# DAVIS-MONTHAN AIR FORCE BASE
# ARIZONA

# PERSONNEL RECOVERY TRAINING PROGRAM

## FINAL ENVIRONMENTAL ASSESSMENT









U.S. AIR FORCE

2020

# FINAL

# ENVIRONMENTAL ASSESSMENT FOR THE DAVIS-MONTHAN AIR FORCE BASE PERSONNEL RECOVERY TRAINING PROGRAM

**January 2020**

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# FINAL FINDING OF NO SIGNIFICANT IMPACT (FONSI)
# for the
# DAVIS-MONTHAN AIR FORCE BASE PERSONNEL RECOVERY TRAINING PROGRAM

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 of the United States Code (U.S.C.), §§4321 to 4347, implemented by Council on Environmental Quality (CEQ) Regulations, Title 40 of the Code of Federal Regulations (CFR), §§1500-1508, and 32 CFR 989, Environmental Impact Analysis Process, the U.S. Air Force (USAF) assessed the potential environmental consequences associated with the USAF proposal to conduct an improved comprehensive Personnel Recovery (PR) training program (Proposed Action) centered out of Davis-Monthan Air Force Base (AFB), Arizona. While the PR training program would be centered out of Davis-Monthan AFB, PR training activities would be conducted throughout the southwestern United States (U.S.).

## PURPOSE AND NEED FOR THE ACTION (EA Sections 1.3 and 1.4)

DoD Directive 3002.01E, *Personnel Recovery*, defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. PR training courses and events need to provide the most realistic PR training environments available to USAF Rescue forces so that they comply with DoD Directive 3002.01E, as well as Air Force Policy Directive 10-30, *Personnel Recovery*. The purpose of the Proposed Action is to provide adequate PR training to enhance the readiness of PR forces operating out of Davis-Monthan AFB, and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations. PR training participants would include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) Interagencies, and Foreign Partner Nations.

The Proposed Action is needed because PR forces currently operating out of Davis-Monthan AFB are limited by the number of adequate and realistic PR training sites which have the required characteristics for PR training activities. Commanders face challenges in ensuring that routine and formal PR training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Environmental Assessment (EA), incorporated by reference into this finding, analyzes the potential environmental consequences of proposed PR training activities associated with the PR training program, and provides minimization measures and/or operational constraints to avoid or reduce adverse environmental impacts to a less than significant level. The EA considers all potential impacts of the Proposed Action and the No-Action Alternative. The EA also considers cumulative environmental impacts with other relevant actions throughout the southwestern U.S.

## PROPOSED ACTION (EA Section 2.3)

The USAF is proposing to improve PR training conducted throughout the southwestern U.S. This includes routine and specialized formal training for PR forces as a well as Large Force joint/multi-national events. Improvements would involve increasing suitable PR training site access and expanding training activities at some sites. The USAF proposes to conduct the PR

training events in Arizona, California, Nevada, and New Mexico. Specifically, the Proposed Action includes using DoD and non-DoD properties for ground, flight, and water operations. Proposed PR training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan AFB. The specific activities may range in scale from Small Force training involving fewer than 50 personnel using light trucks and motorcycles to Large Force training involving up to 1,000 personnel and a variety of U.S. and foreign aircraft.

***Training***

The proposed PR training activities would be centered out of Davis-Monthan AFB and hosted by various organizations depending on the PR training event. Comprehensive training involves ground, flight, and water activities. PR forces would train through the full spectrum of PR capabilities with ground recovery personnel, air assets, Special Forces teams, and federal agents. Training activities would comply with Special Use permit stipulations for specific PR training locations. Preparation of the training environment would occur approximately one month before each event for several days, five to six times a year. Preparation would primarily consist of site surveys to assess the safety of specific locations for intended event execution. All airspace used during PR training events would be governed by the PR Airspace Control Plan (ACP). The ACP outlines procedures and designates airspace for PR training events within the Temporary Playas Military Operation Area/Air Traffic Control Assigned Airspace and the Barry M. Goldwater Range (BMGR), and other identified restricted airspace.

Large Force training events would include Red Flag-Rescue, an Air Combat Command (ACC)-sponsored Large Force training event for Combat Air Force, joint coalition, and interagency participants. An average of 30 aircraft, and potentially up to 45 aircraft, participate in these events. This training event would occur biannually (twice a year), lasting up to 21 days, with up to 1,000 personnel. The first week of the Large Force training event would include in-processing and classroom training (at Davis-Monthan AFB), and familiarization flights (at sites chosen for specific training events). The schedule of the Large Force training event would vary depending on the number of participants, but would generally involve alternating between planning the field training and execution of the training with an average of five planning days and ten execution days, including five to seven flying days. This would be followed by a short de-mobilization period and return to home base. This training event would include ground, flight, and water operations (described further below and in **EA Section 2.1**). All or part of the proposed PR training activities, equipment, airspace, and PR training sites discussed in this analysis have the potential to be utilized as part of the Large Force training events.

Medium Force training events would include group-level training such as Rescue Group Pre-Deployment PR Training. Up to 18 aircraft would participate in this training event. This training event would occur quarterly and could last up to 14 days with 50-100 personnel, including seven flying days. Typically, the first week of a Medium Force training event would involve planning and classroom training of participating personnel, then up to five days of field training, one day of de-mobilization, and then debrief on results of PR training. Medium Force training events would include ground, flight, and water operations. All or part of the PR training activities, equipment, airspace, and training locations discussed in this analysis have the potential to be utilized as part of Medium Force training events.

Small Force training events would include squadron-level training, including individual training activities in support of Guardian Angel Formal Training Unit courses. Up to six aircraft would participate in this training event. This training event would occur several days a week throughout the year (with flying up to eight hours per day) with up to 50 personnel. This training event would include a combination of ground, flight and water operations. All or part of the proposed PR training activities, equipment, airspace, and training sites discussed in this analysis have the potential to be utilized as part of Small Force training events.

***Training Sites***

The proposed PR training sites are located on federal, tribal, state, municipal, city, county and private land in areas of Arizona, California, Nevada, and New Mexico that have been previously disturbed or are currently or previously used for the types of activities that would be conducted under the Proposed Action. There are 175 PR training sites that may be utilized during PR training (see **EA Appendix A**). As discussed in EA Section 2.2, 151 of these sites are already authorized and used for PR training. Under the Proposed Action, 24 additional sites would be authorized for use. In addition, the range of authorized PR training activities on some current sites would be expanded to include additional activities. The Proposed Action would include 55 PR training sites on DoD property; 44 on U.S. Forest Service (USFS) or other federal land; 57 on other land (e.g., municipal, city, county, state, or tribal); and 19 on private property. Numerous sites could serve multiple training purposes and not all of the proposed sites would be used every year. Although there are a large number of proposed PR training sites across a large area of the southwestern U.S., the proposed PR training activities are typically conducted at a select number of sites that are secure, well maintained, and conveniently located within a reasonable travel timeframe to Davis-Monthan AFB.

When planning each PR training event, locations would be selected based on the specific requirements of each PR training event and in consultation with the appropriate agencies and land managers. A list of sites would generally be finalized approximately three months prior to the PR training event, at which time consultation with the State Historic Preservation Officers (SHPOs), land managers, and other necessary agencies as identified in **Section 3.4.3.2** would be conducted if not already completed. For the proposed PR training sites on DoD property, training sites would be selected in coordination with the appropriate range and other installation personnel and would be permitted sites already governed by the installations' environmental policies and procedures. For the proposed PR training sites on non-DoD property, Special Use permits and/or other necessary permits would be obtained from the affected land managers for use of the proposed sites. The USAF would ensure that the appropriate permits are current, and no PR training activity would occur unless the appropriate permits are obtained. The use of PR training sites on private property would be subject to terms and agreements between the USAF and the respective property owner. The nature and location of sites would vary from training cycle to training cycle depending on the specific event developed for the PR training. Through the use of varying PR training activities, overuse of specific sites would be avoided.

Proposed PR training sites were discussed with the various PR organizations for use during PR training events. The information collected during these discussions resulted in the determination that several sites identified had either logistical or environmental concerns that eliminated them from being considered for PR training.

The following PR training activities, including the activation of the Playas Temporary Military Operations Area, currently occur and would continue to occur as part of the Proposed Action.

**Ground Operations**

- Camping, Bivouacking, and Assembly Area Use (G1)
- Cross-Country Dismounted (Non-Vehicle) Movements (G2)
- Mounted Movements/Blackout Driving (G3)
- Survival Training/Natural Resources Consumption (G4)
- Military Operations in Urban Terrain/Urban Evasion (G5)
- Technical Rope Work (G6)
- Pyrotechnic Use (G7)
- Small Arms Firing Range (G8)

**Flight Operations**

- Established Military Operations Areas (F1)
- Temporary Military Operations Area (F2)
- Low Altitude Tactical Navigation Area (F3)
- Restricted Areas (F4)
- Other Airspace (F5)
- Forward Aircraft Refueling Point Operations (F6)
- Helicopter Landing Zones (F7)
- Fixed-Wing Landing Zones (F8)
- Parachute Operations and Drop Zones (F9)
- Close Air Support/Escort (F10)

**Water Operations**

- Helicopter Landing Zones/Drop Zones/Overwater Hoist Operations (W1)
- Amphibious Operations (W2)

***Training Site Locations***

**DoD Property**. The Proposed Action would include the use of 55 proposed PR training sites on DoD property, which would include BMGR East, Camp Navajo Army Base, Davis-Monthan AFB, March Air Reserve Base, U.S. Marine Corps Base Camp Pendleton, Naval Air Facility El Centro, Nellis AFB, Florence Military Reservation, Luke AFB, Fort Huachuca, Melrose Air Force Range, San Clemente Island, and White Sands Missile Range. The proposed PR training sites would be selected in coordination with the appropriate range and other installation personnel, and in accordance with the operational constraints outlined in EA Section 3.4.3.2.1. PR training would be approved at sites already governed by the installations' environmental policies and procedures. No PR training activity would occur unless the appropriate approvals are obtained.

**USFS or Other Federal Land.** The Proposed Action would include the use of 44 PR training sites on USFS or other federal land (41 of which would be on USFS land [including Apache-Sitgreaves, Coconino, Coronado, Gila, Kaibab, and Tonto National Forests], two on Bureau of Land Management [BLM] land, and one on National Park Service [NPS] land). If a USFS, BLM, or NPS site is proposed for PR training activities for a given event, USAF would

coordinate with USFS district rangers, BLM field offices, NPS and SHPOs to ensure proper procedures and operational constraints outlined in EA Section 3.4.3.2.2 are followed. The USAF would also coordinate with any USFS, BLM, or NPS permittees where PR training sites are proposed, such as Catron County who currently maintains and administers the Reserve Airport under Special Use permit from the USFS. Use of any PR training site would require a current Special Use permit or other necessary permit from USFS, BLM, and NPS. Regarding BLM, the proposed PR training activity would need to be limited to types that would be considered "casual use" under 43 CFR 2800, which is by definition "activities ordinarily resulting in no or negligible disturbance of the public lands, resources, or improvements." Proposed PR training sites would be permitted for use subject to availability and the findings of this EA. If the USFS, BLM, or NPS determines that a proposed PR training site would not be suitable, permits would not be issued and alternative PR training sites would be chosen as needed. No PR training activity would occur unless the appropriate permits and/or approvals are obtained.

**Other Land (Municipal City, County, State, or Tribal).** The Proposed Action would include the use of 57 proposed PR training sites on other land (municipal city, county, state, or tribal) for PR training activities. Some of these proposed PR training sites would consist of municipal airports that would provide for HLZs, LZs, and DZs and, in some instances, forward aircraft refueling points. Others would consist of tribal and state recreation areas that would allow for water training at locations in closer proximity to Davis-Monthan AFB than proposed Pacific coast sites associated with military installation training areas in California. All proposed PR activities at all PR training sites would be reviewed in consultation and coordination with the appropriate controlling agency permitting authorities, and operational constraints outlined in EA Section 3.4.3.2.3. No PR training activity would occur unless the appropriate permits and/or approvals are obtained.

**Private Property.** The Proposed Action would include the use of 19 proposed PR training sites on private property. Several sites proposed as DZ/HLZs are on private ranches. The use of these sites would be subject to terms and agreements prepared between the USAF and the property owner prior to use. The use of these sites would also be subject to the land controlling agency requirements and the USAF would coordinate with the appropriate agency to obtain any required permits or approvals. No training activity would occur unless the appropriate agreements, permits, and approvals are obtained.

**ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION (EA Section 2.4)**

Two alternatives to the Proposed Action were considered: (1) conduct PR training only on DoD training sites, and (2) use training sites outside the southwestern U.S. Neither of these alternatives fully met the Purpose and Need, and neither was determined to be a reasonable alternative. Both have been eliminated from further consideration in this EA.

**NO-ACTION ALTERNATIVE (EA Section 2.2)**

Under the No-Action Alternative, existing PR training activities, equipment, personnel, airspace, and training locations currently used by the individual rescue units would continue. In addition to the above training events, the USAF would conduct limited biannual Large Force rescue events using pre-approved PR training sites throughout the southwestern U.S. Limited training resources would continue to be over-utilized, and less realistic training would minimize the ability of PR forces to keep pace with changes in the global operating environment. The lack of

adequate and available PR training sites would continue to present challenges for meeting PR training requirements and sustaining readiness.

**SUMMARY OF FINDINGS**

The analyses of the affected environment and environmental consequences of implementing the Proposed Action presented in the EA determined that by implementing environmental protection measures for potential site-specific concerns, the USAF would be in compliance with all terms and conditions and reporting requirements for implementation of the reasonable and prudent measures stipulated by the USFS.

The analyses in the EA focused on the following environmental resources: airspace management, air quality, biological resources, cultural resources, land use and aesthetics, hazardous materials and hazardous waste management, noise, safety, socioeconomics, and water resources (surface water). The USAF has concluded implementation of the Proposed Action (including the activation of the Playas Temporary MOA) would result in less than significant effects related to the following environmental resources: airspace management, air quality, biological resources, cultural resources, land use and aesthetics, hazardous materials and hazardous waste management, noise, safety, socioeconomics, or water resources. In addition, the USAF has concluded that the Proposed Action (including the activation of the Playas Temporary MOA) would not have the potential to impact the following environmental resources which were not carried forward in the EA for detailed analysis: coastal resources, Department of Transportation Section 4(f) properties, farmlands, environmental justice, geology and soils, transportation, utilities, and water resources (groundwater). Less than significant cumulative impacts would result from activities associated with the Proposed Action, including the activation of the Playas Temporary MOA, when considered with past, present, or reasonably foreseeable future actions in the southwestern U.S.

The USAF would use the processes outlined in this EA to review each planned PR training event to ensure all PR training events are within the scope of the analysis and conform to the findings and determinations made during required consultations. Any additional analysis and/or consultation would be completed prior to approval of the PR training event as needed. These processes would preserve flexibility for event planning and management while ensuring environmental requirements have been sufficiently analyzed and any necessary additional analysis or consultation is properly completed. The USAF would thoroughly document its review of each planned PR training event.

**Airspace Management.** Considering aircraft sortie numbers, aircraft availability, and airspace access requirements, the impact of proposed PR training activities would be minimized environmentally and fiscally by achieving the required readiness and training objectives in the minimum amount of time through the optimum use of resources. Environmental impacts would be minimized through managing annual cumulative aircraft participation and optimizing the total number of sorties and sortie durations (flying time). Sorties would not be scheduled in the Air Tasking Order that exceed the operational capacity of the required airspace. Therefore, implementation of the Proposed Action would result in a less than significant impact to airspace management.

**Air Quality.** The proposed PR training activities, particularly those similar to Medium and Small Force training events, have been routinely conducted in the region at Davis-Monthan AFB

and at other airfields to a lesser extent. For Large Force training event, the aircraft training would occur within the Playas Temporary MOA or BMGR where no sensitive receptors are present or impacted. Therefore, given the limited increase in the proposed PR training activities around airfields or training sites, the air quality impact in terms of aircraft or vehicle emissions within the affected counties or states would not be significant. Annual air emissions would not exceed the applicable Clean Air Act (CAA) General Conformity Rule *de minimus* threshold within the counties designated as either non-attainment or as a maintenance area for criteria pollutants nor exceed the NEPA assessment indicator threshold of 100 tons per year within the attainment counties for a criteria pollutant. The Proposed Action would not appreciably impact the trend in the air quality around affected airfields and proposed PR training sites over time. Therefore, implementation of the Proposed Action would result in a less than significant impact to air quality.

**Biological Resources.** The Large Force training event would occur for brief periods (21 days) biannually at some of the rural PR training sites. Short-term, negligible to minor, adverse impacts on biological resources at these rural training sites would be expected. However, because many of the proposed PR training sites were previously disturbed, significant impacts are not anticipated. No significant disturbances are anticipated at non-rural sites. Therefore, implementation of the Proposed Action would result in a less than significant impact to biological resources.

**Cultural Resources**. The Proposed Action would be subject to all federal, state and local cultural resource regulations—as appropriate—mandating the consideration of cultural resources during project planning. Impacts would be minimized through avoidance or data recovery, if needed. Therefore, implementation of the Proposed Action would result in a less than significant impact to cultural resources.

Please note that cultural resource surveys have not been completed for 20 of the 175 PR training sites and have thus been removed from the Section 106 consultation process at this time. Of these 20 PR training sites, two are located in New Mexico on USFS land (Negrito North and Negrito South). The remaining 18 PR training sites are located in Arizona and consist of the following: five PR training sites on USFS land (Comanche, Rough Rider, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West); six PR training sites on other land (Babbitt Ranch 1, Babbitt Ranch 3, Highway 80 Paladins [TW 2 Paladins], Powerline, Ruby Fuzzy Paladins, and Tombstone Paladins); and seven PR training sites on private property (Cattle, Cattle LTFW, Elk, Gerbil, HLZ 5, Panda, and Squirrel). Consequently, these 20 PR training sites are not included in this Finding of No Significant Impact with respect to cultural resources. PR training activities will not be conducted at these 20 PR training sites until it can be determined through the Section 106 process that the Proposed Action would not result in impacts to cultural resources at these sites. If consultations are completed and there are no adverse effects or any adverse effects are resolved, a second Finding of No Significant Impact would be signed on some or all of these 20 PR training sites. The 155 PR training sites that are covered by this current Finding of No Significant Impact have independent utility apart from these 20 sites. The 155 PR training sites will be used for routine and specialized formal training for PR forces as well as Large Force joint/multi-national events separate and apart from these 20 PR training sites.

**Land Use and Aesthetics.** The proposed PR training activities would be located on sites that have been previously disturbed or are currently or previously used for activities similar to those defined under the Proposed Action. The USAF would obtain the necessary Special Use permits from USFS, BLM, and NPS, obtain the necessary right-of-entry and Special Use permits required from municipal, city, county, state, and tribal controlling agencies, as well as comply with the respective jurisdictions' land use plans, policies, and regulations in which the proposed PR training sites are located. The USAF would also ensure the proposed PR activities on BLM land would be limited to types that would be considered "casual use" under 43 CFR 2800 and would also comply with the terms and agreements prepared between the USAF and respective property land owners. Therefore, implementation of the Proposed Action would result in a less than significant impact to land use and aesthetics.

**Hazardous Materials and Hazardous Waste Management.** During implementation of the Proposed Action, no hazardous materials or waste would be stored or used at the proposed PR training sites. Furthermore, the Proposed Action would not result in an increase in hazardous materials or waste in quantities beyond the capacity of current management procedures. Any spills or leaks would be handled in compliance with Davis-Monthan AFB's Spill Prevention and Control Countermeasures Plan (SPCCP), Pollution Prevention Plan, and Hazardous Waste Management Plan, the respective military installation's regulations, policies, programs, and procedures, as well as all federal, state, and local regulations. Refueling of aircraft and vehicles would occur at established refueling locations (e.g., gasoline stations and airports), which would have adequate spill containment materials for accidental release during fueling. Therefore, implementation of the Proposed Action would result in a less than significant impact to hazardous materials and hazardous waste management.

**Noise**. There would be some noise overlapping geographically particularly around the airfields as a result of the Proposed Action. However, given the small percent increase in the proposed PR training activities as compared to the overall flight operations around each airfield, the noise impacts from the Proposed Action would be minor. Therefore, implementation of the Proposed Action would result in a less than significant impact to noise.

**Safety.** Each of the PR training units have safety measures in place, and would follow specific safety guidance for each PR training site/PR training activity which would minimize safety risks. In addition, safety risks would be minimized through implementation of AFIs 91-301, 91-202, 91-203 and, 13-217, compliance with all rules and regulations in Special Use permits or other applicable permits, and compliance with applicable federal, state, and local safety regulations. Actions on DoD property would comply with DoD and the respective military department's health and safety policies, programs, regulations, and land use controls. Therefore, implementation of the Proposed Action would result in a less than significant impact to safety.

**Socioeconomics.** Under the Proposed Action, there would be no increase in personnel due to training activities and no creation or loss of jobs in the ROI. In addition, the Proposed Action would result in less than significant noise impacts and thus increased noise from the Proposed Action would not be anticipated to significantly affect property values. For this Proposed Action, potential impacts to noise conditions or visual resources as a result of the PR training activities would potentially result in a decrease of visitors at nearby recreation sites. Some PR training activities located at recreation sites would temporarily prevent the public from using these recreation sites, which would result in a temporary loss of revenue resulting in a

socioeconomic impact. However, per the socioeconomic analysis conducted for the Proposed Action, it was found that implementation of the Proposed Action would not be expected to result in changes in recreation use that would result in unanticipated significant loss of fees at fee-based recreation sites or in an unanticipated significant loss of income from income-generating recreation uses. Therefore, implementation of the Proposed Action would result in a less than significant impact related to socioeconomics.

**Water Resources.** The proposed PR training activities would be located on PR training sites that have been previously disturbed or are currently or previously used for similar training activities. PR training activities would be temporary in nature and are not expected to contribute pollutants that would adversely affect water quality. The potential to release fuel from watercraft to surface waters would be minimized to a negligible level through compliance with standard operating procedures for watercraft maintenance and spill prevention and USAF standard operating procedures. Therefore, implementation of the Proposed Action would result in a less than significant impact related to surface water resources.

**FINDING OF NO SIGNIFICANT IMPACT**

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR 989, I conclude that the Davis-Monthan AFB Personnel Recovery Training Program would not have a significant environmental impact, either individually or cumulatively with other actions in the southwestern U.S. Accordingly, an Environmental Impact Statement is not required. Subject to the commitment for reviewing PR training event plans to ensure compliance with the scope of this finding, the signing of this Finding of No Significant Impact completes the environmental impact analysis process.

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Date 5 Feb 2020

DEE JAY KATZER, Col, USAF
Chief, Civil Engineer Division (ACC/A4C)

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# HALLAZGO DE IMPACTO NO SIGNIFICATIVO FINAL (FONSI)
# PARA EL
# PROGRAMA DE ENTRENAMIENTO DE RECUPERACION DE PERSONAL DE LA BASE DE LA FUERZA AÉREA DE LOS ESTADOS UNIDOS DAVIS-MONTHAN

De conformidad con las disposiciones de la Ley Nacional de Política Ambiental (NEPA), Título 42 del Código de los Estados Unidos (USC), §§4321 a 4347, implementado por las Regulaciones del Consejo de Calidad Ambiental (CEQ), Título 40 del Código de Regulaciones Federales (CFR), §§1500-1508 y 32 CFR 989, Proceso de Análisis de Impacto Ambiental, la Fuerza Aérea de los Estados Unidos. (USAF) evaluó las posibles consecuencias ambientales asociadas con la propuesta de la USAF de llevar a cabo un programa de entrenamiento integral mejorado de Recuperación de Personal (PR) (Acción Propuesta) centrada en la Base de la Fuerza Aérea (AFB) Davis-Monthan, Arizona. Si bien el programa de entrenamiento PR se centraría en Davis-Monthan AFB, las actividades de entrenamiento PR se llevarían a cabo en todo el suroeste de los Estados Unidos (EEUU).

## PROPÓSITO Y NECESIDAD DE LA ACCIÓN (EA Secciones 1.3 y 1.4)

La Directiva del Departamento de Defensa (DoD) 3002.01E, Recuperación de Personal, define PR como "una de las más altas prioridades del DoD" y asigna a los Jefes de Servicio con esta responsabilidad. Los cursos y eventos de entrenamiento PR deben proporcionar los entornos más realistas disponibles de entrenamiento PR para las fuerzas de rescate de la USAF, de manera que cumplan con la Directiva DoD 3002.01E, así como con la Directiva de Política de la Fuerza Aérea 10 30, Recuperación de Personal. El propósito de la Acción Propuesta es proporcionar entrenamiento PR adecuado para mejorar la preparación de las fuerzas de PR que operan desde Davis-Monthan AFB, y fortalecer las operaciones militares conjuntas, las asociaciones multinacionales y las operaciones con otras agencias/organizaciones federales, estatales y locales. Los participantes en el entrenamiento PR incluirían fuerzas de PR de la USAF, Servicios Conjuntos, agencias locales/estatales, Interagencias del DoD y Naciones Socias Extranjeras.

La Acción Propuesta es necesaria porque las fuerzas de PR, que actualmente operan desde Davis-Monthan AFB, están limitadas por el número de sitios de entrenamiento PR que sean adecuados y realistas, y que tengan las características requeridas para las actividades de entrenamiento PR. Los comandantes enfrentan desafíos para garantizar que se cumplan los requisitos de entrenamiento de rutina y formales de PR para que las fuerzas de PR estén preparadas para ejecutar sus misiones especiales. Los eventos de entrenamiento PR que son críticos para la preparación conjunta y el fortalecimiento de las asociaciones multinacionales son limitados debido a la falta de disponibilidad de sitios de entrenamiento adecuados. El rango de sitios disponibles actualmente no incluye todos los tipos de terreno y vegetación que estarían presentes en las operaciones PR en la vida real.

La Evaluación Ambiental (EA), incorporada por referencia en este hallazgo, analiza las posibles consecuencias ambientales de las actividades propuestas de entrenamiento PR asociadas con el programa de entrenamiento PR, y proporciona medidas para minimizar y/o restricciones operativas para evitar o reducir los impactos ambientales adversos a un nivel menos que significativo. La EA considera todos los impactos potenciales de la Acción Propuesta y la Alternativa de No Acción. La EA también considera los impactos ambientales acumulativos con otras acciones relevantes en todo el suroeste de los EEUU.

## ACCIÓN PROPUESTA (EA Sección 2.3)

La USAF propone mejorar el entrenamiento PR realizado en todo el suroeste de los EEUU. Esto incluye entrenamiento formal especializado y de rutina para las fuerzas PR, así como eventos conjuntos/multinacionales de la Gran Fuerza. Las mejoras implicarían aumentar el acceso adecuado al sitio de entrenamiento PR y ampliar las actividades de entrenamiento en algunos sitios. La USAF propone llevar a cabo los eventos de entrenamiento PR en Arizona, California, Nevada y Nuevo México. Específicamente, la Acción Propuesta incluye el uso de propiedades DoD y no DoD para operaciones en tierra, vuelo y agua. El entrenamiento PR propuesto incluiría espacios aéreos y polígonos de entrenamiento relacionados con el DoD, utilizando varios números y tipos de aviones estadounidenses y extranjeros que operan principalmente desde Davis-Monthan AFB. Las actividades específicas pueden variar en escala, desde el entrenamiento de Fuerza Menor, la cual consiste en menos de 50 personas utilizando camionetas y motocicletas, hasta el entrenamiento de Gran Fuerza, constando de hasta 1,000 personas y una variedad de aviones estadounidenses y extranjeros.

### ***Entrenamiento***

Las actividades de entrenamiento PR propuestas se centrarían en Davis-Monthan AFB y serían patrocinadas por varias organizaciones dependiendo del evento de entrenamiento PR. El entrenamiento integral incluye actividades terrestres, de vuelo y acuáticas. Las fuerzas de PR se entrenarían en todo el espectro de capacidades PR con personal de recuperación en tierra, activos aéreos, equipos de fuerzas especiales y agentes federales. Las actividades de entrenamiento cumplirían con las estipulaciones de permisos de Uso Especial para las ubicaciones específicas de entrenamiento PR. La preparación del entorno para el entrenamiento ocurriría aproximadamente un mes antes de cada evento durante varios días, de cinco a seis veces al año. La preparación consistiría principalmente en un estudio de sitio, para evaluar la seguridad de las ubicaciones específicas para la ejecución prevista del evento. Todo el espacio aéreo utilizado durante los eventos de entrenamiento PR se regirá por el Plan de Control del Espacio Aéreo de PR (ACP). El ACP describe los procedimientos y designa el espacio aéreo para los eventos de entrenamiento PR dentro del Área de Operaciones Militares Temporales de Playas/Espacio Aéreo Asignado para el Control del Tráfico Aéreo y el Rango Barry M. Goldwater (BMGR), y otros espacios aéreos restringidos identificados.

Los eventos de entrenamiento de la Gran Fuerza incluirían Red Flag-Rescue, un evento de entrenamiento de la Gran Fuerza patrocinado por el Comando de Combate Aéreo (ACC) para la Fuerza Aérea de Combate, la coalición conjunta y los participantes interinstitucionales. Un promedio de 30 aviones, y posiblemente hasta 45 aviones, participan en estos eventos. Este entrenamiento se llevaría a cabo cada dos años (dos veces al año), con una duración de hasta 21 días, con hasta 1,000 personas. La primera semana del entrenamiento de la Gran Fuerza incluiría la inscripción y capacitación en el aula (en Davis-Monthan AFB) y vuelos de familiarización (en los sitios elegidos para eventos específicos de entrenamiento). El cronograma del entrenamiento de la Gran Fuerza variará dependiendo del número de participantes, pero generalmente implicaría alternar entre la planificación del entrenamiento de campo y la ejecución del entrenamiento con un promedio de cinco días de planificación y diez días de ejecución, incluyendo cinco a siete días de vuelo. Esto sería seguido por un corto período de desmovilización y regreso a la base de operaciones. Este evento de entrenamiento incluiría operaciones terrestres, de vuelo y acuáticas (descritas más adelante y en la **Sección 2.1 de la EA**). La totalidad o parte de las actividades propuestas de entrenamiento PR, equipo, espacio

aéreo y sitios de entrenamiento PR discutidos en este análisis tienen el potencial de ser utilizados como parte de los eventos de entrenamiento de la Gran Fuerza.

Los eventos de entrenamiento de Fuerza Media incluirían el entrenamiento a nivel de grupo, como el Entrenamiento PR Previo al Despliegue del Grupo de Rescate. Hasta un máximo de 18 aviones participarían en este entrenamiento. Este entrenamiento ocurriría trimestralmente y podría durar hasta 14 días con 50-100 empleados, incluyendo siete días de vuelo. Por lo general, la primera semana de un evento de entrenamiento de Fuerza Media implicaría la planificación y capacitación en el aula del personal participante, luego hasta cinco días de entrenamiento de campo, un día de desmovilización y luego un informe sobre los resultados del entrenamiento PR. Los eventos de entrenamiento de Fuerza Media incluirían operaciones terrestres, de vuelo y acuáticas. Todas o parte de las actividades de entrenamiento PR, equipos, espacio aéreo y lugares de entrenamiento discutidos en este análisis tienen el potencial de ser utilizados como parte de los eventos de entrenamiento de Fuerza Media.

Los eventos de entrenamiento de Fuerza Menor incluirían entrenamiento a nivel de escuadrón, incluyendo actividades de entrenamiento individual en apoyo de los cursos de la Unidad de Entrenamiento Formal de Guardian Angel. Hasta un máximo de seis aviones participarían en este entrenamiento. Este entrenamiento se llevaría a cabo varios días a la semana durante todo el año (con vuelos de hasta ocho horas por día) con hasta 50 personas. Este entrenamiento incluiría una combinación de operaciones en tierra, vuelo y agua. La totalidad o parte de las actividades de entrenamiento, equipo, espacio aéreo y sitios de entrenamiento PR propuestos discutidos en este análisis tienen el potencial de ser utilizados como parte de los eventos de entrenamiento de Fuerza Menor.

***Sitios de Entrenamiento***

Los sitios propuestos para el entrenamiento PR están ubicados en terrenos federales, tribales, estatales, municipales, de la ciudad, del condado y privados en áreas de Arizona, California, Nevada y Nuevo México que han sido previamente perturbados o que se utilizan actualmente o que se han utilizado anteriormente para los tipos de actividades que se llevarían a cabo bajo la Acción Propuesta. Hay 175 sitios de entrenamiento PR que se pueden utilizar durante el entrenamiento PR (refiérase al **Apéndice A de la EA**). Como se discutió en la Sección 2.2 de la EA, 151 de estos sitios ya están autorizados y se utilizan para entrenamiento PR. Según la Acción Propuesta, 24 sitios adicionales serían autorizados para su uso. Además, la gama de actividades de entrenamiento PR autorizadas en algunos sitios actuales se ampliaría para incluir actividades adicionales. La acción propuesta incluiría 55 sitios de entrenamiento PR en propiedad del DoD; 44 sitios en el Servicio Forestal de los EEUU (USFS) u otras tierras federales; 57 sitios en otras tierras (e.g., municipal, ciudad, condado, estado o tribal); y 19 sitios en propiedad privada. Numerosos sitios podrían servir para múltiples propósitos de entrenamiento y no todos los sitios propuestos se usarían cada año. Aunque hay una gran cantidad de sitios propuestos para entrenamiento PR en una gran área del suroeste de los EEUU, las actividades propuestas de entrenameinto PR generalmente se llevan a cabo en un número selecto de sitios que son seguros, están bien mantenidos, y están convenientemente ubicados a una distancia razonable de Davis-Monthan AFB.

Durante la planificación de cada evento de entrenamiento PR, la selección de los sitios de entrenamiento PR será basada en los requerimientos específicos de cada evento de entrenamiento y en consulta con las agencias apropiadas y los administradores de tierras correspondientes. La

lista de los sitios será finalizada aproximadamente tres meses antes del evento de entrenamiento PR; en este momento al menos de que se haya completado anteriormente, se hará la consulta a los Oficiales de Preservación Histórica Estatal (SHPOs), administradores de las tierras, y otras agencias necesarias tal como fueron identificadas en la **Sección 3.4.3.2**. Para los sitios de entrenamiento PR propuestos en propiedades del DoD, los sitios de entrenamiento se seleccionarían en coordinación con el polígono y cualquier otro personal de instalación correspondiente, y serían sitios previamente aprobados y que están regidos por las políticas y procedimientos ambientales de las instalaciones. Para los sitios de entrenamiento PR propuestos en propiedades no pertenecientes al DoD, se solicitarán, a los administradores de tierras afectados, permisos de Uso Especial y/u otros permisos necesarios para el uso de los sitios propuestos. La USAF se aseguraría de que los permisos apropiados estén vigentes, y no se realizarían actividades de entrenamiento PR a menos que se obtengan los permisos apropiados. El uso de sitios de entrenamiento PR en propiedad privada estaría sujeto a los términos y acuerdos entre la USAF y el propietario respectivo. La naturaleza y la ubicación de los sitios variarían de un ciclo de entrenamiento a otro, dependiendo del evento específico desarrollado para el entrenamiento PR. Mediante el uso de diversas actividades de entrenamiento PR, se evitaría el uso excesivo de sitios específicos.

Los sitios propuestos de entrenamiento PR se discutieron con las diversas organizaciones de PR para su uso durante los eventos de entrenamiento PR. La información recopilada durante estas discusiones resultó en la determinación de que varios sitios identificados tenían dificultades logísticas o ambientales que los eliminaron de ser considerados para entrenamiento PR.

Las siguientes actividades de entrenamiento PR, incluyendo la activación del Área de Operaciones Militares Temporales de Playas, actualmente ocurren y continuarán ocurriendo como parte de la Acción Propuesta.

**Operaciones Terrestres**

- Uso de área de Campamento, Vivaque y Montaje (G1)
- Movimientos a Campo Traviesa Desmontados (sin vehículo) (G2)
- Movimientos Montados/Blackout Driving (G3)
- Entrenamiento de Supervivencia/Consumo de Recursos Naturales (G4)
- Operaciones Militares en Terrenos Urbanos/Evasión Urbana (G5)
- Trabajo Técnico de Cuerda (G6)
- Uso Pirotécnico (G7)
- Polígono de Armas Pequeñas (G8)

**Operaciones de Vuelo**

- Establecimiento de Areas de Operaciones Militares (F1)
- Area de Operaciones Militares Temporales (F2)
- Area de Navegación Táctica de Baja Altitud (F3)
- Areas Restringidas (F4)

- Otro Espacio Aéreo (F5)
- Operaciones de Punta de Reabastecimiento de Aeronaves (F6)
- Zonas de Aterrizaje de Helicópteros (F7)
- Zonas de Aterrizaje de Ala Fija (F8)
- Operaciones de Paracaídas y Zonas de Lanzamiento (F9)
- Apoyo Aéreo Cercano/Escolta (F10)

**Operaciones Acuáticas**

- Zonas de Aterrizaje de Helicópteros/Zonas de Lanzamiento/Operaciones de Elevación Sobre el Agua (W1)
- Operaciones Anfibias (W2)

***Ubicaciones de Sitios de Entrenamiento***

**Propiedad DoD**. La Acción Propuesta incluiría el uso de 55 sitios de entrenamiento PR propuestos en la propiedad del DoD, incluyendo el BMGR Este, Base de la Armada Camp Navajo, Davis-Monthan AFB, Base de Reserva Aérea March, Campo Pendleton del US Marine Corps, Instalaciones Aéreas Navales El Centro, Nellis AFB, Reserva Militar de Florencia, Luke AFB, Fuerte Huachuca, Polígono de la Fuerza Aérea Melrose, Isla San Clemente y Polígono de Misiles White Sands. Los sitios de entrenamiento PR propuestos se seleccionarían en coordinación con el polígono y cualquier otro personal de la instalación correspondiente, y de acuerdo con las restricciones operativas descritas en la Sección 3.4.3.2.1 de la EA, entrenamiento de PR y serían sitios previamente aprobados que ya están regidos por las políticas y procedimientos ambientales de las instalaciones. No se realizarán actividades de entrenamiento PR a menos que se obtengan las aprobaciones apropiadas.

**USFS u Otras Tierras Federales.** La Acción Propuesta incluiría el uso de 44 sitios de entrenamiento PR en USFS u otras tierras federales (41 de las cuales serían en tierras USFS [incluyendo Apache-Sitgreaves, Coconino, Coronado, Gila, Kaibab y Tonto National Forests], dos sitios de la Oficina Gestión de Tierras [BLM], y una en tierras del Servicio de Parques Nacionales [NPS]. Si se propone un sitio de USFS, BLM o NPS para actividades de entrenamiento PR para un evento determinado, la USAF coordinará con los guardaparques del distrito de USFS, las oficinas de campo de BLM,NPS y SHPOs para garantizar que se sigan los procedimientos adecuados y restricciones operativas descritas en la Sección 3.4.3.2.2 de la EA. La USAF también coordinaría con cualquier comité de permisos de USFS, BLM o NPS donde se propongan sitios de entrenamiento PR, como en el condado de Catron, el cual actualmente mantiene y administra el aeropuerto de reserva del condado de Catron con un permiso de Uso Especial del USFS. El uso de cualquier sitio de entrenamiento PR requeriría un permiso de Uso Especial vigente u otro permiso necesario de USFS, BLM y NPS. Con respecto a BLM, la actividad de entrenamiento PR propuesta debería limitarse a los tipos que se considerarían "uso casual" bajo 43 CFR 2800, que es, por definición, "actividades que normalmente resultan en una alteración nula o insignificante de las tierras públicas, recursos o mejoras". Los sitios de entrenamiento PR propuestos serían permitidos para su uso, sujeto a disponibilidad y los hallazgos de este EA. Si el USFS, BLM o NPS determina que un sitio de entrenamiento PR propuesto no sería adecuado, no se emitirían permisos y se elegirían sitios alternativos de

entrenamiento PR según sea necesario. No se realizarán actividades de entrenamiento PR a menos que se obtengan los permisos y/o aprobaciones correspondientes.

**Otras Tierras (Ciudad, Municipal, Condado, Estado o Tribales).** La Acción Propuesta incluiría el uso de 57 sitios propuestos para entrenamiento PR en otras tierras (ciudad municipal, condado, estado o tribales) para actividades de entrenamiento PR. Algunos de estos sitios propuestos para entrenamiento PR consistirían en aeropuertos municipales que proporcionarían HLZ, LZ y DZ y, en algunos casos, puntos de reabastecimiento de combustible para aeronaves. Otros consistirían en áreas de recreación tribales y estatales que permitirían la entrenamiento sobre el agua en lugares más cercanos a Davis-Monthan AFB, que los sitios propuestos para la costa del Pacífico asociados con las áreas de entrenamiento de instalaciones militares en California. Todas las actividades de PR propuestas en todos los sitios de entrenamiento PR se revisarán en consulta y coordinación con las autoridades de permisos de la agencia encargada correspondiente, y restricciones operativas descritas en la Sección 3.4.3.2.3 de la EA. No se realizarán actividades de entrenamiento PR a menos que se obtengan los permisos y/o aprobaciones correspondientes.

**Propiedad Privada.** La Acción Propuesta incluiría el uso de 19 sitios de entrenamiento PR propuestos en propiedad privada. Varios sitios propuestos como DZ/HLZ están en ranchos privados. El uso de estos sitios estará sujeto a los términos y acuerdos preparados entre la USAF y el propietario antes de su uso. El uso de estos sitios también estaría sujeto a los requisitos de la agencia de control de tierras y la USAF coordinaría con la agencia apropiada para obtener los permisos o aprobaciones requeridos. No se realizaría ninguna actividad de entrenamiento a menos que se obtengan los acuerdos, permisos y aprobaciones correspondientes.

**ALTERNATIVAS ELIMINADAS DE UNA CONSIDERACION ADICIONAL (EA Sección 2.4)** Se consideraron dos alternativas a la Acción Propuesta: (1) realizar entrenamiento PR solo en los sitios de entrenamiento del DoD y (2) utilizar sitios de entrenamiento fuera del suroeste de los EEUU. Ninguna de estas alternativas cumplen completamente la Propuesta y la Necesidad, y ninguna fue considerada como una alternative razonable. Ambas han sido eliminadas de una consideración adicional en esta EA.

**ALTERNATIVA DE NO-ACCIÓN (EA Sección 2.2)**
Bajo la Alternativa de No Acción, las actividades existentes de entrenamiento PR, equipo, personal, espacio aéreo y lugares de entrenamiento utilizados actualmente por las unidades de rescate individuales continuarían. Además de los eventos de entrenamiento anteriores, USAF llevará a cabo eventos de rescate bianuales de la Gran Fuerza, utilizando sitios de entrenamiento PR preaprobados en todo el suroeste de los EEUU. Los recursos de entrenamiento limitados continuarían siendo sobreutilizados, y un entrenamiento menos realista minimizaría la capacidad de las fuerzas PR para mantener el ritmo con los cambios en el entorno operativo global. La falta de sitios adecuados y disponibles de entrenamiento PR continuaría presentando desafíos para cumplir con los requisitos de entrenamiento PR y mantener la preparación.

**RESUMEN DE HALLAZGOS**
Los análisis del medio ambiente afectado y las consecuencias ambientales de la implementación de la Acción Propuesta presentada en la EA determinaron que al implementar medidas de protección ambiental para posibles dificultades de sitios específicos, la USAF cumpliría con

todos los términos, condiciones y requisitos de informes para la implementación de las medidas razonables y prudentes estipuladas por el USFS.

Los análisis en la EA se centraron en los siguientes recursos ambientales: gestión del espacio aéreo, calidad del aire, recursos biológicos, recursos culturales, uso del suelo y estética, materiales peligrosos y gestión de residuos peligrosos, ruido, seguridad, socioeconomía y recursos hídricos (aguas superficiales). La USAF ha concluido que la implementación de la Acción Propuesta (incluida la activación del MOA de Playas Temporales) generaría efectos menos que significativos relacionados con los siguientes recursos ambientales: gestión del espacio aéreo, calidad del aire, recursos biológicos, recursos culturales, uso de la tierra y estética, materiales peligrosos y gestión de desechos peligrosos, ruido, seguridad, socioeconomía y recursos hídricos. Además, la USAF ha concluido que la Acción Propuesta (incluida la activación del MOA de Playas Temporales) no tendría el potencial de afectar los siguientes recursos ambientales, los cuales no se incluyeron en la EA para un análisis detallado: recursos costeros, propiedades del Departamento de Transporte Sección 4(f), tierras de cultivo, justicia ambiental, geología y suelos, transporte, servicios públicos, y recursos hídricos (aguas subterráneas). Impactos acumulativos menos que significativos resultarían de las actividades asociadas con la Acción Propuesta, incluyendo la activación del MOA de Playas Temporales, al considerar acciones pasadas, presentes o acciones futuras razonablemente previsibles en el suroeste de los EEUU.

La USAF utilizaría los procesos descritos en esta EA para evaluar cada evento de entrenamiento PR, y garantizar que todos los eventos de entrenamiento PR están dentro del alcance del análisis y se ajustan a los hallazgos y determinaciones hechas durante las consultas requeridas. Cualquier análisis y/o consulta adicional se completará previo a la aprobación del evento de entrenamiento PR según sea necesario. Estos procesos preservarían la flexibilidad para la planificación y gestión de eventos, a la vez que garantizarían que los requisitos ambientales se hayan analizado suficientemente, y que cualquier análisis o consulta adicional necesaria se complete adecuadamente. La USAF documentaría minuciosamente su análisis de cada evento de entrenamiento PR planificado.

**Gestión del Espacio Aéreo.** Teniendo en cuenta los números de despegue de aeronaves, la disponibilidad de aeronaves y los requisitos de acceso al espacio aéreo, el impacto de las actividades de la propuesta de entrenamiento PR se minimizaría ambiental y fiscalmente al lograr los objetivos de preparación y entrenamiento requeridos en el menor tiempo posible, mediante el uso óptimo de los recursos. Los impactos ambientales se minimizarían mediante la gestión del uso anual acumulado de la aeronave y la optimización del número total de despegues y duraciones de vuelo (tiempo de vuelo). Los despegues en el Orden de Tareas Aéreas no se programarían si exceden la capacidad operativa del espacio aéreo requerido. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos que significativo para la gestión del espacio aéreo.

**Calidad del Aire.** Las actividades de entrenamiento PR propuestas, particularmente aquellas similares a los eventos de entrenamiento de Fuerza Media y Pequeña, se han llevado a cabo rutinariamente en la región en Davis-Monthan AFB y en otros aeródromos en menor escala. Para el evento de entrenamiento de Gran Fuerza, el entrenamiento de la aeronave ocurriría dentro del MOA de Playas Temporales o BMGR donde no hay receptores sensibles o impactados. Por lo tanto, dado el aumento limitado de las actividades de entrenamiento PR propuestas en los

campos de aviación o sitios de entrenamiento, el impacto en la calidad del aire en términos de emisiones de aeronaves o vehículos dentro de los condados o estados afectados no sería significativo. Las emisiones anuales al aire no excederían el umbral de contaminación mínimo aplicable de la Regla de Conformidad General de la Ley de Aire Limpio (CAA) dentro de los condados designados como incumplimiento o como área de mantenimiento para contaminantes criterio, tampoco excederían el umbral del indicador de evaluación NEPA de 100 toneladas por año dentro de los condados de logro de un contaminante criterio. Con el tiempo, la Acción Propuesta no afectaría significativamente la tendencia en la calidad del aire alrededor de los campos de aviación afectados y los sitios propuestos de entrenamiento PR. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos que significativo en la calidad del aire.

**Recursos Biologicos.** El evento de entrenamiento de la Gran Fuerza ocurriría por períodos breves (21 días) cada dos años en algunos de los sitios rurales de entrenamiento PR. Se esperaría un impacto adverso a corto plazo, de insignificante a menor, en los recursos biológicos en estos sitios de entrenamiento rural. Sin embargo, debido a que muchos de los sitios de entrenamiento PR propuestos fueron perturbados previamente, no se anticipan impactos significativos. No se prevén perturbaciones significativas en sitios no rurales. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos que significativo para los recursos biológicos.

**Recursos Culturales**. La Acción Propuesta estaría sujeta a todas las regulaciones federales, estatales y locales de recursos culturales, según corresponda, obligando a considerar los recursos culturales durante la planificación del proyecto. Los impactos se minimizarían con evación o la recuperación de datos, si es necesario. Por lo tanto, la implementación de la Acción Propuesta tendría un impacto menos que significativo en los recursos culturales.

Por favor tomar nota que 20 de los 175 sitios de entrenamiento PR no cuentan con el estudio de recursos naturales y por lo tanto en este momento han sido removidos de la Sección 106 del proceso de consulta. De estos 20 sitios de entrenamiento PR, dos están ubicados en Nuevo México en tierras de la USFS (Negrito Norte y Negrito Sur). Los restantes 18 sitios de entrenamiento PR están ubicados en Arizona y consisten de los siguientes: cinco sitios de entrenamiento PR en tierras de la USFS (Comanche, Rough Rider, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West), seis sitios de entrenamiento PR en otras tierras (Babbitt Ranch 1, Babbitt Ranch 3, Highway 80 Paladins [TW 2 Paladins], Powerline, Ruby Fuzzy Paladins, y Tombstone Paladins), y siete sitios de entrenamiento PR en propiedad privada (Cattle, Cattle LTFW, Elk, Gerbil, HLZ 5, Panda, y Squirrel). Por lo tanto, estos 20 sitios de entrenamiento PR no están incluidos en este Hallazgo de Impacto No Significativo con respecto a los recursos culturales. Las actividades de entrenamiento PR no se llevarán a cabo en ninguno de estos 20 sitios de entrenamiento PR hasta que se determine mediante el proceso de la Sección 106 que la Acción Propuesta no resultará en impactos a los recursos culturales en estos sitios. Si los estudios se finalizan y no hay efectos adversos o cualquier efecto adverso ha sido resuelto, un segundo Hallazgo de Impacto No Significativo será firmado para algunos o todos de estos 20 sitios de entrenamiento PR. Los 155 sitios de entrenamiento PR cubiertos bajo este Hallazgo de Impacto No Significativo tienen utilidad independiente de estos 20 sitios. Los 155 sitios de entrenamiento PR serán utilizados por las fuerzas PR para el entrenamiento formal rutinario y especializado y por los eventos en conjunto/multinacionales de la Gran Fuerza.

**Uso de Suelo y Estética.** Las actividades de entrenamiento PR propuestas se ubicarían en sitios que han sido previamente perturbados o que se usan actualmente o que se utilizaron anteriormente para actividades similares a las definidas en la Acción Propuesta. La USAF obtendría los permisos necesarios de Uso Especial de USFS, BLM y NPS, obtendría el derecho de entrada y los permisos de Uso Especial necesarios de las agencias de control municipales, de la ciudad, del condado, estatales y tribales, y cumpliría con los planes, políticas y regulaciones de uso de suelo de las respectivas jurisdicciones en los que se ubican los sitios de entrenamiento PR propuestos. La USAF también se aseguraría de que las actividades PR propuestas en tierras BLM se limiten a los tipos que se considerarían "uso casual" bajo 43 CFR 2800, y también cumplirían con los términos y acuerdos preparados entre la USAF y los respectivos propietarios de tierras. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos que significativo para el uso de la tierra y la estética.

**Materiales Peligrosos y Gestión de Desechos Peligrosos.** Durante la implementación de la Acción Propuesta, no se almacenarían ni utilizarían materiales o desechos peligrosos en los sitios de entrenamiento PR propuestos. Además, la Acción Propuesta no generaría un aumento de materiales peligrosos o desechos en cantidades más allá de la capacidad de los procedimientos de gestión actuales. Cualquier derrame o fuga se manejaría de conformidad con el Plan de Prevención y Control de Derrames (SPCCP) de Davis-Monthan AFB, el Plan de Prevención de Contaminación y el Plan de Gestión de Residuos Peligrosos, los reglamentos, políticas, programas y procedimientos de la instalación militar respectiva, así como todas las regulaciones federales, estatales y locales. El reabastecimiento de combustible de aeronaves y vehículos ocurriría en lugares de reabastecimiento de combustible establecidos (por ejemplo, estaciones de gasolina y aeropuertos), que tendrían materiales de contención de derrames adecuados para su liberación accidental durante el reabastecimiento. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos que significativo para los materiales peligrosos y la gestión de desechos peligrosos.

**Ruido**. Como resultado de la Acción Propuesta, habría algo de ruido superpuesto geográficamente, particularmente alrededor de los aeródromos. Sin embargo, dado el pequeño aumento porcentual en las actividades de entrenamiento PR propuestas en comparación con las operaciones generales de vuelo alrededor de cada aeródromo, los impactos de ruido de la Acción Propuesta serían menores. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos que significativo al ruido.

**Seguridad.** Cada una de las unidades de entrenamiento PR tiene medidas de seguridad establecidas y seguirían una guía de seguridad específica para cada sitio/actividad de entrenamiento PR que minimizaría los riesgos de seguridad. Además, los riesgos de seguridad se minimizarían a través de la implementación de las AFI 91-301, 91-202, 91-203 y, 13-217, el cumplimiento de todas las reglas y regulaciones en los permisos de Uso Especial u otros permisos aplicables, y el cumplimiento de las regulaciones de seguridad federales, estatales y locales correspondientes. Las acciones en la propiedad del DoD cumplirían con las políticas, programas, regulaciones y controles de uso de tierra del DoD y del departamento militar respectivo. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos que significativo para la seguridad.

**Socioeconomía.** La Acción Propuesta no generaría un aumento en el personal debido a las actividades de entrenamiento, ni creación o pérdida de empleos en el ROI. Además, la Acción

Propuesta generaría impactos de ruido menos que significativos y, por lo tanto, no se anticiparía que el aumento del ruido de la Acción Propuesta afecte significativamente los valores de las propiedades. Para esta Acción Propuesta, los posibles impactos a las condiciones de ruido o los recursos visuales como resultado de las actividades de entrenamiento PR podrían resultar en una disminución de los visitantes a los sitios de recreación cercanos. Algunas actividades de entrenamiento PR ubicadas en sitios de recreación evitarían temporalmente que el público utilice estos sitios de recreación, lo que resultaría en una pérdida temporal de ingresos, causando un impacto socioeconómico. Sin embargo, el análisis socioeconómico realizado para la Acción Propuesta concluyó que no se espera que la implementación de la Acción Propuesta produzca cambios en el uso de la recreación que resulten en una pérdida significativa no anticipada de tarifas, en los sitios de recreación basados en tarifas, o en una pérdida significativa inesperada de ingresos, en los usos recreativos generadores de ingresos. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto menos significativo relacionado con la socioeconomía.

**Recursos Hídricos.** Las actividades de entrenamiento PR propuestas se ubicarían en sitios de entrenamiento PR que hayan sido perturbados previamente o que se utilicen actualmente o anteriormente para actividades de entrenamiento similares. Las actividades de entrenamiento PR serían de naturaleza temporal y no se espera que contribuyan con contaminantes que afecten negativamente la calidad del agua. El potencial para liberar combustible de las embarcaciones a las aguas superficiales se minimizaría a un nivel insignificante mediante el cumplimiento de los procedimientos operativos estándar para el mantenimiento de las embarcaciones y la prevención de derrames y los procedimientos operativos estándar de la USAF. Por lo tanto, la implementación de la Acción Propuesta resultaría en un impacto a los recursos de aguas superficiales menos que significativo.

## HALLAZGO DE IMPACTO NO SIGNIFICATIVO

Basado en mi revisión de los hechos y análisis contenidos en la EA adjunta, realizada bajo las disposiciones de NEPA, Regulaciones CEQ, y 32 CFR 989, concluyo que el Programa de Entrenamiento de Recuperación de Personal de Davis-Monthan AFB no tendría un impacto ambiental significativo, ya sea de forma individual o acumulativa con otras acciones en el suroeste de los EEUU. En consecuencia, no se requiere una Declaración de Impacto Ambiental. Sujeto al compromiso de revisar los planes de los eventos de entrenamiento PR para garantizar el cumplimiento con el alcance de este hallazgo, la firma de este Hallazgo de Impacto No Significativo completa el proceso de análisis de impacto ambiental.

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# GLOSSARY OF ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| 414 CTS | 414th Combat Training Squadron |
| 563 RQG | 563rd Rescue Group |
| 68 RQS | 68th Rescue Squadron |
| 943 RQG | 943rd Rescue Group |
| ACAM | Air Conformity Applicability Model |
| ACC | Air Combat Command |
| ACHP | Advisory Council on Historic Preservation |
| ACP | Airspace Control Plan |
| ADEQ | Arizona Department of Environmental Quality |
| ADOT | Arizona Department of Transportation |
| AFB | Air Force Base |
| AFI | Air Force Instruction |
| AFMAN | Air Force Manual |
| AFOSH | Air Force Occupational and Environmental Safety, Fire Protection, and Health |
| AFPD | Air Force Policy Directive |
| AFRC | Air Force Reserve Command |
| AGL | above ground level |
| AHPA | Archaeological and Historic Preservation Act |
| AIRFA | American Indian Religious Freedom Act |
| AMARG | 309th Aerospace Maintenance and Regeneration Group |
| ANGB | Air National Guard Base |
| AP | Area Planning |
| APE | Area of Potential Effect |
| AR | aerial refueling |
| ARB | Air Reserve Base |
| ARPA | Archaeological Resources Protection Act |
| ASBS | Area of Special Biological Significance |
| ASLD | Arizona State Land Department |
| ATC | Air Traffic Control |
| ATCAA | Air Traffic Control Assigned Airspace |
| ATV | All-Terrain Vehicle |
| AZARNG | Arizona Army National Guard |
| AZGFD | Arizona Game and Fish Department |
| AZSITE | Arizona Cultural Resource Inventory |
| BAI | Backup Aircraft Inventory |
| BCC | Birds of Conservation Concern |
| BGEPA | Bald and Golden Eagle Protection Act |
| BLM | Bureau of Land Management |
| BMGR | Barry M. Goldwater Range |
| CAA | Clean Air Act |
| cal. | caliber |
| Camp Pendleton | U.S. Marine Corps Base Camp Pendleton |
| CATM | Combat Arms Training and Maintenance |

| | |
|---|---|
| CEQ | Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| $CO_2e$ | total equivalent emissions of $CO_2$ |
| CRO | Combat Rescue Officer |
| CRRC | Combat Rubber Raiding Craft |
| CSAR | Combat Search and Rescue |
| CWA | Clean Water Act |
| dB | decibel |
| dBA | A-weighted decibel |
| DMAFBI | Davis-Monthan Air Force Base Instruction |
| DNL | day and night noise level |
| DoD | Department of Defense |
| DZ | Drop Zone |
| EA | Environmental Assessment |
| EIAP | Environmental Impact Analysis Process |
| EIS | Environmental Impact Statement |
| EO | Executive Order |
| ESA | Endangered Species Act |
| FAA | Federal Aviation Administration |
| FARP | Forward Aircraft Refueling Point |
| FEIS | Final Environmental Impact Statement |
| FICUN | Federal Interagency Committee on Urban Noise |
| FL | flight level |
| FONSI | Finding of No Significant Impact |
| GCR | general conformity rule |
| GHG | greenhouse gas |
| GWP | global warming potential |
| HAP | hazardous air pollutant |
| HLZ | Helicopter Landing Zone |
| HOLF | Helicopter Outlying Landing Field |
| HSTT | Hawaii-Southern California Training and Testing |
| HUD | U.S. Department of Housing and Urban Development |
| HWMP | Hazardous Waste Management Plan |
| Hz | hertz |
| IAP | International Airport |
| IAW | in accordance with |
| ICRMP | Integrated Cultural Resource Management Plan |
| IFNM | Ironwood Forest National Monument |
| IFR | Instrument Flight Rules |
| INCRMP | Integrated Natural and Cultural Resources Management Plan |
| INRMP | Integrated Natural Resources Management Plan |
| IR | Instrumental Route |
| IRP | Installation Restoration Program |

| | |
|---|---|
| JP | Joint Publication |
| LATN | Low Altitude Tactical Navigation |
| LEIS | Legislative Environmental Impact Statement |
| LZ | Landing Zone |
| MAJCOM | Major Commands |
| MBTA | Migratory Bird Treaty Act |
| MILCON | Military Construction |
| mm | millimeter |
| µg | micrograms |
| $m^3$ | cubic meter |
| mg | milligrams |
| MOA | Military Operations Area |
| MOUT | Military Operations in Urban Terrain |
| MR_NMAP | Military Operating Area and Range Noise Model |
| MSL | mean sea level |
| MTR | Military Training Route |
| NAAQS | National Ambient Air Quality Standards |
| NAGPRA | Native American Graves Protection and Repatriation Act |
| NAS | U.S. National Airspace System |
| NAU | Northern Arizona University |
| NDSP | Nevada Division of State Parks |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NMAC | New Mexico Administrative Code |
| NMCRIS | New Mexico Cultural Resources Information System |
| $NO_2$ | nitrogen dioxide |
| NOA | Notice of Availability |
| NOAA | National Oceanic and Atmospheric Administration |
| NOTAM | Notice to Airmen |
| NOTAR | Notice to Mariner |
| $NO_X$ | oxides of nitrogen |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priorities List |
| NPS | National Park Service |
| NRHP | National Register of Historic Places |
| NTTR | Nevada Test and Training Range |
| NWI | National Wetland Inventory |
| $O_3$ | ozone |
| OEIS | Overseas Environmental Impact Statement |
| OSHA | Occupational Safety and Health Administration |
| OHV | Off-Highway Vehicle |
| PA | Programmatic Agreement |
| Pb | lead |
| PCB | polychlorinated biphenyl |
| PDL | Piedra de Lumbre |
| $PM_{10}$ | particulate matter equal to or less than 10 microns in aerodynamic diameter |

| | |
|---|---|
| $PM_{2.5}$ | particulate matter equal to or less than 2.5 microns in aerodynamic diameter |
| PMOA | Programmatic Memorandum of Agreement |
| ppm | parts per million |
| PR | Personnel Recovery |
| RA | Restricted Area |
| RAMB | Rigging Alternate Method Boat |
| RCRA | Resource Conservation and Recovery Act |
| RDT&E | Research, Development, Test & Evaluation |
| RMP | Resource Management Plan |
| ROD | Record of Decision |
| ROI | Region of Influence |
| ROS | Recreation Opportunities Spectrum |
| RWQCB | Regional Water Quality Control Board |
| SCUBA | Self-Contained Underwater Breathing Apparatus |
| SDWA | Safe Drinking Water Act |
| SEA | Supplemental Environmental Assessment |
| SERE | Survival, Evasion, Resistance, and Escape |
| SHPO | State Historic Preservation Officer |
| SIO | Scenic Integrity Objective |
| $SO_2$ | sulfur dioxide |
| SOCAL | Southern California |
| SPCCP | Spill Prevention, Control, and Countermeasure Plan |
| SPS | solar power system |
| SUA | Special Use Airspace |
| SUV | Sport Utility Vehicle |
| SWRCB | State Water Resources Control Board |
| TACTS | Tactical Aircrew Combat Training System |
| TAF | Taiwan Air Force |
| TASS | Tactical Air Support Squadron |
| TCP | Traditional Cultural Property |
| THPO | Tribal Historic Preservation Officer |
| TIA | Tucson International Airport |
| U.S. | United States |
| U.S.C. | United States Code |
| USAF | United States Air Force |
| USEPA | United States Environmental Protection Agency |
| USFS | United States Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| USMC | United States Marine Corps |
| UTV | Utility Terrain Vehicle |
| VFR | Visual Flight Rules |
| VOC | volatile organic compound |
| VR | Visual Route |
| VRI | Visual Resource Inventory |
| WSMR | White Sands Missile Range |
| WTA | Water Training Area |

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# 1.0 PURPOSE AND NEED FOR ACTION

## 1.1 INTRODUCTION

This environmental assessment (EA) has been prepared to evaluate the potential environmental impacts of conducting an improved comprehensive Personnel Recovery (PR) training program centered out of Davis-Monthan Air Force Base (AFB), Arizona (Figure 1.1-1). While the PR training program would be centered out of Davis-Monthan AFB, training activities would be conducted throughout the southwestern United States (U.S.). The EA analyzes the potential for significant environmental impacts associated with the Proposed Action and Alternatives, including the No-Action Alternative. The EA was developed in compliance with the National Environmental Policy Act (NEPA); the regulations implementing NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508); Department of Defense (DoD) Directive 6050.1, Environmental Considerations in DoD Actions; and the United States Air Force (USAF) implementing regulation for NEPA, Title 32 CFR Part 989 the Environmental Impact Analysis Process (EIAP).

## 1.2 BACKGROUND AND SETTING

**Personnel Recovery**

PR activities are an Air Force Service Core Function. DoD Directive 3002.01E, Personnel Recovery, identifies personnel recovery as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. The desired Air Force PR operational effect is to quickly return friendly forces to duty while denying adversaries a source of intelligence and political exploitation. The effect is achieved across the range of military operations. As such, PR forces may engage in Combat Search and Rescue (CSAR) operations in a contested military environment, participate in Building Partnership Capacity and Irregular Warfare before conventional hostilities begin, and conduct humanitarian operations in support of our allies during peacetime as well as rescue operations during natural disasters. Non-combat responsibilities are met by applying strategic intent and the universal desire to conduct operations that mitigate human suffering and save human lives. The personnel that compose Air Force PR have conducted over 12,000 lifesaving, combat rescue missions since 11 September 2001. Additionally, because of their unique capabilities, they have been called upon to support the rescue of over 5,000 civilians worldwide during catastrophic natural disasters and other humanitarian responses over that same period. The term PR encompasses the full spectrum of rescue activities, to include CSAR (i.e., all activities associated with both combat and non-combat rescue).

PR ground forces include Pararescuemen; Combat Rescue Officers (CROs); Survival, Evasion, Resistance, and Escape (SERE) Specialists; and other uniquely trained support personnel. These ground forces are also known as Guardian Angel, the ground element of the Air Force Rescue triad, with specially configured HH-60 helicopters and HC-130 cargo planes composing the other two parts of the triad. When tasked separately from the triad, Guardian Angel may work

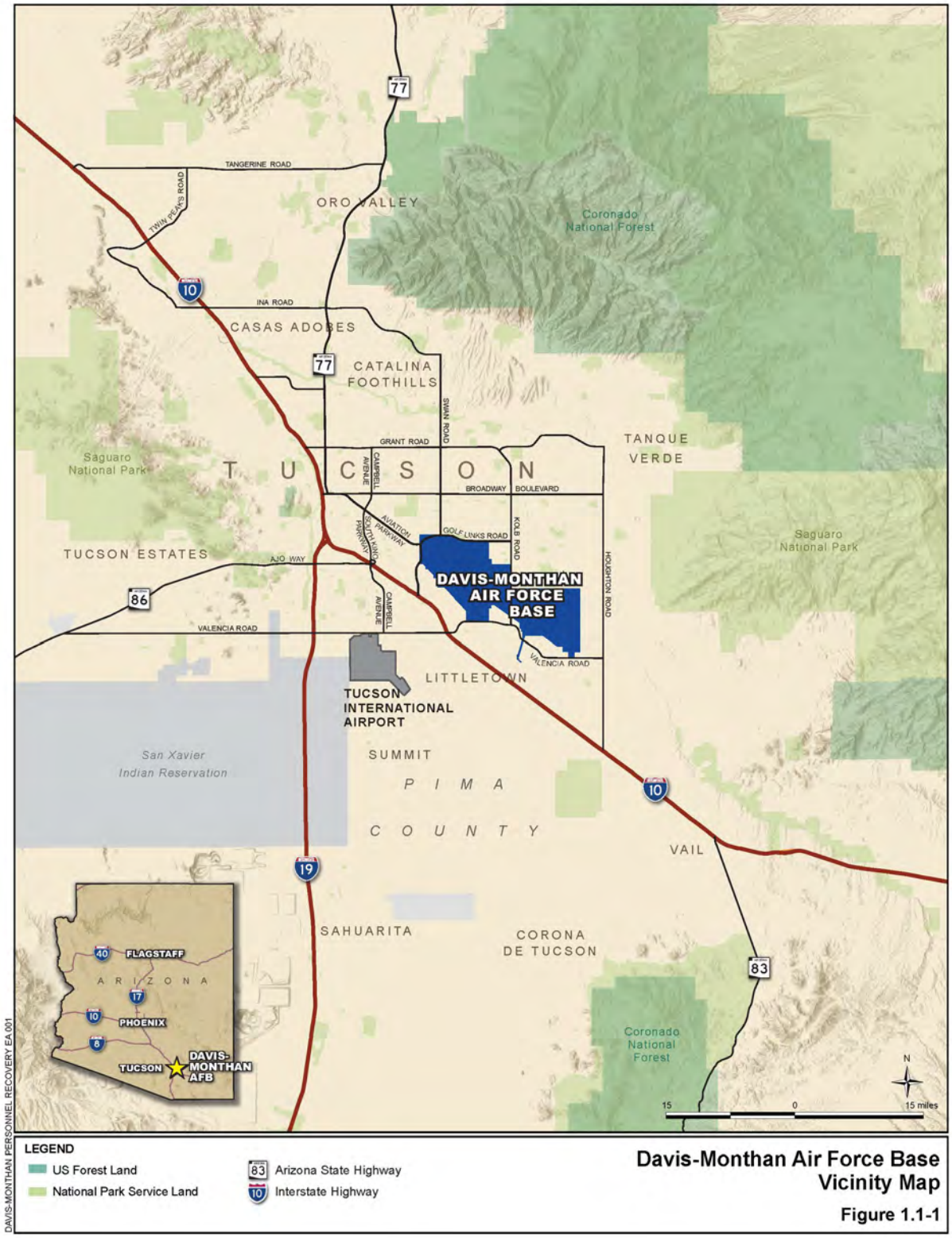


**Figure 1.1-1 Davis-Monthan Air Force Base Vicinity Map**

autonomously or be integrated with joint or coalition[1] forces, including Special Operations Forces, vertical lift, airdrop, command and control, resupply, close air support, and ground mobility assets.

The PR mission requires distinct tasks and skills that involve frequent, repetitive training to maintain proficiency. PR preparation efforts need to ensure that PR forces:

- Keep pace with changes in the global operating environment;
- Stay prepared to plan and execute operations with other joint, interagency[2], and coalition partners;
- Sustain mission readiness; and
- Maximize use of limited resources.

### PR Assets and Organizations at Davis-Monthan AFB

In 2002, Davis-Monthan AFB was selected as the location for the west coast beddown[3] of active duty PR, formerly known as CSAR, assets. The beddown established the only full complement of active duty PR assets in the western U.S. The USAF organizations regularly participating in PR training centered out of Davis-Monthan AFB are listed in Table 1.2-1, followed by a more detailed description of the organizations.

**Table 1.2-1. USAF Organizations Regularly Participating in Personnel Recovery Training Activities at Davis-Monthan AFB**

| Organization | Number of Personnel | Roles | Equipment Summary/Aircraft | Number of Training Events Per Year | Number of Personnel per Training Event |
|---|---|---|---|---|---|
| **563 RQG** | **455** | **Active Duty PR Group** | **See RQS 55, RQS 79, RQS 48, and RQS 68 below** | **6** | **50-100** |
| 55 RQS | 72 | PR (Helicopter Support) | 9 HH-60 | 500 | 4-7 |
| 79 RQS | 76 | PR (Cargo Airlift Support) | 6 HC-130 | 480 | 3-10 |
| 48 RQS | 176 | PR Ground Forces/Guardian Angel | No aircraft<br>Off-road vehicles<br>Marine equipment<br>Parachute equipment<br>Camping equipment<br>Rope | 30 | 10-50 |

[1] Joint refers to operations in which elements of two or more Military Departments participate, whereas coalition refers to an arrangement between two or more nations for common action (Joint Publication [JP] 1-02).
[2] Interagency is of or pertaining to U.S. government agencies and departments, including the DoD (JP 1-02).
[3] A beddown is the execution of an approved basing action (Air Force Instruction [AFI] 10-503 [USAF 2017a]).

| Table 1.2-1. USAF Organizations Regularly Participating in Personnel Recovery Training Activities at Davis-Monthan AFB | | | | | |
|---|---|---|---|---|---|
| **Organization** | **Number of Personnel** | **Roles** | **Equipment Summary/Aircraft** | **Number of Training Events Per Year** | **Number of Personnel per Training Event** |
| 68 RQS | 45 | Guardian Angel Formal Training Unit | No aircraft<br>Off-road vehicles<br>Marine equipment<br>Parachute equipment<br>Rope | 8 | Up to 50 |
| **943 RQG** | **500** | **Reserve PR Group** | **See RQS 305 and RQS 306 below** | **6** | **50-100** |
| 305 RQS | 55 | PR (Helicopter Support) | 6 HH-60 | 200 | 4-7 |
| 306 RQS | 120 | PR Ground Forces/Guardian Angel | No aircraft<br>Off-road vehicles<br>Marine equipment<br>Parachute equipment<br>Camping equipment<br>Rope | 26 | 10-50 |
| **414 CTS Det 1 at Davis-Monthan AFB** | **25** | **Exercise planning and execution, to include Red Flag-Rescue** | **5 4x4 trucks<br>7 UTVs** | **2** | **Up to 1,000** |

CTS – Combat Training Squadron
PR – Personal Recovery
RQG – Rescue Group
RQS – Rescue Squadron
UTV – Utility Terrain Vehicle
Source: USAF 2018-2019.

### *563rd Rescue Group*[4]

The 563rd Rescue Group (563 RQG) is one of two rescue groups operating out of Davis-Monthan AFB. The 563 RQG is under the operational control of the 355th Wing[5] at Davis-Monthan AFB and falls under Air Combat Command (ACC). The 563 RQG directs flying operations for one of only two active-duty USAF rescue groups dedicated to PR. The group is responsible for training and readiness of one HC-130 squadron[6] and two HH-60 squadrons, three

[4] A group is a level of command between wings and squadrons. Groups bring together multiple squadrons or other lower echelon units to provide a broader capability (AFI 38-101 [USAF 2017b]).
[5] A wing is a level of command below the Numbered/Named USAF or higher headquarters. A wing has a distinct mission with significant scope. A wing is usually composed of a primary mission group (e.g., operations, training) and the necessary supporting groups (AFI 38-101 [USAF 2017b]).
[6] Squadrons are the basic "building block" organizations in the USAF, providing a specific operational or support capability. A squadron may be either a mission unit, such as an operational flying squadron, or a functional unit, such as a civil engineer, security forces, or maintenance squadron (AFI 38-101 [USAF 2017b]).

pararescue squadrons, and an operations support squadron operating from two geographically separated operating locations: Davis-Monthan AFB, Arizona and Nellis AFB, Nevada. One of the pararescue squadrons (68th Rescue Squadron [68 RQS]) in the 563 RQG is the Guardian Angel Formal Training Unit, which instructs and trains Pararescuemen and CROs in advanced skill upgrades and proficiency training. The 68 RQS instructs and trains Pararescuemen and CROs, providing advanced skill upgrades and proficiency training in order to meet combat capability requirements and enhance integration with joint combat forces in support of joint force commander and combatant commander taskings.

### *943rd Rescue Group*

The 943rd Rescue Group (943 RQG) is an USAF reserve unit operating out of Davis-Monthan AFB. The 943 RQG is under the operational control of the 920th Rescue Wing at Patrick AFB, FL and falls under Air Force Reserve Command (AFRC). The 943 RQG organizes, trains, and equips mission ready airmen to perform PR operations worldwide. The group consists of one HH-60 squadron, two pararescue squadrons, one maintenance squadron, and one aerospace medicine squadron operating from two geographically separated operating locations: Davis-Monthan AFB, AZ and Portland Air National Guard Base, OR.

### *414th Combat Training Squadron, Detachment 1*

In 2006, an annual large-scale training program and event called "Angel Thunder" was established by the 23rd Wing (located at Moody AFB, GA) and planned/executed by the 563 RQG at Davis-Monthan AFB. In 2016, responsibility of the event was transitioned to the 414th Combat Training Squadron (414 CTS), which is assigned to the 57th Wing under the Air Warfare Center at Nellis AFB, Nevada. Detachment 1 of the 414 CTS was established at Davis-Monthan AFB to continue the planning and execution of the event from this location. In 2017, the program was expanded to biannual events and in 2018 the event was renamed as "Red Flag-Rescue." The name was changed to solidify that the event is a joint, Combat Air Force, flag-level (General Officer-level) event and the logical progression from the Red Flag event at Nellis AFB. Red Flag-Nellis focuses on realistic combat training where scenarios may result in isolated personnel requiring recovery.

### *Other Organizations*

Besides the regular participants listed in Table 1.2-1 and discussed above, PR assets from other DoD properties travel to Davis-Monthan AFB to participate in PR training when they are available. Fighter aircraft stationed at Davis-Monthan AFB may engage in PR training if they are available (such as A-10s from the 354th Fighter Squadron located at Davis-Monthan); however, fighter aircraft from various locations throughout the U.S. may participate as well. Other types of aircraft from different DoD services, other government agencies and organizations, and other nations travel to the southwest U.S. to participate in Large Force training events such as Red Flag-Rescue.

## PR Training Activities and Events Conducted from Davis-Monthan AFB

The operational units in the Rescue Groups at Davis-Monthan AFB are regularly tasked by their Major Commands (MAJCOM) to conduct specific training activities in order to sustain mission readiness. Flying units are tasked to conduct a minimum number of sorties,[7] simulator missions, and other distinct training events based on their aircraft and the roles they must perform when conducting a PR mission. Ground units receive similar taskings based on their mission roles. To be effective, each mission must successfully complete a sufficient number of events applicable to that mission type, as determined by the squadron commander. The Guardian Angel Formal Training Unit conducts formal training for Pararescuemen across the USAF based on MAJCOM directives.

Red Flag-Rescue is the only dedicated DoD PR training event accredited by the Joint National Training Capability, a DoD initiative to ensure combat forces have gained experience operating jointly before deploying to forward locations. Red Flag-Rescue is focused on CSAR planning, the USAF's preferred planning methodology for providing PR coverage. Red Flag-Rescue combines PR education for PR forces and combat aircrews with training for intelligence personnel, battle managers, and Joint PR agency personnel. While the Red Flag-Rescue event is primarily centered out of Davis-Monthan AFB, the overall Red Flag-Rescue event can take place in Arizona, California, Nevada, and New Mexico.

Other group- and squadron-level training activities and events are centered out of Davis-Monthan AFB. An example is Rescue Group Pre-Deployment PR training, which is a concerted effort by the 563 RQG to integrate deploying units to train and fight together in a realistic training environment before they deploy into combat operations. Training activities also include those conducted for USAF-wide Guardian Angel personnel by the Guardian Angel Formal Training Unit.

Large Force PR training events such as Red Flag-Rescue are needed to ensure combat forces have gained experience operating jointly before deploying to theater. The training event provides DoD PR forces their first 10 combat search and rescue missions in a Large Force training event simulating deployed conditions. Other nations participate in these training events, making them critical for strengthening multi-national partnerships. Participation can also include other federal, state, and local agencies/organizations, which enhances coordination/cooperation between these organizations.

## PR Training Activities and Event Locations

PR training activities and events conducted by the organizations based at Davis-Monthan AFB occur in a variety of locations throughout the southwestern U.S. Limited biannual PR Large Force training events are conducted using DoD and non-DoD properties. Training would involve related DoD training airspaces and ranges. Non-DoD properties include U.S. Forest Service (USFS) land as well as properties under various federal, state, local, municipal, and private control in Arizona, California, Nevada, and New Mexico.

[7] A sortie is an operational flight by one aircraft, from take-off to landing (JP 1-02). A sortie operation involves the take-off, flight operations at one or multiple training locations, and landing.

## 1.3 PURPOSE OF THE ACTION

The purpose of the Proposed Action would be to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations.

## 1.4 NEED FOR THE ACTION

Currently, PR forces operating out of Davis-Monthan AFB are limited by the number of available training sites which have the required characteristics for these activities. Commanders face challenges in ensuring that routine and formal training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations. In order to address these limitations, Davis-Monthan AFB is proposing to identify additional sites that can be used to support the training activities.

## 1.5 DECISION TO BE MADE

The decision to be made is whether to implement the proposed PR training activities. The decision-maker is the Chief, Civil Engineer Division, ACC. The decision options are:

a) Determine that the Proposed Action would not result in significant impacts to the human and natural environment and sign a Finding of No Significant Impact (FONSI), allowing implementation of the Proposed Action;

b) Initiate preparation of an Environmental Impact Statement (EIS) if it is determined that significant impacts would occur with implementation of the Proposed Action; or

c) Select the No-Action Alternative, whereby the Proposed Action would not be implemented.

## 1.6 COOPERATING AGENCY AND INTERGOVERNMENTAL COORDINATION/CONSULTATIONS

### 1.6.1 Cooperating Agency

The Federal Aviation Administration (FAA), which has jurisdiction over airspace, is a cooperating agency in the preparation of this EA. In their role as a cooperating agency, the FAA will provide technical and regulatory input to this USAF EA, and may use this EA as the necessary NEPA documentation to support their own discretionary actions in accordance with FAA's Order 1050.1F and JO 7400.2M (FAA 2015, 2019d). Refer to Section 3.0, Affected Environment and Environmental Consequences, of this EA for additional information regarding FAA's role and its actions.

### 1.6.2 Interagency and Intergovernmental Coordination and Consultations

Federal, state, and local agencies with jurisdiction that could be affected by the alternative actions were notified and consulted during the development of this EA. Agencies contacted include the FAA; Bureau of Land Management (BLM); National Park Service (NPS); United States Fish and Wildlife Service (USFWS); USFS; Arizona Game and Fish; New Mexico

Department of Game and Fish; California Department of Fish and Wildlife; Nevada Department of Wildlife; State Historic Preservation Officers (SHPOs); and affiliated tribes for Arizona, California, Nevada, and New Mexico.

Appendix B contains the complete list of agencies consulted during this analysis and copies of correspondence.

### 1.6.3 Government-to-Government Consultations

Section 106 of the National Historic Preservation Act (NHPA) directs federal agencies to consult with Native American tribal governments when a federal undertaking occurs on or affects historic properties on tribal lands, as well as when any Native American tribe attaches religious or cultural significance to historic properties that may be affected by an undertaking. To comply with legal mandates, federally-recognized tribes that are affiliated historically with Davis-Monthan AFB and the areas identified in this analysis were invited to consult on the proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the Interagency Intergovernmental Coordination processes and requires separate notification of relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The Davis-Monthan AFB point-of-contact for Native American tribes is the Installation Commander. The Davis-Monthan AFB point-of-contact for consultation with the Tribal Historic Preservation Officer (THPO) and the Advisory Council on Historic Preservation is the Cultural Resources Manager.

Section 7.0 of this EA contains a list of Native American tribal governments that were consulted and coordinated with regarding this action, and copies of correspondence are included in Appendix B of this EA.

## 1.7 PUBLIC AND AGENCY REVIEW OF EA

A Notice of Availability (NOA) of the Draft EA and FONSI was published in newspapers servicing areas near the training locations, announcing the availability of the Draft EA for review at a total of 19 libraries in Arizona, California, Nevada, and New Mexico, and on Davis-Monthan AFB's website. Specifically, the NOA was published in the following newspapers: the Arizona Daily Star, Arizona Republic, Arizona Daily Sun, Silver City Daily Press, Albuquerque Journal, El Defensor Chieftain, Deming Headlight, Las Cruces Sun News, Desert Lightening, Las Vegas Review Journal, San Diego Union Tribune, and the San Diego Tribune En Español newspapers. The NOA invited the public to review and comment on the Draft EA. The NOA was provided to the individuals, agencies, and libraries listed in Section 7.0 of this EA. The public and agency review period started on 20 September 2019 was originally scheduled for a period of 30 days. However, in response to a comment received, the review period was extended by six days due to an update to the Davis-Monthan AFB website to make the Draft EA more prominent/easier to find as instructed in the NOA. A press release announcing the extension of the public review period end date was sent on 26 September 2019 to individuals, agencies, and libraries listed in Section 7.0 of this EA. The comment review period ended on 26 October 2019. A list of the comments received on the Draft EA is provided in Table 1.7-1 below and copies of the comment letters are provided in Appendix H of this EA.

| Table 1.7-1. List of Comments Received on the Draft EA | |
|---|---|
| **Commenter** | **Date** |
| **Federal Agencies** | |
| Gila National Forest | 18 October 2019 |
| Coronado National Forest | 21 October 2019 |
| Kaibab National Forest | 23 October 2019 |
| Coconino National Forest | 24 October 2019 |
| U.S. Army Garrison Fort Huachuca | 26 October 2019 |
| **State Agencies** | |
| State of New Mexico Department of Cultural Affairs, Historic Preservation Division | 26 September 2019 |
| **Organizations or Interest Groups** | |
| Center for Biological Diversity | 24 September 2019 |
| Heart of the Gila | 21 October 2019 |
| Gila Conservation Coalition et al.[1] | 25 October 2019 |
| **Tribal** | |
| Viejas Band of Kumeyaay Indians | 30 September 2019 |
| Augustine Band of Cahuilla Indians | 8 October 2019 |
| Rincon Band of Luiseño Indians | 17 October 2019 |
| **General Public** | |
| Private Citizens (New Mexico) | 25 October 2019 |
| Notes:<br>[1] Gila Conservation Coalition et al. was a joint letter submitted by the following organizations: Gila Conservation Coalition, Center for Biological Diversity, Gila Resources Information Project, Heart of the Gila, and Upper Gila Watershed Alliance. | |

A NOA of the Final EA and FONSI has been published in the same newspapers as NOA for the Draft EA and FONSI. The NOA of the Final EA and FONSI availability has also been provided to the individuals, agencies, and libraries listed in Section 7.0 of this EA, and a copy of the Final EA and FONSI has been made available on Davis-Monthan AFB's website.

## 1.8 ORGANIZATION OF THIS DOCUMENT

This EA is organized into eight sections, plus appendices. **Section 1.0** of the EA provides historical and background information, the project location, and the purpose of and need for the Proposed Action. **Section 2.0** contains a description of the Proposed Action and No-Action Alternative, along with a description of the alternatives eliminated from further consideration. **Section 3.0** describes the existing conditions of the potentially affected environment and identifies the environmental consequences of implementing the Proposed Action and No-Action Alternative. **Section 4.0** includes an analysis of the potential cumulative and other impacts. **Section 5.0** provides the names of those who prepared the EA. **Section 6.0** lists the references used in the preparation of this document. **Section 7.0** provides the distribution list for the EA. **Appendix A** provides more details on the proposed PR training sites and types of proposed PR training activities, including site-specific maps. **Appendix B** provides the list of agencies consulted during the preparation of this EA. **Appendix C** provides additional detailed information on airspace above the proposed PR training sites. Assumptions made for the air emissions estimates are detailed in **Appendix D. Appendix E** shows the results of the cultural

resources records search for potentially historic sites. Detailed guidelines for the compatibility of various land uses with noise exposure levels are included in **Appendix F**. **Appendix G** provides the Biological Evaluation prepared for the Proposed Action. Lastly, **Appendix H** provides the Draft EA Comments.

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# 2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section presents information on the Proposed Action and Alternatives for the proposed PR training activities centered out of Davis-Monthan AFB and conducted throughout the southwestern U.S. The NEPA process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a Proposed Action, as defined in Sections 1.3 and 1.4. Council on Environmental Quality (CEQ) regulations specify the inclusion of a No-Action Alternative against which potential action alternative impacts can be compared. While the No-Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail in accordance with CEQ regulations.

## 2.1 DESCRIPTION OF TRAINING ACTIVITIES

This section describes all of the features and components of the PR training activities and events that currently occur at Davis-Monthan AFB, except for the specific sites at which the activities and events occur. The section describes:

- General structure of training activities;
- Specific courses and events that are held;
- The manner in which training courses, events, and activities are categorized to facilitate environmental analysis; and
- Specific activities that are performed as part of PR training.

The description of the features and components of the PR training activities in this section is common to both the No-Action Alternative and the Proposed Action. The primary difference between the No-Action Alternative and the Proposed Action is the locations of the sites used for these activities, and the total number of sorties flown. The Proposed Action would authorize additional training sites, and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, under the Proposed Action, there would be no change in the organizations at Davis-Monthan AFB that conduct the training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in the current procedures used to avoid and protect environmental resources. The sites currently used for training and the current number of sorties flown are described in Section 2.2, and the additional sites that would be used and sorties flown under the Proposed Action are described in Section 2.3 of this EA. Figures 2.1-1 and 2.1-2 show the location of the PR training sites under the Proposed Action. The Map Book index numbers in Appendix A of this EA correspond to the Figure 2.1-1 and Figure 2.1-2 index maps with more detailed, site-specific maps of the proposed PR training sites.

### 2.1.1 General Structure of Training Activities

The PR training activities are centered out of Davis-Monthan AFB and hosted by various organizations depending on the training event. Comprehensive training involves ground, water, and flight/airspace activities. PR forces train through the full spectrum of PR capabilities with ground recovery personnel, air assets, Special Forces teams, and federal agents. Pre-training site surveys are conducted approximately one month prior to events at proposed PR training

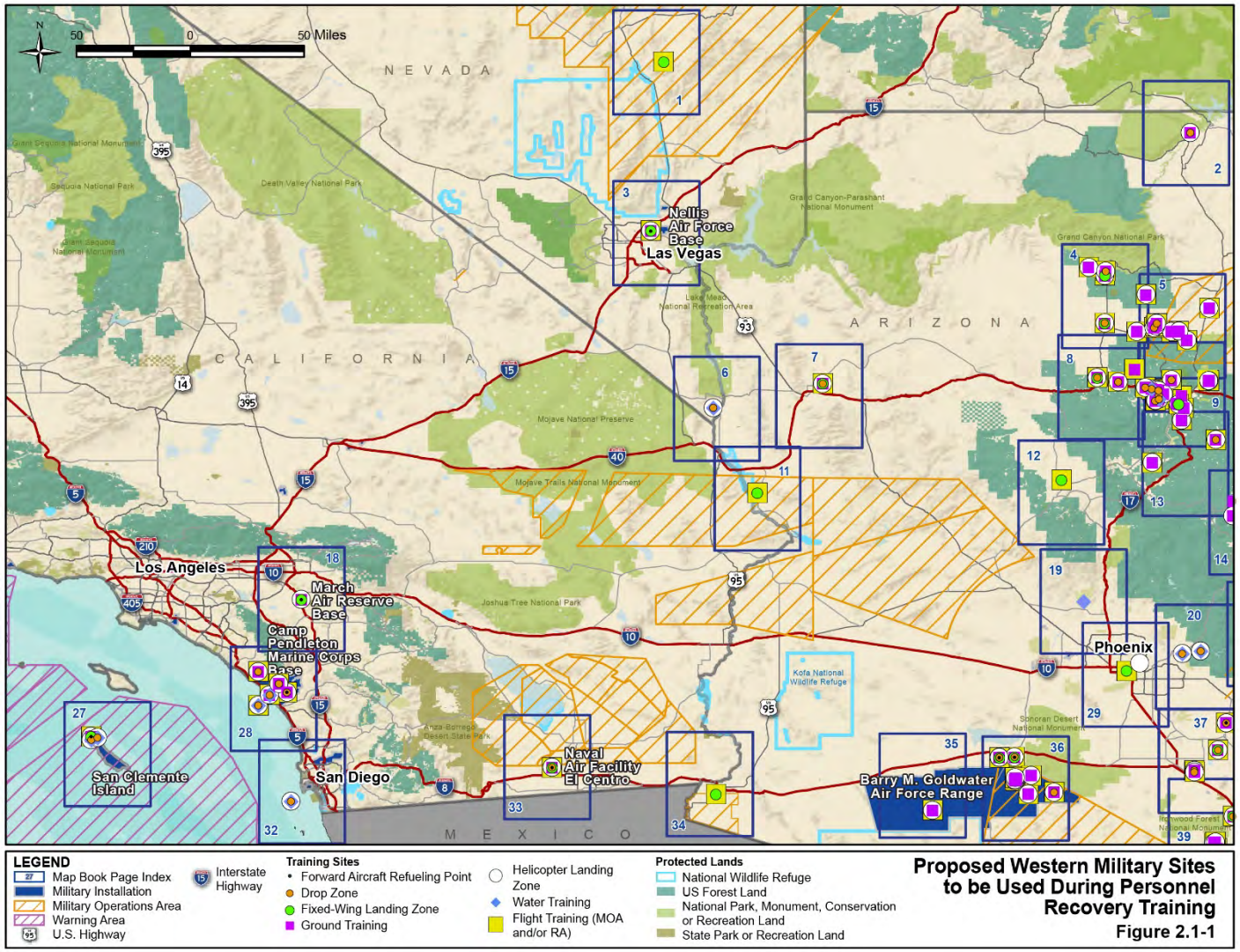


**Figure 2.1-1 Proposed Western Military Sites to be Used During Personnel Recovery Training**

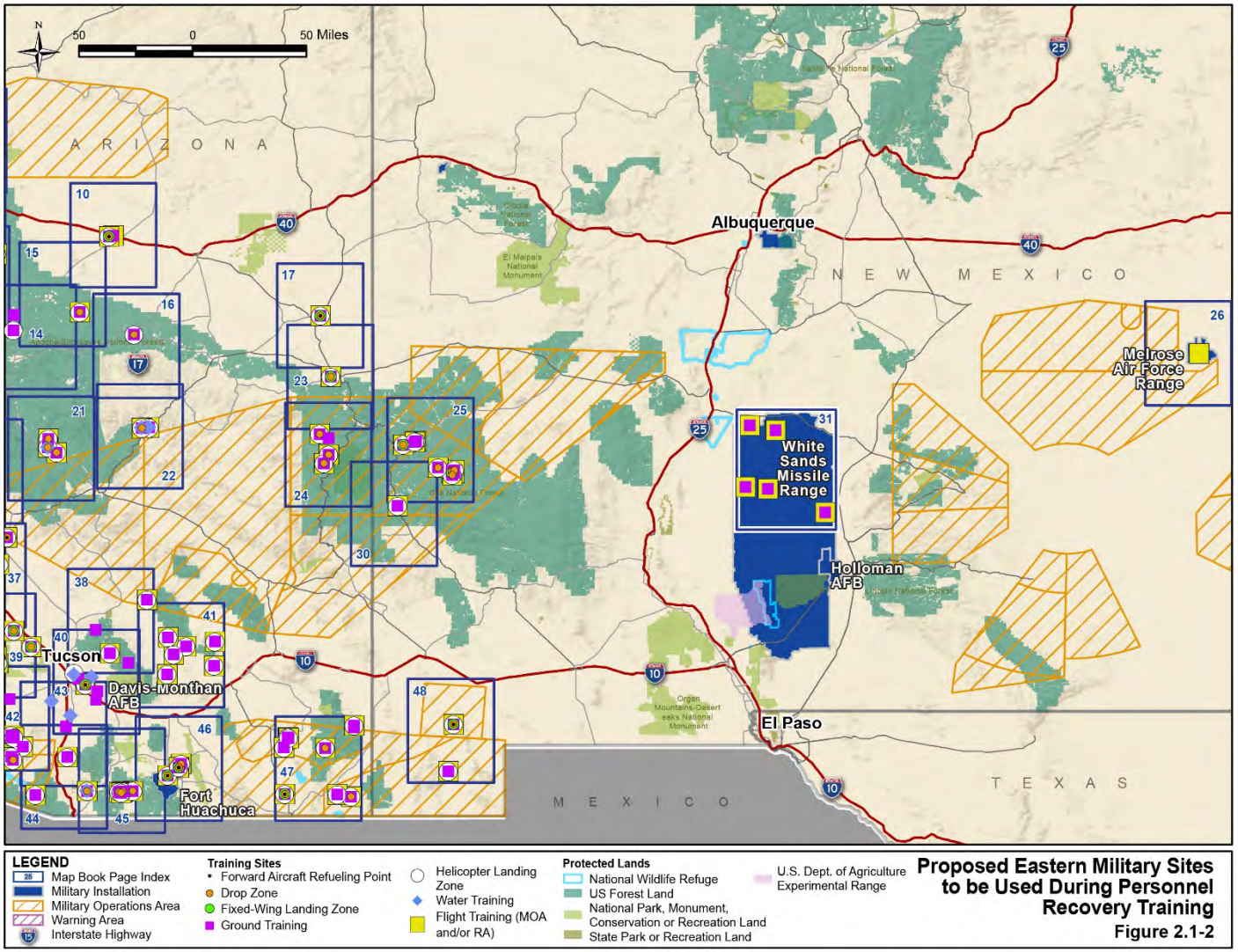


**Figure 2.1-2. Proposed Eastern Military Sites to be Used During Personnel Recovery Training**

locations to check the sites for adequacy for training operations as well as to identify any hazards present (e.g., power lines, cactus, etc.). PR training activities comply with Special Use permit stipulations for specific PR training locations, as applicable. Based on specific restrictions of use for some PR training areas (e.g., sensitive habitat, etc.), PR training activities avoid a specific area or move activity to a different location to comply with the restriction. As part of permit stipulations, the USAF restores any potentially damaged roadway/site to its previous condition.

During proposed PR training activities, operations centers provide a centralized location for the command and control of training operations and serve as the focal point for planning, executing, and assessing component operations (e.g., logistical and beddown [personnel and equipment staging] locations). Operations centers consist of three to four personnel, serving as the focal point for planning, executing, and assessment of ground operations. For Large Force training events such as Red Flag-Rescue, these centers provide aeromedical evacuation, security, and reconnaissance missions in support of a global contingency scenario (i.e., dismounted ground and water operations and movement). The purpose is to give the combat USAF PR forces increased mobility and strike capability and to emphasize their critical role in the Expeditionary USAF. The operations center has the minimum essential facilities to house, sustain, and support operations. For Large Force training events, the nucleus of Command and Control/ Communications and Surveillance activities centers on the Air Operations Center at Davis-Monthan AFB with a Forward Operations Center at Camp Navajo, AZ. During Large Force training events, a joint terminal attack controller may be used. This is a one- or two-person team that, from a forward position, directs the action of combat aircraft engaged in close air support and other offensive air operations. Operations centers are set up at one or more forward operating airfields such as Bisbee Douglas International Airport (IAP), Pulliam Airport (Flagstaff), Winslow-Lindbergh Regional Airport, and Fort Huachuca's Libby Army Airfield. For smaller-scale training events, Command and Control/Communications and Surveillance activities are controlled out of Davis-Monthan AFB.

Annual aircraft training sorties at the rescue squadron level that support/participate in Davis-Monthan AFB PR training events are provided in Table 2.1-1.

**Table 2.1-1. Annual Aircraft Sorties Supporting/Participating in Personnel Recovery Training Events**

| Aircraft | Sorties |
|---|---|
| A-10 | 1,854 |
| HC-130 | 736 |
| HH-60 | 1,148 |
| Other* | 156 |
| TOTAL | 3,894 |

* Other aircraft include F-16, F-15, F-18, KC-135, helicopters, and general aviation aircraft.
Source: Personal communication with AFCEC and Leidos 2018.

### 2.1.2 Description of Specific Courses and Events

#### Red Flag-Rescue

Red Flag-Rescue is an ACC-sponsored Large Force training event for Combat Air Force, joint, coalition, and interagency participants that lasts approximately three weeks. Red Flag-Rescue

provides the most realistic PR training environment available for up to 1,000 participants to engage in a variety of PR training activities to simulate deployment conditions and contingencies.

The first week of the training event includes in-processing and classroom training (at Davis-Monthan AFB), and familiarization flights (at sites chosen for specific events). The schedule of the training event varies depending on the number of participants, but generally involves alternating between planning the field scenarios and execution of those scenarios with an average of five planning days and 10 execution days, including five to seven flying days. This is followed by a short de-mobilization period and return to home base. The biannual events normally occur during the spring and fall. Due to the constant evolution of enemy tactics, the training event must evolve in order for participants to be equipped to deal with U.S. adversary tactics downrange. While the Red Flag-Rescue training event is primarily centered out of Davis-Monthan AFB, the overall Red Flag-Rescue training event takes place in California, Arizona, Nevada, and New Mexico. These environments provide the maximum amount of variety for PR training in a fictional country with similar environmental conditions. Recent Large Force training events such as Red Flag-Rescue have involved an average of approximately 30 aircraft; however, because the type and number (potentially up to 45) of aircraft that participate in these events are variable depending on availability, the possible aircraft (or similar types) that may participate during a Red Flag-Rescue training event could include:

***Fighter/Attack Aircraft***

- A/T-6 (Texan II)
- AV-8 (Harrier)
- A-10 (Thunderbolt)
- A-29 (Super Tucano)
- F-15C (Eagle) and F-15E (Strike Eagle)
- F-16 (Fighting Falcon)
- F-18 (Hornet)
- F-22 (Raptor)
- F-35A, F-35B, and F-35C (Lightning II)
- F-21 (Kfir)
- Rafale
- Mirage
- Tornado
- Eurofighter

***Cargo/Refueling/Surveillance Aircraft***

- A400M (Atlas)
- C-130 (Hercules)
- EC-130 and EC-130H (Compass Call)
- HC-130 (Hercules)
- C-208B (Grand Caravan)
- CASA 212 (Aviocar)
- C-23 (Sherpa)

- E-3 (Sentry)
- E-8 (Joint Stars)
- KC-10 (Extender)
- KC-135 (Stratotanker)
- RC-135
- MC-12 (Liberty)
- P-3 (Orion)
- P-8 (Poseidon)
- SC-7 (Skyvan) or C-2 (Greyhound)
- U-28A

***Helicopters***

- HH-60 (Pave Hawk)
- MH-6 (Little Bird)
- MH/AH-64 (Apache)
- CH/MH-47 (Chinook)
- UH-1 (Iroquois)
- AH-1 (Cobra)
- AW101
- AW139
- UH-72 (Lakota)
- MH/CH-53 (Sea Stallion)
- CV/MV-22 (Osprey)
- MH-60 (Seahawk)
- EC725 (Caracal)
- EC225 (Super Puma)
- EH101 (Merlin)
- NH90
- EC665 (Tiger)
- MI-8/17 (Hip)
- MI-24/35 (Hind)

***Unmanned Aircraft***

- MQ-1 (Predator)
- MQ-9 (Reaper)

**Courses Offered by 68 RQS**

The 68 RQS conducts formal training courses to include the Combat Team Member Course, Military Freefall Jumpmaster Course, and Combat Leader Course, which are described below.

The Combat Team Member Course purpose is to provide new Pararescuemen with a mastery of the basic skills needed to be a successful team member during any rescue scenario. This course is conducted by the 68 RQS at Davis-Monthan AFB and at Marana Regional Airport in Arizona. A summary of the course includes:

- 11 weeks long; three courses per calendar year
- Graduates up to 72 students annually
- Instruction focuses on advanced medical training, advanced parachute insertion training, baseline shooting and tactics skills, high angle proficiency, combat dive training, and rotary-wing airmanship

The Military Freefall Jumpmaster Course is designed to provide the USAF with joint accredited Military Freefall Jumpmasters. This course is conducted by the 68 RQS at Davis-Monthan AFB and at Marana Regional Airport. A summary of the course includes:

- 3 weeks long; three courses per calendar year
- Graduates up to 36 joint service accredited Military Free Fall Jumpmasters
- Accredited by the U.S. Special Operations Command
- Training is open to students from all U.S. military branches
- Capable of providing units a Mobile Training Team

The Combat Leader Course is a course intended to sharpen Pararescuemen into mature leaders. This course is conducted by the 68 RQS at Davis-Monthan AFB and Florence Military Reservation in Arizona; and, Vandenberg AFB, and U.S. Marine Corps Base Camp Pendleton (Camp Pendleton) in California. Prerequisites for personnel to enter this course include being a qualified Static Line Jumpmaster, a Military Free Fall Jumpmaster, and a Dive Supervisor. A summary of the course includes:

- 60 days long; two courses per calendar year
- Graduates up to 24 students annually

### 2.1.3 Scale of Activities to Facilitate Analysis

Given the complexity of the Proposed Action and No-Action Alternative and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three PR training event levels: Large Force training event; Medium Force training event (group-level training); and Small Force training event (squadron-level training). Table 2.1-2 provides information relating to each category.

**Table 2.1-2. Description of Personnel Recovery Training Events under Proposed Action and No-Action Alternative**

| Category | Description | # of Personnel | Duration | Frequency |
|---|---|---|---|---|
| Large Force | Large Force training events include PR events such as Red Flag-Rescue. An average of 30 aircraft, and potentially up to 45 aircraft, participate in these events. | Up to 1,000 | Up to 21 days | Biannual |
| Medium Force | Medium Force training events include group-level PR training such as Rescue Group Pre-Deployment PR training. Up to 18 aircraft participate in these events. | 50-100 | Up to 14 days | Quarterly |

| Table 2.1-2. Description of Personnel Recovery Training Events under Proposed Action and No-Action Alternative | | | | |
|---|---|---|---|---|
| **Category** | **Description** | **# of Personnel** | **Duration** | **Frequency** |
| Small Force | Small Force training events include squadron-level PR training, including individual PR training activities in support of Guardian Angel Formal Training Unit courses. Up to six aircraft participate in these events. | Up to 50 | Up to seven days | Daily |
| Source: USAF 2018-2019. | | | | |

### Large Force Training Events

Large Force training events include participation by up to 1,000 individuals. Each biannual Large Force training event consists of a three-week event with multiple training missions (components of the event developed for the training event). The events provide training for PR and supporting forces, to include interagency and international partners. The training events combined have a duration of approximately 21 calendar days and occur twice a year. The first week of a Large Force training event involves planning and classroom training of participating personnel, followed by a two- to three-day mobilization period, 10 to 11 days of field training (including five to seven flying days), one day of de-mobilization, and return to home base. The Large Force training events include ground, water, and flight operations. Given the scale of Large Force training events, all or part of the PR training activities, equipment, airspace, and training locations discussed in this analysis have the potential to be utilized as part of the PR training activities.

Estimated annual aircraft sorties supporting and participating in Large Force PR training events are provided in Table 2.1-3. It should be noted that the table shows an estimation of what is typically included in Large Force training events as the type and number of aircraft that participate in these events vary depending on availability.

| Table 2.1-3. Estimated Annual Aircraft Sorties Supporting/Participating in Large Force Training Events | |
|---|---|
| **Maximum Number of Aircraft per Large Force Training Event** | **Total** |
| 4 AV-8 | 80 |
| 4 A-10 | 160 |
| 2 EC-130H | 80 |
| 2 HC-130 | 80 |
| 2 F-15 | 80 |
| 2 F-16 | 80 |
| 2 F-18 | 40 |
| 2 F-22 | 80 |
| 2 F-35 | 80 |
| 8 HH-60 | 80 |
| 2 AH-1 | 80 |
| 2 UH-1 | 80 |
| 2 CH-47 | 80 |
| 2 CH-53 | 80 |
| 2 CV/MV-22 | 80 |

| Table 2.1-3. Estimated Annual Aircraft Sorties Supporting/Participating in Large Force Training Events | |
|---|---|
| **Maximum Number of Aircraft per Large Force Training Event** | **Total** |
| 1 KC-135 | 40 |
| 1 MQ-1 or MQ-9 | 40 |
| 1 MC-12 | 40 |
| 2 F-21 (Columbian Fighter) | 20 |
| Average of 30 aircraft but up to 45 aircraft | 1,380 |
| Notes: Sortie Day/Night split is 80/20.<br>Total sorties represent operations with the maximum number of aircraft (45). Actual number of annual sorties is likely to be lower as the average number of aircraft participating in Large Force events is 30.<br>Note that Large Force training has a duration of approximately 21 calendar days and occurs twice a year; only five to seven days of the 21-day period are flying days.<br>Source: USAF 2018-2019. | |

### Medium Force Training Events

Medium Force training events are typically conducted at the Group level. As defined, this effort involves 50 to 100 rescue personnel. The training events have a duration of approximately 14 calendar days and occur quarterly. Typically, the first week of a Medium Force training event involves planning and classroom training of participating personnel, then up to five days of field training, one day of de-mobilization, and then debrief on results of training. Medium Force training events include ground, water, and flight operations. Events may include all or part of the training activities, equipment, airspace, and training locations discussed in this analysis.

An example of a Medium Force training event includes pre-deployment PR training events to integrate deploying personnel to train and fight together in a realistic training environment prior to deployment into combat operations. The intent is to establish and build relationships between personnel and organizations scheduled to deploy together to ensure that the first-time relationships are established is not on Day one after arriving in their deployed locations. Routine Medium Force training events are mainly focused on maintaining currency (e.g., basic aircraft skills and weapons qualification) and meeting specific mission qualification requirements.

Estimated annual aircraft sorties that support/participate in Medium Force training events are provided in Table 2.1-4.

| Table 2.1-4. Estimated Annual Aircraft Sorties Supporting/Participating in Medium Force Training Events | |
|---|---|
| **Maximum Number of Aircraft per Medium Force Training Event** | **Total** |
| 6 A-10 | 240 |
| 2 HC-130 | 80 |
| 6 HH-60 | 240 |
| 2 UH-1/AH-1 | 80 |
| 2 CH-47 | 40 |
| 2 CV/MV-22 | 80 |
| 20 aircraft | 760 |

| Table 2.1-4. Estimated Annual Aircraft Sorties Supporting/Participating in Medium Force Training Events | |
|---|---|
| **Maximum Number of Aircraft per Medium Force Training Event** | **Total** |
| Notes: Sortie Day/Night split is 80/20.<br>Note that Medium Force training totals 56 calendar days annually, divided into 14-day quarterly event periods; only seven days of the 14-day event period are flying days.<br>Source: USAF 2018-2019. | |

### Small Force Training Events

Small Force training events are typically conducted at the squadron level and involve less than 50 personnel. The training events occur several days a week throughout the year. Small Force training events include a combination of ground, water, and flight operations. Events may include all or part of the training activities, equipment, airspace, and training locations discussed in this analysis. Formal Small Force training courses for Pararescuemen and CROs are conducted by the Guardian Angel Formal Training Unit (68 RQS) and focus on providing advanced skill upgrades and proficiency training.

Estimated annual aircraft sorties that support/participate in Small Force training events are provided in Table 2.1-5.

| Table 2.1-5. Estimated Annual Aircraft Sorties Supporting/Participating in Small Force Training Events | |
|---|---|
| **Maximum Number of Aircraft per Small Force Training Event** | **Total** |
| 2 A-10 | 1,080 |
| 1 HC-130 (or similar aircraft) | 500 |
| 3 HH-60 | 1,820 |
| 6 aircraft | 3,400 |
| Notes: Sortie Day/Night split is 80/20.<br>Note that Small Force training occurs several days a week throughout the year; flying occurs up to eight hours per day.<br>Source: USAF 2018-2019. | |

## 2.1.4 Description of Specific Training Activities

The following subsections provide a brief description of the types of proposed PR training activities that currently occur, and would continue to occur as part of the Proposed Action and No-Action Alternative.

### 2.1.4.1 Ground Operations – Camping, Bivouacking, and Assembly Area Use (G1)

Personnel utilize existing hardened camp facilities (e.g., established camp grounds) for bivouacking and assembly, including buildings and infrastructure, for both logistical and training activities. This activity occurs on DoD property, USFS land or other federal land, and private property. Bivouacking/Assembly usage consists of existing billeting structures, trailers, tent cabins, or tents where personnel eat and rest overnight in support of PR training activities.

The mission objective is to leave sites in the same condition they were in prior to the event. Appropriate coordination is completed with the specific location prior to execution.

The ground surface may be slightly disturbed, within 6 inches of ground surface, from placement of tent stakes in areas already disturbed for this purpose. Stakes are recovered at the completion of the training event.

Table 2.1-6 provides a summary of bivouacking and assembly area use activities that occur during PR training events.

**Table 2.1-6. Camping, Bivouacking, and Assembly Area Use (G1) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of vehicles:<br>Humvees<br>ATVs<br>van<br>light trucks<br>2.5-ton trucks | Up to 1,000 | Tents, stakes | 21 days/ biannual | Per Special Use permit |
| Medium Force | Variable number of vehicles:<br>Humvees<br>ATVs<br>van<br>light trucks<br>2.5-ton trucks | 50-100 | Tents, stakes | 14 days/ quarterly | Per Special Use permit |
| Small Force | Variable number of vehicles:<br>Humvees<br>ATVs<br>van<br>light trucks<br>2.5-ton trucks | Up to 50 | Tents, stakes | Up to 72 hours/ 4 per year | Per Special Use permit |

Note: Vehicle operations are analyzed under activity type G3 (see Table 2.1-8) and any associated dismounted movements are analyzed under activity type G2 (see Table 2.1-7).
ATV – All Terrain Vehicle
Source: USAF 2018-2019.

### 2.1.4.2 Ground Operations – Cross-Country Dismounted (Non-Vehicle) Movements (G2)

Cross-country dismounted movements involve rescue personnel walking across land areas from one location to another as part of simulated training activities. Opposing forces may compete to locate the target personnel. Cross-country dismounted movement may occur on or off roads or on unimproved trails. Personnel may carry different configurations of equipment based on current conditions and the individual missions.

During dismounted movements, forces may engage each other using a range of pyrotechnics in various PR training scenarios. Pyrotechnic use is further discussed in Section 2.1.4.7. For purposes of this activity, the pyrotechnics used on approved sites would be limited to those listed in Table 2.1-7.

| Table 2.1-7. Cross-Country Dismounted Movements (Non-Vehicle) (G2) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | NA | Up to 1,000 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares and smoke | 21 days/ biannual | Per Special Use permit |
| Medium Force | NA | 50–100 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares and smoke | 14 days/ quarterly | Per Special Use permit |
| Small Force | NA | Up to 50 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares and smoke | 12 hours/ daily | Per Special Use permit |
| NA – Not applicable.<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.3 Ground Operations – Mounted Movements/Blackout Driving (G3)

Mounted ground movements involve the use of personnel vehicles, all-terrain vehicles, motorcycles/bicycles, horses, and public transportation such as buses and trains, which are shown in Table 2.1-8. Other mounted movements could include bicycles, motorcycles, and horses. Most mounted movements occur across established roads and trails from one location to another in support of PR training activities, logistics, and personnel transport. Less frequently used transport includes bicycles, motorcycles, horses, and public transportation. ATV/UTV use is conducted using existing unpaved roads and established trails. ATVs/UTVs may also be used on trails in support of cross-country dismounted movement activities. Occasionally, off-road driving is conducted during PR training activities to pick up isolated personnel that may be located just outside a Helicopter Landing Zone (HLZ); this is typically conducted within 200 feet of the HLZ and occurs approximately five percent of the time. However, it should be noted that no off-road driving would occur at the Barry M. Goldwater Range (BMGR) or Fort Huachuca. Also, for any PR training sites located on USFS land, motor vehicle use off designated roads and trails and outside designated areas would be prohibited in compliance with 36 CFR 212.50.

During opposing forces vehicle operations, the teams compete to locate isolated personnel (e.g., downed pilot) using established roads and trails as discussed above. Personnel may exit their vehicles to conduct search activities.

Blackout Driving involves nighttime driving of UTV-type and high-mobility multipurpose wheeled vehicles without full headlights. Headlights are diminished to "cats eyes," which are essentially small slits placed over the headlights. This modification of the headlights provides

enough light to utilize night vision goggles while driving. Roads used for this activity are temporarily closed to the public to prevent safety mishaps.

During mounted movements, PR forces may engage each other using a range of pyrotechnics in various PR training scenarios. Pyrotechnic use is further discussed in Section 2.1.4.7. For the proposed activity, the pyrotechnics used on approved sites would be limited to those listed in Table 2.1-8.

**Table 2.1-8. Mounted Movements/Blackout Driving (G3) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of vehicles:<br>Buses<br>Vans<br>Repurposed civilian vehicles<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Humvees<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | Up to 1,000 | airsoft pellets<br>sim-munitions<br>ground burst simulators<br>simulated 50 cal.<br>Smokey Sam<br>burn barrel | 21 days/ biannual | Limited off-road vehicular activity to within 200 feet of PR training sites |
| Medium Force | Variable number of vehicles:<br>Buses<br>Vans<br>Repurposed civilian vehicles<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Humvees<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | 50-100 | airsoft pellets<br>sim-munitions<br>ground burst simulators<br>simulated 50 cal.<br>Smokey Sam<br>burn barrel | 14 days/ quarterly | Limited off-road vehicular activity to within 200 feet of PR training sites |

| Table 2.1-8. Mounted Movements/Blackout Driving (G3) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | Variable number of vehicles:<br>Buses<br>Vans<br>Repurposed civilian vehicles<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Humvees<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | Up to 50 | airsoft pellets<br>sim-munitions<br>ground burst simulators<br>simulated 50 cal.<br>Smokey Sam<br>burn barrel | 3 hours/<br>3x week | Limited off-road vehicular activity to within 200 feet of PR training sites |
| ATV – All Terrain Vehicle<br>cal. – caliber<br>UTV – Utility Terrain Vehicle<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.4 Ground Operations – Survival Training/Natural Resources Consumption (G4)

Survival training is a critical component of military readiness and PR training (e.g., SERE). Survival training takes place on Davis-Monthan AFB and other areas known to contain a variety of edible plants. UTVs are used to travel via maintained road to desert areas where personnel are educated on edible plants. Flares and smoke are used only on bare ground or paved surfaces on approved sites, which are cleared of any vegetation within a 3-foot by 3-foot area prior to use of flares and smoke. Extra water is brought to the site to wet down the area after use to minimize wildfire risk. Flares/smoke would only be used when fire danger is low. Survival training during Large Force and Medium Force training events consists primarily of classroom training and field familiarity of edible plants.

Approximately 90 percent of SERE training is performed on Davis-Monthan AFB, typically on the southeastern portion of the base in the vicinity of the Combat Arms Training and Maintenance (CATM) facility. On occasion, SERE training is be conducted off base under the Ruby Fuzzy Military Operations Area (MOA). Personnel travel by vehicle or aircraft to the training area for their training events. During SERE training, forces engage each other using a range of pyrotechnics in various PR training scenarios while recovering an isolated individual. Pyrotechnics include airsoft rifles, sim-munitions, hand flares/smoke, simulated 50 cal. machine gun, and ground burst simulators. Flares/smoke could be used at any PR training site where survival training activities are proposed, as well as in association with other ground, flight, and water operations (i.e., cross-country dismounted movement [G2], mounted vehicle movement [G3], pyrotechnic use [G7], established MOAs [F1], restricted areas [F4], and amphibious

activities [W1]), unless prohibited by the installation-specific range protocols or conditions of a Special Use permit. Hand flares and smoke are only used when fire danger is low. Pyrotechnic use is further discussed in Section 2.1.4.7.

During survival training, plants are used for friction fire demonstrations, edible fruit, bean pod, leaves, and fiddle head demonstrations; whole plant edibility demonstrations; and medical demonstrations. Typically, edible vegetation is simply pointed out and verbal instruction is provided on procurement/consumption. Locations of avoidance areas (e.g., areas that contain sensitive habitats and sensitive species) is communicated to participants prior to the activity. Survival training does not involve substantial consumption of natural resources. Snaring and trapping of animals is rarely conducted; however, if this activity occurs, it is conducted in accordance with applicable laws/regulations including obtaining appropriate hunting and fishing licenses and the activity is conducted using the same approved methods used by the public.

Table 2.1-9 provides a summary of natural resources consumption activities that occur during PR training events.

**Table 2.1-9. Survival Training/Natural Resources Consumption Activity (G4) Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | HC-130<br>HH-60<br>2.5-ton trucks<br>ATVs/UTVs | Up to 1,000 | Individual Combat Equipment<br>airsoft pellets<br>machine gun<br>ground burst simulators<br>hand flares/smoke | 2 days/ biannual | Per Special Use permit<br>Avoid protected wildlife and plants |
| Medium Force | HC-130<br>HH-60<br>2.5-ton trucks<br>ATVs/UTVs | 50-100 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares/smoke | 1 day/ quarterly | Per Special Use permit<br>Avoid protected wildlife and plants |
| Small Force | HC-130<br>HH-60<br>2.5-ton trucks<br>ATVs/UTVs | Up to 50 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions simulated 50 cal. machine gun<br>ground burst simulators<br>hand flares/smoke | 3 hours/ quarterly | Per Special Use permit<br>Avoid protected wildlife and plants |

ATV – All Terrain Vehicle
cal. – caliber
UTV – Utility Terrain Vehicle
Source: USAF 2018-2019.

### 2.1.4.5 Ground Operations – Military Operations in Urban Terrain/Urban Evasion (G5)

Military Operations in Urban Terrain (MOUT) training locations provide rescue personnel the opportunity to master combat and maneuvering skills required to successfully conduct rescue missions in urban environments. Opposing forces compete to locate the target personnel. In these approved urban-type areas, three- to six-person teams move throughout urban

environments on paved roads in four-wheel drive vehicles, SUVs, or motorcycles. Ground activities may also include the use of bicycles, horses, public transportation, and Amtrak trains by small teams of two personnel. When the teams are within 1,640 feet of the approved site, personnel dismount on foot carrying small 20-pound backpacks to accomplish PR training missions. No off-road driving would occur at the BMGR or Fort Huachuca, and for any PR training sites located on USFS land, motor vehicle use off designated roads and trails and outside designated areas would be prohibited in compliance with 36 CFR 212.50.

The PR training activities utilize city-type environments to achieve urban evasion training objectives. Personnel carry different configurations of equipment based on current conditions and individual missions. Depending on scenarios and the roles involved, personnel may be carrying a variety of survival/camping equipment. Activities are conducted in accordance with the normal everyday use of the existing businesses/facilities and with prior coordination with local officials and law enforcement. Local law enforcement may also participate in the training event. These activities consist of the personnel moving on foot and blending in with the existing environments.

During MOUT training, forces engage each other using a range of pyrotechnics in various PR training scenarios at DoD properties and the Playas Training and Research Center. Pyrotechnics may include airsoft rifles and sim-munitions. Within civilian city environments, pyrotechnic use does not occur. Pyrotechnic use is further discussed in Section 2.1.4.7.

Table 2.1-10 provides a summary of MOUT operations that occur during PR training events.

**Table 2.1-10. Military Operations in Urban Terrain (G5) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of vehicles:<br>Light trucks<br>2.5-ton trucks<br>ATVs<br>SUVs<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | Up to 1,000 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions | 2 days/ biannual | Limited off-road vehicular activity to within 200 feet of PR training sites |
| Medium Force | Variable number of vehicles:<br>Light trucks<br>2.5-ton trucks<br>ATVs<br>SUVs<br>Motorcycles | 50-100 | Individual Combat Equipment<br>sim-munitions<br>airsoft pellets | 1 day/ quarterly | Limited off-road vehicular activity to within 200 feet of PR training sites |
| Small Force | Variable number of vehicles:<br>Light trucks<br>2.5-ton trucks<br>ATVs<br>SUVs<br>Motorcycles | Up to 50 | Individual Combat Equipment<br>sim-munitions<br>airsoft pellets | 12 hours/ quarterly | Limited off-road vehicular activity to within 200 feet of PR training sites |

| Table 2.1-10. Military Operations in Urban Terrain (G5) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| ATV – All Terrain Vehicle<br>SUV – Sport Utility Vehicle<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.6 Ground Operations – Technical Rope Work (G6)

Rescue missions require use of roped access equipment to recover isolated or injured personnel in high and low angle environments to include mountainous, urban environments, and confined spaces. Technical rope work involves the insertion and extraction of rescue personnel via fast rope, rappel, or rope ladder. The training may utilize stationary objects or helicopters to achieve training objectives. Stationary objects may consist of cliffs, ravines, buildings, and other natural and man-made features. PR training sites where technical rope work is conducted from stationary platforms include Davis-Monthan AFB, Mount Lemmon, Mogollon Rim, and Titan Missile Museum.

**Fast Rope** is a technique for descending a thick rope used for deploying troops from a helicopter in places and situations where it is difficult for the helicopter to touch down. It is much quicker and easier than rappelling, although more dangerous as a descender simply holds onto the rope with his gloved hands and feet and slides down it without any security (not attached to the rope).

**Rappelling** is a technique for descending from a stationary position or a hovering helicopter where an individual wears a safety harness attached to a rope and uses a descender control device to control their descent.

**Rope Ladder** is a technique for extracting personnel to a helicopter where it is difficult to touch down. Typically, one person holds the rope ladder tight as the other person ascends the ladder.

Table 2.1-11 provides a summary of technical rope work activities that occur during PR training events.

| Table 2.1-11. Ground-Based Technical Rope Work (G6) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of vehicles:<br>HC-130<br>HH-60<br>light trucks<br>van | Up to 1,000 | No expendables<br>Rope, safety harness | 21 days/ biannual | NA |
| Medium Force | Variable number of vehicles:<br>HC-130<br>HH-60<br>light trucks<br>van | 50-100 | No expendables<br>Rope, safety harness | 14 days/ quarterly | NA |

| Table 2.1-11. Ground-Based Technical Rope Work (G6) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | Variable number of vehicles:<br>HC-130<br>HH-60<br>light truck<br>van | Up to 50 | No expendables<br>Rope, safety harness | 12 hours/ bimonthly | NA |
| NA – Not applicable<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.7 Ground Operations – Pyrotechnic Use (G7)

During mounted and dismounted movements and many of the ground PR training activity types, forces engage each other using a range of pyrotechnics in various training scenarios. Pyrotechnics include airsoft rifles, which shoot a 6 mm biodegradable pellet; sim-munitions (realistic, non-lethal munitions); ground burst simulators (simulates battle noise); simulated 50 cal. machine gun (propane gun to simulate loud burst of gun fire), signal flares (e.g., MK-124 or MK-13), Smokey Sams, and burn barrels.

Smokey Sams and burn barrels are only used on DoD properties and when fire danger is low. The Smokey Sam is a small unguided rocket used as a threat simulator. When launched, the model rocket motor produces a white plume, providing a realistic simulation of the launch of a surface-to-air missile. It is constructed from phenolic paper and Styrofoam so that, in the event of accidentally striking low-flying aircraft, no or minimal damage results. A burn barrel is simply a cut-off metal barrel that is lit to simulate a burning target.

Hand flares and smoke are only used on approved sites. Flares and smoke are used only on bare ground or paved surfaces, which are cleared of any vegetation within a 3-foot by 3-foot area prior to use of flares and smoke. Extra water is brought to the site to wet down the area after use to minimize wildfire risk. Aircraft use of flares and chaff is discussed in Section 2.1.4.9.

Table 2.1-12 provides a summary of pyrotechnics use activities that occur during PR training events.

| Table 2.1-12. Pyrotechnic Use (G7) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Vehicle use as described in activity type G2, G3, G4, and G5 | Up to 1,000 | Airsoft pellets, sim-munitions, ground burst simulators hand flares/smoke simulated 50 cal. Smokey Sam burn barrel | 21 days/ biannual | Sim-munitions, ground burst simulators, hand flares/smoke, simulated 50 cal., Smokey Sam, and burn barrel to only be used on military lands |

| Table 2.1-12. Pyrotechnic Use (G7) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Medium Force | Vehicle use as described in activity type G2, G3, G4, and G5 | 50-100 | Airsoft pellets, sim-munitions, ground burst simulators hand flares/smoke simulated 50 cal. Smokey Sam burn barrel | 14 days/ quarterly | Sim-munitions, ground burst simulators, hand flares/smoke, simulated 50 cal., Smokey Sam, and burn barrel to only be used on military lands |
| Small Force | Vehicle use as described in activity type G2, G3, G4, and G5 | Up to 50 | Airsoft pellets, sim-munitions, ground burst simulators hand flares/smoke simulated 50 cal. Smokey Sam burn barrel | 4 hours/ bimonthly (twice a month) | Sim-munitions, ground burst simulators, hand flares/smoke, simulated 50 cal., Smokey Sam, and burn barrel to only be used on military lands |
| cal. – caliber<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.8 Ground Operations – Small Arms Firing Range (G8)

PR training activities involve the use of existing DoD and private small arms firing ranges to enhance weapons training skills. The caliber of the weapons used for the training and subsequent events does not exceed the design, capacity, or certification of the facilities. Small arms training occurs during normal operating hours of the facilities. Small arms firing ranges are located at the Davis-Monthan AFB CATM facility, Florence Military Reservation, and Three Points Public Shooting Range. These locations are situated on DoD properties with the exception of the Three Points Public Shooting Range, which is a public range.

Table 2.1-13 provides a summary of small arms firing range activities that occur during PR training events.

| Table 2.1-13. Small Arms Firing Range (G8) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | NA | NA | NA | NA | NA |
| Medium Force | light trucks and buses | 50-100 | 5.56 mm<br>7.62 mm<br>9 mm<br>.50 cal. (some incendiary/explosive)<br>30 mm<br>40 mm (some incendiary/explosive) | 14 days/ quarterly | Not to exceed the design, capacity, or certification of the facilities |

| Table 2.1-13. Small Arms Firing Range (G8) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | light trucks and buses | Up to 50 | 5.56 mm<br>7.62 mm<br>9 mm<br>.50 cal. (some incendiary/explosive)<br>30 mm<br>40 mm (some incendiary/explosive) | 4 hours/ weekly | Not to exceed the design, capacity, or certification of the facilities |

cal. – caliber
mm – millimeter
NA – Not applicable
Source: USAF 2018-2019.

#### 2.1.4.9 Flight Operations – Established Military Operations Areas (F1)

The established MOAs (Figure 2.1-3) associated with the effort support nonhazardous military flight activities, including but not limited to tactical combat maneuvering by fighters; transport and rotary-wing aircraft formation flights; air intercepts; low altitude tactics rescue escort maneuvering above participating rotary-wing aircraft; close air support; freefall and static line parachute operations; and Visual Flight Rules (VFR) aerial helicopter refueling. Aircraft operations associated with the PR activities occur in several established MOAs, including:

- Desert
- Dome
- Fuzzy
- Outlaw
- Reserve
- Ruby 1
- Sells 1
- Sells Low
- Sunny
- Tombstone A/C
- Tombstone B/C
- Tombstone C
- Turtle

Aerial refueling (AR) operations between fixed-wing and rotary-wing aircraft occur in all MOAs as well as on published AR tracks (e.g., AR135V, AR136V, AR137V, AR230V, etc.).

Airspace utilized during PR activities is governed by the associated Airspace Control Plan (ACP). The ACP outlines procedures and designates airspace for the PR training operations within the MOAs/Air Traffic Control Assigned Airspace (ATCAA), BMGR East (the "Exercise Area"), and other identified restricted airspace. Responsibilities and procedures described in the ACP are applicable to participating aircraft and are adhered to unless prior coordination was

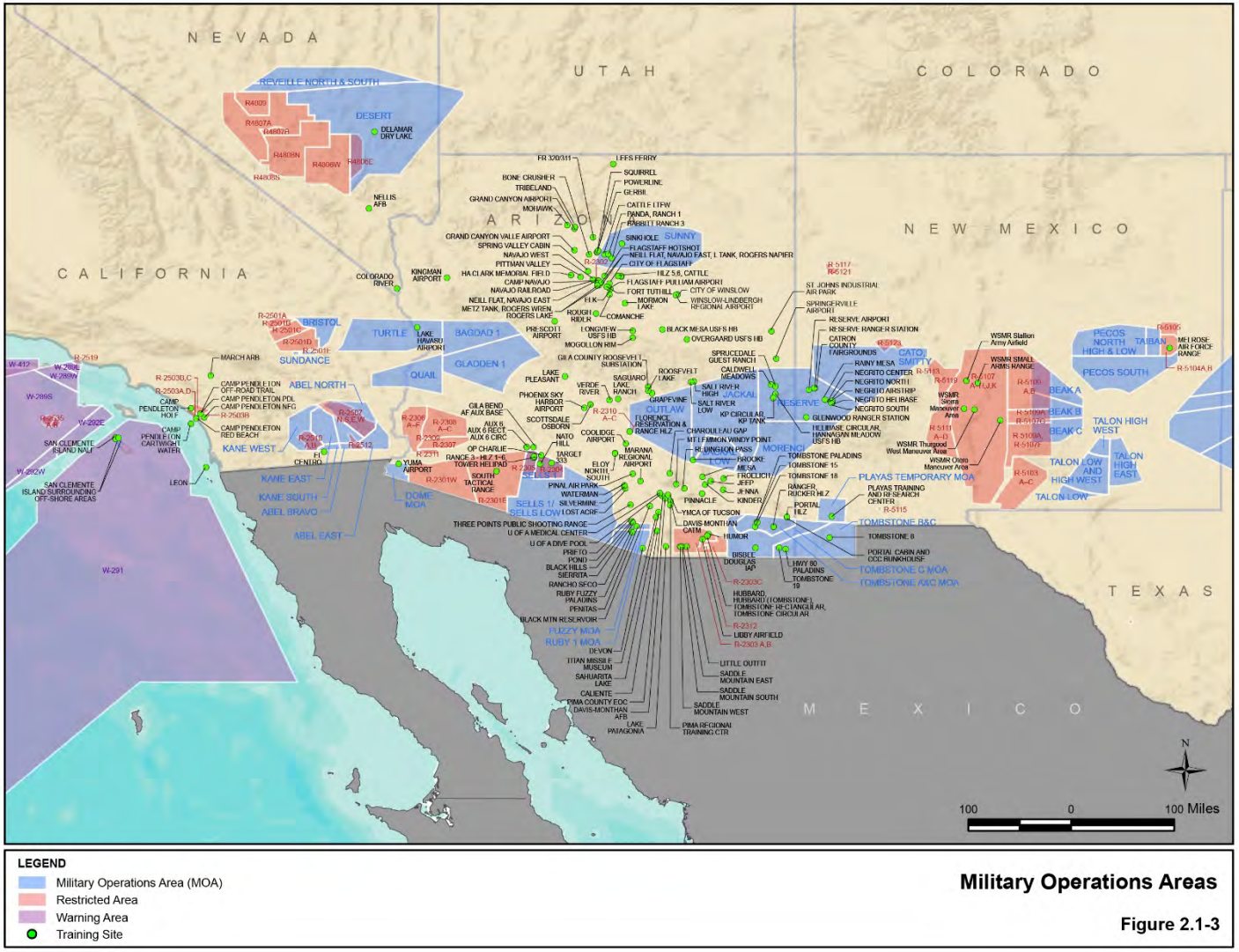


**Figure 2.1-3. Military Operations Areas (MOAs)**

conducted. The document is supplementary to the procedures in FAA Orders 7110.65, Air Traffic Control, and 7610.4, Special Military Operations, and is consistent with Air Force Manual (AFMAN) 13-212, Volume 1, Range Planning and Operations, for all activities on the BMGR East (USAF 2018f). The ACP does not replace airfield or airspace local operating procedures, DoD Flight Information Publications, or service and national flight operations regulations.

Chaff and flares are defensive countermeasures dispensed by military aircraft to avoid detection or attack by the enemy's air defense systems and prevent targeting by certain weapons. Aircraft participating in PR training event may utilize RR-188 training chaff, which consists of bundles of approximately 5 to 5.6 million fibers (the thickness of a human hair). When dispensed, these fibers form a cloud that reflects radar signals and temporarily obscures the aircraft from radar detection. Chaff does not emit any heat.

Flares ejected from aircraft provide high-temperature heat sources that mislead heat-sensitive or heat-seeking targeting systems. Aircraft participating in PR training events may utilize M211, M212, and LUU-19 flares. These flares are infrared flares designed to meet advanced threats in current and future operational environments. The M211 uses a special high surface area metal foil, which rapidly oxidizes when exposed to oxygen. When the flare is dispensed from the aircraft, the material reacts with air to emit intense infrared radiation that is not visible to the naked eye. The infrared radiation diverts heat-seeking missiles away from the aircraft. The M211 is used together with the M212, a spectrally matched flare, to provide protection against a wide range of surface to air threats. The LUU-19 flare provides infrared illumination of a target area for night vision goggle-capable aircraft.

Air-deployed LUU-2 and LUU-4 flares are high-intensity illumination flares used to illuminate targets. The flare is housed in a canister and is deployed by ejection. The mechanism has a timer on it that deploys the parachute and ignites the flare candle. The flare burns magnesium, which burns at high temperature emitting an intense bright white light and has a burn time of approximately five minutes while suspended from a parachute. The flare enhances a pilot's ability to see targets while using night vision goggles.

Chaff and flares are only used over the BMGR and Ruby Fuzzy MOAs. To minimize the potential for flares to ignite vegetation, flares are employed at an altitude that prevents the flares from impacting the ground or structures. Chaff and flares are used in compliance with the 355 WG Inflight Guide.

PR training participants conduct required mission planning through the use of (1) the ACP; (2) DoD's Flight Information Publications, including Area Planning (AP)/1A, Special Use Airspace, North and South America, and AP/1B, Military Training Routes (Defense Logistics Agency 2019); (3) applicable Letters of Agreement and regulations; (4) Air Tasking Order, as discussed in Section 3.0 of this EA; (5) Airspace Control Order; and (6) Special Instructions. Table 2.1-14 provides a summary of aircraft and activities that occur during PR training events within established MOAs.

| Table 2.1-14. Established Military Operations Areas (F1) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>A-10<br>EC-130 and EC-130H<br>HC-130<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B<br>HH-60<br>CV/MV-22<br><br>Foreign Fighter Aircraft and Helicopters<br>MH-60<br>AH-1/UH-1<br>KC-10<br>KC-135<br>MC-12 | Up to 1,000 | Self-protection flares/chaff | 21 days/ biannual | In accordance with designated altitude restrictions and SUA times-of-use published in FAA JO 7400.2M |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22<br>SC-7 | 50-100 | Self-protection flares/chaff | 14 days/ quarterly | In accordance with designated altitude restrictions and SUA times-of-use published in FAA JO 7400.2M |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | Self-protection flares/chaff | weekly | In accordance with designated altitude restrictions and SUA times-of-use published in FAA JO 7400.2M |
| FAA – Federal Aviation Administration<br>SUA – Special Use Airspace<br>Source: FAA 2019d; USAF 2018-2019. | | | | | |

### 2.1.4.10 Flight Operations – Temporary Military Operations Area (F2)

Aircraft operations associated with PR training activities occur above the Playas Training and Research Center (Figure 2.1-3) in conjunction with a wide range of ground training that takes place at this facility. The Playas Training and Research Center offers a unique, adaptive, urban/suburban training environment ideal for integration with combat search and rescue aircraft training. The Playas Temporary MOA is a 20 nautical mile by 20 nautical mile square-shaped

area from 300 feet above ground level (AGL) up to but not including Flight Level (FL) 180.[8] The proposed boundary is 32°10'43" N 108°42'48" W to 32°09'20" N 108°19'29" W to 31°49'27" N 108°21'03" W to 31°50'48" N 108°44'28" W to the point of beginning.[9] Overlying the Playas Temporary MOA is the Playas Temporary ATCAA. The Playas Temporary ATCAA would have the same lateral dimensions as the Temporary MOA but the vertical dimensions would extend from FL 180 up to FL 220. For more information related to the times and details the Playas Temporary MOA is proposed to be activated, see Section 3.1.2.3.1 of this EA.

Most PR training does not require establishment of a Temporary MOA above the Playas Training and Research Center, but when aircraft operations involve combat maneuvering or flying at high speeds, a request to establish a Temporary MOA must be submitted to the FAA for approval. Requests to establish a Temporary MOA are submitted on an as-needed basis, typically to support Large Force training events such as Red Flag-Rescue. The Temporary MOA is only used during a specified timeframe (five to seven flying days during each Red Flag-Rescue/Large Force training event) with specific times of use announced via Notice to Airmen.[10] Times of use vary from continuous to day-night windows scheduled to meet training requirements. The Temporary MOA with associated flight restrictions supports nonhazardous military flight activities including, but not limited to, tactical combat maneuvering by fighter, transport, and rotary wing aircraft; non-standard formation flights; rescue escort maneuvering above participating rotary wing aircraft; close air support; freefall and static line parachute operations; and VFR aerial helicopter refueling. The Playas Temporary MOA training activities include night extracts and night ground infiltration/evasion/exfiltration scenarios at the Playas training facility.

Variable types and numbers of aircraft operate in the Playas Temporary MOA depending on the agenda for each training event (see Table 2.1-15 below). Aircraft could include other similar aircraft depending on outside agency/organization participation. Specific aircraft expected to participate in each training event involving establishment of the Playas Temporary MOA are included in each individual request submitted to the FAA.

If establishment of a Temporary MOA occurs on a regular basis for a prolonged period, the establishment of a Permanent MOA may be required. Any plans for establishing a Permanent MOA over the Playas Training and Research Center would be coordinated with the FAA and addressed in a future analysis.

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[8] Flight Level means a level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet (e.g., FL 250 represents a barometric altimeter indication of 25,000 feet; FL 255, an indication of 25,500 feet (14 CFR 1.1).

[9] Please note that at the time of the publication of the Final EA, the area of the Playas Temporary MOA slightly decreased (by approximately 0.4 percent). The boundaries mostly remained the same (just a smaller area and with a negligible shift to the northeast by approximately one foot). The revised coordinates are the following (shown in strikeout/underline for clarity): 32°10'43" N 108°42'48" W to 32°09'20" N 108°19'29" W to 31°49'27~~32~~" N 108°21'~~03~~06" W to 31°50'48~~49~~" N 108°44'~~28~~26" W to the point of beginning. However, in order to present a conservative evaluation of the Proposed Action, this EA analyzed the original boundaries of the Playas Temporary MOA.

[10] A Notice Airmen is a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of the flight.

| Table 2.1-15. Temporary MOA (F2) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category[1]** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>A-4<br>A-10<br>AV-8<br>A-29<br>A/T-6<br>C-130 (all variants)<br>C-17<br>C-208<br>CASA-212<br>EC-130 and EC-130H<br>F-15 (all variants)<br>F-16<br>F-18<br>F-21<br>F-22<br>F-35 (all variants)<br>MH/HH-60<br>P-3 (all variants)<br>P-8<br>CV/MV-22<br>AW139<br>UH-72<br>AH-1/UH-1<br>AH-64<br>MH/AH-6<br>MH/CH-47<br>MH/CH-53<br>KC-135<br>KC-10<br>MQ-1 or MQ-9<br>MC-12<br>U-28<br><br>Foreign Fighter Aircraft and Helicopters<br>Rafale<br>Mirage<br>Tornado<br>Eurofighter<br>A400M<br>EC725 (all variants)<br>AW101 (all variants)<br>NH90 (all variants)<br>EC665 (all variants)<br>MI-8/17 (all variants)<br>MI-24/35 (all variants) | Up to 1,000 | NA | Up to 45 days/as needed | In accordance with FAA approved terms and conditions specified in the Special Use Airspace Proposals required by FAA JO 7400.2M, Part 5, Section 3. |

| Table 2.1-15. Temporary MOA (F2) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category[1]** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Medium Force | None | 50-100 | NA | NA | NA |
| Small Force | None | Up to 50 | NA | NA | NA |

MOA – Military Operations Area
NA – Not applicable.
[1] The Playas Temporary MOA would only be established for Red Flag-Rescue/Large Force training events.
Source: FAA 2019d; USAF 2018-2019.

The ACP outlines procedures and designates airspace for PR operations within the Playas Temporary MOA. As previously discussed, responsibilities and procedures described in the ACP are applicable to participating aircraft and are adhered to unless prior coordination was conducted. Table 2.1-15 shown above provides details for PR training events within the Playas Temporary MOA.

### 2.1.4.11 Flight Operations – Low Altitude Tactical Navigation Area (F3)

Low Altitude Tactical Navigation (LATN) areas are large geographic areas where random low altitude operations are conducted at airspeeds below 250 Knots Indicated Airspeed. PR personnel use LATN areas to accomplish low-level PR training objectives. LATN areas allow the USAF to perform random tactical navigation, generally below 3,000 feet AGL. The LATN to be used by this effort is CSAR LATN (Figure 2.1-4) per Davis-Monthan Air Force Base Instruction (DMAFBI) 11-250 (USAF 2016d).

PR aircraft typically use the LATN area to transit to/from Davis-Monthan AFB and PR training areas. Helicopters traveling to HLZs to conduct PR training activities as well as the specific activities occurring at the HLZ typically occur at altitudes below 3,000 feet AGL. Aircraft using this LATN must follow the rules described in DMAFBI 11-250 (USAF 2016d).

In combat, many aircraft operate at altitudes as low as 100 feet to defeat ground missile radars and avoid sophisticated surface-to-air missiles, anti-aircraft artillery, and enemy fighters. Pilots must have long hours of realistic training to become skilled at low-altitude flight; and then must have many more hours of the same training to remain proficient. Low-altitude flying training provides this realism and is considered one of the USAF's highest training priorities.

The FAA does not consider an LATN area SUA; therefore, formal airspace designation is not required and LATN airspace is not included on FAA VFR Sectional maps. Military aircraft are required to follow existing Federal Aviation Regulations while flying within an LATN area. Military and civilian pilots must use the “see and avoid” technique while operating in an LATN area. Table 2.1-16 provides a summary of aircraft and activities that occur during PR training events within LATN areas.

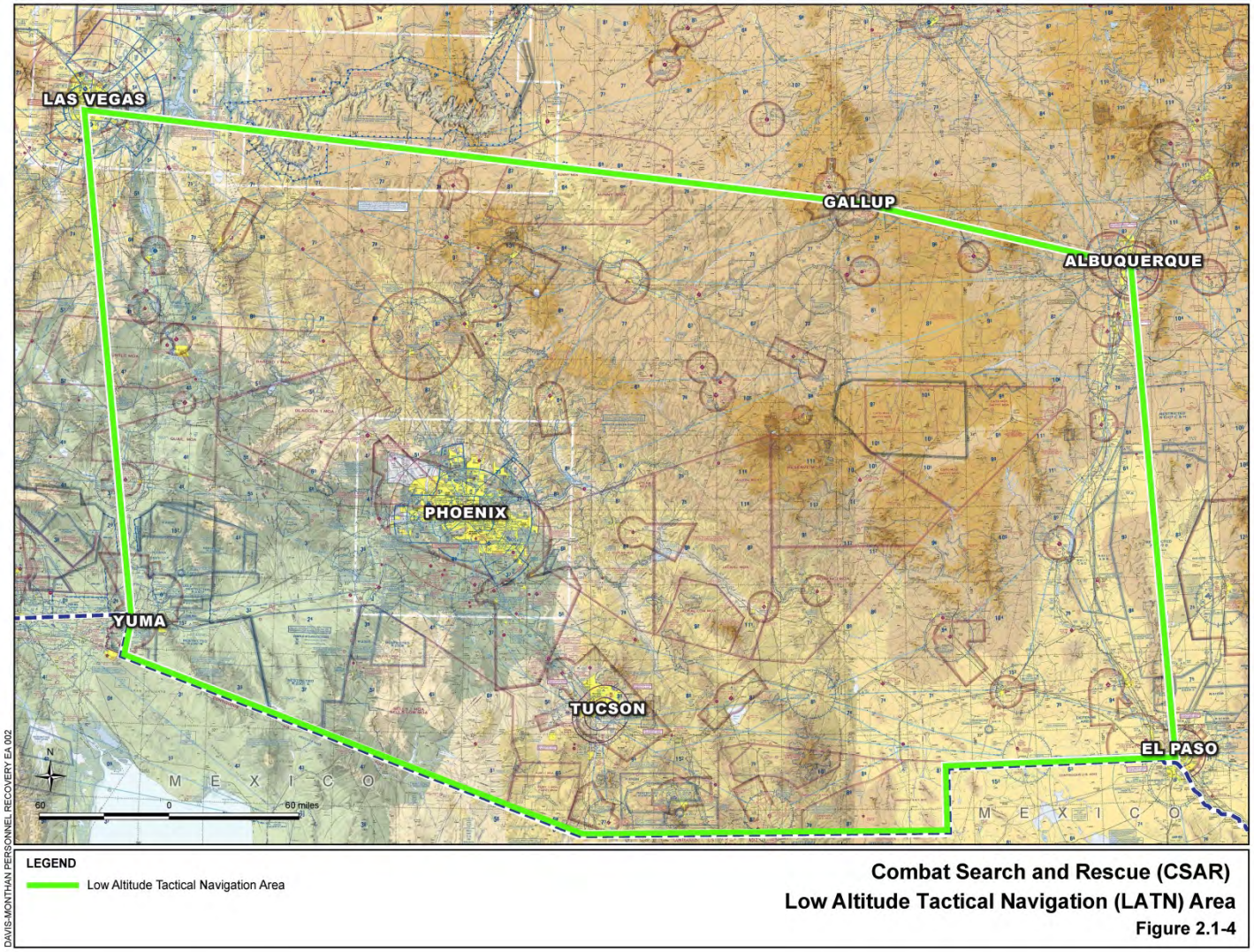



**Figure 2.1-4. Combat Search and Rescue (CSAR) Low Altitude Tactical Navigation (LATN) Area**

| Table 2.1-16. Low Altitude Tactical Navigation (F3) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>A-10<br>HC-130<br>HH-60<br>CV/MV-22<br>Foreign Fighter Aircraft and Helicopters<br>AH-1/UH-1<br>MC-12 | Up to 1,000 | NA | 21 days/ biannual | IAW AFI 11-2MDS V3 and AFI 11-214 |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | NA | 14 days/ quarterly | IAW AFI 11-2MDS V3 and AFI 11-214 |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | NA | weekly | IAW AFI 11-2MDS V3 and AFI 11-214 |
| AFI – Air Force Instruction<br>IAW – In accordance with<br>NA – Not applicable<br>Sources: USAF 2016b, 2018d, 2018-2019. | | | | | |

### 2.1.4.12 Flight Operations – Restricted Areas (F4)

Restricted Area (RA) confines or segregates activities considered hazardous to non-participating aircraft. Warning Areas are similar to RAs but are located offshore over domestic and international waters and typically begin 3 miles from the shoreline. Potential hazards include bombs, artillery, mortars, gunfire, rockets, missiles, lasers, lights out, unmanned aerial systems, etc. Flight operations for PR training activities use several different established RAs and Warning Areas across the region (Figure 2.1-3) to include:

- R-2301E, R-2304, and R-2305 (BMGR)
- R-2303 A&B (Fort Huachuca)
- R-2303 A&B (Little Outfit, Saddle Mountain East, South, and West)
- R2310A (Florence Military Reservation and Florence Range HLZ)
- R 2503 B&C (Camp Pendleton Helicopter Outlying Landing Field [HOLF])
- R-2503 A&D (Camp Pendleton NFG and Camp Pendleton Red Beach)
- R-2503 B&C (Camp Pendleton Off-Road Trail and Camp Pendleton Piedra de Lumbre [PDL])
- R-5104 A&B (Melrose Air Force Range)

- R-5107 B&F (White Sands Missile Range)
- W-291 (San Clemente Island Naval Auxiliary Landing Field [NALF] and San Clemente Island Surrounding Off-Shore Areas)

Yuma Tactical Aircrew sortie operations occur within R-2301W and typically consist of rotary-wing assets [variants of HH-60 (e.g., UH-60, SH-60), AH-64, and CH-47], fixed-winged aircraft (e.g., HC-130, A-10, F-16, F-18, F-35, CV/MV-22, and KC-135), and unmanned aerial systems (e.g., MQ-1 Predator or MQ-9 Reaper). PR training activities that involve aircraft live weapon firing or use of unmanned aerial systems (e.g., MQ-1 or MQ-9) occur at training areas that are within an RA.

RAs and Warning Areas are airspace designated for hazardous military activities, which may include live-firing of weapons. Restrictions are placed on all non-participating air traffic. Table 2.1-17 provides a summary of aircraft and activities that occur during PR training events within restricted areas.

**Table 2.1-17. Restricted Areas (F4) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of aircraft:<br>A-10<br>AV-8<br>EC-130 and EC-130H<br>HC-130<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B<br>HH-60<br>MH-60<br>CV/MV-22<br>Foreign Fighter Aircraft and Helicopters<br>AH-1/UH-1<br>E-3<br>MC-12<br>KC-10<br>KC-135<br>MQ-1<br>MQ-9 | Up to 1,000 | Chaff<br>Flares<br>7.62 mm<br>50 cal.<br>30 mm<br>20 mm<br>25mm | 21 days/biannual | IAW AFI 11-2MDS V3 and AFI 11-214, and Range Guidance/Safety restrictions on Chaff/Flare usage by range based on fire hazard |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | Chaff<br>Flares<br>7.62 mm<br>50 cal.<br>30 mm | quarterly | IAW AFI 11-2MDS V3 and AFI 11-214, and Range Guidance/ Safety restrictions on Chaff/Flare usage by range based on fire hazard |

| Table 2.1-17. Restricted Areas (F4) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | Chaff<br>Flares<br>7.62 mm<br>50 cal.<br>30 mm | daily | IAW AFI 11-2MDS V3 and AFI 11-214, and Range Guidance/ Safety restrictions on Chaff/Flare usage by range based on fire hazard |

AFI – Air Force Instruction
cal. – caliber
IAW – In accordance with
mm – millimeter
Note that chaff use is only approved in BMGR and Ruby Fuzzy MOAs.
Sources: USAF 2016b, 2018d, 2018-2019.

### 2.1.4.13 Flight Operations – Other Airspace (F5)

Military missions may also use airspace that is not categorized as Special Use Airspace (SUA). Military Training Routes (MTRs) are military corridors designated by FAA to support low altitude, high-speed military operations below 10,000 feet mean sea level (MSL) outside SUA. MTRs are designated as either VFR Routes (Visual Routes) or IFR Routes (Instrument Routes). AR tracks/anchors are designated areas to conduct AR. LATN areas are uncharted, unscheduled areas used to conduct random, VFR, low altitude navigation in accordance with Federal Aviation Regulation Section 91.117. ATCAA is airspace above 18,000 feet MSL that is usually associated with an underlying MOA per Letter of Agreement with the controlling agency. Table 2.1-18 provides a listing of other airspace that could be utilized during proposed PR training activities. Table 2.1-19 provides a summary of aircraft and activities that could occur during proposed PR training activities within other airspace for each event.

| Table 2.1-18. Other Airspace (F5) | | |
|---|---|---|
| **Type** | **Vertical Limits** | **Notes** |
| MTRs | Generally below 10,000 feet MSL | • Operations are to be conducted at the minimum speed required to accomplish the mission<br>• Unless otherwise delineated in an MTR special operating procedure, aircrew are to avoid charted, uncontrolled airports by 3 nautical miles laterally or 1,500 feet AGL vertically<br>• Aircrew are to avoid Class B, C, and D airspace<br>• Route entries are to be accomplished at published entry/alternate entry points only<br>• Route exits are to be accomplished at published exit/alternate exit points only |

| Table 2.1-18. Other Airspace (F5) | | |
|---|---|---|
| **Type** | **Vertical Limits** | **Notes** |
| Visual Routes | Visual Routes (VRs) with one or more segments above 1,500 AGL are identified by three numbers, e.g. VR-123. Routes with no segment above 1,500 AGL have four numbers, e.g. VR-4321. | • Are MTRs<br>• Can be utilized for flight training and entry into MOAs and RAs<br>• Coordinates, vertical and lateral limits, and scheduling agencies are listed in the DoD Flight Information Publication AP/1B |
| Instrument Routes | Instrument Routes (IRs) with one or more segments above 1,500 AGL are identified by three numbers, e.g. IR-123. Routes with no segment above 1,500 AGL have four numbers, e.g. IR-4321. | • Are MTRs<br>• ATC entry clearance is required<br>• Coordinates, vertical and lateral limits, and controlling agencies are listed in the DoD Flight Information Publication AP/1B |
| Slow Routes | at or below 1,500 feet AGL | • At speeds of 250 knots (288 miles per hour) or less<br>• Not included on FAA VFR Sectional maps<br>• Coordinates, vertical and lateral limits, and controlling agencies are listed in the DoD Flight Information Publication AP/1B |
| AR Tracks | Per AP/1B | • Are not MTRs<br>• Not included on FAA VFR Sectional maps<br>• Coordinates, vertical and lateral limits, and controlling agencies are listed in the DoD Flight Information Publication AP/1B |

AGL – above ground level
AP – Area Planning
AR – aerial refueling
ATC – Air Traffic Control
DoD – Department of Defense
FAA – Federal Aviation Administration
IR – Instrument Route
MOA – Military Operations Area
MSL – mean sea level
MTR – Military Training Route
VFR – Visual Flight Rules
VR – Visual Route
Source: USAF 2018-2019.

| Table 2.1-19. Other Airspace (F5) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>A-10<br>AV-8<br>EC-130 and EC-130H<br>HC-130<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B<br>HH-60<br>MH-60<br>CV/MV-22<br>Foreign Fighter Aircraft and Helicopters<br>AH-1/UH-1<br>E-3<br>MC-12<br>KC-10<br>KC-135 | Up to 1,000 | NA | 21 days/ biannual | Per AP/1B |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | NA | 14 days/ quarterly | Per AP/1B |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | NA | 8 hours/daily | Per AP/1B |
| NA – Not applicable<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.14 Flight Operations – Forward Aircraft Refueling Point Operations (F6)

Ground refueling of fixed- and rotary-wing aircraft to support PR training activities occurs within designated areas of the airfields and in accordance with airfield policies and procedures. Hot refueling (fueling an aircraft with the engines on) and aircraft-to aircraft ground refueling operations are limited to existing approved locations on DoD properties. Military airfields and the Bisbee Douglas IAP have been used as Forward Aircraft Refueling Points (FARPs) in the past and are proposed for use during proposed PR training activities. Airfields used for refueling activities have appropriate fuel storage on site, and are managed in accordance with facility Spill Prevention Control, and Countermeasure Plan (SPCCP).

Table 2.1-20 provides a summary of aircraft that could participate and FARP activities that occur during PR training events.

| Table 2.1-20. Forward Aircraft Refueling Point Operations (F6) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>MH-6<br>AH-64<br>CH/MH-47<br>CV/MV-22<br>AH-1/UH-1 | Up to 1,000 | No expendables/ Refueling equipment | 21 days/ biannual | SPCCP and appropriate containment required |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | No expendables/ Refueling equipment | 14 Days/ quarterly | SPCCP and appropriate containment required |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | No expendables/ Refueling equipment | 1 hour/ weekly | SPCCP and appropriate containment required |
| SPCCP – Spill Prevention, Control, and Countermeasure Plan<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.15 Flight Operations – Helicopter Landing Zones (F7)

HLZs are utilized as landing sites for rescue personnel during PR training activities. These PR training sites are located on DoD, federal, state, and local government lands as well as privately-owned lands. The HLZ PR training sites are naturally open areas or are open areas that have been cleared of vegetation by the land owners through regular land management activities.

Low-level helicopter insertions/extractions involve flying helicopter(s) near treetop level to an HLZ and inserting or extracting rescue personnel. Insertion/extraction of personnel is conducted via helicopter landing, fast rope, rappel, rope ladder, or hoist. Approximately 50 percent of helicopter/HLZ operations occur at night. Aircraft travel to the HLZ and spend thirty minutes to four hours conducting training activities before returning to the installation. Patterns are typically flown between 0.25 and 1 mile from the HLZ at 1,000 feet AGL and below. Approximately 40 percent of the aircraft's time is spent flying patterns around the HLZ with the remaining time being spent at the HLZ. When at the HLZ, approximately 60 percent of the aircraft's time is spent hovering with actual landing for pick-up of personnel typically completed within two minutes or less. Helicopters typically hover between 10 and 70 feet above the ground to support hoist and rappel activities, fast ropes, and rope ladders.

CV/MV-22 aircraft utilize specific HLZs that meet their landing requirements. The landing area required for CV/MV-22 aircraft (approximately 200- by 200-foot area) is four times the area required for a helicopter (approximately 100-foot by 100-foot area). As a result, most CV/MV-22 landings occur at HLZs within the BMGR and at the Playas Training and Research Center.

**Hoist** extraction is a method for retrieving an injured person with use of a basket and hoist. The hoist assembly is normally housed in a fairing above the cabin door and contains a spool of steel cable—often around 300 feet in length—with a hook attached to the end. Typically, the on-the-hook lift limit is 600 pounds. A basket or rescue harness is lowered, the injured individual is helped into the harness or basket, and they are hoisted into the helicopter.

HH-60 mission equipment includes an 8,000-pound capacity cargo hook and rescue hoist capable of lifting a 600-pound load from a hover height of 200 feet. For definitions of Rappelling, Fast Rope, and Rope Ladder techniques, refer to Section 2.1.4.6 of this EA.

Close air support/escort activities, as described in Section 2.1.4.18, may participate in HLZ operations providing military air support against hostile targets that are in proximity to friendly forces to ensure successful rescue activities. Close Air Support only occurs within MOAs where aircraft combat maneuvering is permitted.

Table 2.1-21 provides a summary of aircraft and activities that use HLZs during PR training events.

**Table 2.1-21. Helicopter Landing Zones (F7) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of aircraft:<br>HH-60<br>AH-64<br>CH/MH-47<br>MH-6<br>CV/MV-22 | Up to 1,000 | No expendables/ hoist, rope ladder, fast rope, stokes litter | 21 days/biannually | IAW AFI 11-2MDS V3 |
| Medium Force | HH-60<br>CV/MV-22 | 50-100 | No expendables/ hoist, rope ladder, fast rope, stokes litter | 14 days/ quarterly | IAW AFI 11-2MDS V3 |
| Small Force | HH-60 | Up to 50 | No expendables/ hoist, rope ladder, fast rope, stokes litter | weekly | IAW AFI 11-2MDS V3 |

IAW – In accordance with
Source: USAF 2018d, 2018-2019.

### 2.1.4.16 Flight Operations – Fixed-Wing Landing Zones (F8)

Established landing zones (LZs) are utilized as part of PR training activities. LZs are located on DoD, federal, state, and local government lands as well as one privately-owned air park. The LZ sites include paved runways or unpaved runways that have been graded and cleared of vegetation by the land owners through regular land management activities. Of the 32 LZs, 27 are paved LZs and five are unpaved LZs.

Table 2.1-22 provides a summary of aircraft and activities that utilize LZs during PR training events.

**Table 2.1-22. Fixed-Wing Landing Zones (F8) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of aircraft, including all variants of the following:<br>A-10<br>A-29<br>A/T-6<br>A400M<br>C-130<br>C-12<br>C-17<br>C-208<br>CASA-212<br>U-28 | Up to 1,000 | NA | 21 days/ biannual | NA |
| Medium Force | HC-130 | 50-100 | NA | 14 days/ quarterly | NA |
| Small Force | HC-130 | Up to 50 | NA | 1 hour/ weekly | NA |

NA – Not applicable
Source: USAF 2018-2019.

### 2.1.4.17 Flight Operations – Parachute Operations and Drop Zones (F9)

PR training encompasses parachute operations. Parachute operations include day and night extractions and day and night infiltration, evasion, and exfiltration activities. These training activities involve:

- Pararescuemen parachute into a remote location to rescue simulated injured personnel. Once secured, arrange for retrieval of the injured and Pararescuemen by ground vehicle or via helicopter at an approved HLZ.
- Pararescuemen by parachute that must then proceed to a designated location for extraction by vehicle or helicopter while avoiding detection by an opposing force.
- Equipment by parachute that is recovered by parachutists or ground party personnel.
- Conduct similar types of operations in an urban setting modifying insertion and extraction to vehicular use or designated HLZs or LZs, if available.

During parachute training, airdrops of personnel and equipment include freefall- and static line-parachute operations from various altitudes landing on unimproved surfaces. Ground and parachute training for rescue personnel occur within previously approved ranges and drop zones (DZs). During parachute training, personnel deploy from the airdrop platforms typically between altitudes of 800 feet AGL and 25,000 feet MSL into the designated area, and equipment between altitudes of 150 feet and 6,000 feet AGL.

The sites are located on DoD, federal, state, and local government lands as well as privately owned lands, although the primary DZs utilized include Aux 6, Bisbee Douglas IAP, Playas Training and Research Center, and Camp Navajo. The DZ sites are naturally open areas or are open areas that have been cleared of vegetation by the land owners through regular land management activities. DZs are typically used for the insertion of Pararescuemen in small squads, normally around eight to 12 personnel. HC-130s conduct bundle drops for training. These drops typically include 500-pound water barrels (over land), training equipment (over land) weighing up to 3,000 pounds, or zodiac boats (over water).

Parachute training occurs over land as well as water training areas. Guardian Angel parachute training typically occurs at Marana Regional Airport or Pinal Air Park with support from a commercial carrier to provide the jump aircraft.

Table 2.1-23 provides a summary of aircraft and activities that occurs during parachute operations.

**Table 2.1-23. Parachute Operations and Drop Zones (F9) Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables / Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Up to four Airdrop Platforms:<br>HH-60<br>AH-64<br>CH/MH-47<br>MH-6<br>CV/MV22<br>C-17<br>HC-130<br>SC-7<br>Light Trucks | Up to 1,000 | No expendables/ Parachutes water barrels rubber bands | 21 days / biannual | No person may make a parachute jump, and no pilot-in-command can allow a parachute jump to be made from the aircraft, in or into Class A, B, C, or D airspace without, or in violation of, the terms of an ATC authorization issued by the ATC facility with jurisdiction over that airspace (14 CFR 105) (FAA 2015). |
| Medium Force | Up to two Airdrop Platforms:<br>HC-130<br>HH-60<br>CH/MH-47<br>SC-7, or<br>CV/MV22<br>Light Trucks | 50-100 | No expendables/ Parachutes water barrels rubber bands | 14 days / quarterly | No person may make a parachute jump, and no pilot-in-command can allow a parachute jump to be made from the aircraft, in or into Class A, B, C, or D airspace without, or in violation of, the terms of an ATC authorization issued by the ATC facility with jurisdiction over that airspace (14 CFR 105) (FAA 2015). |
| Small Force | One Airdrop Platform:<br>HC-130<br>HH-60<br>CH/MH-47<br>C-23<br>SC-7, or<br>CV/MV22<br>Light Trucks | Up to 50 | No expendables/ Parachutes water barrels rubber bands | 4 hours/ daily | No person may make a parachute jump, and no pilot-in-command can allow a parachute jump to be made from the aircraft, in or into Class A, B, C, or D airspace without, or in violation of, the terms of an ATC authorization issued by the ATC facility with jurisdiction over that airspace (14 CFR 105) (FAA 2015). |

| Table 2.1-23. Parachute Operations and Drop Zones (F9) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables / Equipment** | **Duration/ Frequency** | **Restrictions** |
| ATC – Air Traffic Control<br>CFR – Code of Federal Regulations<br>FAA – Federal Aviation Administration<br>Sources: FAA 2015; USAF 2018-2019.<br>Refer to Section 3.1 of this EA for a detailed discussion of Class A, B, C, or D airspace. | | | | | |

### 2.1.4.18 Flight Operations – Close Air Support/Escort (F10)

For PR training activities, close air support consists of fixed- and/or rotary-wing aircraft providing military air support against hostile targets that are in close proximity to friendly forces to ensure successful rescue activities. Aircraft make multiple passes to simulate close air support within the established airspace boundaries. As part of PR training activities, threat emitters (e.g., emitter that simulates a radar tracking location) are set up in general proximity to the event area on the side of roads, rights-of-way, or other approved areas. Threat emitters are set up at approved locations by BMGR, at the Playas Training and Research Center, and within the Tombstone MOA and Fuzzy MOA. Threat emitters are placed in remote locations, away from human activity, and are continuously manned and secured to prevent civilians from accessing the emitter site and to maintain required radiofrequency energy hazard safety distance from the emitter. Threat emitters placed at Playas Training and Research Center are within the fenced area of the facility that is controlled by security staff. Close air support conducts maneuvers to simulate elimination of those threats in support of the PR training activity. Close air support activities occur within existing military ranges, MOAs, LATN areas, and within designated MTRs.

When aircraft such as the A-10 provide air support for PR training missions, they act as escorts and provide close air support to PR forces. The A-10 is ideally suited for this mission as it can fly slowly at lower altitude and, as such, can provide oversight of the operations occurring below it. Table 2.1-24 provides a summary of aircraft and activities that occur during close air support.

| Table 2.1-24. Close Air Support/Escort Activity (F10) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | HH-60<br>AH-64<br>UH-1<br>AH-1<br>A-10<br>AV-8<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B | Up to 1,000 | NA | 21 days/ biannual | NA |
| Medium Force | HH-60<br>A-10 | 50-100 | NA | 14 Days/ quarterly | NA |

| Table 2.1-24. Close Air Support/Escort Activity (F10) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | HH-60<br>A-10 | Up to 50 | NA | 8 Hours/ weekly | NA |
| NA – Not applicable<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.19 Water Operations – HLZs/DZs/Overwater Hoist Operations (W1)

PR activities at water HLZs and DZs involve hoist recovery of personnel and watercraft over water. Low-level helicopter insertions/extractions involve water-based helicopter training sites and drop sites for the deployment of rescue personnel and equipment. Insertion and extraction of personnel is conducted via fast rope, rappel, ladder, hoist, or other means (e.g., parachute). Aircraft fly between just above the surface to 3,000 feet AGL. Water operations routinely take two to six hours to complete and occur during the day and night.

A main surface support safety boat (up to 40 feet long with two outboard engines) is positioned at the water training location to be used for medical emergencies/support as well as recovery of parachutes, packing debris, and personnel. Typical boat operations utilize three to six personnel per boat.

The Combat Rubber Raiding Craft (CRRC) (inflatable Zodiac boat approximately 15 feet in length with single outboard engine) is deployed from helicopters and fixed-wing aircraft using Tethered Duck (T-Duck), Kangaroo Duck (K-Duck), or Rigging Alternate Method Boat (RAMB).

- T-Duck method: this method of deployment involves the CRRC (with motor mounted) being deflated, rolled up, and stored inside the HH-60. Once at the Water Training Area (WTA) (and usually at 30 feet above the water or less), the team lowers the boat into the water using a controlled belay. When the boat is in the water, the team deploys out the other door using a fast-rope, swims to the boat, inflates it (using compressed air), starts the engine, and is underway.
- K-Duck or Hard Duck method: this method of deployment involves the inflated CCRC (with motor unmounted) being secured to the underside of the HH-60. Once at the WTA (and usually at 10 feet above the water or less) the CRRC is released and allowed to "free fall" from the HH-60 to the water. The team jumps in the water, swims to the boat, mounts and starts the engine, and is underway.
- RAMB: this method of deployment involves the CRRC (with motor unmounted) being packed in a container for low-velocity airdrop from a HC-130. The boat is deflated and rigged for rapid inflation and deployment once in the water. The team parachutes into the water, swims to the container and inflates the boat, mounts and starts the engine, and is underway.

Marine flares are dropped during PR training events within marine WTAs. Smoke from the marine flares is used to check wind direction. Daytime PR training at a marine WTA involves

the use of sea dye markers dropped from the helicopter to mark the location of a survivor. The markers also provide a navigational aid for the helicopter aircrew. During PR training events after dark, HH-60 aircrews also use lightsticks. Since lightsticks float and are not biodegradable, every practicable effort is made to retrieve them at the completion of PR training activities in the WTA.

Table 2.1-25 provides a summary of aircraft/watercraft and activities that occur during water HLZ/DZ PR training activity.

**Table 2.1-25. Water HLZs/DZs Activity (W1) Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Up to four airdrop platforms:<br>HH-60<br>AH-64<br>CH/MH-47<br>MH-6<br>CV/MV-22<br>C-17<br>HC-130<br>Light Trucks | Up to 1,000 | Cotton webbing, cardboard<br>CRRC packing container, marine flares, sea dye packets, lightsticks/<br>Parachutes, hoist, rope ladder, fast rope, stokes litter<br>Safety Boat, CRRC | 21 days/ biannual | IAW AFI 11-2MDS V3 |
| Medium Force | Up to two airdrop platforms:<br>C-17<br>HC-130<br>HH-60<br>Light Trucks | 50-100 | Cotton webbing, cardboard<br>CRRC packing container, marine flares, sea dye packets, lightsticks/<br>Parachutes, hoist, rope ladder, fast rope, stokes litter<br>Safety Boat, CRRC | 14 days/ quarterly | IAW AFI 11-2MDS V3 |
| Small Force | 1 airdrop platform:<br>C-17<br>HC-130<br>HH-60<br>Light Trucks | Up to 50 | Cotton webbing, cardboard<br>Marine flares, sea dye packets, lightsticks/<br>Hoist, rope ladder, fast rope, stokes litter<br>Safety Boat, CRRC | 4 hours/ weekly | IAW AFI 11-2MDS V3 |

CRRC – Combat Rubber Raiding Craft
DZ – Drop Zone
HLZ – Helicopter Landing Zone
IAW – In accordance with
Sources: USAF 2018d, 2018-2019.

### 2.1.4.20 Water Operations – Amphibious Operations (W2)

Amphibious operations involve PR training activities in a water environment; loading/unloading of personnel to and from boats; and movement in streams, rivers, and lakes as part of egress/ingress operations. Amphibious activities avoid those waterways used extensively for recreational purposes and sensitive habitats and mostly utilize larger bodies of water given the size requirements for the amphibious watercraft. Watercraft that may participate in amphibious

operations include a safety boat up to 40 feet in length, CRRCs, wave runners, and customized jet skis. Should recreational users and military trainees be present on the same body of water, training activities do not impede canoers, kayakers, or tubers/skiers.

Amphibious operations involve PR training activities in a water environment, loading/unloading teams of five to six personnel (carrying backpacks weighing approximately 50 pounds) to and from boats, and movement in training pools, streams, rivers, and lakes as part of egress/ingress operations. Open circuit (i.e., Self-Contained Underwater Breathing Apparatus [SCUBA]) dive operations of personnel/equipment using commercial lifting techniques are conducted. Divers perform simulated search and rescue operations while in the water. Sonar is used to locate subsurface items such as submerged ammo cans, human dummy, or other objects to be retrieved.

Table 2.1-26 provides a summary of aircraft/watercraft and PR activities that occur during amphibious operations.

**Table 2.1-26. Amphibious Operations (W2) Details per Event**

| Category | Types of Vehicles/ Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Light Trucks | Up to 1,000 | No expendables/ Boats up to 40 feet in length, CRRC, personal watercraft | 21 days / biannual | Avoid sensitive habitats and areas with species of concern. Avoid public boaters; not to impede recreational use. |
| Medium Force | Light Trucks | 50-100 | No expendables/ Boats up to 40 feet in length, CRRC, personal watercraft | 14 days / quarterly | Avoid sensitive habitats and areas with species of concern. Avoid public boaters; not to impede recreational use. |
| Small Force | Light Trucks | Up to 50 | No expendables/ Boats up to 40 feet in length, CRRC, personal watercraft | 4 hours/ quarterly | Avoid sensitive habitats and areas with species of concern. Avoid public boaters; not to impede recreational use. |

CRRC – Combat Rubber Raiding Craft
Source: USAF 2018-2019.

## 2.2 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, existing PR training activities, equipment, personnel, airspace, and training locations currently used by the individual rescue units would continue. USAF PR Forces would continue to:

- Conduct overwater training operations at existing WTAs off the coast of San Diego, California (utilizing sea dye markers, lightsticks, and marine flares) and also other WTAs in Arizona (lakes, rivers, and pools);
- Conduct sortie-operations by HH-60 and HC-130 aircraft within the Sells Low MOA, Jackal Low MOA, 305 East and West LATN areas, BMGR and associated Restricted Areas (R-2301E, R-2305, and R-2304), and the Yuma Tactical Aircrew Combat Training System (TACTS) Range (R-2301W);
- Conduct HH-60 weapons training operations within previously approved target areas at the BMGR involving smoke grenades, aircraft-mounted 7.62 mm, and .50 cal. machine guns;
- Conduct AR operations between HH-60 and HC-130 aircraft in the Sells Low and Jackal Low MOAs; and
- Conduct ground and parachute training for PR personnel within previously approved ranges, HLZs, DZs, LZs, and small arms training ranges.
- Conduct sortie-operations within approved areas;
- Conduct AR operations between HH-60 and HC-130;
- Conduct ground and parachute training; and
- Conduct small arms training at approved target areas.

In addition to the above training events, the USAF would conduct limited biannual Large Force rescue events using pre-approved training sites throughout the southwestern U.S.

Site-specific maps of the current training sites are provided in Appendix A. The PR training centered out of Davis-Monthan AFB utilizes unique training environments across four states: Arizona, California, Nevada, and New Mexico. The PR training sites are located on federal, state, municipal, or private property, on sites that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action and the No-Action Alternative. Under the No-Action Alternative, 151 are currently authorized for PR training, and have been evaluated for their environmental impacts under the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d), the Environmental Baseline Survey: Lease of 20 HLZ/DZs on State Lands, BLM Lands, and Lands Controlled by the USFS (USAF 2015e) and other environmental analysis documents. Of the 151 existing sites, 54 are on DoD land, 38 on land managed by other federal agencies, 41 on land managed by state, county, municipal, or local agencies or tribes, and 18 on private land.

Annual aircraft training sorties on an actual rescue squadron-level under the baseline/No-Action Alternative condition that support/participate in Davis-Monthan AFB PR training events are provided in Table 2.2-1.

**Table 2.2-1. Annual Aircraft Sorties Supporting/Participating in Personnel Recovery Training Events**

| Aircraft | Sorties |
|---|---|
| A-10 | 1,854 |
| HC-130 | 736 |

| Table 2.2-1. Annual Aircraft Sorties Supporting/Participating in Personnel Recovery Training Events | |
|---|---|
| **Aircraft** | **Sorties** |
| HH-60 | 1,148 |
| Other* | 156 |
| TOTAL | 3,894 |
| * Other aircraft include F-16, F-15, F-18, KC-135, helicopters, and general aviation aircraft.<br>Source: Personal communication with AFCEC and Leidos 2018. | |

Under the No-Action Alternative, PR forces would continue existing training activities, utilizing the same equipment, personnel, airspace, and training locations. Limited resources would continue to be over utilized. Less realistic training scenarios would minimize the ability of PR forces to keep pace with changes in the global operating environment. The lack of adequate and available training sites would continue to present challenges in meeting training requirements and sustaining readiness.

## 2.3 PROPOSED ACTION

Under the Proposed Action, the USAF is proposing to improve PR training conducted throughout the southwestern U.S. This includes routine and specialized formal training for PR forces as a well as Large Force joint/multi-national events. Improvements would involve increasing suitable training site access and expanding training activities at some sites.

Overall, there are 175 proposed PR training sites that may be utilized during PR training. As discussed in Section 2.2 of this EA, 151 of these sites are already authorized and used for PR training. Under the Proposed Action, 24 additional sites would be authorized for use. In addition, the range of authorized PR training activities on some current sites would be expanded to include additional activities. Overall, the Proposed Action would include 55 proposed PR training sites on DoD property; 44 on USFS or other federal land; 19 on private property; and 57 on other land (e.g., municipal, city, county, state, or tribal).

Although there are a large number of proposed PR training sites across a large area of the southwest U.S., the proposed PR training activities are typically conducted at a select number of sites that are secure, well maintained, and conveniently located within a reasonable travel timeframe to Davis-Monthan AFB. Specific locations for these proposed PR training sites are detailed in Appendix A.

When planning each PR training event, locations would be selected based on the specific requirements of each training event and in consultation with the appropriate agencies and land managers. Initial planning would begin to identify proposed PR training activities, dates, and sites for use approximately six months prior to the PR training event. A list of sites would generally be finalized approximately three months prior to the PR training event, at which time consultation with the SHPOs, land managers, and other necessary agencies as identified in Section 3.4.3.2 of this EA would be conducted if not already completed. No PR training activity would occur unless SHPO and other necessary agency concurrence is received.

For the proposed PR training sites on non-DoD property, Special Use permits would be required from the affected land managers for use of the proposed sites. The proponent would ensure that

the appropriate permits are current. No training activity would occur unless the appropriate current permit is obtained. The use of PR training sites on private property would be subject to terms and agreements prepared between the USAF and the property land owner.

The proposed PR training sites may be used for multiple training activities. For example, a HLZ/Fixed-Wing LZ may support both helicopter and fixed-wing landings as well as support FARP operations. An accounting of the types of proposed PR training sites and setting in which they are located (e.g., on a DoD property or USFS land) is provided in Table 2.3-1.

**Table 2.3-1. Accounting of Proposed PR Training Site Types**

| Training Site Type | Total | DoD Property | USFS or Other Federal Land | Other Land (Municipal, City, County, State, or Tribal) | Private |
|---|---|---|---|---|---|
| HLZ | 144 | 45 | 38 | 43 | 16 |
| DZ | 79 | 29 | 25 | 18 | 7 |
| LZ | 33 | 13 | 3 | 16 | 1 |
| FARP | 20 | 16 | 0 | 4 | 0 |
| MOUT | 22 | 15 | 1 | 5 | 1 |
| Mounted (Vehicle) Movement/Blackout Driving | 130 | 45 | 36 | 34 | 15 |
| Firing Range | 24 | 19 | 0 | 3 | 2 |
| Camping/Assembly | 97 | 27 | 37 | 17 | 16 |
| Technical Rope | 127 | 33 | 37 | 43 | 14 |
| Water | 18 | 6 | 3 | 9 | 0 |

DZ – Drop Zone
FARP – Forward Aircraft Refueling Point
HLZ – Helicopter Landing Zone
LZ – Fixed-Wing Landing Zone
MOUT – Military Operations in Urban Terrain
USFS – U.S. Forest Service
Source: USAF 2018-2019.

Appendix A details the proposed PR training sites and types of proposed PR training activities, as well as any MOAs or other SUA that may be associated with the training location. The Map Book index numbers in Appendix A correspond to the Figure 2.1-1 and Figure 2.1-2 index maps with more detailed, site-specific maps of the proposed training sites provided in Appendix A.

In addition to the above PR training events, the USAF would continue to conduct limited biannual Large Force training events throughout the southwestern U.S. These events would include using DoD and non-DoD properties. Training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft based at Davis-Monthan AFB. Non-DoD properties include USFS land as well as properties under various federal, state, local, municipal, and private control.

A summary of the estimated annual aircraft sorties that would support/participate in Davis-Monthan AFB rescue training events for the three scenarios is provided in Table 2.3-2 below.

| Table 2.3-2. Estimated Annual Aircraft Sorties Supporting/Participating in Proposed Action Personnel Recovery Training Events (All Training Events) | |
|---|---|
| **Aircraft** | **Sorties** |
| AV-8 | 80 |
| A-10 | 1,480 |
| EC-130H | 80 |
| HC-130 | 660 |
| F-15 | 80 |
| F-16 | 80 |
| F-18 | 40 |
| F-22 | 80 |
| F-35 | 80 |
| HH-60 | 2,140 |
| AH-1 | 80 |
| UH-1 | 160 |
| CH-47 | 120 |
| CH-53 | 80 |
| CV/MV-22 | 160 |
| KC-135 | 40 |
| MQ-1 or MQ-9 | 40 |
| MC-12 | 40 |
| F-21 (Columbian Fighter) | 20 |
| TOTAL | 5,540 |
| Source: USAF 2018-2019. | |

Compared to the annual baseline sorties (Table 2.1-3), the annual sorties under the Proposed Action could increase up to 1,646 sorties. The majority of these sorties would be associated with the Large Force PR training event Red Flag-Rescue. This training event would have a 21-day duration (where only five to seven of those days would be flying days) that would occur twice a year.

## 2.4 ALTERNATIVES DEVELOPMENT AND SCREENING

### Alternative Selection Standards

NEPA and the CEQ regulations mandate the consideration of reasonable alternatives for the Proposed Action. "Reasonable alternatives" are those that also could be utilized to meet the purpose of and need for the Proposed Action. Per the requirements of 32 CFR 989, the USAF EIAP regulations, selection standards are used to identify reasonable alternatives for meeting the purpose and need for the action.

The proposed PR training alternatives must meet the following selection standards based on the Purpose and Need, as discussed in Sections 1.3 and 1.4 of this EA:

1. ADEQUATE AND AVAILABLE

   - Alternatives must include training sites that provide operational utility (i.e., suitable to support all elements of the training scenarios); this may include the size of the site, the type of airspace available, the type of equipment and facilities available, etc.
   - Alternatives must include a sufficient number of training sites that are available to accommodate the number of personnel and the number and types of aircraft (e.g., HH-60, A-10, HC-130, etc.) involved in the training scenario.
   - Alternatives must include training sites that are available to schedule for training events within a reasonable timeframe.

2. REALISTIC

   - Alternatives must include training sites that provide a variety of geographical settings/terrain and elevations (e.g., desert and mountain landscapes, forested and vegetated areas, open water, rural, and urban environments, etc.).
   - Alternatives must include a sufficient number of training sites that are available to minimize training complacency (i.e., familiarity with a specific training site that results in less realistic training and lowers the value of training at that site).

3. PROXIMATE AND EFFICIENT

   - Alternatives must include training sites that are within a reasonable travel timeframe to Davis-Monthan AFB while still providing operational utility in order to optimize use of limited resources (e.g., fuel, time, personnel, etc.).

**Screening of Alternatives**

The selection standards described above were applied to the proposed PR training alternatives to determine which would support PR training requirements and fulfill the purpose and need for the action. Table 2.4-1 compares the alternatives considered in relation to the selection standards.

**Table 2.4-1. Comparison of Alternatives**

| Alternative Descriptions | Selection Standards | | | |
|---|---|---|---|---|
| | Adequate and Available | Realistic | Proximate and Efficient | Meets Purpose and Need |
| | (1) | (2) | (3) | |
| Proposed Action | Yes | Yes | Yes | Yes |
| Conduct PR Training Only on DoD Training Sites | Partially | No | Partially | No |
| Use Training Sites Outside Southwest U.S. | Partially | Yes | No | No |
| No-Action Alternative | Partially | Partially | Partially | No |

Source: USAF 2018-2019.

## Alternatives Eliminated from Further Consideration

Requirements for PR training are established by ACC and AFRC. These requirements include such items as types of training events and specific tasks to be accomplished during these training events, number of training events, and setting for training events based, in part, on current PR missions occurring in-theater. The USAF initially considered several alternatives for supporting PR training. Alternatives that did not meet the selection standards were not carried forward for analysis. These alternatives included the following:

**Conduct PR Training Only on DoD Training Sites.** Under this alternative, PR training events would only occur on DoD training sites (e.g., on Davis-Monthan AFB, BMGR, Fort Huachuca, Camp Navajo, etc.). Although numerous PR training events are currently accommodated on DoD training sites, a wide variety of geographical settings/terrain and elevations are not available on DoD training sites in the southwestern U.S. to accomplish realistic PR training for Large, Medium, and Small Force training events. For example, no HLZ locations on DoD installations are within mountainous environments. Additionally, some DoD training sites experience high demand from units across the DoD and sometimes have limited availability based on the controlling organization. These training areas are not always available for PR forces to train, especially for Large Force training events like Red Flag-Rescue. Non-availability of DoD training sites would limit the number of training sites available, which would cause complacency (familiarity with a specific training site that results in less realistic training and lowers the value of training at that site).

In the case of Large Force training, a greater number of training locations are required to accommodate numerous complex training scenarios that involve multiple ground activities occurring concurrently with a number of different aircraft in a variety of roles to adequately simulate contested search and rescue operations and achieve PR training requirements. Limiting Large Force PR training events to only DoD training sites would not provide an adequate number of locations with a variety of geographic settings to meet the complexity of varying PR training requirements.

Training sites must be located within a reasonable travel timeframe to Davis-Monthan AFB while still providing operational utility (suitable to support all elements of the training scenarios). The majority of sites must be within a reasonable travel timeframe to maximize efficient use of limited resources to include fuel, personnel, and time. PR aircraft typically have a three- to four-hour flight time before they require refueling. Spending more than a few hours to get to and from a training site would limit the overall utility of the training location and would result in less training events being accomplished. PR forces would not be able to conduct the number of training events dictated by the MAJCOMs. This would impact readiness of PR forces and their ability to keep pace with changes in the global operating environment. There are not enough DoD training sites within a reasonable travel timeframe to Davis-Monthan to meet PR training requirements. Additionally, DoD training sites do not provide an adequate number of locations to conduct water training events. Current military swimming pools are not available or of sufficient capacity to accommodate required dive training; as a result, non-military dive pools are required (e.g., University of Arizona Dive Pool and Tucson YMCA Pool) to accomplish dive training. The only military-controlled area that can support PR training events that involve overwater helicopter operations are off the coast of California. As a result, non-military locations within a reasonable travel timeframe to Davis-Monthan AFB that support overwater

helicopter PR training activities (e.g., Roosevelt Lake) are crucial to completing required PR training events.

Limiting PR training events to only DoD training sites would not provide an adequate number of locations within a reasonable travel timeframe to Davis-Monthan AFB, would not provide a wide variety of geographical settings to accomplish realistic PR training, and would not allow adequate time to accomplish required training within the three- to four-hour flight time for PR aircraft operations. The readiness of PR forces would be impacted and they may not be qualified for real-world missions. For these reasons, this alternative was not carried forward for consideration.

**Use Training Sites Outside the Southwestern U.S.** Training sites outside the southwestern U.S. may be available but would be too distant from Davis-Monthan AFB to meet PR training requirements. PR aircraft have limited flight distances (e.g., three- to four-hour flight time) due to fuel capacity, and access to refueling capabilities is limited. For ground training, vehicles would experience additional wear and tear and additional funding would be required for fuel usage. Training sites in other areas of the U.S. are used by units located in those areas and may not be readily available. Additionally, using distant training sites would result in PR training events being substantially longer so fewer PR training events would be accomplished. PR forces would not be able to conduct the number of PR training events dictated by the MAJCOMs. This would impact readiness of PR forces and their ability to keep pace with changes in the global operating environment. PR forces may not be qualified to conduct real-world missions. Therefore, this alternative was not carried forward for consideration.

**Training Sites Considered but Eliminated from Detailed Analysis.** As part of the initial scoping process, proposed training sites were discussed with the various PR organizations for use during PR training events. The information collected during these discussions resulted in the determination that several sites identified had either logistical or environmental concerns that eliminated them from being considered for PR training. These sites include the following:

- Babbitt Ranch 2 – this site contained cultural resources concerns
- Jacks Canyon – this site contained cultural resources concerns
- HLZ 7 – this site contained cultural resources concerns
- HLZ 8 – this site contained cultural resources concerns
- Paige HLZ – this site contained cultural resources concerns
- Payson-RimSide – this site contained cultural resources concerns
- Pedro HLZ – this site contained cultural resources concerns
- Sage – this site contained cultural resources concerns
- Stronghold – this site resulted in noise and visual impacts to nearby sensitive receptors
- Tombstone 1 HLZ – this site is in close proximity to Tombstone 11 and 14 HLZs
- Tombstone 2 HLZ – this site is located within a Wilderness Study Area
- Tombstone 3 HLZ – this site is in close proximity to Tombstone 5 HLZ
- Tombstone 4 HLZ – this site is in close proximity to Tombstone 8 HLZ
- Tombstone 5 HLZ – this site is located within a Wilderness Study Area

- Tombstone 6 HLZ – this site is in close proximity to Tombstone 2 HLZ
- Tombstone 10 HLZ – this site is in close proximity to Tombstone 11 and 14 HLZs
- Tombstone 12 HLZ – this site is in close proximity to critical habitat for the Jaguar
- Tombstone 20 HLZ – this site is in close proximity to critical habitat for the Jaguar

## 2.5 COMPARISON OF ENVIRONMENTAL IMPACTS

Detailed analyses of the affected environment and potential effects of the Proposed Action and No-Action Alternative are discussed in Section 3.0 of this EA. A summary of the Proposed Action and No-Action Alternative for each environmental resource evaluated is presented in Table 2.5-1.

**Table 2.5-1. Summary of Environmental Impacts**

| Resource | No-Action Alternative | Proposed Action |
|---|---|---|
| Airspace Management | No Impact | Less than Significant Impact |
| Air Quality | No Impact | Less than Significant Impact |
| Biological Resources | No Impact | Less than Significant Impact |
| Cultural Resources | No Impact | Less than Significant Impact |
| Environmental Justice | No Impact | No Impact |
| Geology and Soils | No Impact | No Impact |
| Hazardous Materials and Hazardous Waste Management | No Impact | Less than Significant Impact |
| Land Use and Aesthetics | No Impact | Less than Significant Impact |
| Noise | No Impact | Less than Significant Impact |
| Safety | No Impact | Less than Significant Impact |
| Socioeconomics | No Impact | Less than Significant Impact |
| Transportation | No Impact | No Impact |
| Utilities | No Impact | No Impact |
| Water Resources (Groundwater) | No Impact | No Impact |
| Water Resources (Surface) | No Impact | Less than Significant Impact |
| Cumulative Effects | No Impact | Less than Significant Impact |
| Note: Summaries were derived from the respective resource subsections in Section 3.0 of this EA. | | |

# 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

**Affected Environment**

Consistent with the CEQ regulations, the scope of analysis presented in this EA is defined by the potential range of environmental impacts that would result from implementation of the Proposed Action or the No-Action Alternative. CEQ regulations (40 CFR 1501.7) state that an agency shall identify and eliminate from detailed study those issues that are not likely relevant or that have been covered by prior environmental review. This document is "issue driven" in that it concentrates on those resources that may be affected by implementation of the Proposed Action or the No-Action Alternative.

Based on the nature of the activities that would occur under the Proposed Action and No-Action Alternative, it was determined that the potential exists for the following resources to be affected or to create environmental effects: airspace management, air quality, biological resources, cultural resources, land use and aesthetics, hazardous materials and hazardous waste management, noise, safety, socioeconomics, and water resources (surface water). This section presents the baseline environment potentially affected by the Proposed Action and the No-Action Alternative and defines the Region of Influence (ROI) to be studied for each resource affected. The ROI determines the area addressed as the affected environment. Each resource with potential to be affected by the Proposed Action and the No-Action Alternative is analyzed and discussed in Environmental Consequences Section of this EA.

The proposed PR training activities under the Proposed Action and the No-Action Alternative would not result in impacts related to the following resources: environmental justice, geology and soils, transportation, utilities, and water resources (groundwater). The reasons for not addressing these resources in detail are discussed briefly below.

- **Environmental Justice:** Minority populations are populations identified in census data as Hispanic or Latino, Black or African American, Asian, Native Hawaiian and other Pacific Islander, some other race, or two or more races. Low-income populations are families that are living below the U.S. poverty level. Child populations are defined as persons under the age of 5. Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by the President on February 11, 1994. Objectives of the EO, include development of federal agency implementation strategies, and identification of low-income and minority populations potentially affected because of proposed federal actions. In addition to environmental justice issues are concerns pursuant to EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, which directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

  Potential effects on minority or low-income populations and on children would occur primarily at the PR training sites, many of which are on DoD properties. The environmental justice ROI consists of census block groups that encompass PR training sites because they represent the broadest areas within which potential effects could occur on minority low-income, or child populations.

Census block groups are small, uniquely numbered areas that typically encompass between 600 and 3,000 inhabitants. Census block group data may be used to indicate population statistics for each block group, or may be combined to provide population statistics for an entire census tract, county, state or the country. The U.S. Census Bureau collects, maintains and publishes demographics data for the populations within each block group.

The Interagency Federal Working Group on Environmental Justice guidance states that a minority and/or low-income population may be present in an area if the proportion of the populations in the area of interest are "meaningfully greater" than that of the general population, or where the proportion exceeds 50 percent of the total population. Demographics data describing minority, low-income, and child populations are presented for the census block groups encompassing PR training sites that contain environmental justice populations in Table 3.0-1. If a PR training site is not listed in Table 3.0-1, it is because that census block group does not contain an environmental justice population.

For purposes of determining whether environmental justice impacts could occur, a minority, low-income, or child population was determined to be "meaningfully greater" when the percent minority, low-income, or child population for that census block group exceeded the percent minority, low-income, or child population for the county it falls within. For example, the census block group that Delamar Dry Lake PR training site falls within has a low-income population of 34 percent. While this is not greater than 50 percent, Lincoln County (the county that this census block group falls within) has a low-income population of 30 percent, and therefore this census block group was determined to have an environmental justice population. These occurrences have been noted in Table 3.0-1. Because it is unlikely that a census block group would have a child population over 50 percent, only the "meaningfully greater" definition is applicable for this population type. A census block group only has to meet one of these thresholds for one population group to be considered to contain an environmental justice population.

There are low-income, minority, and child populations within roughly half of the census block groups that contain PR training sites (see Table 3.0-1) for census block groups with environmental justice populations. However, no disproportionate effects on minority, low-income, or youth populations are expected. The vast majority of the PR training sites that fall within census block groups with environmental justice populations are located at either existing airports or military bases, or are located in remote areas far from residential and commercial development. The few PR training sites located within or in close proximity to populated areas occur at existing hospitals, and the University of Arizona, as well as within three residential areas. Prior to the use of PR training sites, surveys would be conducted to assess the adequacy and safety of specific locations for intended event execution. Furthermore, PR training operations would be short in duration and infrequent, and most PR training activities occur at pre-authorized sites. For these reasons, disproportionate effects on low-income, minority, and child populations are not expected and are not analyzed in more detail in this EA.

| Table 3.0-1. Low-income, Minority, and Child Populations Near PR Training Sites | | | | |
|---|---|---|---|---|
| **Census Block Group** | **PR Training Site(s)** | **Minority Population (%)** | **Low-Income Population (%)** | **Child Population (%)** |
| 040050022001 | Camp Navajo Army Base;<br>Fort Tuthill;<br>L Tank;<br>Metz Tank;<br>Navajo East;<br>Navajo Railroad;<br>Navajo West;<br>Neill Flat;<br>Rogers Lake (Logger Camp);<br>Rogers Napier;<br>Rogers Wren. | 16% | 57% | 7% |
| 060730187001 | Camp Pendleton PDL;<br>Camp Pendleton Off-Road Trail;<br>Camp Pendleton HOLF;<br>Camp Pendleton NFG;<br>Camp Pendleton Red Beach. | 39% | 49%* | 15%* |
| 320179502001 | Delamar Dry Lake | 9% | 34%* | 13%* |
| 060250111002 | El Centro | 67% | 38% | 7% |
| 040030014013 | Hubbard;<br>Hubbard (Tombstone);<br>Tombstone Circular;<br>Tombstone Rectangular;<br>Humor;<br>Libby Army Airfield. | 33% | 56% | 37%* |
| 060650467001 | March ARB | 39% | 16% | 10%* |
| 040190043272 | Titan Missile Museum | 39% | 35% | 7%* |
| 040239661051 | Devon | 93% | 58% | 6% |
| 040050015003 | Elk;<br>Mormon Lake – USFS Helitack Base. | 43% | 70% | 5% |
| 350039764003 | Catron County Fairgrounds;<br>Reserve Ranger Station. | 30%* | 65% | 6%* |
| 040070008001 | Grapevine HLZ/DZ | 24% | 55% | 0% |
| 040119601001 | Hannagan Meadow – USFS Helitack Base;<br>Helibase Circular;<br>KP Circular;<br>KP Tank;<br>Sprucedale Guest Ranch. | 64% | 33% | 5% |
| 040179642012 | Overgaard – USFS Helitack Base | 2% | 71% | 2% |
| 040139413002 | Verde River | 100% | 70% | 8%* |
| 040030005004 | Bisbee Douglas IAP (Chang Noi DZ) | 69% | 0% | 0% |
| 040190043163 | Blackhills HLZ/DZ;<br>Penitas HLZ/DZ;<br>Pond HLZ/DZ;<br>Prieto HLZ/DZ;<br>Rancho Seco HLZ/DZ;<br>Ruby Fuzzy Paladins;<br>Sierrita HLZ/DZ. | 18% | 47%* | 0% |
| 040199409001 | Black Mountain Reservoir | 89% | 62% | 8%* |
| 040210024003 | Brooke HLZ/DZ | 65% | 58% | 1% |

| Table 3.0-1. Low-income, Minority, and Child Populations Near PR Training Sites | | | | |
|---|---|---|---|---|
| **Census Block Group** | **PR Training Site(s)** | **Minority Population (%)** | **Low-Income Population (%)** | **Child Population (%)** |
| 040019705021 | Caldwell Meadows | 14% | 31% | 9%* |
| 040239661011 | Caliente HLZ/DZ | 65% | 36% | 3% |
| 040050010003 | City of Flagstaff | 31% | 94% | 0% |
| 040179604003 | City of Winslow | 73% | 52% | 4% |
| 320030057023 | Colorado River | 48% | 66% | 8%* |
| 040210008021 | Coolidge Airport | 40% | 13% | 7%* |
| 040050009002 | Flagstaff Pulliam Airport | 27% | 21% | 11%* |
| 040050017001 | H. A. Clark Memorial Field | 26% | 44%* | 5% |
| 040030003031 | Jeep HLZ/DZ;<br>Kinder HLZ/DZ;<br>Pinnacle HLZ/DZ. | 19% | 19% | 8%* |
| 040030002012 | Jenna HLZ/DZ | 43% | 35% | 8%* |
| 040159539002 | Kingman Airport | 16% | 43% | 8%* |
| 040159524002 | Lake Havasu Airport | 30%* | 45%* | 5% |
| 040239661045 | Lake Patagonia | 85% | 41% | 9%* |
| 040190044311 | Marana Regional Airport | 27% | 42%* | 0% |
| 040190043231 | Sahuarita Lake | 52% | 29% | 14%* |
| 040079402001 | Salt River High;<br>Salt River Low | 99% | 86% | 12%* |
| 040132172012 | Scottsdale Osborn | 33% | 47%* | 5% |
| 040190015001 | University of Arizona Medical Center | 21% | 81% | 0% |
| 040179605002 | Winslow-Lindbergh Regional Airport (Wiseman Aviation) | 71% | 72% | 4% |
| 040050022004 | Babbitt Ranch 1;<br>Babbitt Ranch 3;<br>Bone Crusher;<br>Cattle LTFW;<br>Flagstaff Hotshot – USFS Helitack Base;<br>FR 320/311;<br>Gerbil;<br>Grand Canyon Valle Airport;<br>Panda;<br>Powerline;<br>Sinkhole;<br>Squirrel. | 38% | 68% | 14%* |
| 040210020011 | Eloy North;<br>Eloy South. | 54% | 55% | 8%* |
| 040210021033 | Pinal Air Park | 34% | 30% | 12%* |
| 040190044241 | Three Points Public Shooting Range | 44% | 52% | 7%* |

ARB – Air Reserve Base
DZ – Drop Zone
HLZ – Helicopter Landing Zone
HOLF – helicopter outlying landing field
PDL – Piedra de Lumbre
PR – Personnel Recovery
USFS – U.S. Forest Service

* indicates a "meaningfully greater" population where the percent low-income, minority, or child population in that census block group is greater than the percent low-income, minority, or child population of the county it falls within.

Sources: U.S. Census Bureau 2017; USEPA 2017.

- **Geology and Soils:** The Proposed Action does not include construction or significant ground-disturbing activities other than the potential to set up tents, vehicle movements, and use of helicopters. Specifically, the ground surface may be slightly disturbed, within 6 inches of ground surface, from placement of tent stakes in areas already disturbed for this purpose. Stakes would be recovered at the completion of the training event. Vehicle movement would mainly occur on designated roads and trails with the exception of occasional off-road driving occurring during PR training activities to pick up isolated personnel that may be located just outside a HLZ; this is typically conducted within 200 feet of the HLZ and occurs approximately five percent of the time. However, it should be noted that no off-road driving would occur at the BMGR or Fort Huachuca. Also, for any PR training sites located on USFS land, motor vehicle use off designated roads and trails and outside designated areas would be prohibited in compliance with 36 CFR 212.50. Vehicle movement could create some rutting along roadways and trails. Use of the PR training sites would comply with existing agreements and use restrictions. Also, the use of helicopters at HLZs and DZs may impact soils during takeoff and landing due to erosion from propeller wash. However, PR training events at HLZ/DZ sites would be temporary and intermittent, and would primarily occur within previously disturbed areas. Effects from propeller wash would be greater at sites that are used more frequently but would still be considered minor. Furthermore, prior to the start of PR training events, the USAF would photo document the ground conditions and would repair any damage or rutting to pre-training event conditions. Because the Proposed Action would not have the potential to significantly impact geology and soils, impacts to soils and geology are not analyzed in more detail in this EA.
- **Transportation:** Transportation associated with the Proposed Action and No-Action Alternative would be temporary and intermittent only occurring in support of PR training activities. Vehicles would utilize existing roadways to transit from one location to another in support of PR training activities, logistics, and personnel transport. The minimal traffic generated during PR training activities would not substantially increase traffic or affect the existing level of service on regional roadways. Therefore, impacts on transportation are not expected and are not analyzed in more detail in this EA.
- **Utilities:** PR training activities under the Proposed Action and the No-Action Alternative would not require the use of utilities or infrastructure other than those at established areas. Because PR training events would be temporary and intermittent, impacts on utilities are not expected and are not analyzed in more detail in this EA.
- **Water Resources (Groundwater, Stormwater, and Floodplains):** Implementing the Proposed Action or No-Action Alternative would result in no impact to groundwater resources, stormwater, or floodplains. The Proposed Action and No-Action Alternative do not include any construction or substantial ground-disturbing activities that would result in an increase in impervious surfaces or impact drainages that could interfere with groundwater recharge. Ground surface may be slightly disturbed but would not reach the depths that would affect groundwater resources, stormwater, or floodplains. Also, the Proposed Action and No-Action Alternative would not involve drilling, dredging, dewatering, or groundwater extraction. Therefore, impacts on groundwater resources, stormwater, and floodplains are not expected and are not analyzed in more detail in this EA. However, as noted above, the Proposed Action and the No-Action Alternative

would have the potential to impact surface water resources, which is further discussed in Section 3.10 of this EA.

**Environmental Consequences**

This section presents the results of the analysis of potential environmental consequences associated with the implementation of the Proposed Action and the No-Action Alternative. Changes to the natural and human environments that may result from implementation of the Proposed Action and the No-Action Alternative were evaluated relative to the existing environment as described in the Affected Environment. The potential for environmental consequences was evaluated utilizing the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27).

The following discussion elaborates on the nature of the characteristics that might relate to various impacts:

- ***Short-term or long-term.*** These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts would be those that are temporary and short-lived. Long-term impacts would be those that would be more likely to be persistent and chronic.
- ***Direct or indirect.*** A direct impact would be caused by and occurs contemporaneously at or near the location of the action. An indirect impact would be caused by a proposed action and might occur later in time or be farther removed in distance but could still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of a proposed action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- ***Negligible, minor, moderate, or major.*** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts would generally be perceptible but would be at the lower level of detection. A minor effect would be slight, but detectable. A moderate impact would be readily apparent but less than significant. A major impact would be significant.
- ***Significant or beneficial.*** A significant impact would be one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact would be one having positive outcomes on the man-made or natural environment. A single act might result in significant impacts on one environmental resource and beneficial impacts on another resource.
- ***Context.*** The context of an impact could be localized or more widespread (e.g., regional, global).

**FAA**

The Proposed Action includes activation of the Playas Temporary MOA. Temporary MOAs are designated to accommodate the military's need for additional airspace to periodically conduct events that supplement training. According to FAA Order JO 7400.2M, Chapter 25, Military Operations Areas, Temporary MOAs may be established for a period not to exceed 45 days (FAA 2019d).

FAA SUA actions are subject to environmental impact analysis pursuant to NEPA as implemented by the CEQ regulations. The proposed PR training encompasses many related actions, one of which is utilizing the Playas Temporary MOA. The USAF would use the Playas Temporary MOA for two training events per year over a period of four years and anticipates that the action would remain the same for four years. In the event any PR training event scheduled for the future four years differ from those analyzed here, a new environmental analysis would be conducted to the extent necessary and appropriate. The FAA action only involves establishing the Playas Temporary MOA. The FAA would independently review this EA to ensure that it complies with FAA NEPA compliance requirements before establishing the Playas Temporary MOA. The FAA would adopt this EA and produce their own FONSI Record of Decision (ROD) in support of establishing the Playas Temporary MOA. The FAA determines whether to issue a FONSI based on final review of this EA.

FAA Order 1050.1F defines impact categories specific for FAA NEPA analysis (FAA 2015). Table 3.0-2 shows the correspondence between FAA impact categories and the impact categories in this EA.

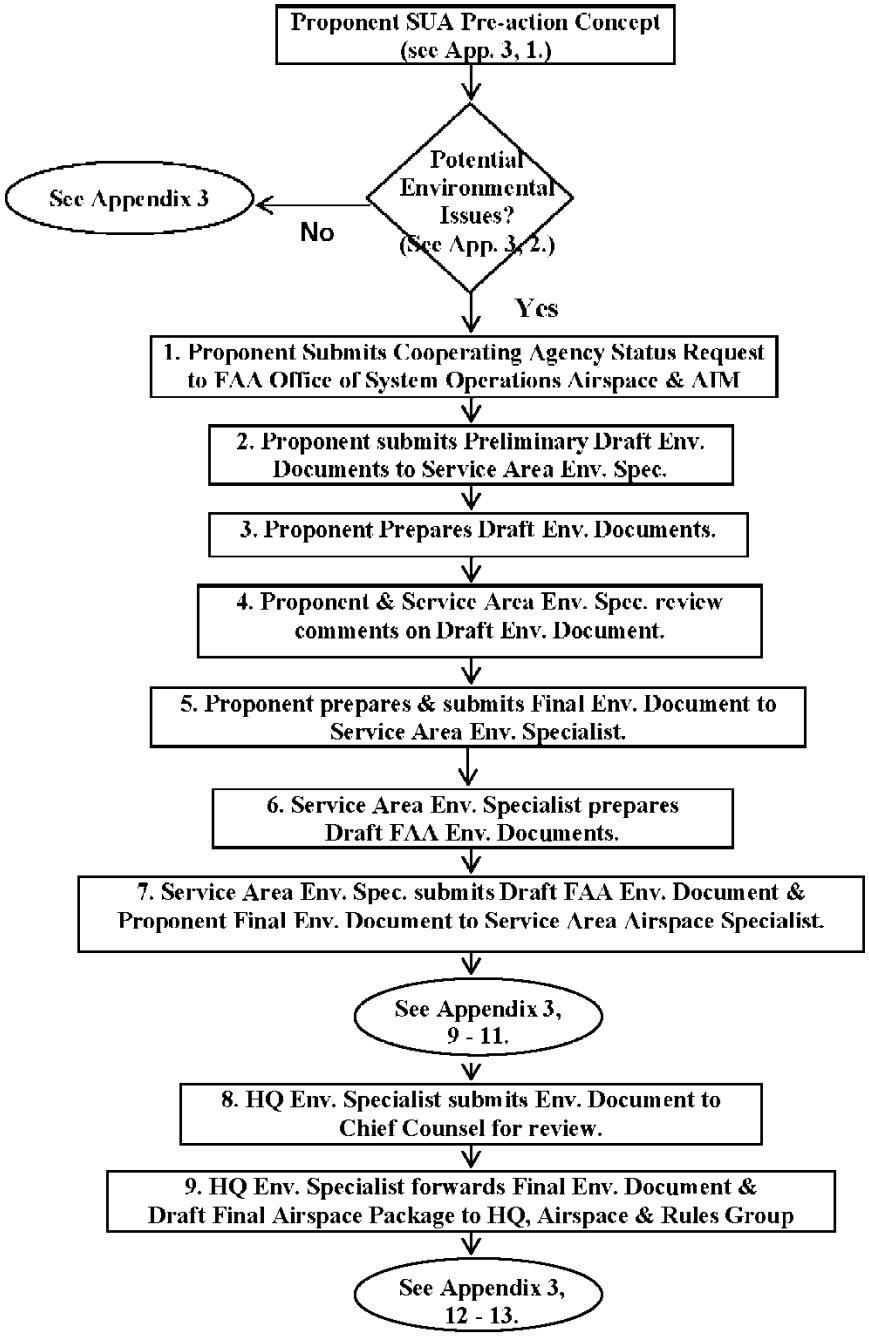
**Table 3.0-2. Comparison of FAA and PR EA Impact Categories Applicable to Establishing the Playas Temporary MOA**

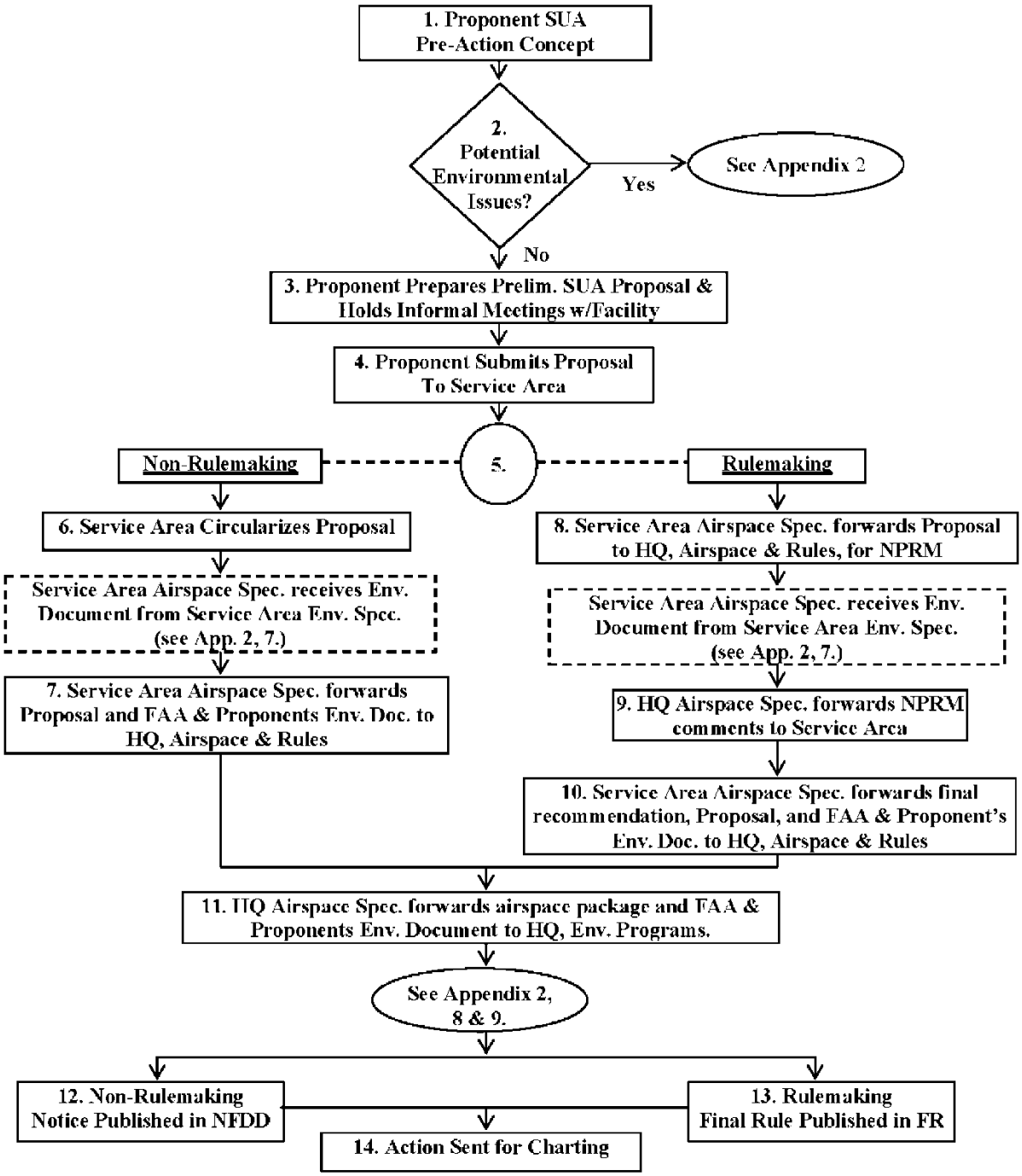
| FAA Impact Category | PR EA Impact Category | PR EA Section |
|---|---|---|
| Air Quality | Air Quality | 3.2.3.1.3.1 |
| Biological Resources (including fish, wildlife, and plants) | Biological Resources | 3.3.3.1.3.5 |
| Climate | Air Quality | 3.2.3.1.3.1 |
| Coastal Resources | NA[1] | |
| Department of Transportation Act, Section 4(f) | NA[2] | |
| Farmlands | NA[3] | |
| Hazardous Materials, Solid Waste, and Pollution Prevention | Hazardous Materials and Hazardous Waste Management | 3.6.3.1.3.1 |
| Historical, Architectural, Archaeological, and Cultural Resources | Cultural Resources | 3.4.3.2.3.1 |
| Land Use | Land Use and Aesthetics | 3.5.3.1.3.1 |
| Natural Resources and Energy Supply | Irreversible and Irretrievable Commitment of Resources | 4.2 |
| Noise and Compatible Land Use | Noise<br>Land Use and Aesthetics | 3.7.3.1.3.1 |
| Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety | Safety<br>Socioeconomics | 3.0<br>3.8.3.1.3.1<br>3.9.3.1.3.1 |
| Visual Effects (including light emissions) | Land Use and Aesthetics | 3.5.3.1.3.1 |
| Water Resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers) | Water Resources | 3.0<br>3.3.3.1.3.5<br>3.10.3.1.3.1 |

Notes: NA – not applicable
NA[1] – The Playas Temporary MOA is not in a coastal zone.
NA[2] – Special Use Airspace Actions are exempt from Section 4(f) of the Department of Transportation Act pursuant to the U.S. Department of Defense Reauthorization Statute (Public Law 105-85, Div. A, Title X, Section 1079).
NA[3] –While there is important farmland (e.g., prime and farmland of statewide importance) within the 20 nautical

| Table 3.0-2. Comparison of FAA and PR EA Impact Categories Applicable to Establishing the Playas Temporary MOA | | |
|---|---|---|
| **FAA Impact Category** | **PR EA Impact Category** | **PR EA Section** |
| | mile by 20 nautical mile boundary of the Playas Temporary MOA (USDA NRCS 2019), the activation of the Playas Temporary MOA will not cause ground disturbance that would impact the farmland or result in conversion of this land to non-agricultural use. | |

Coastal resources, Department of Transportation Act Section 4(f), and farmlands will not be analyzed in detail with respect to the Playas Temporary MOA. The Playas Temporary MOA is not within the coastal environment, so coastal resources would not be impacted. Also, SUA actions are exempt from consideration of Section 4(f) properties. Establishment of the Playas Temporary MOA for proposed PR training would not convert important farmlands (prime, unique, or statewide or locally important) to non-agricultural use.


Proponent SUA Pre-action Concept
(see App. 3, 1.)
Potential Environmental Issues?
(See App. 3, 2.)
No
See Appendix 3
Yes
1. Proponent Submits Cooperating Agency Status Request to FAA Office of System Operations Airspace & AIM
2. Proponent submits Preliminary Draft Env. Documents to Service Area Env. Spec.
3. Proponent Prepares Draft Env. Documents.
4. Proponent & Service Area Env. Spec. review comments on Draft Env. Document.
5. Proponent prepares & submits Final Env. Document to Service Area Env. Specialist.
6. Service Area Env. Specialist prepares Draft FAA Env. Documents.
7. Service Area Env. Spec. submits Draft FAA Env. Document & Proponent Final Env. Document to Service Area Airspace Specialist.
See Appendix 3, 9 - 11.
8. HQ Env. Specialist submits Env. Document to Chief Counsel for review.
9. HQ Env. Specialist forwards Final Env. Document & Draft Final Airspace Package to HQ, Airspace & Rules Group
See Appendix 3, 12 - 13.


1. Proponent SUA Pre-Action Concept
2. Potential Environmental Issues?
Yes
See Appendix 2
No
3. Proponent Prepares Prelim. SUA Proposal & Holds Informal Meetings w/Facility
4. Proponent Submits Proposal To Service Area
5.
Non-Rulemaking
Rulemaking
6. Service Area Circularizes Proposal
Service Area Airspace Spec. receives Env. Document from Service Area Env. Spec. (see App. 2, 7.)
7. Service Area Airspace Spec. forwards Proposal and FAA & Proponents Env. Doc. to HQ, Airspace & Rules
8. Service Area Airspace Spec. forwards Proposal to HQ, Airspace & Rules, for NPRM
Service Area Airspace Spec. receives Env. Document from Service Area Env. Spec. (see App. 2, 7.)
9. HQ Airspace Spec. forwards NPRM comments to Service Area
10. Service Area Airspace Spec. forwards final recommendation, Proposal, and FAA & Proponent's Env. Doc. to HQ, Airspace & Rules
11. HQ Airspace Spec. forwards airspace package and FAA & Proponents Env. Document to HQ, Env. Programs.
See Appendix 2, 8 & 9.
12. Non-Rulemaking Notice Published in NFDD
13. Rulemaking Final Rule Published in FR
14. Action Sent for Charting

## 3.1 AIRSPACE MANAGEMENT

### 3.1.1 Definition of Resource

Airspace is a national resource supporting a broad spectrum of aviation operations in the national interest. The FAA is responsible for the control and use of the U.S. National Airspace System (NAS). This authority dates to the Federal Aviation Act of 1958 and is addressed in 49 United States Code (U.S.C.) 40103, Sovereignty and Use of Airspace. The FAA created the NAS to protect persons and property on the ground, and to establish a safe and efficient operational environment for civil, commercial, and military aviation.

All pilots, civil and military, must understand the classes of airspace in the NAS since they are highly likely to fly through these periodically. Access to this airspace is required for PR training. Table 3.1-1 provides a description and explanation of this airspace.

**Table 3.1-1. Classes of Airspace in the National Airspace System**

| Airspace Class | Description |
|---|---|
| A | Class A encompasses the en route, high-altitude environment used by aircraft to transit from one area of the country to another. All aircraft in Class A must operate under IFR. Class A airspace exists within the United States from 18,000 feet MSL to and including 60,000 feet MSL, including the airspace overlying the waters within 12-nautical miles off the coast of the 48 contiguous states and Alaska. This is controlled airspace. |
| B | All aircraft, both IFR and VFR, in Class B airspace are subject to positive control from ATC. Class B airspace exists at 37 high-density airports in the United States as a means of managing air traffic activity around the airport. It is designed to regulate the flow of air traffic above, around, and below the arrival and departure routes used by air carrier aircraft at major airports. Class B airspace generally includes all airspace from an airport's established elevation up to 10,000 feet MSL, and, at varying altitudes, out to a distance of approximately 30 nautical miles from the center of the airport. Aircraft operating in Class B airspace must have specific radio and navigation equipment, including an altitude encoding transponder, and must obtain ATC clearance. This is controlled airspace. Class B airspace applicable to this EA includes: Phoenix Sky Harbor International, Los Angeles International, Marine Corps Air Station Miramar, San Diego International/Lindbergh Field, and Las Vegas/McCarran International. |
| C | Class C airspace is charted around airports with airport traffic control towers and radar approach control. It normally has two concentric circular areas with a diameter of 10 and 20 nautical miles. Variations in the shape are often made to accommodate other airports or terrain. The top of Class C airspace is normally set at 4,000 feet AGL. Aircraft operating in Class C airspace must have specific radio and navigation equipment, including an altitude encoding transponder, and must obtain ATC clearance. VFR aircraft are only separated from IFR aircraft in Class C airspace (i.e., ATC does not separate VFR aircraft from other VFR aircraft, as this is the pilots' responsibility). This is controlled airspace. Class C airspace applicable to this EA includes: Davis-Monthan AFB and Tucson International. |

| Table 3.1-1. Classes of Airspace in the National Airspace System | |
|---|---|
| **Airspace Class** | **Description** |
| D | Class D airspace is under the jurisdiction of a local Air Traffic Control Tower. The purpose of the Control Tower is to sequence arriving and departing aircraft and direct aircraft on the ground. The purpose of Class D airspace is to provide airspace within which the Control Tower can manage aircraft in and around the immediate vicinity of an airport. Aircraft operating within this area are required to maintain radio communication with the Control Tower. No separation services are provided to VFR aircraft. The configuration of each Class D airspace area is unique. Class D airspace is normally a circular area with a radius of 5 miles around the primary airport. This controlled airspace extends upward from the surface to about 2,500 feet AGL. When instrument approaches are used at an airport, the airspace is normally designed to protect these procedures. This is controlled airspace. All airports in this EA that have an open and operating Control Tower and do not have Class B or Class C airspace have Class D airspace. |
| E | Class E airspace is a general category of airspace that is intended to provide air traffic service and adequate separation for IFR aircraft from other aircraft. Although Class E is controlled airspace, VFR aircraft are not required to maintain contact with ATC but are only permitted to operate in visual meteorological conditions. Class E airspace generally exists from 700/1,200 feet AGL to the bottom of Class A airspace at 18,000 feet MSL. It tends to fill in the gaps between Class B, C, and D airspace at altitudes below 18,000 feet MSL. Federal Airways, including Victor Airways below 18,000 feet MSL are classified as Class E airspace. This is controlled airspace. |
| G | Airspace not designated as Class A, B, C, D, or E is considered uncontrolled (Class G) airspace. ATC does not have the authority or responsibility to manage of air traffic within this airspace. |
| AGL – above ground level<br>ATC – Air Traffic Control<br>IFR – Instrument Flight Rules<br>MSL – mean sea level<br>VFR – Visual Flight Rules<br>Source: FAA 2017. | |

Some responsibilities related to NAS operations are assigned by the FAA to qualified entities like the Armed Services and contract ATC personnel. Examples in the region being analyzed for this EA include: USAF air traffic controllers at Davis-Monthan AFB, Luke AFB, Gila Bend AF Auxiliary Field, Army Air Traffic Controllers at Libby AAF/R2303, Marine Air Traffic Controllers at Marine Corps Air Station (MCAS) Yuma, Navy air traffic controllers at San Clemente Island, and military personnel who schedule access to SUA. SUA is defined and described in FAA JO 7400.2M, Procedures for Handling Airspace Matters (FAA 2019d). In that order, Part 5, Special Use Airspace, states: "SUA is airspace of defined dimensions wherein activities must be confined because of their nature, or wherein limitations may be imposed upon aircraft operations that are not a part of those activities." For the U.S. military, certain SUA enables inherently hazardous test and training activities while ensuring the safety of non-participating aircraft through restricting airspace access or providing notification of potential hazards.

The SUA required for PR training is described in Section 2.0, Description of Proposed Action and Alternatives, which notes the following:

- RAs are listed in Section 2.1.4.12 and the activities in those RAs are listed in Table 2.1-17. There are also Warning Areas included in these references. A Warning Area is airspace of defined dimensions designated over international waters that contains activity which may be hazardous to nonparticipating aircraft. The purpose of such Warning Areas is to warn nonparticipating pilots of the potential danger (FAA 2019d).
- MOAs are listed in Sections 2.1.4.9 and 2.1.4.10 and the activities in the MOAs are listed in Tables 2.1-14 and 2.1-15. MOAs are SUA but do not support hazardous flight activity. Air combat maneuvers, air intercepts, and aerobatic flight all occur in MOAs but aerial gunnery and air-to-ground bombing does not. MOAs are established to segregate IFR traffic from military flight activities and to provide notification to VFR pilots that military activity may be ongoing that requires constant diligence to comply with 14 CFR 91.113 which establishes right-of-way rules and stipulates any person operating an aircraft, weather and visibility permitting, must see and avoid other aircraft. SUA and other training sites proposed for this EA are also depicted in Figure 2.1-3.

Since all airspace in the NAS is a national resource, military personnel who schedule access to SUA must balance priorities and requirements against users' requests for access. While the FAA provides ATC services and clearances to aircraft entering and exiting SUA throughout most of the NAS, the approval to occupy the airspace for a specified period of time comes from the military unit scheduling the airspace, referred to as the "using agency" in FAA JO 7400.2M (FAA 2019d). Appendix C provides additional information on airspace. One example is the 56th Fighter Wing at Luke AFB, Arizona, which schedules large areas of SUA to include R-2304 and R-2305 and the Sunny MOA. Using agency designation for the 56th Fighter Wing does not mean only F-16 and F-35A aircraft based at Luke AFB are scheduled access to the airspace, although those squadrons may be given priority in certain circumstances. The activities analyzed in this EA require access to airspace scheduled by units other than those based at Davis-Monthan AFB, which means airspace identified in this EA may not always be available for PR training events.

The airspace related to the Proposed Action and No-Action Alternative are described in Section 2.1.4. RAs and MOAs are discussed in Sections 2.1.4.12, 2.1.4.9, and 2.1.4.10, and are labeled as F4 (RAs), F1 (Established MOA), and F2 (Temporary MOA). F3 is LATN, also described in Section 2.1.4.11, Table 2.1-16, and depicted in Figure 2.1-4. F5 is Other Airspace, which includes MTRs and AR Tracks as described in Section 2.1.4.13 and Tables 2-18 and 2-19. F6 is Forward Aircraft Refueling Point Operations, described in Section 2.1.4.14 and Table 2.1-20. F7 is HLZs, described in Section 2.1.4.15 and Table 2.1-21. F8 is Fixed-Wing LZs, described in Section 2.1.4.16 and Table 2.1-22. F9 is Parachute Operations and DZs, described in Section 2.1.4.17 and Table 2.1-23. Close Air Support/Escort is F10, described in Section 2.1.4.18 and Table 2.1-24.

The Water Operations - HLZs/DZs/Overwater Hoist Operations (W1) are described in Section 2.1.4.19 and Table 2.1-25. Both aircraft and airspace are associated with this water operations activity.

The airspace management ROI for PR training events includes: civil and military airfields; Classes B, C, or D airspace charted around the airfields; regional SUA and other airspace

scheduled for military flight operations; and other NAS airspace shared by civil and military users.

### 3.1.2 Affected Environment

The PR training described in this EA includes all the airspace, described as resources in Section 3.1.1 and Table 3.1-1. FAA and military air traffic controllers would provide ATC services, and SUA, when required, would be scheduled by the using agencies identified in FAA JO 7400.2M (FAA 2019d). These using agencies include:

- Davis-Monthan AFB
- Luke AFB
- U.S. Marine Corps (USMC) Yuma
- Arizona Air National Guard
- Arizona Army National Guard (AZARNG)
- USMC Camp Pendleton
- U.S. Army, Fort Huachuca
- Naval Air Warfare Center
- Cannon AFB
- Nellis AFB

As stated in Section 1.2, PR exists to quickly return friendly forces to duty. From an airspace perspective, this involves personnel on the ground and aircraft (manned and unmanned) focused on retrieving or ensuring the safe passage and recovery of those personnel. Mission aircraft could be operating in any combination of airspace described in Section 3.1.1, but the last tactical element of the PR mission involves airspace at lower altitudes since the personnel being recovered or supported are on the ground.

FAA control of the region analyzed in this EA is provided by air traffic controllers assigned to Albuquerque Center, Los Angeles Center, Phoenix Terminal Radar Approach Control, Tucson Terminal Radar Approach Control, Luke AFB RAPCON, Libby AAF Ground Control Approach, MCAS Yuma Approach Control, Southern California Terminal Radar Approach Control, and Las Vegas Terminal Radar Approach Control. Other ATC services are provided as required by the airspace being transited, e.g., control towers (FAA or military) for Class D, military for certain SUA. In Class G airspace or when flying VFR in Class E airspace, see-and-avoid is required per 14 CFR 91.113 and other federal aviation regulations. Phoenix, Southern California, and Las Vegas Terminal Radar Approach Control are the FAA facilities that would manage portions of the routes of flight to the airspace associated with ingress and egress from the last tactical element of the PR mission.

The FAA Air Traffic Activity System reports the following operations for these facilities in 2018 (FAA 2019c).[11]

[11] ATADS – TRACON

- Phoenix (P50 is facility identifier)
  - Total operations: 713,211
  - Military operations: 8,756 (1.23 percent of the total)
- Tucson (U90 is facility identifier)
  - Total operations: 191,811
  - Military operations: 49,905 (26 percent of the total)
- Southern California (SCT is facility identifier)
  - Total operations: 2,261,004
  - Military operations: 179,213 (7.93 percent of the total)
- Las Vegas (L30 is facility identifier)
  - Total operations: 596,708
  - Military operations: 3,659 (0.61 percent of the total)

The Proposed Action and No-Action Alternative for conducting PR training activities in the airspace identified in this EA are described in Table 2.1-4. Section 2.1.4.9 describes the resources and guidance that would be used for mission flight planning. Before mission planning can occur, advance airspace coordination must be completed. This involves the using agencies and ATC service providers (controlling agencies) for SUA, the terminal radar approach control facilities, and the airport managers at airports identified as potential PR training sites.

The PR training activities analyzed in this EA require access to airspace scheduled by units other than those based at Davis-Monthan AFB, which means airspace identified in this EA may not always be available for PR training. The ten using agencies identified at the beginning of Section 3.1.2 that schedule SUA to support PR training includes five USAF units. The airspace scheduled by these using agencies supports training, test profiles, and other readiness requirements across all DoD services. The USAF does internally identify assigned users for each of their operated or owned ranges which effectively links range capabilities to specific training requirements tasked to Air Force units. This USAF process, outlined in AFMAN 13-212, Volume 1, Range Planning and Operations, is important to service-specific planning and scheduling but is not intended to define the overall military readiness supported by USAF operated or owned ranges like BMGR East or Melrose Air Force Range. PR training events are supported with regional airspace access to the maximum extent possible to meet annual training requirements.

Periodically, there may also be limited opportunities to support PR training at military airfields based on their individual operational requirements or real-world events. Regional civil airports may have limited availability due to anticipated surges in transient aircraft or runway, taxiway, and ramp closures for maintenance. At no time will one hundred percent of the airspace and PR training sites identified ever be available during advance airspace coordination based on the timing of the proposed PR training event (both days and hours requested).

The completion of advance airspace coordination allows the PR training event planners to define how and where the airspace and training sites would be utilized. Section 2.3 acknowledges that the number and types of aircraft supporting PR training events are variable based on availability.

Once participation is confirmed, the types and number of aircraft that would be flying in the airspace can be used to prepare an Air Tasking Order.

The Air Tasking Order assigns specific missions to certain squadrons or aircraft with specific mission capabilities. It normally includes details to include aircraft call signs, targets or airspace zones for operations, and controlling agencies. Air Tasking Orders prepared for ongoing combat or contingency operations differ from the orders prepared to support PR training events. In FAA airspace, and due to the time and access boundaries established during advance airspace coordination, these orders essentially constitute the flying schedule that all parties (federal, military, state, and civil) have agreed to and are prepared to support.

#### 3.1.2.1 Department of Defense Property

Table A-1 in Appendix A of this EA identifies PR training sites on DoD property. The PR training activity column (fourth) identifies whether flight operations are proposed at an individual PR training site (F1 through F10 and W1). The fifth column identifies SUA and MTRs overlying or in proximity to the site. NAS airspace in Table 3.1-1 is not listed in this column of Table A-1. Of the 55 sites in the table, three have ground-only activity and 34 are located within RAs or Warning Areas, which provide safety elements associated with mitigating risks to civil aircraft flying in proximity to certain types of military flight operations.

Airfields like Gila Bend Air Force Auxiliary Base and NAF El Centro have Class D airspace when the control tower is operational. Sites like Fort Tuthill have overlying Class D airspace associated with an adjacent civil airfield, Flagstaff Pulliam. Class D altitudes for Flagstaff Pulliam are surface of the earth to 9,500 MSL as a point of reference.

The Camp Pendleton Cart Wright Water site is an example of a location that does not have SUA protection nor local airport Class D airspace. This training site is approximately 7 miles offshore from the Camp Pendleton Red Beach site (Red Beach is within a RA). Between Red Beach and the offshore training site, there are VFR flyways along the coast with altitudes varying from surface of the earth to 6,500 MSL and 4,500 MSL and above. PR training in this area is therefore being conducted over the Gulf of Santa Catalina so see-and-avoid and whatever air traffic advisory service is provided by Southern California Terminal Radar Approach Control based on workload are the flight rules and airspace regulatory elements associated with flight safety for both civil and military aircraft.

#### 3.1.2.2 U.S. Forest Service or Other Federal Land

Table A-1 in Appendix A of this EA identifies these proposed PR training sites. These sites are important as they satisfy the selection standards in Section 2.4, selection standard 2, REALISTIC— the sites provide a variety of geographical settings/terrain and elevations. There are 44 sites and four only permit ground activity.

These sites are in more remote, less populated areas and, as indicated in Table A-1 column three, the controlling agency (source for approval of the PR training activity) is an entity within USFS, BLM, or NPS.

Many of these PR training sites also have designated Wilderness Areas or National Monuments adjacent to them or in near proximity. PR training event aircraft flying to these sites would be required to overfly these Wilderness Areas and National Monuments above 2,000 feet AGL,

which is a minimum altitude established by the FAA and also reflected in military service-specific flight rules. This same altitude restriction also applies to National Parks and other environmentally sensitive areas.

The Mogollon Rim (General Crook) site serves as an example of what is described in the paragraph above. Aircraft flying to this site from the south or the west would, depending on their route of flight, remain above 2,000 feet AGL due to overflight of any of these areas:

- Mazatzal Wilderness
- Pine Mountain Wilderness
- Verde River Bald Eagle Breeding Area
- Salt River Bald Eagle Breeding Area
- Four Peaks Wilderness
- Superstition Wilderness

#### 3.1.2.3 Other Land (Municipal, City, County, State, or Tribal)

Table A-1 in Appendix A of this EA identifies these proposed PR training sites. Fourteen of these sites are airports. Taken as a whole, all classes of airspace identified in Table 3.1-1 are associated with these sites except Class A. Letters of agreement or memoranda of understanding (plus advance coordination) will be important to the manner and the frequency of use for PR training at these locations.

While many of these PR training sites are like those described in Section 3.1.2.2 of this EA and are situated in remote, less populated areas, the remainder of the PR training sites are in more densely populated areas where there is also a greater volume of civil air traffic and greater FAA positive control of the airspace. This requires military flight operations that are more compatible with an operational environment dominated by private and commercial aircraft.

##### 3.1.2.3.1 Activation of Playas Temporary MOA

Section 2.1.4.10 of this EA describes the Playas Temporary MOA and the Playas Temporary ATCAA. The Playas Temporary MOA is a 20 NM by 20 NM square-shaped area from 300 feet AGL up to but not including FL 180 (17,999 feet MSL). It would be scheduled for up to 14-days, as required, twice a year and the published activation hours would be continuous (24-hours a day). The FAA joint-use policy per FAA JO 7400.2M para 21-1-8 (FAA 2019d) would be recognized, meaning: reasonable and timely aerial access below 1,200 feet AGL to private and public land below the proposed Temporary Playas MOA by general aviation aircraft would not be restricted.

The Playas Temporary ATCAA would have the same lateral dimensions as the Playas Temporary MOA but the vertical dimensions would extend from FL 180 to FL 220. This ATCAA would also be activated continuously for up to 14-days, twice yearly, consistent with the Playas Temporary MOA activation.

#### 3.1.2.4 Private Property

Table A-1 in Appendix A of this EA identifies these proposed PR training sites. Military training events that utilize private property are not uncommon. DZs supporting the aerial

delivery of personnel and equipment are one example found throughout the NAS. As stated in Section 2.3, proposed PR training sites on private property would be subject to the terms of an agreement between the USAF and the person or entity with real property ownership and rights to the subject property. Temporary MOA operations (F2), FARP operations (F6), and Fixed-Wing LZs (F8) are not proposed activities on any private property.

Two elements of a successful PR training enabling agreement are the airspace class overlying the land and the proximity of other property owners who might consider PR activities a nuisance or a hazard to people and property on the ground. The airspace overlying these proposed PR training sites is compatible with the PR training and is primarily Classes E and G. RAs and MOAs also overlie some of the land. A review of satellite imagery dated June 2017 (Google Earth Pro 2019) shows single-family housing to the west of the PR training sites HLZs 5 and 6. The remainder of the PR training sites are on or adjacent to airports or are in remote, less populated areas.

### 3.1.3 Environmental Consequences

Airspace Management impacts created by the Proposed Action would be significant if they resulted in:

- Reductions and/or restrictions to existing military training in the ROI.
- Departure or arrival delays for civil aircraft operating in the ROI. Airline delays related to NAS factors include weather, traffic volume, ATC or navigation equipment outages, closed runways, and other factors. If PR training events created a significant impact, it would likely be categorized as traffic volume or other.

#### 3.1.3.1 Proposed Action

As discussed in Section 2.0 of this EA, the following scale categories were developed to capture three PR training events:

- Large Force
- Medium Force
- Small Force

Large Force training event would total 42 days annually, divided into two 21-day event periods occurring in the spring and fall. Each 21-day training event would have up to seven days of flying. The estimated number of annual sorties for Large Force training event is 1,380.

Medium Force training event would total 56 days annually, divided into 14-day quarterly event periods. Each 14-day event would have approximately seven days of flying. The estimated number of annual sorties for Medium Force training event is 720.

Small Force training event would total 250 days annually since the training would occur on a weekly basis. The estimated number of annual sorties for Small Force training event is 3,000.

Considering sortie numbers, aircraft availability, and airspace access requirements, the impact of proposed PR training activities would be minimized environmentally and fiscally by achieving the required readiness and training objectives in the minimum amount of time through the optimum use of resources. Environmental impacts would be minimized through managing annual cumulative aircraft participation and optimizing the total number of sorties and sortie

duration (flying time). The greater the number of aircraft flying and how long those aircraft are airborne all factor into ROI air traffic volume and ATC/airspace scheduling requirements.

Advance airspace coordination, discussed previously in Section 3.1.2 of this EA, describes how and where airspace and proposed PR training sites could be utilized based on the availability of the resource. Since this varies due to aircraft availability and competing priorities for airspace access in both the civil and military realms, there is no one equation that balances these competing priorities with divergent requirements. Sorties would not be scheduled in the Air Tasking Order that exceed the operational capacity of the required airspace.

The total number of sorties required for PR training events is not entirely additive to the current military flying in the region. Pilots and other aircrew members maintain flying currency, qualifications, and proficiency in accordance with military service-specific instructions and regulations. The flight operations, described in Sections 2.1.4.9 through 2.1.4.18, include types of sorties that are already required to be flown to meet existing aircrew training and evaluation requirements. If a formation of A-10 aircraft flying in an LATN or a CV/MV-22 aircraft flying in a RA can mission plan to meet their individual training requirements in addition to supporting PR training, those sorties have achieved multiple objectives. Large Force and Medium Force training events do include greater pools of potential aircraft, which could temporarily increase the number of military sorties flown across the region (i.e., compared to the annual baseline sorties, the annual sorties under the Proposed Action could increase up to 1,646 sorties as discussed in Section 2.3 of this EA).

#### 3.1.3.1.1 Department of Defense Property

DoD property in Table A-1 already supports the readiness requirements of the U.S. military. Expanding PR training into sites that do not currently support those training events would rely on the ACP, as discussed in Section 2.1.4.9, the Air Tasking Order, as discussed in Section 3.1.2, existing flight rules (civil and military), air traffic services, and airspace access requirements to ensure PR training is conducted safely and efficiently within the NAS. Adverse impacts to airspace management would be short term and negligible due to the planning and preparation associated with advance airspace coordination, the creation of an ACP, and publishing the Air Tasking Order. Short-term impacts from Large Force and Medium Force training events would be greater than that of Small Force training event due to the surge in flying activity during the scheduled training event days.

There are no flight operations that involve airspace access or tactics, techniques, and procedures associated with PR training events that have not been previously analyzed and authorized on the DoD property identified in this EA. The tactics, techniques, and procedures currently being conducted on DoD property may not have previously been in support of the purpose and need identified in this EA, but the inclusion of the PR training mission does not change the nature of those flight operations nor their environmental impact (USAF 2015a, 2017b, 2017c).

#### 3.1.3.1.2 U.S. Forest Service or Other Federal Land

PR sorties to any of these proposed PR training sites would be required to comply with FAA airspace access requirements described in Table 3.1-1, ATC clearances, military service-specific flight rules and procedures, applicable Federal Aviation Regulations, and applicable terms and conditions required by USFS or the U.S. Department of Agriculture. The remote nature of these

sites means the overlying airspace is generally Class E or Class G and most of the flight operations in the vicinity of the sites would be conducted under VFR. Adverse impacts to airspace management would be short term and negligible due to the planning and preparation associated with advance airspace coordination, publishing the Air Tasking Order, and prior coordination with USFS and the U.S. Department of Agriculture. The number of sites potentially available facilitates site selection to minimize adverse impacts during the proposed training period.

USFS has land management plans and wildland fire considerations that could restrict or preclude operations. These terms and conditions would be included in letters of agreement or memoranda of understanding. Specific examples are provided below and further discussed in Section 3.5.3.1.2 of this EA.

To help prevent unnecessary conflicts (of airspace or other uses) and address public safety needs, the USAF shall contact the relevant Forest Dispatch Center and Aviation Officer prior to the start of PR training events (at least one week in advance) to:

- Coordinate flight activities;
- Check for other planned flight activities and/or USFS activities occurring or upcoming in the PR training areas;
- Check on current fire danger level, and
- Check on fire or other emergency status (use of helipads for firefighting, etc.).

Air Force Instruction (AFI) 13-217, Drop Zone and Landing Zone Operations, is applicable to HLZs (F7), Fixed-Wing LZs (F8), and Parachute Operations/DZs (F9) (USAF 2014a). Surveys must be conducted by trained and qualified personnel in accordance with (IAW) AFI 13-217, or the currency of existing surveys validated, before aircraft can land in a designated LZ and personnel and equipment can be delivered aerially to a designated DZ. The surveys are designed to ensure flight safety; identify ground hazards; and protect structures, personnel, and equipment on the ground. The surveys also define the type of operations and aircraft that are authorized and whether restrictions apply to how aircraft ingress and egress the sites.

Section 1.6.3 addresses government-to-government consultations related to this EA. AFI 90-2002, Air Force Interactions with Federally-Recognized Tribes, is also applicable to Native American tribal government consultations and discusses overflight of tribal land and sacred sites (USAF 2015a). Since many of these remote proposed PR training sites may require routes of flight or ingress and egress flight paths that have not been routinely flown in the past, aircrews and PR personnel must exercise diligence to ensure impacts associated with proposed PR training events are not inadvertently created near sacred sites that have not been previously the subject of consultations.

#### 3.1.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

PR sorties to any of these proposed PR training sites would be required to comply with FAA airspace access requirements described in Table 3.1-1, ATC clearances, military service-specific flight rules and procedures, and applicable Federal Aviation Regulations. Letters of agreement or memoranda of understanding (plus advance coordination) will be important to the manner and the frequency of PR training at these sites and should be focused on minimizing the impacts

associated with flying operations. Adverse impacts to airspace management would be short term and negligible due to the planning and preparation associated with advance airspace coordination and publishing the Air Tasking Order. The number of sites potentially available facilitates site selection to minimize adverse impacts during the proposed PR training period.

In airspace Classes B, C, and D, ATC will play a greater role in how those portions of PR training sorties are conducted. The expected sortie duration (amount of flying time) could be increased due to instructions or clearances being issued to aircraft based on the total volume of air traffic being managed by ATC.

At more remote sites with Class E or Class G airspace, most of the flight operations would be conducted under VFR and would be similar to the training at the sites described in Section 3.1.2.2.

AFI 13-217, Drop Zone and Landing Zone Operations, is applicable to HLZs (F7), Fixed-Wing LZs (F8), and Parachute Operations/DZs (F9) (USAF 2014a). Surveys must be conducted by trained and qualified personnel IAW AFI 13-217, or the currency of existing surveys validated, before aircraft can land in a designated LZ and personnel and equipment can be delivered aerially to a designated DZ. The surveys are designed to ensure flight safety; identify ground hazards; and protect structures, personnel, and equipment on the ground. The surveys also define the type of operations and aircraft that are authorized and whether there are restrictions to how aircraft ingress and egress the sites.

#### 3.1.3.1.4 Activation of Playas Temporary MOA

The USAF anticipates only 20 percent of Temporary MOA and ATCAA operations would occur between 2200L and 0700 (10:00 p.m. and 7:00 a.m. local time). Maximum altitude for flight activities would be FL 220. Proposed aerial activities would consist of typical MOA flight operations to include tactical combat maneuvering by fighter jet aircraft involving high speed, abrupt, unpredictable changes in altitude, attitude, and direction of flight. Some associated VFR flight exercise operations would not require activating the Temporary MOA. These include transport and rotary wing aircraft flight operations and parachute drops. Temporary MOA and ATCAA activation are required to be coordinated and approved by the FAA (Albuquerque Center).

The most recent FAA Aeronautical Study related to the Playas Temporary MOA/ATCAA is dated 28 February 2019 (FAA 2019a). Per this study, the proposed Playas Temporary MOA would have minimal impact on IFR and VFR terminal operations. The altitudes of the proposed MOA would have a minor impact to IFR en route operations. Due to the location of the proposed Playas Temporary MOA, most aircraft arriving to the Tucson terminal area would be above the Playas Temporary MOA and the majority of departing aircraft should not have trouble climbing above the airspace. Most El Paso, Texas, area departures and arrivals would also have the aircraft performance to climb above the Playas Temporary MOA. The proposed Playas airspace would cause some VFR aircraft to deviate from their preferred route to avoid the Playas Temporary MOA, but because the proposed Playas Temporary is only 20 by 20 nautical miles, it creates a minimal impact to the NAS.

Albuquerque Center does not expect the proposed Playas Temporary MOA to result in a significant reduction of service to either the Playas Temporary MOA participants or non-

participants. The Playas Temporary MOA and ATCAA activation times would be available by Notice to Airmen (NOTAM) in advance for both pilots and controllers.

Albuquerque Center has analyzed the impact of the proposed Playas Temporary MOA and associated Temporary ATCAA on non-participating users for the ability to maintain safety and efficiency throughout the NAS. It is Albuquerque Center's position that with proper coordination between the FAA and the using agencies, procedures can be developed that would result in a minimal adverse impact on non-participating aircraft operations. Albuquerque Center concurs with the development of the proposed Playas Temporary MOA (FAA 2019a).

#### 3.1.3.1.5 Private Property

Proposed PR training sites on private property would be subject to the terms of an agreement between the USAF and the person or entity with real property ownership and rights to the subject property. Minimizing impacts from flight operations would be addressed in these agreements which would be site specific and consider adjacent land use, terrain, and obstacles. Section 3.1.2.4 addresses elements of a successful private property agreement.

The airspace overlying these proposed sites is compatible with the PR training and is primarily Classes E and G. RAs and MOAs also overlie some of the land. A review of satellite imagery dated June 2017 (Google Earth Pro 2019) shows single-family housing to the west of the proposed PR training sites Cattle, HLZ 5, and HLZ 6. The proximity of this housing should be addressed in any agreement. The remainder of the sites are located on or adjacent to airports or are in remote, less populated areas.

Adverse impacts to airspace management would be short term and negligible due to the planning and preparation associated with advance airspace coordination and publishing the Air Tasking Order. The number of sites potentially available facilitates site selection to minimize adverse impacts during the proposed training period.

### 3.1.3.2 No-Action Alternative

Annual aircraft sorties under the baseline/No-Action Alternative would total 3,894. Airspace previously analyzed to support rescue training activities would continue to be scheduled and used. The No-Action Alternative would continue to support training events in compliance with existing military service-specific guidance and FAA agreements and regulations. There would be no significant impacts to airspace in the ROI and airspace management. However, training disadvantages would exist due to airspace management options under the No-Action Alternative. The overall volume of airspace available to support PR training and exercises would be limited, as would scheduled tactical time in the airspace. There would also be fewer options for access to airspace with attributes that produce more realistic and relevant training, e.g., terrain features underlying the airspace or operational authorizations for weapons employment.

## 3.2 AIR QUALITY

### 3.2.1 Definition of Resource

Air quality in any given location is defined by the concentration of various pollutants in the atmosphere. Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant's concentration is determined by comparing it to

Federal and/or state ambient air quality standards. The federal Clean Air Act (CAA), 42 U.S.C. Sections 7401–7671(q) provides that emission sources must comply with the air quality standards and regulations that have been established by federal and state regulatory agencies. These standards and regulations focus on (1) the maximum allowable ambient pollutant concentrations, and (2) the maximum allowable emissions from individual sources.

**Criteria Pollutants and National Ambient Air Quality Standards.** The U.S. Environmental Protection Agency (USEPA) established the federal standards for the permissible levels of certain pollutants in the at2019cmosphere. National Ambient Air Quality Standards (NAAQS) have been established for six criteria pollutants as summarized in Table 3.2-1: ozone ($O_3$); nitrogen dioxide ($NO_2$); particulate matter equal to or less than 10 microns in aerodynamic diameter ($PM_{10}$) and particulate matter equal to or less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$); carbon monoxide (CO); sulfur dioxide ($SO_2$); and lead (Pb). $O_3$ is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors. The $O_3$ precursors are oxides of nitrogen ($NO_x$) and volatile organic compounds (VOCs). States may either adopt the NAAQS or establish their own more stringent standards. Arizona, New Mexico, Nevada, and California have all adopted the NAAQS to regulate air pollution levels. However, the States of California and New Mexico also implement more stringent standards on several pollutants such as CO. However, the more stringent State Ambient Air Quality Standards are not relevant to federal actions.

Areas that meet the NAAQS standard for a criteria pollutant are designated as being "in attainment" while areas where criteria pollutant levels exceed the NAAQS are designated as "nonattainment." A maintenance area is a former nonattainment area that has recently been re-designated as an attainment area. However, during the maintenance period, most of the CAA rules for a nonattainment area are still applicable to a maintenance area. In general, an attainment area is considered to have a good ambient air quality condition.

**Clean Air Act Conformity.** Title 40 CFR 93, General Conformity, requires federal actions to conform to any State Implementation Plan approved or promulgated under Section 110 of the CAA. The general conformity rule (GCR) applicability analysis does apply to the Proposed Action since many of the counties within the four states where the proposed PR training sites are located are in either a nonattainment or a maintenance area for certain criteria pollutants. Therefore, the annual nonattainment or maintenance pollutant emissions from the Proposed Action are required to be quantified and compared with applicable *de minimis* levels as summarized in Table 3.2-2. If the annual levels are below the corresponding *de minimis* thresholds, no formal GCR determination would be required.

**Table 3.2-1. National and State Ambient Air Quality Standards**

| Pollutant | Averaging Time | Federal/Arizona/ Nevada Standards | | California Standards[c][d] | New Mexico Standards |
|---|---|---|---|---|---|
| | | Primary[a] | Secondary[b] | | |
| CO | 8 hours | 9 ppm (10 mg/m$^3$) | None | 9 ppm (10 mg/m$^3$) | 8.7 ppm |
| | 1 hour | 35 ppm (40 mg/m$^3$) | | 20 ppm (23 mg/m$^3$) | 13.1 ppm |
| $NO_2$ | Annual Arithmetic Mean | 0.053 ppm (100 µg/m$^3$) | Same as Primary | 0.030 ppm (57 µg/m$^3$) | 0.05 ppm |
| | 1 hour | 0.1 ppm (188 µg/m$^3$) | None | 0.18 ppm (339 µg/m$^3$) | -- |
| | 24 hours | -- | -- | -- | 0.1 ppm |
| $O_3$ | 8 hours | 0.07 ppm (137 µg/m$^3$) | None | 0.070 ppm (137 µg/m$^3$) | 0.07 ppm |

## Table 3.2-1. National and State Ambient Air Quality Standards

| Pollutant | Averaging Time | Federal/Arizona/ Nevada Standards | | California Standards[c][d] | New Mexico Standards |
|---|---|---|---|---|---|
| | | Primary[a] | Secondary[b] | | |
| Pb | 1 hour | -- | -- | 0.09 ppm (180 µg/m$^3$) | -- |
| | 30-day average | -- | -- | 1.5 µg/m$^3$ | -- |
| | Rolling three-month average | 0.15 µg/m$^3$ | Same as Primary | -- | 0.15 µg/m$^3$ |
| $PM_{10}$ | Annual Geometric Mean | -- | -- | 20 µg/m$^3$ | -- |
| | 24 hours | 150 µg/m$^3$ | Same as Primary | 50 µg/m$^3$ | 150 µg/m$^3$ |
| $PM_{2.5}$ | Annual Arithmetic Mean | 12 µg/m$^3$ | 15 µg/m$^3$ | 12 µg/m$^3$ | 12 µg/m$^3$ [Primary]; 15 µg/m$^3$ [Secondary] |
| | 24 hours | 35 µg/m$^3$ | Same as Primary | -- | 35 µg/m$^3$ |
| $SO_2$ | Annual Arithmetic Mean | 0.03 ppm (for certain areas)[e] | None | -- | 0.02 ppm |
| | 24 hours | 0.14 ppm (for certain areas)[e] | -- | 0.04 ppm (105 µg/m$^3$) | 0.1 ppm |
| | 3 hours | -- | 0.5 ppm (1,300 µg/m$^3$) | -- | 0.5 ppm (1,300 µg/m$^3$) |
| | 1 hour | 0.075 ppm (196 µg/m$^3$) | -- | 0.25 ppm (655 µg/m$^3$) | -- |

Notes:

(a) Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by USEPA.

(b) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after USEPA approves the implementation plan.

(c) Standards, other than for $O_3$ and those based upon annual averages, are not to be exceeded more than once a year. The $O_3$ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

(d) Concentrations are expressed first in units in which they were promulgated. Equivalent units are provided in the second column.

(e) On June 2, 2010, a new one-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the one-hour national standard, the three-year average of the annual 99th percentile of the one-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

"--" – The standard does not apply.
µg/m$^3$ – micrograms per cubic meter
mg/m$^3$ – milligrams per cubic meter
ppm – parts per million

Sources: CARB 2016; Nevada Division of Environmental Protection 2019a; USEPA 2012, 2019b.

## Table 3.2-2. *De Minimis* Emission Levels for Criteria Air Pollutants

| Pollutant | Nonattainment Designation | Tons/Year |
|---|---|---|
| $O_3$* | Serious | 50 |
| | Severe | 25 |
| | Extreme | 10 |
| | Other nonattainment or maintenance areas | 100 |

| Table 3.2-2. *De Minimis* Emission Levels for Criteria Air Pollutants | | |
|---|---|---|
| **Pollutant** | **Nonattainment Designation** | **Tons/Year** |
| | outside $O_3$ transport region | |
| | Marginal and moderate nonattainment areas inside $O_3$ transport region | 50/100** |
| CO | All | 100 |
| $SO_2$ | All | 100 |
| Pb | All | 25 |
| $NO_2$ | All | 100 |
| $PM_{10}$ | Moderate | 100 |
| | Serious | 70 |
| $PM_{2.5}$*** | All | 100 |

Notes:
* Applies to $O_3$precursors –VOCs and $NO_X$.
** VOC/$NO_X$
*** Applies to $PM_{2.5}$ and its precursors.
CO – carbon monoxide
$NO_2$ – nitrogen dioxide
$O_3$ – ozone
Pb – lead
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$PM_{2.5}$ – particulate matter equal to or less than 2.5 microns in aerodynamic diameter
$SO_2$ – sulfur dioxide
Source: 40 CFR 6, 51, and 93.

The USAF has developed an automated screening tool known as the Air Conformity Applicability Model (ACAM) to perform a simplified GCR applicability analysis for most USAF proposed projects. This model can be used for predicting air emissions from partial sources under the Proposed Action.

ACAM is used in conjunction with other USAF guideline documents to identify proposed actions and alternatives which would likely result in no or minimal emission increases, and those actions which may result in no or minimal emission increases, and those actions which may require further air quality analysis and undergo a GCR determination. ACAM calculates criteria pollutants, hazardous air pollutants (HAPs), and greenhouse gas (GHG) for proposed USAF action while requiring minimal inputs from the user. The resultant calculations are entered into standardized reports that follow the requirements for the USAF Record of Conformity Analysis reporting format.

While the GCR *de minimis* thresholds are intended to be used to perform an applicability analysis, they can also be used as a general indicator for air quality NEPA assessments. Given the GCR *de minimis* threshold values (provided in Table 6-1, General Conformity De Minimis Thresholds, in the Air Force Air Quality Environmental Impact Analysis Process [EIAP] Guide – Fundamentals, Volume 1 of 2 [AFCEC 2017]) are the maximum net change an action can acceptably emit in nonattainment and maintenance areas, these threshold values would also be a

conservative indicator that an action's emissions within an attainment area would also be acceptable.

**Hazardous Air Pollutants.** In addition to the criteria pollutants discussed above, non-criteria toxic pollutants, called HAPs, are also regulated under the CAA. USEPA has identified a total 187 HAPs known or suspected to cause health effects in small doses. HAPs are emitted by a wide range of man-made and naturally occurring sources including combustion mobile and stationary sources. However, unlike the NAAQS for criteria pollutants, federal ambient air quality standards do not exist for non-criteria pollutants.

The HAPs emitted from mobile sources such as aircraft operations under the Proposed Action are called Mobile Source Air Toxics, which include benzene, aldehydes, 1,3-butadiene, and a class of compounds known as polycyclic aromatic hydrocarbons. According to findings from Select Source Materials and Annotated Bibliography on the Topic of Hazardous Air Pollutants (HAPs) Associated with Aircraft, Airports, and Aviation (FAA 2003), the FAA concluded that neither aircraft nor airports meet the definitions of the source types that are regulated under CAA Section 112, "Hazardous Air Pollutants."

Therefore, HAPs were not evaluated further in this EA. This is justified because aircraft emissions of HAPs are unlikely to reach levels considered significant below the mixing height and would not create health risks to humans living adjacent to airfields or underneath airspace in which these aircraft operate.

**GHG Emissions.** GHGs are compounds that contribute to the greenhouse effect. The greenhouse effect is a natural phenomenon where gases trap heat within the surface-troposphere (lowest portion of the earth's atmosphere) system, causing heating at the surface of the earth. The primary long-lived GHGs directly emitted by human activities are carbon dioxide ($CO_2$), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

To estimate global warming potential (GWP), all GHGs are expressed relative to a reference gas, $CO_2$, which is assigned a GWP equal to 1. All six GHGs are multiplied by their GWP and the results are added to calculate the total equivalent emissions of $CO_2$ ($CO_2e$). This EA considers $CO_2e$ as the representative GHG emission.

### 3.2.2 Affected Environment

The ROI for the air quality analysis includes the existing Air Quality Control Regions that surround the proposed PR training sites within four states.

The existing air quality conditions within the ROI at those proposed PR training sites over the areas encompassing four states to be affected by the Proposed Action are reflected by the current status of NAAQS attainment.

#### 3.2.2.1 Department of Defense Property

The current air quality designations for the counties where the DoD property is used for the proposed PR training activities are summarized in Table 3.2-3.

**Table 3.2-3. Attainment Condition for Proposed PR Training Sites on DoD Property**

| County, State | # of Sites | Attainment Status | GCR *De Minimis*/NEPA Assessment Indicator (tons per year) |
|---|---|---|---|
| Cochise, AZ | 7 | Attainment for all pollutants | 100 |
| Coconino, AZ | 11 | Attainment for all pollutants | 100 |
| Maricopa, AZ | 15 | Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 |
| Pima, AZ | 3 | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 |
| Pinal, AZ | 2 | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 |
| Imperial, CA | 1 | Nonattainment: moderate $PM_{2.5}$, serious $PM_{10}$, marginal $O_3$<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and $PM_{2.5}$: 100<br>Other: 100 |
| Los Angeles, CA | 2 | Nonattainment: extreme $O_3$<br>Maintenance: $PM_{10}$, $NO_2$, CO<br>Attainment: other pollutants | NOx and VOC: 10<br>$PM_{10}$, $NO_2$, and CO: 100<br>Other: 100 |
| Riverside, CA | 1 | Nonattainment: extreme $O_3$, moderate $PM_{2.5}$<br>Maintenance: $PM_{10}$, $NO_2$, CO<br>Attainment: other pollutants | NOx and VOC: 10<br>$PM_{10}$, $NO_2$, and CO: 100<br>Other: 100 |
| San Diego, CA | 7 | Nonattainment: moderate $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | NOx, VOC, and CO: 100<br>Other: 100 |
| Clark, NV | 1 | Nonattainment: marginal $O_3$<br>Maintenance: $PM_{10}$ and CO<br>Attainment: other pollutants | NOx, VOC, $PM_{10}$, and CO: 100<br>Other: 100 |
| Otero, NM | 1 | Attainment for all pollutants | 100 |
| Roosevelt, NM | 1 | Attainment for all pollutants | 100 |
| Sierra, NM | 2 | Attainment for all pollutants | 100 |
| Socorro County, NM | 2 | Attainment for all pollutants | 100 |

CO – carbon monoxide
$NO_2$ – nitrogen dioxide
NOx – oxides of nitrogen
$O_3$ – ozone
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$PM_{2.5}$ – particulate matter equal to or less than 2.5 microns in aerodynamic diameter
$SO_2$ – sulfur dioxide
VOC – volatile organic compound
Source: USEPA 2019c.

### 3.2.2.2 U.S. Forest Service or Other Federal Land

The current air quality designations for the counties where USFS and other federal land is used for the proposed PR training activities are summarized in Table 3.2-4.

**Table 3.2-4. Attainment Condition for Proposed PR Training Sites on USFS or Other Federal Land**

| County, State | # of Sites | Attainment Status | GCR *De Minimis*/NEPA Assessment Indicator (tons per year) |
|---|---|---|---|
| Cochise, AZ | 5 | Attainment for all pollutants | 100 |
| Coconino, AZ | 11 | Attainment for all pollutants | 100 |
| Gila, AZ | 2 | Maintenance: $PM_{10}$<br>Attainment: other pollutants | $PM_{10}$: 100<br>Other: 100 |
| Graham, AZ | 1 | Attainment for all pollutants | 100 |
| Greenlee, AZ | 4 | Attainment for all pollutants | 100 |
| Maricopa, AZ | 2 | Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 |
| Navajo, AZ | 1 | Attainment for all pollutants | 100 |
| Pima, AZ | 2 | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 |
| Pinal, AZ | 1 | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 |
| Santa Cruz, AZ | 4 | Attainment for all pollutants | 100 |
| Yavapai, AZ | 1 | Attainment for all pollutants | 100 |
| Lincoln, NV | 1 | Attainment for all pollutants | 100 |
| Catron, NM | 9 | Attainment for all pollutants | 100 |

CO – carbon monoxide
NOx – oxides of nitrogen
$O_3$ – ozone
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$SO_2$ – sulfur dioxide
VOC – volatile organic compound
Source: USEPA 2019c.

### 3.2.2.3 Other Land (Municipal, City, County, State, or Tribal)

The current air quality designations for the counties where other land (municipal, city, county, state, or tribal) is used for the proposed PR training activities are summarized in Table 3.2-5.

**Table 3.2-5. Attainment Condition for Proposed PR Training Sites on Other Land (Municipal City, County, State, or Tribal)**

| County, State | # of Sites | Attainment Status | GCR *De Minimis*/NEPA Assessment Indicator (tons per year) |
|---|---|---|---|
| Apache, AZ | 3 | Attainment for all pollutants | 100 |
| Cochise, AZ | 9 | Attainment for all pollutants | 100 |
| Coconino, AZ | 7 | Attainment for all pollutants | 100 |
| Pima, AZ | 17 | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 |
| Pinal, AZ | 3 | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 |

| Table 3.2-5. Attainment Condition for Proposed PR Training Sites on Other Land (Municipal City, County, State, or Tribal) | | | |
|---|---|---|---|
| **County, State** | **# of Sites** | **Attainment Status** | **GCR *De Minimis*/NEPA Assessment Indicator (tons per year)** |
| Gila County, AZ | 3 | Maintenance: $PM_{10}$<br>Attainment: other pollutants | $PM_{10}$: 100 |
| Graham, AZ | 1 | Attainment for all pollutants | 100 |
| Maricopa, AZ | 2 | Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 |
| Mohave, AZ | 2 | Attainment for all pollutants | 100 |
| Navajo, AZ | 2 | Attainment for all pollutants | 100 |
| Santa Cruz, AZ | 2 | Attainment for all pollutants | 100 |
| Yavapai, AZ | 1 | Attainment for all pollutants | 100 |
| Yuma, AZ | 1 | Nonattainment: moderate $PM_{10}$<br>Attainment: other pollutants | $PM_{10}$: 100<br>Other: 100 |
| Clark, NV | 1 | Nonattainment: marginal $O_3$<br>Maintenance: $PM_{10}$ and CO<br>Attainment: other pollutants | NOx, VOC, $PM_{10}$, and CO: 100<br>Other: 100 |
| Catron, NM | 1 | Attainment for all pollutants | 100 |
| Hidalgo, NM | 2 | Attainment for all pollutants | 100 |

CO – carbon monoxide
NOx – oxides of nitrogen
$O_3$ – ozone
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$SO_2$ – sulfur dioxide
VOC – volatile organic compound
Source: USEPA 2019c.

#### 3.2.2.3.1 Activation of Playas Temporary MOA

The Playas Temporary MOA is located within Hidalgo and Grant counties, NM, an attainment area for all criteria pollutants.

### 3.2.2.4 Private Property

The current air quality designations for the counties where private property is used for the proposed PR training activities are summarized in Table 3.2-6.

| Table 3.2-6. Attainment Condition for Proposed PR Training Sites on Private Property | | | |
|---|---|---|---|
| **County, State** | **# of Sites** | **Attainment Status** | **GCR *De Minimis*/NEPA Assessment Indicator (tons per year)** |
| Coconino, AZ | 12 | Attainment for all pollutants | 100 |
| Greenlee, AZ | 1 | Attainment for all pollutants | 100 |
| Maricopa, AZ | 1 | Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 |

| Table 3.2-6. Attainment Condition for Proposed PR Training Sites on Private Property | | | |
|---|---|---|---|
| **County, State** | **# of Sites** | **Attainment Status** | **GCR *De Minimis*/NEPA Assessment Indicator (tons per year)** |
| Pima, AZ | 2 | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 |
| Pinal, AZ | 2 | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 |
| Santa Cruz, AZ | 1 | Attainment for all pollutants | 100 |
| CO – carbon monoxide<br>NOx – oxides of nitrogen<br>$O_3$ – ozone<br>$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter<br>VOC – volatile organic compound<br>Source: USEPA 2019c. | | | |

### 3.2.3 Environmental Consequences

This section discusses the potential effects of the Proposed Action on air quality within the affected counties where a PR mission is originated (i.e., Davis-Monthan AFB) and a training site is proposed. Since many proposed PR training sites are located in a NAAQS nonattainment or maintenance area, the analysis used the applicable CAA GCR *de minimis* thresholds as discussed and summarized in Section 3.2 of this EA as an indicator of potential significant impact as a result of implementing the Proposed Action. While the GCR *de minimis* thresholds are used to perform an applicability analysis for a nonattainment or maintenance area, they can also be used as a general indicator for air quality NEPA assessments. Per the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume 1 of 2 (AFCEC 2017), the maximum net change an action can acceptably emit in nonattainment and maintenance areas under the GCR could also be a conservative indicator that an action's emissions within an attainment area would also be acceptable. Therefore, for those sites in attainment areas, the maximum allowed threshold of 100 tons per year is assumed as the significance indicator.

Although air pollutant emissions occur during all phases of aircraft operation (landing and takeoff, idling, and in-flight), only those emissions emitted in the lower atmosphere's mixing layer have the potential to result in ground-level ambient air quality impacts. The mixing layer is the air layer extending from ground level up to the point at which the vertical mixing of pollutants decreases significantly. USEPA recommends that a default mixing layer of 3,000 feet be used in aircraft emission calculations (USEPA 1992). Consistent with this recommendation, aircraft emissions released above 3,000 feet were not included in the estimate.

The methodology for estimating PR training-related aircraft, airfield ground support equipment, and on-road ground vehicle emissions follows the procedures established by the USAF as provided in Air Emissions Guide for Air Force Mobile Sources (USAF 2018a). Aircraft engines operational types include arrival, departures, climb out, pattern flight that includes touch and go operations, and engine maintenance run-ups including helicopter hovering. Ground support equipment at an airfield for each aircraft type associated with each sortie (i.e., an operational

flight by one aircraft, from take-off to landing) include generator, air compressor, heater, test stand, air conditioner, light cart, etc. PR training ground vehicles used around HLZs would also generate air emissions. The applicable emissions factors under various engine operational modes and associated times in modes during each sortie or around a proposed PR training site were obtained from the same guide. Ground vehicle emissions, including fugitive dust emissions with potential to emit during PR training activities, include those from tactical vehicles used for on-base training on a daily basis and for twice a month off-base training, and trucks particularly used for Large Force training traveling between Davis-Monthan AFB and Playas and/or BMGR PR training sites.

The USAF ACAM model developed based on the 2018 guideline was first used for predicting emissions from all sources that are available in the model including most of fixed wing aircraft, ground support equipment, and on-road ground training vehicles. For on-road ground training vehicles, the emission factors for non-road vehicle types available in the ACAM were conservatively used. The emissions from remaining sources such as helicopters were then estimated using the data inputs and procedures detailed in the same USAF 2018 guideline document, Air Emissions Guide for Air Force Mobile Sources (USAF 2018a).

Detailed emissions estimates can be found in Appendix D of this EA.

#### 3.2.3.1 Proposed Action

Under the Proposed Action, changes would occur in PR-related aircraft types and sorties at Davis-Monthan AFB as shown in Table 3.2-7 and subsequently would affect the low altitude training sorties below 3,000 feet altitude at proposed PR training sites. Thus, potential air quality impacts are expected to result from the anticipated increase in PR training missions, particularly around proposed PR training sites considered in the EA.

The operational impact analysis for air quality for the Proposed Action is based upon the net increase of aircraft, ground support equipment at airfields, and training vehicle and truck operations over the baseline conditions. Both baseline and proposed aircraft flight operational conditions were established through intensive interviews with the airfield manager, pilots, and PR schedule personnel.

**Table 3.2-7. Proposed Annual PR Sorties at Davis-Monthan AFB**

| Aircraft | Proposed Combined Sorties | Baseline/ No Action Sorties | Change in Sorties |
|---|---|---|---|
| AV-8 | 80 | -- | 80 |
| A-10 | 1,480 | 1,854 | -374 |
| EC-130H | 80 | -- | 80 |
| HC-130 | 660 | 736 | -76 |
| F-15 | 80 | 156 | 204 |
| F-16 | 80 | | |
| F-18 | 40 | | |
| F-22 | 80 | | |
| F-35 | 80 | | |
| HH-60 | 2,140 | 1,148 | 992 |

| Table 3.2-7. Proposed Annual PR Sorties at Davis-Monthan AFB | | | |
|---|---|---|---|
| **Aircraft** | **Proposed Combined Sorties** | **Baseline/ No Action Sorties** | **Change in Sorties** |
| AH-1 | 80 | -- | 80 |
| UH-1 | 160 | -- | 160 |
| CH-47 | 120 | -- | 120 |
| CH-53 | 80 | -- | 80 |
| CV/MV-22 | 160 | -- | 160 |
| KC-135 | 40 | -- | 40 |
| MQ-1 or MQ-9 | 40 | -- | 40 |
| MC-12 | 40 | -- | 40 |
| F-21 (Columbian Fighter) | 20 | -- | 20 |
| TOTAL | 5,540 | 3,894 | 1,646 |
| Source: USAF 2018-2019. | | | |

Given the airspace constraints for coordinating Large Force training, the biannual events with sorties as presented in Table 3.2-8 could only feasibly be conducted at Playas and BMGR ranges. In the analysis, the low altitude emissions that are below 3,000 feet altitude as part of Large Force training were calculated assuming both annual events would occur within one of these two ranges.

| Table 3.2-8. Proposed Annual Aircraft PR Sorties | | | |
|---|---|---|---|
| **Aircraft** | **Proposed Sorties** | **Red Flag Large Force Sorties** | **Medium and Small Force Sorties** |
| AV-8 | 80 | 80 | -- |
| A-10 | 1,480 | 160 | 1,320 |
| EC-130H | 80 | 80 | -- |
| HC-130 | 660 | 80 | 580 |
| F-15 | 80 | 80 | -- |
| F-16 | 80 | 80 | -- |
| F-18 | 40 | 40 | -- |
| F-22 | 80 | 80 | -- |
| F-35 | 80 | 80 | -- |
| HH-60 | 2,140 | 80 | 2,060 |
| AH-1 | 80 | 80 | 40 |
| UH-1 | 120 | 80 | 40 |
| CH-47 | 120 | 80 | 40 |
| CH-53 | 80 | 80 | -- |
| CV/MV-22 | 160 | 80 | 80 |
| KC-135 | 40 | 40 | -- |
| MQ-1 or MQ-9 | 40 | 40 | -- |
| MC-12 | 40 | 40 | -- |
| F-21 (Columbian Fighter) | 20 | 20 | -- |
| TOTAL | 5,540 | 1,380 | 4,160 |

| Table 3.2-8. Proposed Annual Aircraft PR Sorties | | | |
|---|---|---|---|
| **Aircraft** | **Proposed Sorties** | **Red Flag Large Force Sorties** | **Medium and Small Force Sorties** |
| Source: USAF 2018-2019. | | | |

For Medium and Small Force training, although the PR training activities have been routinely conducted in the region initiated at Davis-Monthan AFB and other airfields to a lesser extent, it was conservatively assumed that within a specific year, the entire PR training sorties excluding those associated with Large Force training could occur at any one of the proposed PR training sites, including both existing and proposed new sites, within four states with the below breakdowns:

- Arizona: 80 percent
- New Mexico: 10 percent
- California: five percent
- Nevada: five percent

In this way, the maximum potential of PR training emissions around either an existing or a new site is conservatively predicted to be the same for all within a specific state.

As explained in Section 3.7 of this EA, for each scale of training (Large Force, Medium Force, and Small Force), the unit based low altitude training sortie aircraft type, time in mode, and number of patterns around an individual LZ/DZ/HLZ would essentially remain the same, with an exception of helicopter pattern flight that is double for the Medium and Small Force training as compared to Large Force training at an HLZ. The conservative annual criteria pollutant and GHG emissions from aircraft, airfield ground support equipment, and ground vehicles with potential to emit around airfields and training sites under the Proposed Action were predicted and are summarized in Tables 3.2-9 and 3.2-10 for operation of aircraft including airfield ground support equipment and ground vehicles, respectively. Table 3.2-11 presents the total changes in emissions associated with the Proposed Action.

| Table 3.2-9. Net Change in PR Training Annual Aircraft Emissions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **CO2e (tons)** |
| Sortie Origination | Davis-Monthan AFB | -2.6 | 0.5 | 21.8 | 5.9 | -0.4 | 0.0 | 1,876.5 |
| Sortie Origination | Other Airfields Combined | 8.2 | 0.9 | 17.8 | 4.1 | 1.4 | 1.3 | 2,142.3 |
| Large Force at HLZ/DZ | Playas Temporary MOA and/or BMGR for Red Flag-Rescue | 13.4 | 1.7 | 15.3 | 3.1 | 2.1 | 1.1 | 5,090.3 |
| Medium and Small Force at HLZ/DZ | Other Arizona Sites Combined | 23.6 | 2.7 | 37.7 | 6.2 | 5.5 | 2.0 | 8,189.9 |
| Medium and Small Force at HLZ/DZ | New Mexico | 2.9 | 0.3 | 4.7 | 0.8 | 0.7 | 0.3 | 1,023.7 |
| Medium and Small Force at HLZ/DZ | California | 1.5 | 0.2 | 2.4 | 0.4 | 0.3 | 0.1 | 511.9 |
| Medium and Small Force at HLZ/DZ | Nevada | 1.5 | 0.2 | 2.4 | 0.4 | 0.3 | 0.1 | 511.9 |

CO – carbon monoxide
$CO_2e$ – total equivalent emissions of $CO_2$
DZ – Drop Zone
HLZ – Helicopter Landing Zone
NOx – oxides of nitrogen
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$PM_{2.5}$ – particulate matter equal to or less than 2.5 microns in aerodynamic diameter
SOx – sulfur oxide
VOC – volatile organic compound

See Appendix D of this EA for detailed emissions data.

| Table 3.2-10. Total PR Training Ground Vehicle Annual Emissions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **CO2e (tons)** |
| On Base | Davis-Monthan AFB | 7.8 | 0.0 | 9.3 | 1.4 | 0.3 | 0.3 | 2,269.8 |
| On Base | Other Airfields Combined | -- | -- | -- | -- | -- | -- | -- |
| Large Force at HLZ/DZ | Playas Temporary MOA and/or BMGR for Red Flag-Rescue | 10.1 | 0.0 | 13.8 | 2.2 | 0.3 | 0.3 | 3,769.10 |
| Medium and Small Force at HLZ/DZ | Other Arizona Sites Combined | 1.6 | 0.0 | 2.8 | 0.4 | 0.1 | 0.1 | 547.2 |
| Medium and Small Force at HLZ/DZ | New Mexico | 0.2 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 68.4 |

## Table 3.2-10. Total PR Training Ground Vehicle Annual Emissions

| PR Training Type | Location | NOx (tons) | SOx (tons) | CO (tons) | VOC (tons) | $PM_{10}$ (tons) | $PM_{2.5}$ (tons) | CO2e (tons) |
|---|---|---|---|---|---|---|---|---|
| Medium and Small Force at HLZ/DZ | California | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 34.2 |
| Medium and Small Force at HLZ/DZ | Nevada | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 34.2 |

CO – carbon monoxide
$CO_2e$ – total equivalent emissions of $CO_2$
DZ – Drop Zone
HLZ – Helicopter Landing Zone
NOx – oxides of nitrogen
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$PM_{2.5}$ – particulate matter equal to or less than 2.5 microns in aerodynamic diameter
SOx – sulfur oxide
VOC – volatile organic compound

See Appendix D of this EA for detailed emissions data.

## Table 3.2-11. Total Net Change in PR Training Annual Emissions

| PR Training Type | Location | NOx (tons) | SOx (tons) | CO (tons) | VOC (tons) | $PM_{10}$ (tons) | $PM_{2.5}$ (tons) | CO2e (tons) |
|---|---|---|---|---|---|---|---|---|
| On Base | Davis-Monthan AFB | 5.2 | 0.5 | 31.1 | 7.3 | -0.1 | 0.3 | 4,146.3 |
| On Base | Other Airfields Combined | 8.2 | 0.9 | 17.8 | 4.1 | 1.4 | 1.3 | 2,142.3 |
| Large Force at HLZ/DZ | Playas Temporary MOA and/or BMGR for Red Flag-Rescue | 23.5 | 1.7 | 29.1 | 5.3 | 2.4 | 1.4 | 8,859.4 |
| Medium and Small Force at HLZ/DZ | Other Arizona Sites Combined | 25.2 | 2.7 | 40.5 | 6.6 | 5.6 | 2.1 | 8,737.1 |
| Medium and Small Force at HLZ/DZ | New Mexico | 3.1 | 0.3 | 5.1 | 0.8 | 0.7 | 0.3 | 1092.1 |
| Medium and Small Force at HLZ/DZ | California | 1.6 | 0.2 | 2.6 | 0.4 | 0.3 | 0.1 | 546.1 |
| Medium and Small Force at HLZ/DZ | Nevada | 1.6 | 0.2 | 2.6 | 0.4 | 0.3 | 0.1 | 546.1 |

CO – carbon monoxide
$CO_2e$ – total equivalent emissions of $CO_2$
DZ – Drop Zone
HLZ – Helicopter Landing Zone
NOx – oxides of nitrogen
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$PM_{2.5}$ – particulate matter equal to or less than 2.5 microns in aerodynamic diameter
SOx – sulfur oxide
VOC – volatile organic compound

See Appendix D for detailed emissions data.

#### 3.2.3.1.1 Department of Defense Property

Within each of the proposed DoD sites, as shown in Table 3.2-12, the PR training operational annual emissions would not result in any exceedances of:

- The applicable GCR *de minimis* threshold within the counties that are designated as either nonattainment or maintenance area for a criteria pollutant; or
- The NEPA assessment indicator of 100 tons per year limit within the attainment counties for a criteria pollutant.

**Table 3.2-12. DoD Property Training Site Net Emission Increase Evaluation**

| County, State | Attainment Status | GCR *De Minimis*/ NEPA Assessment Indicator (tons per year) | Exceeding GCR *De Minimis* or NEPA Assessment Indicator |
|---|---|---|---|
| Cochise, AZ | Attainment for all pollutants | 100 | No |
| Coconino, AZ | Attainment for all pollutants | 100 | No |
| Maricopa, AZ | Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 | No |
| Pima, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 | No |
| Pinal, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 | No |
| Imperial, CA | Nonattainment: moderate $PM_{2.5}$, serious $PM_{10}$, marginal ozone<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and $PM_{2.5}$: 100<br>Other: 100 | No |
| Los Angeles, CA | Nonattainment: extreme $O_3$<br>Maintenance: $PM_{10}$, $NO_2$, CO<br>Attainment: other pollutants | NOx and VOC: 10<br>$PM_{10}$, $NO_2$, and CO: 100<br>Other: 100 | No |
| Riverside, CA | Nonattainment: extreme $O_3$, moderate $PM_{2.5}$<br>Maintenance: $PM_{10}$, $NO_2$, CO<br>Attainment: other pollutants | NOx and VOC: 10<br>$PM_{10}$, $NO_2$, and CO: 100<br>Other: 100 | No |
| San Diego, CA | Nonattainment: moderate $O_3$<br>Maintenance: CO<br>Attainment: other pollutants. | NOx, VOC, and CO: 100<br>Other: 100 | No |
| Clark, NV | Nonattainment: marginal $O_3$<br>Maintenance: $PM_{10}$ and CO<br>Attainment: other pollutants | NOx, VOC, $PM_{10}$, and CO: 100<br>Other: 100 | No |
| Otero, NM | Attainment for all pollutants | 100 | No |
| Roosevelt, NM | Attainment for all pollutants | 100 | No |
| Sierra, NM | Attainment for all pollutants | 100 | No |
| Socorro, NM | Attainment for all pollutants | 100 | No |

| Table 3.2-12. DoD Property Training Site Net Emission Increase Evaluation | | | |
|---|---|---|---|
| **County, State** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| CO – carbon monoxide<br>GCR – general conformity rule<br>NOx – oxides of nitrogen<br>$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter<br>$PM_{2.5}$ – particulate matter equal to or less than 2.5 microns in aerodynamic diameter<br>VOC – volatile organic compound<br>Sources: USEPA 2019c; Appendix D of this EA. | | | |

Therefore, the Proposed Action would result in a less than significant air quality impact at the proposed PR training sites on DoD property.

#### 3.2.3.1.2 U.S. Forest Service or Other Federal Land

As summarized in Table 3.2-13, no exceedances of either GCR *de minimis* or NEPA assessment indicator were predicted at any of the proposed PR training sites on USFS or other federal land. Therefore, the Proposed Action would result in a less than significant air quality impact at the proposed PR training sites on USFS or other federal land.

| Table 3.2-13. USFS or Other Federal Land Training Site Net Emission Increase Evaluation | | | |
|---|---|---|---|
| **County, State** | **Attainment Status** | **GCR De Minimis/ NEPA Assessment Indicator (tons per year)** | **Exceeding GCR De Minimis or NEPA Assessment Indicator** |
| Cochise, AZ | Attainment for all pollutants | 100 | No |
| Coconino, AZ | Attainment for all pollutants | 100 | No |
| Gila County, AZ | Maintenance: $PM_{10}$<br>Attainment: other pollutants | $PM_{10}$: 100<br>Other: 100 | No |
| Graham, AZ | Attainment for all pollutants | 100 | No |
| Greenlee, AZ | Attainment for all pollutants | 100 | No |
| Maricopa, AZ | Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 | No |
| Navajo, AZ | Attainment for all pollutants | 100 | No |
| Pima, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 | No |
| Pinal, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 | No |
| Santa Cruz, AZ | Attainment for all pollutants | 100 | No |
| Yavapai, AZ | Attainment for all pollutants | 100 | No |
| Lincoln, NV | Attainment for all pollutants | 100 | No |

| Table 3.2-13. USFS or Other Federal Land Training Site Net Emission Increase Evaluation | | | |
|---|---|---|---|
| **County, State** | **Attainment Status** | **GCR De Minimis/ NEPA Assessment Indicator (tons per year)** | **Exceeding GCR De Minimis or NEPA Assessment Indicator** |
| Catron, NM | Attainment for all pollutants | 100 | No |

CO – carbon monoxide
GCR – general conformity rule
NOx – oxides of nitrogen
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$SO_2$ – sulfur dioxide
VOC – volatile organic compound
Sources: USEPA 2019c; Appendix D of this EA.

#### 3.2.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

As summarized in Table 3.2-14, no exceedances of GCR *de minimis* threshold or NEPA assessment indicator were predicted at any of proposed PR training sites on other land (municipal, city, county, state, or tribal). Therefore, the Proposed Action would result in a less than significant air quality impact at the proposed PR training sites on other land.

| Table 3.2-14. Other Land (Municipal, City, County, State, or Tribal) Training Site Net Emission Increase Evaluation | | | |
|---|---|---|---|
| **County, State** | **Attainment Status** | **GCR De Minimis/ NEPA Assessment Indicator (tons per year)** | **Exceeding GCR De Minimis or NEPA Assessment Indicator** |
| Apache, AZ | Attainment for all pollutants | 100 | No |
| Cochise, AZ | Attainment for all pollutants | 100 | No |
| Coconino, AZ | Attainment for all pollutants | 100 | No |
| Santa Cruz, AZ | Attainment for all pollutants | 100 | No |
| Gila County, AZ | Maintenance: $PM_{10}$<br>Attainment: other pollutants | $PM_{10}$: 100<br>Other: 100 | No |
| Graham, AZ | Attainment for all pollutants | 100 | No |
| Maricopa, AZ | Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 | No |
| Mohave, AZ | Attainment for all pollutants | 100 | No |
| Navajo, AZ | Attainment for all pollutants | 100 | No |
| Pima, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 | No |
| Pinal, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 | No |
| Santa Cruz, AZ | Attainment for all pollutants | 100 | No |
| Yavapai, AZ | Attainment for all pollutants | 100 | No |

| Table 3.2-14. Other Land (Municipal, City, County, State, or Tribal) Training Site Net Emission Increase Evaluation | | | |
|---|---|---|---|
| **County, State** | **Attainment Status** | **GCR De Minimis/ NEPA Assessment Indicator (tons per year)** | **Exceeding GCR De Minimis or NEPA Assessment Indicator** |
| Yuma, AZ | Nonattainment: moderate $PM_{10}$<br>Attainment: other pollutants | $PM_{10}$: 100<br>Other: 100 | No |
| Clark, NV | Nonattainment: marginal $O_3$<br>Maintenance: $PM_{10}$ and CO<br>Attainment: other pollutants | NOx, VOC, $PM_{10}$, and CO: 100<br>Other: 100 | No |
| Catron, NM | Attainment for all pollutants | 100 | No |
| Hidalgo, NM | Attainment for all pollutants | 100 | No |
| CO – carbon monoxide<br>GCR – general conformity rule<br>NOx – oxides of nitrogen<br>$O_3$ – ozone<br>$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter<br>$SO_2$ – sulfur dioxide<br>VOC – volatile organic compound<br>Sources: USEPA 2019c; Appendix D of this EA. | | | |

#### 3.2.3.1.3.1 Activation of Playas Temporary MOA

The annual emissions within Hidalgo and Grant counties where the Playas Temporary MOA is located would be less than NEPA assessment indicator of 100 tons per year for all criteria pollutants. Therefore, the activation of the Playas Temporary MOA under the Proposed Action would result in a less than significant air quality impact.

### 3.2.3.1.4 Private Property

As summarized in Table 3.2-15, no exceedances of either GCR *de minimis* or NEPA assessment indicator were predicted at any of proposed PR training sites on private property. Therefore, the Proposed Action would result in a less than significant air quality impact at the proposed PR training sites on private property.

| Table 3.2-15. Private Property Training Site Net Emission Increase Evaluation | | | |
|---|---|---|---|
| **County, State** | **Attainment Status** | **GCR De Minimis/ NEPA Assessment Indicator (tons per year)** | **Exceeding GCR De Minimis or NEPA Assessment Indicator** |
| Coconino, AZ | Attainment for all pollutants | 100 | No |
| Greenlee, AZ | Attainment for all pollutants | 100 | No |
| Maricopa, AZ | Nonattainment: serious PM10, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$: 70<br>NOx, VOC, and CO: 100<br>Other: 100 | No |

| Table 3.2-15. Private Property Training Site Net Emission Increase Evaluation | | | |
|---|---|---|---|
| **County, State** | **Attainment Status** | **GCR De Minimis/ NEPA Assessment Indicator (tons per year)** | **Exceeding GCR De Minimis or NEPA Assessment Indicator** |
| Pima, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | $PM_{10}$ and CO: 100<br>Other: 100 | No |
| Pinal, AZ | Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | $PM_{10}$ and $SO_2$: 100<br>Other: 100 | No |
| Santa Cruz, AZ | Attainment for all pollutants | 100 | No |
| CO – carbon monoxide<br>GCR – general conformity rule<br>NOx – oxides of nitrogen<br>$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter<br>VOC – volatile organic compound<br>Sources: USEPA 2019c; Appendix D of this EA. | | | |

#### 3.2.3.2 No-Action Alternative

Under the No-Action Alternative, PR forces would continue existing PR training activities (described previously in Section 3.2.1 of this EA) which have been approved under prior NEPA documents, and would comply with required minimization and operational constraints identified in these documents. Given this the No-Action Alternative would not result in a significant air quality impact.

## 3.3 BIOLOGICAL RESOURCES

### 3.3.1 Definition of Resource

Biological resources include both native and nonnative species of plants and wildlife in the project areas. For discussion purposes, these are divided into vegetation, wildlife, threatened and endangered species, and sensitive habitats. Human activity has altered portions of the natural environment at many of the proposed PR training sites through grading, paving, and construction of roads and buildings. Data sources for biological resources include information provided by Davis-Monthan AFB, Integrated Natural Resources Management Plan (INRMP) for the BMGR (USAF 2018l), USFWS, Arizona Game and Fish Department (AZGFD), California Department of Fish and Wildlife, Nevada Department of Wildlife, and New Mexico Department of Game and Fish. Species are presented in alphabetical order by common name and plants are presented in alphabetical order by scientific name.

Birds of Conservation Concern (BCCs) are identified by USFWS (2008) and are migratory and non-migratory bird species (beyond those already federally listed as threatened or endangered) that represent the highest conservation priorities. Golden eagle and bald eagle are not BCC but are protected under the Bald and Golden Eagle Protection Act (BGEPA).

Sensitive habitats are areas that are considered for protection because of their ecological value. They include wetlands, critical habitat for protected species, plant communities of limited or

unusual distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer/winter habitat).

Proposed PR training activities at San Clemente Island (and near waters) and Leon sites are equivalent to activities currently implemented by the Navy at these locations. Discussion of the terrestrial and marine biological resources at these proposed PR training sites are excluded from the descriptions that follow as they were extensively described and discussed in previous Navy environmental documents including the Southern California (SOCAL) Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) (Navy 2008), and Hawaii-Southern California Training and Testing (HSTT) EIS/OEIS (Navy 2013, 2018b). Proposed PR training activities at these sites would be conducted under the authorizations provided in the following Biological Opinions:

- USFWS Biological Opinion for the SOCAL Range Complex (FWS-LA-09B0027-09F0040) (issued in 2008);
- USFWS Biological Opinion for Phases II of the Navy's HSTT (FWS-SDG-13B0130-13I0187)
- USFWS Biological Opinion for Phases III of the Navy's HSTT (FWS-SDG-13B0130-13I0187-R001); and
- National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Biological Opinion on the Navy's HSTT and the National Marine Fisheries Service's Promulgation of Regulations Pursuant to the Marine Mammal Protection Act for the Navy to "Take" Marine Mammals Incidental to HSTT (December 2018).

Also, proposed PR training activities at White Sands Missile Range (WSMR) Otero Maneuver Area, WSMR Small Arms Range, WSMR Stallion Army Airfield, and WSMR Thurgood West Maneuver Area are equivalent to activities currently implemented by the U.S. Army at these locations. Discussion of the biological resources at these proposed PR training sites are excluded from the descriptions that follow as they were extensively described and discussed in previous U.S. Army environmental documents including Final Environmental Assessment, Network Integration Evaluation, White Sands Missile Range, New Mexico (White Sands Test Center Operations Office 2011); Final Environmental Impact Statement for Development and Implementation of Range-Wide Mission and Major Capabilities at White Sands Missile Range, New Mexico (White Sands Test Center Operations Office 2009), and White Sands Missile Range Integrated Natural and Cultural Resources Management Plan and Environmental Assessment 2015-2019 (U.S. Army Garrison White Sands 2015). Proposed PR training activities at these sites would be conducted under the following authorizations and plans:

- USFWS Concurrence for Range-Wide Mission and Major Capabilities at White Sands Missile Range (Cons. #22420-2009-I-0087) issued on 24 September 2009.
- Endangered Species Management Plan for Todsen's Pennyroyal (*Hedeoma todsenni*) at White Sands Missile Range, New Mexico (2001).
- Endangered Species Management Plan for the Northern Aplomado Falcon (*Falco femoralis septentrionalis*) at White Sands Missile Range, New Mexico (2007).

- Cooperative Agreement for the Protection and Maintenance of the White Sands Pupfish, (1 May 2006).

### 3.3.2 Affected Environment

The ROI associated with biological resources encompasses the entire area within each of the 175 proposed PR training sites (as depicted in Appendix A), and may encompass land, water and air space within each site. Many of the proposed PR training sites represent previously disturbed habitats, although some of the sites are proposed on previously undeveloped habitat. This ROI includes the areas within which potential impacts could occur (estimated to be between 0.3 and 2.7 acres at each PR training site), and provides a basis for evaluating the level of impact. The discussion below is derived from the Biological Evaluation prepared for the Proposed Action, which is provided in Appendix G of this EA. Appendix G provides a detailed discussion on the methodology used for determining biological resources within the proposed PR training sites.

#### 3.3.2.1 Department of Defense Property

The sections that follow describe the existing environment on proposed DoD sites.

##### 3.3.2.1.1 Vegetation

As shown in Table 3.3-1, five vegetation communities were identified within the proposed PR training sites on DoD property. Appendix G of this EA provides a description of these vegetation communities.

**Table 3.3-1. Vegetation Communities within Proposed PR Training Sites on DoD Property**

| Vegetation Community | Proposed PR Training Sites |
|---|---|
| Arizona Upland Division of Sonoran Desertscrub | NATO Hill and OP Charlie |
| Grasslands | Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| Mohave Desertscrub | Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad, South Tactical Range, and Target 333 |
| Petran Montane Conifer Forest | Fort Tuthill and L Tank |
| Plains and Great Basin Grassland | Metz Tank, Navajo East, Navajo West, Neill Flat, Rogers Lake (Logger Camp), Rogers Napier, and Rogers Wren |

DoD – U.S. Department of Defense
HLZ – Helicopter Landing Zone
PDL – Piedra de Lumbre
PR – Personnel Recovery
Sources: AZGFD 2019; USAF 2017a; USMC 2018b.

##### 3.3.2.1.2 Wildlife

**Reptiles:** Reptile species present on or near the proposed PR training sites on DoD property in Arizona, California, Nevada, and New Mexico are discussed below.

Arizona. Common reptile species include banded gecko (*Coleonyx variegates*), desert spiny lizard (*Sceloporous magister*), glossy snake (*Arizona elegans*), gopher snake (*Pituophis catenifer*), greater earless lizard (*Cophosaurus texanus*), regal horned lizard (*Phrynosoma solaris*), tiger whiptail (*Aspidoscelis tigris*), tree lizard (*Urosaurus ornatus*) western

diamondback (*Crotalus atrox*), western ground snake (*Sonora semiannulata*), and western threadsnake (*Leptotyphlops humils*) (USAF 2011).

California. Common reptiles include flat-tailed horned lizard (*Phrynosoma mcallii*), Pacific tree frog (*Pseudacris regilla*), and western rattlesnake (*Crotalus viridis*).

Nevada. Common reptiles include Great Basin whiptail lizard (*Aspidocelis tigris*), sagebrush lizard (*Sceloporus graciosus*), Great Basin rattlesnake *(Crotalus oreganus lutosus*), and Mojave patch-nose snake (*Rhinocheilus lecontei*).

New Mexico. Common reptiles include common earless lizard (*Holbrookia texana scitula*), desert box turtle (*Terrapene ornate luteola*), desert-grassland whiptail (*Aspidoscelis uniparens*), and western hognose snake (*Heterodon nasicus*) (Brown 1994).

**Birds:** Various nesting and breeding migratory bird species protected under the Migratory Bird Treaty Act (MBTA) and the BGEPA have the potential to occur within the proposed PR training sites. Table 3.3-2 lists species potentially present at the proposed PR training sites, if suitable habitat is present (USFWS 2018).

Of the 24 bird species listed in Table 3.3-2, 22 are BCCs.

**Table 3.3-2. Potential Birds within Proposed PR Training Sites on DoD Property**

| Common Name<br>*Scientific Name* | Potential to Breed at the Proposed PR Training Site | Migrating through Proposed PR Training Site (Unlikely to Breed) |
|---|---|---|
| Bald eagle<br>*Haliaeetus leucocephalus* | Fort Tuthill, L Tank, Metz Tank, Navajo East, Neill Flat, Rogers Lake (Logger Camp), Rogers Napier, and Rogers Wren | None |
| Bendire's thrasher<br>*Toxostoma bendirei* | OP Charlie, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, and Range 3-Tower Helipad | None |
| Black-chinned sparrow<br>*Spizella atrogularis* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| Black-throated gray warbler<br>*Setophaga nigrescens* | Fort Tuthill | None |
| Black-throated sparrow<br>*Amphispiza bilineata* | Fort Tuthill | None |
| Burrowing owl<br>*Athene cunicularia* | El Centro | None |
| Common yellowthroat<br>*Geothlypis trichas sinuosa* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| Costa's hummingbird<br>*Calypte costae* | Camp Pendleton Off-Road Trail, Camp Pendleton PDL, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, and Range 3-Tower Helipad | None |
| Gila woodpecker<br>*Melanerpes uropygialis* | NATO Hill, OP Charlie, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad, South Tactical Range, and Target 333 | None |

| Table 3.3-2. Potential Birds within Proposed PR Training Sites on DoD Property | | |
|---|---|---|
| **Common Name** ***Scientific Name*** | **Potential to Breed at the Proposed PR Training Site** | **Migrating through Proposed PR Training Site (Unlikely to Breed)** |
| Gilded flicker *Colaptes chrysoides* | NATO Hill, OP Charlie, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, and Range 3-Tower Helipad | None |
| Golden eagle *Aquila chrysaetos* | Navajo West, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 6, and Range 3-Tower Helipad | None |
| Grace's warbler *Setophaga graciae* | Fort Tuthill | None |
| Lawrence's goldfinch *Carduelis lawrencei* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| Le Conte's thrasher *Toxostoma lecontei* | OP Charlie, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, and Range 3-Tower Helipad | None |
| Lewis's woodpecker *Melanerpes lewis* | Fort Tuthill | None |
| Nuttall's woodpecker *Picoides nuttallii* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| Oak titmouse *Baeolophus inornatus* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| Pinyon jay *Gymnorhinus cyanocephalus* | Fort Tuthill | None |
| Red-faced warbler *Cardellina rubrifrons* | Fort Tuthill | None |
| Rufous hummingbird *Selasphorus rufus* | None | Camp Pendleton Off-Road Trail, Camp Pendleton PDL, Fort Tuthill, L Tank, Metz Tank, Navajo East, Navajo West, Neill Flat, Rogers Lake (Logger Camp), and Rogers Wren |
| Song sparrow *Melospiza melodia* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| Spotted towhee *Pipilo maculatus clementae* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| Virginia's warbler *Leiothlypis virginiae* | Fort Tuthill | None |
| Wrentit *Chamaea fasciata* | Camp Pendleton Off-Road Trail and Camp Pendleton PDL | None |
| DoD – U.S. Department of Defense<br>HLZ – Helicopter Landing Zone<br>PDL – Piedra de Lumbre<br>PR – Personnel Recovery<br>Source: USFWS 2018. | | |

**Mammals:** Various mammal species are present on or near the proposed PR training sites on DoD property in Arizona, California, Nevada, and New Mexico, as discussed below.

Arizona. Some of the more common mammal species include bobcat (*Felis rufus*), black-tailed jackrabbit (*Lepus californicus*), California leaf-nosed bat (*Macrotus californicus*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), desert pocket mouse (*Perognathus penicillatus*), Merriam's kangaroo rat (*Dipodomys merriami*), round-tailed ground squirrel (*Spermophilous tereticaudus*), and white-throated woodrat (*Neotoma albigula*) (USAF 2011).

California. Common mammals include California ground squirrel (*Spermophilus beecheyi*), coyote, desert cottontail, mule deer (*Odocoileus hemionus*), and raccoon (*Procyon lotor*).

Nevada. Common mammals include mule deer, spotted skunk (*Spilogale gracilis*), little brown myotis (*Myotis lucifugus*), desert cottontail, and valley pocket gopher (*Thomomys bottae*).

New Mexico. The pronghorn antelope (*Antilocapra americana*) and white-tailed deer (*Odocoileus virginianus*) are the common large grazing mammals; small burrowing mammals are primarily represented by antelope jackrabbit (*Lepus alleni*); black-tailed jackrabbit; and various burrowing rodents, including the hispid pocket mouse (*Perognathus hispidus*), northern grasshopper mouse (*Onychomys leucogaster*), and spotted ground squirrel (*Spermophilus spilosoma*) (USAF 2017b).

#### 3.3.2.1.3 Threatened and Endangered Species

Table 3.3-3 lists species federally listed as endangered, threatened, candidate, or proposed for which potential habitat occurs on the proposed PR training sites on DoD property. Special-status species with potential to occur due to presence of suitable habitat within or near proposed PR training sites on DoD property include the following:

- The federally endangered arroyo toad (*Anaxyrus californicus*) has the potential to occur within 500 feet of the Camp Pendleton Off-Road Trail and Camp Pendleton PDL PR training sites within the Las Flores Creek riparian vegetation.
- The federally endangered Least Bell's vireo (*Vireo bellii pusillus*) has the potential to occur within 500 feet of the Camp Pendleton Off-Road Trail and Camp Pendleton PDL PR training sites within the riparian vegetation east of the sites along the Las Flores Creek.
- The federally threatened northern Mexican gartersnake (*Thamnophis eques megalops*) has the potential to occur in the vegetation northwest of the Metz Tank PR training site and the pooled water east and southwest of the Navajo West PR training site.
- The federally threatened Mexican spotted owl (*Strix occidentalis lucida*) has the potential to occur within the L Tank PR training site. The Fort Tuthill, Metz Tank, Navajo East, Neill Flat, Rogers Lake (Logger Camp), Rogers Napier, and Rogers Wren PR training sites do not contain suitable nesting habitat for the Mexican spotted owl but are within 500 feet of suitable nesting habitat.
- The federally endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*) has the potential to occur at the NATO Hill, South Tactical Range, and Target 333 PR training sites. The OP Charlie PR training site contains suitable habitat for the non-essential, experimental population of Sonoran pronghorn. The Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad PR training sites contain suitable habitat for both population types of the Sonoran pronghorn.

| Table 3.3-3. Special-Status Species Potentially Occurring within Proposed PR Training Sites on DoD Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| **Crustaceans** | | | | |
| Riverside fairy shrimp<br>*Streptocephalus woottoni* | E | Southwestern California. Vernal pools. | None | No suitable habitat within proposed PR training sites |
| San Diego fairy shrimp<br>*Branchinecta sandiegonensis* | E | South coastal California. Vernal pools. | None | No suitable habitat within proposed PR training sites |
| **Fish** | | | | |
| Tidewater goby<br>*Eucyclogobius newberryi* | E | Del Norte County in northern California, USA to Del Mar in southern California. Waters of coastal lagoons, estuaries, and marshes. | None | No suitable habitat within proposed PR training sites |
| **Amphibians** | | | | |
| Arroyo toad<br>*Anaxyrus californicus* | E | Central and southern California. Sandy or cobble washes with swift currents and associated upland and riparian habitats. | None | *Within 500 feet of potentially suitable habitat:*<br>Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| **Reptiles** | | | | |
| Northern Mexican gartersnake<br>*Thamnophis eques megalops* | T | Arizona, southeastern California, and southwestern New Mexico. Mid-elevation wetlands with highly organic, reducing soils, small earthen impoundments, large river riparian woodlands and forests, and well-developed broadleaf deciduous riparian forests with limited, if any, herbaceous ground cover or dense grass. | None | *Within 500 feet of potentially suitable habitat:*<br>Metz Tank and Navajo West |

| Table 3.3-3. Special-Status Species Potentially Occurring within Proposed PR Training Sites on DoD Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| **Birds** | | | | |
| California condor<br>*Gymnogyps californianus* | E/EXPN | Southern and central coastal California, Grand Canyon in Arizona. Large areas of remote country for foraging, roosting, and nesting. Condors roost on large trees or snags, or on isolated rocky outcrops and cliffs. Nests are located in shallow caves and rock crevices on cliffs where there is minimal disturbance. Foraging habitat includes open grasslands and oak savanna foothills that support populations of large mammals such as deer and cattle. Condors are known to fly 150 miles a day in search of food. | None | No suitable habitat within proposed PR training sites |
| California least tern<br>*Sterna antillarum browni* | E | Coastal California. Open beaches free of vegetation. | None | No suitable habitat within proposed PR training sites |
| Coastal California gnatcatcher<br>*Polioptila californica* | T | Coastal California from Santa Barbara south to Baja California. Coastal sagebrush. | None | No suitable habitat within proposed PR training sites |
| Least Bell's vireo<br>*Vireo bellii pusillus* | E | Coastal southern California through the Sacramento and San Joaquin Valleys as far north as Red Bluff. Lowland riparian habitat. | None | *Within 500 feet of potentially suitable habitat:*<br>Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| Light-footed Ridgway's rail<br>*Rallus obsoletus levipes* | E | Southern California. Coastal salt marshes, lagoons, and their maritime environs. | None | No suitable habitat within proposed PR training sites |
| Mexican spotted owl<br>*Strix occidentalis lucida* | T | Utah, Colorado, Arizona, New Mexico and southwestern Texas. Old-growth or mature forests that possess uneven aged stands, high canopy closure, multi-storied levels, high tree density; and canyons with riparian or conifer communities, in areas with some type of water source. | None | L Tank.<br>*Within 500 feet of potentially suitable nesting habitat:*<br>Fort Tuthill, Metz Tank, Navajo East, Neill Flat, Rogers Lake (Logger Camp), Rogers Napier, Rogers Wren |
| Southwestern willow flycatcher<br>*Empidonax traillii extimus* | E | Arizona, New Mexico, and southern California; portions of southern Nevada and Utah; and southwest Colorado. Riparian forests. | None | No suitable habitat within proposed PR training sites |

| Table 3.3-3. Special-Status Species Potentially Occurring within Proposed PR Training Sites on DoD Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Western snowy plover<br>*Charadrius nivosus* | T | Southern Washington to southern Baja California. Coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. | None | No suitable habitat within proposed PR training sites |
| Yellow-billed cuckoo<br>*Coccyzus americanus* | T | Arizona, western New Mexico, and western coastal California. Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites. | None | No suitable habitat within proposed PR training sites |
| **Mammals** | | | | |
| Pacific pocket mouse<br>*Perognathus longimembris pacificus* | E | Southern coastal California. Fine grain, sandy substrates in coastal strand, coastal dunes, river alluvium and coastal sage scrub habitats within approximately 2.5 miles of the ocean. | None | No suitable habitat within proposed PR training sites |
| Sonoran pronghorn<br>*Antilocapra americana sonoriensis* | E | Southwestern Arizona. Broad alluvial valleys separated by granite mountains and mesas; areas with small-leaf trees and numerous species of cacti scattered over rocky hills and coarse-soiled slopes; and with triangle-leaf bursage (*Ambrosia deltoidea*) or brittle bush (*Encelia* sp.) almost always present. | None | NATO Hill, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad, South Tactical Range, and Target 333 |
| | EXPN | None | None | OP Charlie, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, and Range 3-Tower Helipad, |

| Table 3.3-3. Special-Status Species Potentially Occurring within Proposed PR Training Sites on DoD Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Stephens' kangaroo rat<br>*Dipodomys stephensi* | E | California, from Riverside County south to San Diego County. Annual and perennial grassland habitats but may occur in coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas. | None | Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| **Plants** | | | | |
| San Diego thornmint<br>*Acanthomintha ilicifolia* | T | Coastal southern California. Openings within coastal sage scrub, chaparral, and native grassland. | None | No suitable habitat within proposed PR training sites |
| San Diego ambrosia<br>*Ambrosia pumila* | E | San Diego and Riverside Counties in California, and Baja, Mexico. Open floodplain terraces in variety of ruderal associations or in openings in coastal sage scrub and chaparral. | None | No suitable habitat within proposed PR training sites |
| Thread-leaved brodiaea<br>*Brodiaea filifolia* | T | California, San Bernardino County, and south through eastern Orange and western Riverside Counties to the City of San Diego. Herbaceous plant communities such as grassland communities, alkali playa, and in vernal pools. In some locations, thread-leaved brodiaea grows in open areas associated with coastal sage scrub. | None | Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| Acuna cactus<br>*Echinomastus erectocentrus* var. *acunensis* | E | Arizona Sonoran Desert (Palo Verde-Saguaro Association. Valleys and on small knolls and gravel ridges of up to 30 percent slope. | None | Target 333 |
| San Diego button-celery<br>*Eryngium aristulatum* var. *parishii* | E | Riverside County, California, south to northern Baja California, Mexico. Vernal pools on mesa tops or valley floors interspersed among mima mounds. | None | No suitable habitat within proposed PR training sites |
| Spreading navarretia<br>*fossalis* | T | California Central Coast south to Baja, Mexico. Shadscale Scrub, freshwater wetlands, wetland-riparian. | None | No suitable habitat within proposed PR training sites |

Federal Status: E – Endangered
T – Threatened
EXPN = Experimental Population, Non-Essential

DoD – U.S. Department of Defense
HLZ – Helicopter Landing Zone
PDL – Piedra de Lumbre
PR – Personnel Recovery

Source: USFWS 2018.

- The federally endangered Stephens' kangaroo rat (*Dipodomys stephensi*) has the potential to occur at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL PR training sites.
- The federally threatened thread-leaved brodiaea (*Brodiaea filifolia*) has the potential to occur at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL PR training sites.
- The federally endangered acuna cactus (*Echinomastus erectocentrus* var. *acunensis*) has the potential to occur at the Target 333 PR training site.

#### 3.3.2.1.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

None of the proposed PR training sites on DoD property occur on or within 0.5 mile of designated critical habitat for a federally listed species.

**Wetlands**

Wetlands within the proposed PR training sites on DoD property include the following:

- The Fort Tuthill PR training site contains a natural wetland. The area is identified as riverine on National Wetland Inventory (NWI) maps (USFWS 2018).
- The Metz Tank PR training site contains two types of natural wetlands. The areas are identified as freshwater pond and riverine on NWI maps (USFWS 2018).
- The Navajo East and Neill Flat PR training sites contain two types of natural wetlands. The areas are identified as freshwater pond and riverine on NWI maps (USFWS 2018).
- The Navajo West PR training site contains three types of natural wetlands. The areas are identified as freshwater emergent wetland, freshwater pond, and riverine on NWI maps (USFWS 2018).
- The Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad PR training sites contain a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).
- The Target 333 PR training site contains a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).

### 3.3.2.2 U.S. Forest Service or Other Federal Land

The sections that follow describe the existing environment within sites located on USFS or other federal land.

#### 3.3.2.2.1 Vegetation

As shown in Table 3.3-4, eight vegetation communities were identified within the proposed PR training sites on USFS or other federal land. Appendix G of this EA provides a description of these vegetation communities.

**Table 3.3-4. Vegetation Communities within the Proposed PR Training Sites on U.S. Forest Service or Other Federal Land**

| Vegetation Community | Proposed PR Training Sites |
|---|---|

| Table 3.3-4. Vegetation Communities within the Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | |
|---|---|
| **Vegetation Community** | **Proposed PR Training Sites** |
| Arizona Upland Division of Sonoran Desertscrub | Roosevelt Lake, Saguaro Lake Ranch, and Verde River |
| Great Basin Conifer Woodland | Glenwood Ranger Station and Reserve Ranger Station |
| Great Basin Desertscrub | Lees Ferry and Tribeland |
| Madrean Evergreen Woodland | Charouleau Gap, Devon, Portal Cabin and CCC Bunkhouse, Portal HLZ, Ranger, Rucker HLZ, and Saddle Mountain West |
| Petran Montane Conifer Forest | Black Mesa – USFS Helitack Base, Comanche, Flagstaff Hotshot – USFS Helitack Base, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, Negrito South, and Rainy Mesa |
| Plains and Great Basin Grassland | Overgaard – USFS Helitack Base, Saddle Mountain East, Saddle Mountain South, and Spring Valley Cabin, |
| Semi-desert Grassland | Mesa and Redington Pass |
| PR – Personnel Recovery<br>USFS – U.S. Forest Service<br>Source: AZGFD 2019. | |

#### 3.3.2.2.2 Wildlife

Proposed PR training sites on USFS or other federal land occur only in Arizona, Nevada and New Mexico. None of the proposed PR training sites on USFS or other federal land are in California.

**Fish:** Fish are found in the proposed open water PR training sites. Common fish found in Roosevelt Lake include channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodictis olivaris*), largemouth bass (*Micropterus salmoides*), and smallmouth bass (*Micropterus dolomieu*). Common fish found in the lower Salt River include blue catfish (*Ictalurus furcatus*), channel catfish, flathead catfish, largemouth bass, rainbow trout (*Oncorhynchus mykiss*), smallmouth bass, yellow bass (*Morone mississippiensis*), and yellow perch (*Perca flavescens*). Common fish found in the Verde River include channel catfish, flathead catfish, largemouth bass, rainbow trout, smallmouth bass, and yellow perch.

**Reptiles:** Various reptile species are present on or near the proposed PR training sites on USFS or other federal land in Arizona, Nevada, and New Mexico, as discussed below.

Arizona. Common reptile species include banded gecko, desert spiny lizard, glossy snake, gopher snake, greater earless lizard, regal horned lizard, tiger whiptail, tree lizard, western diamondback, western ground snake, and western threadsnake (USAF 2011).

Nevada. Common reptiles include Great Basin whiptail lizard, sagebrush lizard, Great Basin rattlesnake, and Mojave patch-nose snake.

New Mexico. Reptiles present include common earless lizard, desert box turtle desert-grassland whiptail, and western hognose snake (Brown 1994).

**Birds:** Nesting and breeding migratory bird species protected under the MBTA and the BGEPA have the potential to occur within the proposed PR training sites. Table 3.3-5 lists those species

potentially present at the proposed PR training sites on USFS or other federal land, if suitable habitat is present (USFWS 2018).

**Table 3.3-5. Potential Birds within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land**

| Common Name<br>Scientific Name | Potential to Breed at the Proposed PR Training Site | Migrating through Proposed PR Training Site (Unlikely to Breed) |
|---|---|---|
| Arizona woodpecker<br>*Picoides arizonae* | Charouleau Gap, Devon, Mesa, Portal Cabin and CCC Bunkhouse, Portal HLZ, Ranger, Rucker HLZ, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None |
| Baird's sparrow<br>*Ammodramus bairdii* | None | Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West |
| Bald eagle<br>*Haliaeetus leucocephalus* | Comanche, Glenwood Ranger Station, Lees Ferry, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Roosevelt Lake, Saguaro Lake Ranch, Tribeland, and Verde River | None |
| Bendire's thrasher<br>*Toxostoma bendirei* | Saguaro Lake Ranch, and Verde River | None |
| Black-chinned sparrow<br>*Spizella atrogularis* | Charouleau Gap, Mogollon Rim (General Crook), Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Roosevelt Lake, Saguaro Lake Ranch, and Verde River | None |
| Black-throated gray warbler<br>*Setophaga nigrescens* | Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Longview – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Ranger, Redington Pass, Roosevelt Lake, Rucker HLZ, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, Saguaro Lake Ranch, and Tribeland | None |
| Black-throated sparrow<br>*Amphispiza bilineata* | Charouleau Gap, Glenwood Ranger Station, Mormon Lake - USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Saguaro Lake Ranch | None |
| Blue-throated hummingbird<br>*Lampornis clemenciae* | Portal Cabin and CCC Bunkhouse, and Portal HLZ | None |
| Botteri's sparrow<br>*Peucaea botterii* | Portal Cabin and CCC Bunkhouse, Portal HLZ, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None |
| Brewer's sparrow<br>*Spizella breweri* | Lees Ferry | None |

| Table 3.3-5. Potential Birds within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | |
|---|---|---|
| **Common Name<br>Scientific Name** | **Potential to Breed at the Proposed PR Training Site** | **Migrating through Proposed PR Training Site (Unlikely to Breed)** |
| Chestnut-collared longspur<br>*Calcarius ornatus* | None | Mormon Lake - USFS Helitack Base – USFS Helitack Base, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West |
| Clark's grebe<br>*Aechmophorus clarkia* | Verde River | None |
| Common black-hawk<br>*Buteogallus anthracinus* | Comanche, Glenwood Ranger Station, Reserve Ranger Station, and Roosevelt Lake | None |
| Costa's hummingbird<br>*Calypte costae* | Verde River | None |
| Elegant trogon<br>*Trogon elegans* | Portal Cabin and CCC Bunkhouse, Portal HLZ, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None |
| Elf owl<br>*Micrathene whitneyi* | Glenwood Ranger Station, Portal Cabin and CCC Bunkhouse, Portal HLZ, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, Saguaro Lake Ranch, and Verde River | None |
| Gila woodpecker<br>*Melanerpes uropygialis* | Verde River | None |
| Gilded flicker<br>*Colaptes auratus* | Charouleau Gap, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, Saguaro Lake Ranch, and Verde River | None |
| Golden eagle<br>*Aquila chrysaetos* | Charouleau Gap, Comanche, Devon, Flagstaff Hotshot – USFS Helitack Base, Glenwood Ranger Station, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Reserve Ranger Station, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Saguaro Lake Ranch | None |
| Grace's warbler<br>*Setophaga graciae* | Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Hannagan Meadow – USFS Helitack Base, Longview – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Ranger, Rucker HLZ, and Tribeland | None |
| Grasshopper sparrow<br>*Ammodramus savannarum ammolegus* | Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None |

| Table 3.3-5. Potential Birds within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | |
|---|---|---|
| **Common Name<br>Scientific Name** | **Potential to Breed at the Proposed PR Training Site** | **Migrating through Proposed PR Training Site (Unlikely to Breed)** |
| Gray vireo<br>*Vireo vicinior* | Comanche, Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, and Roosevelt Lake | None |
| Lark bunting<br>*Calamospiza melanocorys* | None | Charouleau Gap, Glenwood Ranger Station, Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West |
| Lewis's woodpecker<br>*Melanerpes lewis* | Charouleau Gap, Flagstaff Hotshot – USFS Helitack Base, Glenwood Ranger Station, Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, and Tribeland | None |
| Lucifer hummingbird<br>*Calothorax lucifer* | Portal Cabin and CCC Bunkhouse | None |
| Mexican chickadee<br>*Poecile sclateri* | Portal Cabin and CCC Bunkhouse, and Portal HLZ | None |
| Mexican whip-poor-will<br>*Antrostomus arizonae* | Charouleau Gap, Portal Cabin and CCC Bunkhouse, Portal HLZ, Ranger, and Rucker HLZ | None |
| Phainopepla<br>*Phainopepla nitens* | Charouleau Gap, Comanche, Devon, Glenwood Ranger Station, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, Saguaro Lake Ranch, and Tribeland | None |
| Pinyon jay<br>*Gymnorhinus cyanocephalus* | Comanche, Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Reserve Ranger Station, Spring Valley Cabin, and Tribeland | None |
| Red-faced warbler<br>*Cardellina rubrifrons* | Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Portal Cabin and CCC Bunkhouse, and Portal HLZ | None |

| Table 3.3-5. Potential Birds within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | |
|---|---|---|
| **Common Name<br>Scientific Name** | **Potential to Breed at the Proposed PR Training Site** | **Migrating through Proposed PR Training Site (Unlikely to Breed)** |
| Rufous hummingbird<br>*Selasphorus rufus* | None | Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Glenwood Ranger Station, Hannagan Meadow – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Rainy Mesa, Ranger, Roosevelt Lake, Rucker HLZ, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Verde River |
| Rufous-winged sparrow<br>*Peucaea carpalis* | Charouleau Gap, Devon, Glenwood Ranger Station, Hannagan Meadow – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, Saguaro Lake Ranch, and Verde River | None |
| Sprague's pipit<br>*Anthus spragueii* | None | Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West |
| Varied bunting<br>*Passerina versicolor* | Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None |
| Virginia's warbler<br>*Leiothlypis virginiae* | Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Portal HLZ, Redington Pass, Roosevelt Lake, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Tribeland | None |
| Whiskered screech-owl<br>*Megascops trichopsis* | Devon, Portal Cabin and CCC Bunkhouse, Portal HLZ, Ranger, Rucker HLZ, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None |
| HLZ – Helicopter Landing Zone<br>PR – Personnel Recover<br>USFS – U.S. Forest Service<br>Source: USFWS 2018. | | |

Of the 36 bird species listed in Table 3.3-5, 34 are BCCs. The Information for Planning and Consultation search results reported no BCCs at the following proposed PR training sites: Black Mesa – USFS Helitack Base, Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, and Negrito South.

**Mammals:** Various mammal species are present on or near the proposed PR training sites on USFS or other federal land in Arizona, Nevada, and New Mexico, as discussed below.

Arizona. Some of the more common mammal species include black-tailed jackrabbit, bobcat, California leaf-nosed bat, coyote, desert cottontail, desert pocket mouse, Merriam's kangaroo rat, round tailed ground squirrel, and white-throated woodrat (USAF 2011).

Nevada. Common mammals include mule deer, spotted skunk, little brown myotis, desert cottontail, and valley pocket gopher.

New Mexico. The pronghorn antelope and white-tailed deer are the common large grazing mammals; small burrowing mammals are primarily represented by the antelope jackrabbit; black-tailed jackrabbit; and various burrowing rodents, including the northern grasshopper mouse, hispid pocket mouse, and spotted ground squirrel (USAF 2017b).

#### 3.3.2.2.3 Threatened and Endangered Species

Table 3.3-6 lists species federally listed as endangered, threatened, candidate, or proposed for which potential habitat occurs on the proposed PR training sites on USFS or other federal land. As shown in Table 3.3-6, the only special-status species with potential to occur due to presence of suitable habitat within or near proposed PR training sites on USFS or other federal land include the following:

- The federally threatened Chiricahua leopard frog (*Rana chiricahuensis*) has the potential to occur within the intermittent stream south of the Devon PR training site and the Cave Creek and associated riparian vegetation southeast of the Portal Cabin and CCC Bunkhouse PR training site. Suitable habitat does not occur at these proposed PR training sites but occurs within 500 feet of each of these proposed PR training sites.
- The federally endangered Colorado pikeminnow (*Ptychocheilus lucius*) has the potential to occur within the Roosevelt Lake PR training site.
- The federally endangered Gila topminnow (*Poeciliopsis occidentalis*) has the potential to occur within the Roosevelt Lake PR training site.
- The Devon, Portal Cabin and CCC Bunkhouse, Ranger, Redington Pass, and Rucker HLZ PR training sites have potentially suitable habitat for the federally endangered jaguar (*Panthera onca*).
- The Tusayan and Williams Districts of the Kaibab National Forest south of the Grand Canyon are within the experimental nonessential population area designated for reintroduction of the federally endangered California condor (*Gymnogyps californianus*). The species has ocassionally been detected in the Tusayan District, and rarely seen in the Williams District. While none of the PR training sites support suitable habitat for condors, flyovers are a potential at Pittman Valley, Tribeland and Mohawk PR training sites given that condors are opportunistic scavengers and their primary use of the forest is for dispersal habitat and foraging.

| Table 3.3-6. Special-Status Species Potentially Occurring within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| **Fish** | | | | |
| Apache trout *Oncorhynchus apache* | T | Upper Salt River and Little Colorado River systems (Colorado River drainage) in Arizona. Clear, cool mountain headwaters and creeks (generally above 2,500 meter elevation), and mountain lakes. | None | No suitable habitat within proposed PR training sites |
| Colorado pikeminnow *Ptychocheilus lucius* | EXPN | Colorado River drainage in USA (Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada and California) and Mexico. Pools of medium to large rivers. Large individuals usually occur in deep, flowing rocky or sandy pools. | None | Roosevelt Lake |
| Desert pupfish *Cyprinodon macularius* | E | Lower Colorado River drainage, including the Gila River system and south through southern Arizona and California (including the Salton Sea) into northern Mexico. Shallow waters of desert springs, small streams, and marshes below 1,524 meters (5,000 feet) in elevation. | None | No suitable habitat within proposed PR training sites |
| Gila chub *Gila intermedia* | E | Gila River system (Colorado River drainage) in New Mexico and Arizona. Pools in smaller streams, springs, and cienegas with deep waters and terrestrial vegetation, boulders and fallen logs. | None | No suitable habitat within proposed PR training sites |
| Gila topminnow *Poeciliopsis occidentalis* | E | Gila River system in New Mexico and Arizona and streams south to western Mexico. Occurs naturally in the Colorado and Yaqui river basins at altitudes ranging from sea level to 1,500 meters. Shallow, warm, fairly quiet waters in ponds, cienegas, tanks, pools, springs, small streams, and the margins of larger streams, with dense mats of algae and debris along the margins for cover and foraging. | None | Roosevelt Lake |
| Gila trout *Oncorhynchus gilae* | T | Gila River system in New Mexico and Arizona. Clear, cold mountain streams in arid regions where they congregate in deeper pools and in shallow water only where there are protective debris or plant beds. | None | No suitable habitat within proposed PR training sites. *Within 500 feet of potentially suitable habitat*:* Negrito North |

| Table 3.3-6. Special-Status Species Potentially Occurring within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Loach minnow *Tiaroga cobitis* | E | Upper Gila River system in New Mexico and Arizona, and San Pedro River in Arizona and northern Sonora, Mexico. Rocky, often vegetated, riffles of creeks and small to medium rivers | *Within 0.5 mile of Critical Habitat:* Glenwood Ranger Station | No suitable habitat within proposed PR training sites. |
| Razorback sucker (*Xyrauchen texanus*) | E | Presently known only above Grand Canyon and in Lakes Mead, Mohave and Havasu on lower Colorado River. Silt-bottomed to rock-bottomed backwaters near strong current and deep pools in medium to large rivers, and impoundments | *Within 0.5 mile of Critical Habitat:* Lees Ferry | Roosevelt Lake |
| Sonora chub *Gila ditaenia* | T | Rio de la Concepcion drainage of northern Mexico. Sycamore Creek, near Nogales, forms the headwaters of this drainage and is the only place in Arizona where it occurs. Shaded pools with undercut banks. | None | No suitable habitat within proposed PR training sites |
| Spikedace *Meda fulgida* | E | Gila River system in Arizona and New Mexico. Sandy and rocky runs and pools and often occurs near riffles of creeks and small rivers | *Within 0.5 mile of Critical Habitat:* Glenwood Ranger Station | Roosevelt Lake |
| **Amphibians** | | | | |
| Chiricahua leopard frog *Rana chiricahuensis* | T | Southern Arizona and New Mexico (bordering with Mexico). Permanent waters in ponds, tanks, cienegas, and small streams. Currently restricted to springs, livestock tanks, and streams in upper portions of watersheds that are free from nonnative predators or where marginal habitat for nonnative predators exists. | None | *Within 500 feet of potentially suitable habitat:* Devon and Portal Cabin and CCC Bunkhouse |
| **Reptiles** | | | | |
| Narrow-headed gartersnake *Thamnophis rufipunctatus* | T | Arizona and southwestern New Mexico. Near the cool, clear headwater streams and river banks. | *Within 0.5 mile of Proposed Critical Habitat:* Glenwood Ranger Station | No suitable habitat within proposed PR training sites |

| Table 3.3-6. Special-Status Species Potentially Occurring within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Northern Mexican gartersnake *Thamnophis eques megalops* | T | Arizona and southwestern New Mexico. Near the cool, clear headwater streams and river banks. | Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | Mormon Lake - USFS Helitack Base, Roosevelt Lake, and Spring Valley Cabin. *Within 500 feet of potentially suitable habitat:* Portal Cabin and CCC Bunkhouse |
| Sonoyta mud turtle *Kinosternon sonoriense longifemorale* | E | Arizona, southeastern California, and southwestern New Mexico. Mid-elevation wetlands with highly organic, reducing soils, small earthen impoundments, large river riparian woodlands and forests, and well-developed broadleaf deciduous riparian forests with limited, if any, herbaceous ground cover or dense grass. | None | No suitable habitat within proposed PR training sites |
| **Birds** | | | | |
| California condor *Gymnogyps californianus* | E/EXPN | Southern and central coastal California, Grand Canyon in Arizona. Large areas of remote country for foraging, roosting, and nesting. Condors roost on large trees or snags, or on isolated rocky outcrops and cliffs. Nests are located in shallow caves and rock crevices on cliffs where there is minimal disturbance. Foraging habitat includes open grasslands and oak savanna foothills that support populations of large mammals such as deer and cattle. Condors are known to fly 150 miles a day in search of food. | None | No suitable habitat within proposed training sites. However, species has been occasionally detected in the Tusayan and Williams Districts of the Kaibab National Forest in southern Arizona (south of the Grand Canyon). While none of the PR training sites support suitable habitat for condors, flyovers are a potential at Pittman Valley, Tribeland and Mohawk PR training sites given that condors are opportunistic scavengers and their primary use of the forest is for dispersal habitat and foraging. |
| California least tern *Sterna antillarum browni* | E | Coastal California. Open beaches free of vegetation. | None | No suitable habitat within proposed PR training sites |

| Table 3.3-6. Special-Status Species Potentially Occurring within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Least tern *Sterna antillarum* | E | Missouri, Mississippi, Ohio, Red, and Rio Grande river systems. Can occur in southeastern New Mexico. Barren to sparsely vegetated sandbars along rivers, sand and gravel pits, lake and reservoir shorelines, and occasionally gravel rooftops. | N/A | No suitable habitat within proposed PR training sites |
| Mexican spotted owl *Strix occidentalis lucida* | T | Southern Rocky Mountains in Colorado and the Colorado Plateau in southern Utah southward through Arizona and New Mexico and discontinuously through the Sierra Madre Occidental and Oriental to the mountains at the southern end of the Mexican Plateau. Nest, forage, roost, and disperse in a wide variety of biotic communities including mixed-conifer forests, Madrean pine-oak forests and rocky canyons. | Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Longview – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito North, Rainy Mesa, Ranger, Redington Pass, and Rucker HLZ.<br>*Within 0.5 mile of Critical Habitat:*<br>Black Mesa – USFS Helitack Base, Devon, Mormon Lake - USFS Helitack Base, Negrito Helibase, Negrito South, and Saddle Mountain West | Charouleau Gap, Comanche, Hannagan Meadow – USFS Helitack Base, Helibase Circular, Portal Cabin and CCC Bunkhouse, Ranger, and Rucker HLZ<br>*Within 500 feet of potentially suitable nesting habitat:*<br>Black Mesa – USFS Helitack Base, Devon, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Negrito Airstrip, Overgaard – USFS Helitack Base, Rainy Mesa, Saddle Mountain West, Spring Valley Cabin, and Tribeland |
| Northern aplomado falcon *Falco femoralis septentrionalis* | EXPN | Utah, Colorado, Arizona, New Mexico and southwestern Texas. Old-growth or mature forests that possess uneven aged stands, high canopy closure, multi-storied levels, high tree density; and canyons with riparian or conifer communities, in areas with some type of water source. | None | Portal Cabin and CCC Bunkhouse, Ranger, and Rucker HLZ |

| Table 3.3-6. Special-Status Species Potentially Occurring within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Southwestern willow flycatcher *Empidonax traillii extimus* | E | Southeastern Arizona and southern New Mexico. Dry grasslands, savannahs, and marshes. | *Within 0.5 mile of Critical Habitat:* Glenwood Ranger Station and Roosevelt Lake | Roosevelt Lake and Verde River |
| Yellow-billed cuckoo *Coccyzus americanus* | T | Arizona, New Mexico, and southern California; portions of southern Nevada and Utah; and southwest Colorado. Riparian forests. | *Within 0.5 mile of Proposed Critical Habitat:* Glenwood Ranger Station and Roosevelt Lake | Portal Cabin and CCC Bunkhouse, Roosevelt Lake, and Verde River. *Within 500 feet of potentially suitable habitat:* Saguaro Lake Ranch |
| Yuma clapper rail *Rallus longirostris yumanensis* | E | Arizona, western New Mexico, and western coastal California. Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites. | None | Roosevelt Lake and Verde River. *Within 500 feet of potentially suitable habitat:* Saguaro Lake Ranch |
| **Mammals** | | | | |
| Jaguar *Panthera onca* | E | Lower Colorado River in Mexico north to the lower Muddy River and Virgin River in Utah. Significant populations occur near and around the Salton Sea in California, and along the lower Gila River and the Gila River near Phoenix, Arizona. Dense cattail or cattail-bulrush marshes. | Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | Devon, Portal Cabin and CCC Bunkhouse, Ranger, Redington Pass, and Rucker HLZ |
| Mexican wolf *Canis lupus baileyi* | EXPN | Southeastern Arizona. Thornscrub, desert scrub, and grasslands. Vegetation communities used in Arizona range from Sonoran desert scrub at lower elevations to subalpine mixed conifer in the mountain ranges. | None | Glenwood Ranger Station, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, Negrito South, Overgaard – USFS Helitack Base, Rainy Mesa, and Reserve Ranger Station |

| Table 3.3-6. Special-Status Species Potentially Occurring within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| New Mexico meadow jumping mouse *Zapus hudsonius luteus* | E | Central and southern Arizona and New Mexico. Not limited to any particular habitat type, but viable populations occur only where human population density and persecution levels are low and prey densities are high. | None | No suitable habitat within proposed PR training sites |
| Ocelot *Leopardus [=Felis] pardalis* | E | Southern Colorado, central (north to south) New Mexico, and central-eastern Arizona. Persistent emergent herbaceous wetlands (i.e., beaked sedge [*Carex rostrata*] and reed canarygrass [*Phalaris arundinacea*] alliances); and scrub-shrub wetlands (i.e., riparian areas along perennial streams that are composed of willows [*Salix* sp.] and alders [*Alnus* sp.]). Especially uses microhabitats of patches or stringers of tall dense sedges on moist soil along the edge of permanent water. | None | No suitable habitat within proposed PR training sites |
| Sonoran pronghorn *Antilocapra americana sonoriensis* | EXPN | Southeastern Arizona and southern Texas. Dense cover in brushy forests and semiarid deserts. | None | No suitable habitat within proposed PR training sites |
| **Plants** | | | | |
| Welsh's milkweed *Asclepias welshii* | T | Southwestern Arizona. Broad alluvial valleys separated by granite mountains and mesas; areas with small-leaf trees and numerous species of cacti scattered over rocky hills and coarse-soiled slopes; and with triangle-leaf bursage (Ambrosia deltoidea) or brittle bush (Encelia sp.) almost always present. | None | No suitable habitat within proposed PR training sites |
| Wright's marsh thistle *Cirsium wrightii* | C | Kane County, Utah, also in Arizona in Coconino, Navajo, and Apache Counties. Active dunes derived from Navajo sandstone. Surrounding habitats include sagebrush, juniper, and ponderosa pine communities at 5,000 to 6,200 feet in elevation. | None | No suitable habitat within proposed PR training sites |

| Table 3.3-6. Special-Status Species Potentially Occurring within Proposed PR Training Sites on U.S. Forest Service or Other Federal Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Zuni fleabane *Erigeron rhizomatus* | T | Seven counties in South-Central New Mexico. Most common in low-elevation wetlands in the barren desert, often in alkaline soils. Moist environments, such as mountain slopes, forests, and marshes on the edges of rivers and ponds. | None | No suitable habitat within proposed PR training sites |
| Huachuca water-umbel *Lilaeopsis schaffneriana* var. *recurve* | E | Twenty scattered populations in the Zuni, Datil, and Sawtooth mountain ranges in west-central New Mexico, and in the Chuska Mountains in northeastern Arizona. Pinyon-juniper woodlands, but the specific habitat where Zuni fleabane grows is sparsely vegetated | None | No suitable habitat within proposed PR training sites |
| San Francisco Peaks ragwort *Packera franciscana* | T | Southeastern Arizona. Between 4,000 and 6,500 feet in cienegas, springs, and other healthy riverine systems. | None | No suitable habitat within proposed PR training sites |
| Brady pincushion cactus *Pediocactus bradyi* | E | San Francisco Peaks in northern Arizona. Upper tree-line and alpine habitats; apparent specificity to volcanic talus habitat. | None | No suitable habitat within proposed PR training sites |
| Canelo Hills ladies-tresses *Spiranthes delitescens* | E | Scattered populations over 70 square kilometers (27 square miles) area near Marble Canyon along the Colorado River in Arizona. Grows only on chips of Kaibab limestone that overlay soils derived from Moenkopi shale and sandstone outcrops. These soils occur along gently sloping benches at 1,180 to 1,370 meters (3,860 to 4,490 feet) in elevation. The sites have sparse vegetation of low shrubs, annuals, and grasses. | None | No suitable habitat within proposed PR training sites |

Federal Status: E – Endangered
T – Threatened
EXPN – Experimental Population, Non-Essential
HLZ – Helicopter Landing Zone
PR – Personnel Recover
USFS – U.S. Forest Service

* Habitat (creek/stream/river) for fish species is more than 200 feet from proposed PR training site. Species excluded from potential occurrence in analysis because the distance between the PR training site and the species' habitat is considered sufficient to not affect the habitat as a result of erosion or ground disturbance.

Source: USFWS 2018.

- The federally threatened Mexican spotted owl has the potential to occur at a number of PR training sites:
  - The Madrean Evergreen Woodland around the Ranger, Rucker HLZ, and Charouleau Gap PR training sites and the Petran Montane Conifer Forest around the Comanche, Hannagan Meadow – USFS Helitack Base, and Helibase Circular sites provide potentially suitable nesting habitat.
  - The Mesa, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Negrito Airstrip, and Rainy Mesa PR training sites do not contain suitable nesting habitat for the Mexican spotted owl but are within 500 feet of potentially suitable nesting habitat.
  - The rocky cliffs around the Mesa PR training site; the Petran Montane Conifer Forest surrounding the Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, and Mogollon Rim (General Crook) PR training sites; the forested area west of the Negrito Airstrip; and the forested area south of the Rainy Mesa PR training site provide potentially suitable nesting habitat.
  - The Petran Montane Conifer Forest west of the Spring Valley Cabin site; the rocky cliffs and Madrean Evergreen Woodland at the Saddle Mountain West site; the Madrean Evergreen Woodland at the Devon site; and the Petran Montane Conifer Forest at the Black Mesa – USFS Helitack Base and Mormon Lake - USFS Helitack Base sites may provide potentially suitable nesting habitat.
  - The Portal Cabin and CCC Bunkhouse PR training site contains potentially suitable nesting habitat.
  - The Overgaard – USFS Helitack Base and Tribeland PR training sites do not contain suitable nesting habitat but are within 500 feet of suitable nesting habitat.
- A nonessential, experimental population of the federally endangered Mexican wolf (*Canis lupus baileyi*) has the potential to occur within the Glenwood Ranger Station, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, Negrito South, Overgaard – USFS Helitack Base, Rainy Mesa, and Reserve Ranger Station PR training sites.
- The non-essential, experimental population of northern aplomado falcon (*Falco femoralis septentrionalis*) has the potential to occur within the Ranger, Rucker HLZ, and Portal Cabin and CCC Bunkhouse PR training sites.
- The Mormon Lake - USFS Helitack Base and Roosevelt Lake sites have potentially suitable habitat for the northern Mexican gartersnake on the banks of their respective lakes. The vegetation associated with the unnamed intermittent stream east of the Spring Valley Cabin PR training site, and Cave Creek east of the Portal Cabin and CCC Bunkhouse PR training site all provides potentially suitable habitat for the northern Mexican gartersnake.
- The federally endangered razorback sucker (*Xyrauchen texanus*) has the potential to occur at the Roosevelt Lake PR training site.
- The Roosevelt Lake PR training site contains potentially suitable habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*). The Verde River PR

training site has potentially suitable habitat for the southwestern willow flycatcher in the riparian vegetation along the river.

- The federally endangered spikedace (*Meda fulgida*) has the potential to occur within the Roosevelt Lake PR training site.
- The Portal Cabin and CCC Bunkhouse and Verde River PR training sites have potentially suitable habitat for the yellow-billed cuckoo (*Coccyzus americanus*) in the riparian vegetation along their respective rivers. The riparian vegetation associated with the Salt River east of the Saguaro Lake Ranch PR training site provides potentially suitable habitat for the yellow-billed cuckoo.
- The federally endangered Yuma clapper rail (*Rallus longirostris yumanensis*) has the potential to occur within the Roosevelt Lake and Verde River PR training sites in the riparian vegetation at each PR training site. The riparian vegetation associated with the Salt River east of the Saguaro Lake Ranch PR training site provides potentially suitable habitat for the Yuma clapper rail.

#### 3.3.2.2.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

As shown in Table 3.3-7, 29 of the proposed PR training sites on USFS or other federal land occur on or within 0.5 mile of a federally listed species critical habitat.

**Table 3.3-7. Proximity of PR Training Sites on U.S. Forest Service or Other Federal Land to Critical Habitat**

| Critical Habitat | Proposed PR Training Sites within Critical Habitat That Provide Potentially Suitable Habitat | Proposed PR Training Sites within Critical Habitat That Do Not Provide Potentially Suitable Habitat | Proposed PR Training Sites within 0.5 mile of Critical Habitat That Provide Potentially Suitable Habitat | Proposed PR Training Sites within 0.5 mile of Critical Habitat That Do Not Provide Potentially Suitable Habitat |
|---|---|---|---|---|
| **Fish** | | | | |
| Loach minnow *Tiaroga cobitis* | None | None | Glenwood Ranger Station | None |
| Razorback sucker *Xyrauchen texanus* | None | None | None | Lees Ferry |
| Spikedace *Meda fulgida* | None | None | Glenwood Ranger Station | None |
| **Reptiles** | | | | |
| Narrow-headed gartersnake *Thamnophis rufipunctatus* | None | None | None | Glenwood Ranger Station |
| Northern Mexican gartersnake *Thamnophis eques megalops* | None | Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None | None |

| Table 3.3-7. Proximity of PR Training Sites on U.S. Forest Service or Other Federal Land to Critical Habitat | | | | |
|---|---|---|---|---|
| **Critical Habitat** | **Proposed PR Training Sites within Critical Habitat That Provide Potentially Suitable Habitat** | **Proposed PR Training Sites within Critical Habitat That Do Not Provide Potentially Suitable Habitat** | **Proposed PR Training Sites within 0.5 mile of Critical Habitat That Provide Potentially Suitable Habitat** | **Proposed PR Training Sites within 0.5 mile of Critical Habitat That Do Not Provide Potentially Suitable Habitat** |
| **Birds** | | | | |
| Mexican spotted owl *Strix occidentalis lucida* | Charouleau Gap, Comanche, Hannagan Meadow – USFS Helitack Base, Helibase Circular, Ranger, and Rucker HLZ | Redington Pass, Negrito Center, and Negrito North *Within 500 feet of suitable habitat:* Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Negrito Airstrip, and Rainy Mesa | Black Mesa – USFS Helitack Base, Devon, Mormon Lake - USFS Helitack Base, Saddle Mountain West, and Spring Valley Cabin | Negrito Helibase and Negrito South |
| Southwestern willow flycatcher *Empidonax traillii extimus* | None | None | Roosevelt Lake | Glenwood Ranger Station |
| Yellow-billed cuckoo *Coccyzus americanus* | None | None | Roosevelt Lake | Glenwood Ranger Station |
| **Mammals** | | | | |
| Jaguar *Panthera onca* | None | Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West | None | None |
| HLZ – Helicopter Landing Zone<br>PR – Personnel Recovery<br>USFS – U.S. Forest Service<br>Source: USFWS 2018. | | | | |

## Wetlands

Wetlands within the proposed PR training sites on USFS or other federal land include the following:

- A small manmade wetland exists within the Black Mesa – USFS Helitack Base PR training site. The area is identified as a freshwater pond on NWI maps (USFWS 2018).
- The Comanche PR training site contains a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).
- The Longview – USFS Helitack Base PR training site contains a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).

- The Mormon Lake - USFS Helitack Base PR training site contains two types of natural wetlands. The areas are identified as freshwater emergent wetland and riverine on NWI maps (USFWS 2018).
- The Negrito Airstrip, Negrito Center, and Negrito North PR training sites contain a natural wetland. The area is identified as freshwater pond on NWI maps (USFWS 2018).
- The Negrito Helibase and Negrito South PR training sites contain a natural wetland. The area is identified as freshwater pond on NWI maps (USFWS 2018).
- The Portal Cabin and CCC Bunkhouse PR training site contains two types of natural wetlands. The areas are identified as freshwater forested/shrub wetland and riverine on NWI maps (USFWS 2018).
- The Roosevelt Lake PR training site contains three types of natural wetlands. The areas are identified as freshwater forested/shrub wetland, lake, and riverine on NWI maps (USFWS 2018).
- The Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West PR training sites contain two types of natural wetlands. The areas are identified as freshwater forested/shrub wetland and riverine on NWI maps (USFWS 2018).
- The Spring Valley Cabin PR training site contains a natural wetland. The area is identified as freshwater emergent wetland on NWI maps (USFWS 2018).
- The Verde River PR training site contains two types of natural wetlands. The areas are identified as freshwater forested/shrub wetland and riverine on NWI maps (USFWS 2018).

#### 3.3.2.3 Other Land (Municipal, City, County, State, or Tribal)

The sections that follow describe the existing environment within sites located on other land.

##### 3.3.2.3.1 Vegetation

As shown in Table 3.3-8, eleven vegetation communities were identified within the proposed PR training sites on other land. Appendix G of this EA provides descriptions of these vegetation communities.

**Table 3.3-8. Vegetation Communities within Proposed PR Training Sites on Other Land**

| Vegetation Community | Proposed PR Training Sites |
|---|---|
| Arizona Upland Division of Sonoran Desertscrub | Blackhills HLZ/DZ, Black Mountain Reservoir, Lake Pleasant, Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ |
| Chihuahuan Desertscrub | Highway 80 Paladins (TW-2 Paladins) |
| Great Basin Conifer Woodland | Catron County Fairgrounds and Jenna HLZ/DZ |
| Interior Chaparral | Salt River High |
| Mohave Desertscrub | Pond HLZ/DZ, Prieto HLZ/DZ, Rancho Seco HLZ/DZ, and Sierrita HLZ/DZ |
| Petran Montane Conifer Forest | Caldwell Meadows |
| Plains and Great Basin Grassland | Babbitt Ranch 1 |
| Riparian | Colorado River, Lake Patagonia, Lake Pleasant, and Salt River Low |
| Semi-desert Grassland | Brooke, Caliente, Gila County Sheriff Roosevelt Substation, Lake Patagonia, Penitas, Playas Training and Research Center, Ruby Fuzzy Paladins, and Tombstone 8 HLZ |

| Table 3.3-8. Vegetation Communities within Proposed PR Training Sites on Other Land | |
|---|---|
| **Vegetation Community** | **Proposed PR Training Sites** |
| Open Water – Lake | Lake Patagonia and Lake Pleasant |
| Open Water – River | Colorado River and Salt River Low |
| DZ – Drop Zone<br>HLZ – Helicopter Landing Zone<br>PR – Personnel Recovery<br>Sources: AZGFD 2019; USAF 2017a; USMC 2018b. | |

#### 3.3.2.3.2 Wildlife

Proposed PR training sites on other land occur only in Arizona and New Mexico. None of the proposed PR training sites on other land are in California or Nevada.

**Fish:** Fish are found in the proposed open water PR training sites on other land. Common fish found in the Colorado River include channel catfish, largemouth bass, rainbow trout, and striped bass (*Morone saxatilis*). Common fish found in Lake Patagonia include channel catfish, flathead catfish, largemouth bass, and rainbow trout. Common fish found in Lake Pleasant include bluegill (*Lepomis macrochirus*), largemouth bass, white bass (*Morone chrysops*), and white crappie (*Pomoxis annularis*). Common fish found in the lower Salt River include blue catfish, channel catfish, flathead catfish, largemouth bass, rainbow trout, smallmouth bass, yellow bass, and yellow perch. Common fish found in the upper Salt River include channel catfish, flathead catfish, largemouth bass, and smallmouth bass.

**Reptiles:** Various reptile species are present on or near the proposed PR training sites on other land in Arizona and New Mexico, as discussed below.

Arizona. Common reptile species include banded gecko, desert spiny lizard, glossy snake, gopher snake, greater earless lizard, regal horned lizard, tiger whiptail, tree lizard, western diamondback, western ground snake, and western threadsnake (USAF 2011).

New Mexico. Reptiles present include common earless lizard, desert box turtle, desert-grassland whiptail, and western hognose snake (Brown 1994).

**Birds:** Nesting and breeding migratory bird species protected under the MBTA and the BGEPA have the potential to occur within the proposed PR training sites. Table 3.3-9 lists species potentially present at the proposed PR training sites on other land, if suitable habitat is present (USFWS 2018).

Of the 30 bird species listed in Table 3.3-9, 28 are BCCs. There are no BCCs at the following proposed PR training sites on other land: Black Mountain Reservoir, Highway 80 Paladins (TW-2 Paladins), Playas Training and Research Center, Rancho Seco HLZ/DZ, Ruby Fuzzy Paladins, Salt River High, and Tombstone 8 HLZ.

**Table 3.3-9. Potential Birds within Proposed PR Training Sites on Other Land**

| Common Name<br>Scientific Name | Potential to Breed at the Proposed PR Training Site | Migrating through Proposed PR Training Site (Unlikely to Breed) |
|---|---|---|
| Bald eagle<br>*Haliaeetus leucocephalus* | Lake Patagonia, Lake Pleasant, and Salt River Low | None |
| Black-throated gray warbler<br>*Setophaga nigrescens* | Lake Patagonia | None |
| Botteri's sparrow<br>*Peucaea botterii* | Lake Patagonia | None |
| Black-throated sparrow<br>*Amphispiza bilineata* | Brooke, Gila County Sheriff Roosevelt Substation, Jenna HLZ/DZ, Lake Patagonia, and Penitas | None |
| Arizona woodpecker<br>*Picoides arizonae* | Lake Patagonia | None |
| Black-chinned sparrow<br>*Spizella atrogularis* | Caliente, Lake Patagonia, and Lake Pleasant | None |
| Burrowing owl<br>*Athene cunicularia* | Colorado River | None |
| Chestnut-collared longspur<br>*Calcarius ornatus* | None | Jenna HLZ/DZ |
| Clark's grebe<br>Aechmophorus clarkia | Lake Pleasant | None |
| Common black-hawk<br>*Buteogallus anthracinus* | Catron County Fairgrounds, Gila County Sheriff Roosevelt Substation and Lake Patagonia | None |
| Costa's hummingbird<br>*Calypte costae* | Caliente, Colorado River, Lake Pleasant, Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ | None |
| Elegant trogon<br>*Trogon elegans* | Lake Patagonia | None |
| Elf owl<br>*Micrathene whitneyi* | Brooke, Caliente, Lake Patagonia, Lake Pleasant, and Penitas | None |
| Gila woodpecker<br>*Melanerpes uropygialis* | Blackhills HLZ/DZ, Caliente, Lake Pleasant, Lost Acre HLZ/DZ, Pond HLZ/DZ, Prieto HLZ/DZ, Sierrita HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ | None |
| Gilded flicker<br>*Colaptes chrysoides* | Caliente, Colorado River, Gila County Sheriff Roosevelt Substation, Lake Patagonia, Lake Pleasant, Lost Acre HLZ/DZ, Penitas, Silvermine HLZ/DZ, and Waterman HLZ/DZ | None |
| Golden eagle<br>*Aquila chrysaetos* | Caliente, Catron County Fairgrounds, Lake Patagonia, Lake Pleasant, Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ | None |
| Grasshopper sparrow<br>*Ammodramus savannarum ammolegus* | Lake Patagonia | None |
| Gray vireo<br>*Vireo vicinior* | Caliente, Lake Patagonia, and Lake Pleasant | None |
| Lark bunting<br>*Calamospiza melanocorys* | None | Lake Patagonia |
| Lawrence's goldfinch<br>*Carduelis lawrencei* | Lake Pleasant | None |
| Lewis's woodpecker<br>*Melanerpes lewis* | Lake Patagonia | None |
| Long-billed curlew<br>*Numenius americanus* | None | Colorado River |

| Table 3.3-9. Potential Birds within Proposed PR Training Sites on Other Land | | |
|---|---|---|
| **Common Name<br>Scientific Name** | **Potential to Breed at the Proposed PR Training Site** | **Migrating through Proposed PR Training Site (Unlikely to Breed)** |
| Marbled godwit<br>*Limosa fedoa* | None | Lake Pleasant |
| Phainopepla<br>*Phainopepla nitens* | Brooke, Gila County Sheriff Roosevelt Substation, Lake Patagonia, and Salt River Low | None |
| Pinyon jay<br>*Gymnorhinus cyanocephalus* | Catron County Fairgrounds | None |
| Red-faced warbler<br>*Cardellina rubrifrons* | Caldwell Meadows | None |
| Rufous hummingbird<br>*Selasphorus rufus* | None | Caliente, Lake Patagonia, and Lake Pleasant |
| Rufous-winged sparrow<br>*Peucaea carpalis* | Caliente, Lake Patagonia, Lake Pleasant, Lost Acre HLZ/DZ, Salt River Low, Silvermine HLZ/DZ, and Waterman HLZ/DZ | None |
| Varied bunting<br>*Passerina versicolor* | Lake Patagonia | None |
| Virginia's warbler<br>*Leiothlypis virginiae* | Lake Patagonia | None |
| Willet<br>*Tringa semipalmata* | None | Colorado River |
| DZ – Drop Zone<br>HLZ – Helicopter Landing Zone<br>PR – Personnel Recovery<br>Source: USFWS 2018. | | |

**Mammals:** Various mammal species are present on or near the proposed PR training sites on other land in Arizona and New Mexico, as discussed below.

Arizona. Some of the more common mammal species include black-tailed jackrabbit, bobcat, California leaf-nosed bat, coyote, desert cottontail, desert pocket mouse, Merriam's kangaroo rat, round tailed ground squirrel, and white-throated woodrat (USAF 2011).

New Mexico. The pronghorn antelope and white-tailed deer are the common large grazing mammals; small burrowing mammals are primarily represented by the antelope jackrabbit, black-tailed jackrabbit and various burrowing rodents, including the hispid pocket mouse, northern grasshopper mouse, and spotted ground squirrel (USAF 2017b).

#### 3.3.2.3.3 Threatened and Endangered Species

Table 3.3-10 lists species federally listed as endangered, threatened, candidate, or proposed for which potential habitat occurs on the proposed PR training sites on other land. As shown in the table, special-status species with potential to occur due to presence of suitable habitat within or near proposed PR training sites on other land include the following:

- The federally endangered bonytail chub (*Gila elegans*) has the potential to occur within the Colorado River PR training site.

- The federally endangered Gila topminnow has the potential to occur within the Lake Patagonia and Lake Pleasant PR training sites. Both lake PR training sites provide potentially suitable habitat for the Gila topminnow.
- The federally endangered Colorado pikeminnow has the potential to occur within the Salt River High and Salt River Low PR training sites.
- The federally endangered razorback sucker has the potential to occur at the Colorado River, Salt River Low and Salt River High PR training sites.
- The federally endangered Three Forks springsnail (*Pyrgulopsis trivialis*) has the potential to occur at the Caldwell Meadows PR training site within the Black River.
- The federally threatened Chiricahua leopard frog has the potential to occur within the Salt River High and Salt River Low PR training sites along the Salt River; the Lake Patagonia PR training site within the riparian vegetation along some of the shoreline; and, the Caldwell Meadows PR training site is just north of the Black River. The Rancho Seco HLZ/DZ Tank southeast of the Rancho Seco HLZ/DZ PR training site may provide suitable habitat for the Chiricahua leopard frog. Suitable habitat does not occur at this PR training site but occurs within 500 feet of the PR training site.
- The federally endangered Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*) has the potential to occur within 500 feet of the Rancho Seco HLZ/DZ PR training site (within the Rancho Seco HLZ/DZ Tank southeast of the PR training site); however, the Rancho Seco HLZ/DZ PR training site does not contain suitable habitat.
- The federally threatened northern Mexican gartersnake has the potential to occur within the Lake Patagonia and Lake Pleasant PR training sites on the banks of their respective lakes. The Black, Colorado, and Salt Rivers also have potentially suitable habitat for this species within the Caldwell Meadows, Colorado River, Salt River High, and Salt River Low PR training sites. The Rancho Seco HLZ/DZ Tank southeast of the Rancho Seco HLZ/DZ PR training site provides potentially suitable habitat for the northern Mexican gartersnake.
- The Black Mountain Reservoir PR training site is within 500 feet of potentially suitable habitat for the federally endangered jaguar.
- The federally endangered Mexican long-nosed bat (*Leptonycteris nivalis*) has the potential to occur within the Playas Training and Research Center PR training site.
- The Lake Patagonia PR training site contains potentially suitable nesting habitat for the Mexican spotted owl. The Salt River High and Salt River Low PR training sites do not contain suitable nesting habitat for the Mexican spotted owl but are within 500 feet of suitable nesting habitat.
- A non-essential, experimental population of the federally endangered Mexican wolf has the potential to occur within the Caldwell Meadows, Catron County Fairgrounds, Gila County Sheriff Roosevelt Substation, Playas Training and Research Center, Salt River High, Salt River Low, and Tombstone 8 HLZ PR training sites.
- The federally threatened narrow-headed gartersnake has potential to occur within the Salt River High and Salt River Low PR training sites.

| Table 3.3-10. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Other Land | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| **Fish** | | | | |
| Apache trout<br>*Oncorhynchus apache* | T | White Mountains and Upper Salt River and Little Colorado River systems in Arizona. Clear, cool, mountain headwaters and creeks (generally above 2500 meters in elevation) and mountain lakes. | None | No suitable habitat within proposed PR training sites |
| Beautiful shiner<br>*Cyprinella formosa* | T | San Bernardina Creek in southwest New Mexico and southeast Arizona (presumed extirpated in the U.S.). Sandy and rocky pools of creeks. | None | No suitable habitat within proposed PR training sites |
| Bonytail chub<br>*Gila elegans* | E | Colorado River drainage in Wyoming, Colorado, Utah, New Mexico, Arizona and California. Flowing pools and backwaters, usually over mud or rock. | None | Colorado River |
| Chihuahua chub<br>*Gila nigrescens* | T | Mimbres River in New Mexico. Flowing pools of creeks and small rivers, usually near brush or other cover. | None | No suitable habitat within proposed PR training sites |
| Colorado pikeminnow<br>*Ptychocheilus lucius* | EXPN | Colorado River drainage in Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada and California; and Mexico. Now mostly restricted to Utah and Colorado; extirpated from the southern portion of the range. Pools of medium to large rivers. Large individuals usually occur in deep, flowing rocky or sandy pools. | None | Salt River High and Salt River Low |
| Gila chub<br>*Gila intermedia* | E | Gila River system (Colorado River drainage) in New Mexico and Arizona. Pools in smaller streams, springs, and cienegas with deep waters and terrestrial vegetation, boulders and fallen logs. | None | No suitable habitat within proposed PR training sites |
| Gila topminnow<br>*Poeciliopsis occidentalis* | E | Gila River system in New Mexico and Arizona and streams south to western Mexico. Occurs naturally in the Colorado and Yaqui river basins at altitudes ranging from sea level to 1,500 meters. Shallow, warm, fairly quiet waters in ponds, cienegas, tanks, pools, springs, small streams, and the margins of larger streams, with dense mats of algae and debris along the margins for cover and foraging. | None | Lake Patagonia and Lake Pleasant |

| Table 3.3-10. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Other Land | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Gila trout<br>*Oncorhynchus gilae* | T | Gila River system in New Mexico and Arizona. Clear, cold mountain streams in arid regions where they congregate in deeper pools and in shallow water only where there are protective debris or plant beds. | None | No suitable habitat within proposed PR training sites.<br>*Within 500 feet of potentially suitable habitat*:*<br>Catron County Fairgrounds |
| Loach minnow<br>*Tiaroga cobitis* | E | Upper Gila River system in New Mexico and Arizona, and San Pedro River in Arizona and northern Sonora, Mexico. Rocky, often vegetated, riffles of creeks and small to medium rivers. | None | No suitable habitat within proposed PR training sites.<br>*Within 500 feet of potentially suitable habitat*:*<br>Catron County Fairgrounds |
| Razorback sucker<br>*Xyrauchen texanus* | E | Presently known only above Grand Canyon and in Lakes Mead, Mohave and Havasu on lower Colorado River. Silt-bottomed to rock-bottomed backwaters near strong current and deep pools in medium to large rivers, and impoundments. | Salt River Low | Colorado River, Salt River High, and Salt River Low |
| Spikedace<br>*Meda fulgida* | E | Gila River system in Arizona and New Mexico. Sandy and rocky runs and pools and often occurs near riffles of creeks and small rivers. | None | No suitable habitat within proposed PR training sites |
| Yaqui catfish<br>*Ictalurus pricei* | T | Rio Yaqui and Rio Casas Grandes drainages in northwestern Mexico and (presumably) extreme southeastern Arizona. Quiet water over sandy or rocky bottom in small to medium rivers. | None | No suitable habitat within proposed PR training sites |
| Yaqui chub<br>*Gila purpurea* | E | Rio Yaqui basin in Arizona, USA and Mexico. Introduced to Leslie Creek (Whitewater Draw drainage), extreme southeast Arizona. Quiet pools of headwaters and creeks and usually occurs in vegetation. | None | No suitable habitat within proposed PR training sites |
| Zuni bluehead sucker<br>*Catostomus discobolus yarrowi* | E | Snake River system (Columbia River drainage), Wyoming, and Idaho; Lake Bonneville basin, Idaho, Wyoming and Utah; south through upper Colorado river drainage (Grand Canyon and above), Wyoming, Colorado, Utah, New Mexico and Arizona. Rocky riffles and runs of small to large rivers. | None | No suitable habitat within proposed PR training sites |

| Table 3.3-10. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Other Land | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| **Snails** | | | | |
| Three Forks springsnail<br>*Pyrgulopsis trivialis* | E | Endemic to the Three Forks, Boneyard Bog, and Boneyard Creek spring complexes along Boneyard Creek and the confluence with the North Fork East Fork Black River in Apache County of east-central Arizona. Rheocrene springs (emerging from the ground as a flowing stream), seeps, spring pools, outflows, and diverse flowing waters at elevations around 2,400 meters (8,000 feet). | None | Caldwell Meadows |
| **Amphibians** | | | | |
| Chiricahua leopard frog<br>*Rana chiricahuensis* | T | Southern Arizona and New Mexico (bordering with Mexico). Permanent waters in ponds, tanks, cienegas, and small streams. Currently restricted to springs, livestock tanks, and streams in upper portions of watersheds that are free from nonnative predators or where marginal habitat for nonnative predators exists. | None | Caldwell Meadows, Lake Patagonia, Salt River High, and Salt River Low.<br>*Within 500 feet of potentially suitable habitat:*<br>Rancho Seco HLZ/DZ |
| **Reptiles** | | | | |
| Desert tortoise<br>*Gopherus agassizii* | T | Mojave and Sonoran Deserts of the southwestern U.S. and northwestern Mexico and the Sinaloan thornscrub of northwestern Mexico. Variety of habitats from sandy flats to rocky foothills, including alluvial fans, washes and canyons where suitable soils for den construction occur. | None | No suitable habitat within proposed PR training sites |
| Narrow-headed gartersnake<br>*Thamnophis rufipunctatus* | T | Arizona and southwestern New Mexico. Near the cool, clear headwater streams and river banks. | None | No suitable habitat within proposed PR training sites |
| New Mexico ridge-nosed rattlesnake<br>*Crotalus willardi obscurus* | T | Populations are scattered throughout New Mexico, Arizona and the northern part of Mexico. High elevation, wooded mountain ranges. | None | No suitable habitat within proposed PR training sites |

| Table 3.3-10. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Other Land | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Northern Mexican gartersnake<br>*Thamnophis eques megalops* | T | Arizona, southeastern California, and southwestern New Mexico. Mid-elevation wetlands with highly organic, reducing soils, small earthen impoundments, large river riparian woodlands and forests, and well-developed broadleaf deciduous riparian forests with limited, if any, herbaceous ground cover or dense grass. | None | Caldwell Meadows, Colorado River, Lake Patagonia, Lake Pleasant, Salt River High, and Salt River Low.<br>*Within 500 feet of potentially suitable habitat:*<br>Rancho Seco HLZ/DZ |
| Sonoyta mud turtle<br>*Kinosternon sonoriense longifemorale* | E | Southern Arizona (near Nogales). Spring-fed pools, ponds, and stream courses with perennial or near-perennial water. | None | *Within 500 feet of potentially suitable habitat:*<br>Rancho Seco HLZ/DZ |
| **Birds** | | | | |
| California least tern<br>*Sterna antillarum browni* | E | Coastal California. Open beaches free of vegetation. | None | No suitable habitat within proposed PR training sites |
| Mexican spotted owl<br>*Strix occidentalis lucida* | T | Utah, Colorado, Arizona, New Mexico and southwestern Texas. Old-growth or mature forests that possess uneven aged stands, high canopy closure, multi-storied levels, high tree density; and canyons with riparian or conifer communities, in areas with some type of water source. | Caldwell Meadows | Lake Patagonia.<br>*Within 500 feet of potentially suitable nesting habitat:*<br>Brooke, Jenna HLZ/DZ, Salt River High, and Salt River Low |
| Northern Aplomado falcon<br>*Falco femoralis septentrionalis* | EXPN | Southeastern Arizona and southern New Mexico. Dry grasslands, savannahs, and marshes. | None | No suitable habitat within proposed PR training sites |
| Southwestern willow flycatcher<br>*Empidonax traillii extimus* | E | Arizona, New Mexico, and southern California; portions of southern Nevada and Utah; and southwest Colorado. Riparian forests. | None | Colorado River |
| Yellow-billed cuckoo<br>*Coccyzus americanus* | T | Arizona, western New Mexico, and western coastal California. Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites. | Lake Patagonia | Colorado River and Lake Patagonia |

| Table 3.3-10. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Other Land | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Yuma clapper rail<br>*Rallus longirostris yumanensis* | E | Lower Colorado River in Mexico north to the lower Muddy River and Virgin River in Utah. Significant populations occur near and around the Salton Sea in California, and along the lower Gila River and the Gila River near Phoenix, Arizona. Dense cattail or cattail-bulrush marshes. | None | Colorado River |
| **Mammals** | | | | |
| Jaguar<br>*Panthera onca* | E | Southeastern Arizona. Thornscrub, desert scrub, and grasslands. Vegetation communities used in Arizona range from Sonoran desert scrub at lower elevations to subalpine mixed conifer in the mountain ranges. | *Within 0.5 mile:*<br>Caliente | *Within 500 feet of potentially suitable habitat:*<br>Black Mountain Reservoir |
| Mexican long-nosed bat<br>*Leptonycteris nivalis* | E | Southwestern New Mexico, the Big Bend area of Texas, the Chinati Mountains of Presidio County, Texas and southward to central Mexico. desert scrub vegetation dotted with century plants (agaves), mesquite, creosote bush, and a variety of cacti. | None | Playas Training and Research Center |
| Mexican wolf<br>*Canis lupus baileyi* | EXPN | Central and southern Arizona and New Mexico. Not limited to any particular habitat type, but viable populations occur only where human population density and persecution levels are low and prey densities are high. | None | Caldwell Meadows, Catron County Fairgrounds, Gila County Sheriff Roosevelt Substation, Playas Training and Research Center, Salt River High, Salt River Low, and Tombstone 8 HLZ |
| New Mexico meadow jumping mouse<br>*Zapus hudsonius luteus* | E | Southern Colorado, central (north to south) New Mexico, and central-eastern Arizona. Persistent emergent herbaceous wetlands (i.e., beaked sedge [*Carex rostrata*] and reed canarygrass [*Phalaris arundinacea*] alliances); and scrub-shrub wetlands (i.e., riparian areas along perennial streams that are composed of willows [*Salix* sp.] and alders [*Alnus* sp.]). Especially uses microhabitats of patches or stringers of tall dense sedges on moist soil along the edge of permanent water. | Caldwell Meadows | No suitable habitat within proposed PR training sites |

| Table 3.3-10. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Other Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Ocelot *eopardus [=Felis] pardalis* | E | Southeastern Arizona and southern Texas. Dense cover in brushy forests and semiarid deserts. | None | No suitable habitat within proposed PR training sites |
| Sonoran pronghorn *Antilocapra americana sonoriensis* | EXPN | Southwestern Arizona. Broad alluvial valleys separated by granite mountains and mesas; areas with small-leaf trees and numerous species of cacti scattered over rocky hills and coarse-soiled slopes; and with triangle-leaf bursage (*Ambrosia deltoidea)* or brittle bush (*Encelia* sp.) almost always present. | None | Blackhills HLZ/DZ, Lost Acre HLZ/DZ, Penitas, Pond HLZ/DZ, Prieto HLZ/DZ, Rancho Seco HLZ/DZ, Ruby Fuzzy Paladins, Sierrita HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ. *Within 500 feet of potentially suitable habitat:* Black Mountain Reservoir |
| **Plants** | | | | |
| Cochise pincushion cactus *Coryphantha robbinsiorum* | T | Cochise County in Arizona, and northern Sonora in Mexico. Limestone substrates in the transition between Chihuahuan desert scrub and desert grassland | None | Highway 80 Paladins (TW-2 Paladins) |
| Fickeisen plains cactus *Pediocactus peeblesianus fickeiseniae* | E | Northern Arizona. Plains and Great Basin grasslands and Great Basin Desert Scrub in shallow soils derived from exposed layers of Kaibab limestone, with most populations occurring on the margins of canyon rims, on flat terraces or benches, or on the toe of well-drained hills with less than 20 percent slope. | None | Babbitt Ranch 1 |
| Huachuca water-umbel *Lilaeopsis schaffneriana* var. *recurve* | E | Southeastern Arizona. Between 4,000 and 6,500 feet in cienegas, springs, and other healthy riverine systems. | None | No suitable habitat within proposed PR training sites |
| Nichol's Turk's head cactus *Echinocactus horizonthalonius* var. *nicholii* | E | Sonoran Desert of southern Arizona and adjacent Mexico. Semi-arid Sonoran desert scrub. It persists on limestones outcropping and limestone derived soils in incline terraces, saddles, and alluvial fans at elevations from 2,400 to 4,100 feet. | None | Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ |

| Table 3.3-10. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Other Land | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Pima pineapple cactus *Coryphantha scheeri* var. *robustispina* | E | Southeast Arizona in Santa Cruz and Pima counties, and in north central Sonora, Mexico. Semidesert grassland and in Sonoran desert scrub between an elevation of 2,300 and 5,000 feet. It often occurs in open areas on flat ridge tops | None | Blackhills HLZ/DZ, Caliente, Penitas, Ruby Fuzzy Paladins, and Sierrita HLZ/DZ. *Within 500 feet of potentially suitable habitat:* Black Mountain Reservoir |
| Wright's marsh thistle *Cirsium wrightii* | C | Seven counties in South-Central New Mexico. Most common in low-elevation wetlands in the barren desert, often in alkaline soils. Moist environments, such as mountain slopes, forests, and marshes on the edges of rivers and ponds. | None | No suitable habitat within proposed PR training sites |

Federal Status: E – Endangered
T – Threatened
EXPN – Experimental Population, Non-Essential

DZ – Drop Zone
HLZ – Helicopter Landing Zone
PR – Personnel Recovery

* Habitat (creek/stream/river) for fish species is more than 200 feet from proposed PR training site. Species excluded from potential occurrence in analysis because the distance between the PR training site and the species' habitat is considered sufficient to not affect the habitat as a result of erosion or ground disturbance.

Source: USFWS 2018.

- A non-essential, experimental population of the federally endangered Sonoran pronghorn has the potential to occur within the Blackhills HLZ/DZ, Lost Acre HLZ/DZ, Penitas, Pond HLZ/DZ, Prieto HLZ/DZ, Rancho Seco HLZ/DZ, Ruby Fuzzy Paladins, Sierrita HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ PR training sites. The Black Mountain Reservoir PR training site is within 500 feet of suitable habitat for the non-essential, experimental population of the Sonoran pronghorn.
- The federally endangered southwestern willow flycatcher has the potential to occur within the Colorado River PR training site in the riparian vegetation along the banks of the river.
- The Lake Patagonia PR training site contains potentially suitable habitat for the yellow-billed cuckoo. The Colorado River PR training site has potentially suitable habitat for the yellow-billed cuckoo in the riparian vegetation along the river.
- The federally endangered Yuma clapper rail has the potential to occur within the Colorado River PR training site in the riparian vegetation at the PR training site.
- The federally threatened Cochise pincushion cactus (*Coryphantha robbinsiorum*) has the potential to occur within the Highway 80 Paladins (TW-2 Paladins) PR training site.
- The federally endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) has the potential to occur within the Caliente, Ruby Fuzzy Paladins, Blackhills HLZ/DZ, Penitas, and Sierrita HLZ/DZ PR training sites. The Black Mountain Reservoir PR training site is within 500 feet of potentially suitable habitat for the Pima pineapple cactus.
- The federally endangered Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*) has the potential to occur within the Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ PR training sites.
- The Babbitt Ranch 1 PR training site has potentially suitable habitat for the federally endangered Fickeisen plains cactus (*Pediocactus peeblesianus fickeiseniae*).

#### 3.3.2.3.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

As shown in Table 3.3-11, five of the proposed PR training sites on other land occur on or within 0.5 mile of a federally listed species critical habitat.

**Table 3.3-11. Proximity of PR Training Sites on Other Land to Critical Habitat**

| Critical Habitat | Proposed PR Training Sites within Critical Habitat That Provide Potentially Suitable Habitat | Proposed PR Training Sites within Critical Habitat That Do Not Provide Potentially Suitable Habitat | Proposed PR Training Sites within 0.5 mile of Critical Habitat That Provide Potentially Suitable Habitat | Proposed PR Training Sites within 0.5 mile of Critical Habitat That Do Not Provide Potentially Suitable Habitat |
|---|---|---|---|---|
| **Fish** | | | | |
| Razorback sucker *Xyrauchen texanus* | Salt River Low | None | None | None |

| Table 3.3-11. Proximity of PR Training Sites on Other Land to Critical Habitat | | | | |
|---|---|---|---|---|
| **Critical Habitat** | **Proposed PR Training Sites within Critical Habitat That Provide Potentially Suitable Habitat** | **Proposed PR Training Sites within Critical Habitat That Do Not Provide Potentially Suitable Habitat** | **Proposed PR Training Sites within 0.5 mile of Critical Habitat That Provide Potentially Suitable Habitat** | **Proposed PR Training Sites within 0.5 mile of Critical Habitat That Do Not Provide Potentially Suitable Habitat** |
| **Reptiles** | | | | |
| Narrow-headed gartersnake *Thamnophis rufipunctatus* | Salt River High and Salt River Low | None | None | None |
| **Birds** | | | | |
| Mexican spotted owl *Strix occidentalis lucida* | None | Caldwell Meadows | None | None |
| Yellow-billed cuckoo *Coccyzus americanus* | Lake Patagonia | None | None | None |
| **Mammals** | | | | |
| Jaguar *Panthera onca* | None | None | None | Caliente |
| New Mexico meadow jumping mouse *Zapus hudsonius luteus* | None | Caldwell Meadows | None | None |
| PR – Personnel Recovery<br>Source: USFWS 2018. | | | | |

#### 3.3.2.3.5 Wetlands

Wetlands within the proposed PR training sites on other land include the following:

- The Caldwell Meadows PR training site contains two types of natural wetlands. The areas are identified as freshwater emergent wetland and riverine on NWI maps (USFWS 2018).
- The Colorado River PR training site contains three types of natural wetlands. The areas are identified as freshwater emergent wetland, lake, and riverine on NWI maps (USFWS 2018).
- The Lake Patagonia PR training site contains four types of natural wetlands. The areas are identified as freshwater emergent wetland, freshwater forested/shrub wetland, lake, and riverine on NWI maps (USFWS 2018).
- The Lake Pleasant PR training site contains three types of natural wetlands. The areas are identified as freshwater forested/shrub wetland, lake, and riverine on NWI maps (USFWS 2018).
- The Playas Training and Research Center PR training site contains a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).
- The Pond HLZ/DZ, Prieto HLZ/DZ, and Sierrita HLZ/DZ PR training sites contain two types of natural wetlands. The areas are identified as freshwater pond and riverine on NWI maps (USFWS 2018).

- The Salt River High PR training site contains a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).
- The Salt River Low PR training site contains a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).

#### 3.3.2.3.6 Activation of Playas Temporary MOA

Aircraft operations involving combat maneuvering or flying at high speeds require the establishment of a Temporary MOA, as described in Section 2.1.4.10. Because aerial training is planned at the Playas Training and Research Center, the USAF would submit requests to the FAA for the establishment of the Playas Temporary MOA.

Activities at the Playas Temporary MOA would all be aerial, no vegetation or habitat for species would be disturbed or affected. The federally endangered Mexican long-nosed bat and a non-essential, experimental population of the federally endangered Mexican wolf have the potential to occur within the Playas Training and Research Center site and surrounding area.

### 3.3.2.4 Private Property

The sections that follow describe the existing environment within sites located on private property.

#### 3.3.2.4.1 Vegetation

As shown in Table 3.3-12, four vegetation communities occur in the region at the proposed PR training sites on private property. Appendix G of this EA provides a description of these vegetation communities.

**Table 3.3-12. Vegetation Communities within Proposed PR Training Sites on Private Property**

| Vegetation Community | Proposed PR Training Sites |
|---|---|
| Arizona Upland Division of Sonoran Desertscrub | Three Points Public Shooting Range |
| Great Basin Desertscrub | Sinkhole |
| Petran Montane Conifer Forest | Sprucedale Guest Ranch |
| Plains and Great Basin Grassland | Cattle, HLZ 5, Little Outfit, and Panda |

HLZ – Helicopter Landing Zone
PR – Personnel Recovery
Source: AZGFD 2019.

#### 3.3.2.4.2 Wildlife

PR training sites on private property occur only in Arizona. None of the PR training sites on private property are in California, Nevada, or New Mexico.

**Reptiles:** Various reptile species are present on or near the proposed PR training sites on private property in Arizona. Common reptile species include banded gecko, desert spiny lizard, glossy snake, gopher snake, greater earless lizard, regal horned lizard, tiger whiptail, tree lizard, western diamondback, western ground snake, and western threadsnake (USAF 2011).

**Birds:** Nesting and breeding migratory bird species protected under the MBTA and the BGEPA have the potential to occur within the proposed PR training sites. Table 3.3-13 lists the species potentially present at the proposed PR training sites, if suitable habitat is present (USFWS 2018).

Of the 18 bird species listed in Table 3.3-13, 14 are BCCs. There are no BCCs at the following proposed PR training sites: Babbit Ranch 1, Panda, and Sprucedale Guest Ranch.

**Table 3.3-13. Potential Birds within Proposed PR Training Sites on Private Property**

| Common Name<br>Scientific Name | Potential to Breed at the Proposed PR Training Site | Migrating through Proposed PR Training Site (Unlikely to Breed) |
|---|---|---|
| Arizona woodpecker<br>*Picoides arizonae* | Little Outfit | None |
| Bald eagle<br>*Haliaeetus leucocephalus* | Cattle and HLZ 5 | None |
| Black-chinned sparrow<br>*Spizella atrogularis* | Little Outfit | None |
| Black-throated gray warbler<br>*Setophaga nigrescens* | Cattle, HLZ 5, and Little Outfit | None |
| Black-throated sparrow<br>*Amphispiza bilineata* | Cattle, HLZ 5, and Little Outfit | None |
| Brewer's sparrow<br>*Spizella breweri* | Sinkhole | None |
| Elegant trogon<br>*Trogon elegans* | Little Outfit | None |
| Gila woodpecker<br>*Melanerpes uropygialis* | Three Points Public Shooting Range | None |
| Golden eagle<br>*Aquila chrysaetos* | Cattle and HLZ 5 | None |
| Lesser yellowlegs<br>*Tringa flavipes* | None | Sinkhole |
| Lewis's woodpecker<br>*Melanerpes lewis* | Cattle and HLZ 5 | None |
| Long-billed curlew<br>*Numenius americanus* | Sinkhole | None |
| Phainopepla<br>*Phainopepla nitens* | Cattle, HLZ 5, and Little Outfit | None |
| Pinyon jay<br>*Gymnorhinus cyanocephalus* | Cattle and HLZ 5 | None |
| Rufous hummingbird<br>*Selasphorus rufus* | None | Cattle, HLZ 5, and Little Outfit |
| Rufous-winged sparrow<br>*Peucaea carpalis* | Little Outfit | None |
| Whiskered screech-owl<br>*Megascops trichopsis* | Little Outfit | None |
| Virginia's warbler<br>*Leiothlypis virginiae* | Cattle | None |
| Willet<br>*Tringa semipalmata* | None | Sinkhole |

HLZ – Helicopter Landing Zone
PR – Personnel Recovery
Source: USFWS 2018.

**Mammals:** Various mammal species are present on or near the proposed PR training sites on private property in Arizona. Some of the more common mammal species include black-tailed jackrabbit, bobcat, California leaf-nosed bat, coyote, desert cottontail, desert pocket mouse, Merriam's kangaroo rat, round tailed ground squirrel, and white-throated woodrat (USAF 2011).

#### 3.3.2.4.3 Threatened and Endangered Species

Table 3.3-14 lists species federally listed as endangered, threatened, candidate, or proposed for which potential habitat occurs on proposed PR training sites on private property. As shown in the table, the only special-status species with potential to occur due to presence of suitable habitat within or near proposed PR training sites on private property include the following:

- The federally threatened Chiricahua leopard frog has the potential to occur within the intermittent stream east of the Little Outfit PR training site; and within Beaver Creek south of the Sprucedale Guest Ranch PR training site. Suitable habitat does not occur at these PR training sites but occurs within 500 feet.
- The federally endangered Gila chub (*Gila intermedia*) has the potential to occur within 500 feet of the Little Outfit site in an unnamed creek east of the site; however, the Little Outfit site does not contain suitable habitat for the Gila chub.
- The federally endangered Gila topminnow has the potential to occur within 500 feet of the Little Outfit PR training site in an unnamed creek located east of the proposed PR training site. However, the Little Outfit PR training site does not contain suitable habitat for the Gila topminnow.
- The federally endangered Gila trout (*Oncorhynchus gilae*) has the potential to occur within 500 feet of the Sprucedale Guest Ranch PR training site in Beaver Creek.
- The Little Outfit PR training site is within 500 feet of potentially suitable habitat the federally threatened northern Mexican gartersnake, along the intermittent stream east of the PR training site. The Beaver Creek south of the Sprucedale Guest Ranch PR training site provides potentially.
- The Cattle and HLZ 5 PR training sites do not contain suitable nesting habitat for the Mexican spotted owl but are within 500 feet of suitable nesting habitat.
- A non-essential, experimental population of the federally endangered Mexican wolf has the potential to occur within the Sprucedale Guest Ranch PR training site.
- The federally endangered Sonoran tiger salamander (*Ambystoma tigrinum stebbinsi*) within 500 feet of the Little Outfit PR training site within the ephemeral stream east of the PR training site.
- The Panda and Sinkhole PR training sites have potentially suitable habitat for the federally endangered Fickeisen plains cactus (*Pediocactus peeblesianus fickeiseniae*).

| Table 3.3-14. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Private Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status*** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| **Fish** | | | | |
| Apache trout<br>*Oncorhynchus apache* | T | White Mountains and Upper Salt River and Little Colorado River systems in Arizona. Clear, cool, mountain headwaters and creeks (generally above 2,500 meters in elevation) and mountain lakes. | None | No suitable habitat within proposed PR training sites |
| Gila chub<br>*Gila intermedia* | E | Gila River system (Colorado River drainage) in New Mexico and Arizona. Pools in smaller streams, springs, and cienegas with deep waters and terrestrial vegetation, boulders and fallen logs. | None | No suitable habitat within proposed PR training sites.<br>*Within 500 feet of potentially suitable habitat *:*<br>Little Outfit |
| Gila topminnow<br>*Poeciliopsis occidentalis* | E | Gila River system in New Mexico and Arizona and streams south to western Mexico. Occurs naturally in the Colorado and Yaqui river basins at altitudes ranging from sea level to 1,500 meters. Shallow, warm, fairly quiet waters in ponds, cienegas, tanks, pools, springs, small streams, and the margins of larger streams, with dense mats of algae and debris along the margins for cover and foraging. | None | *Within 500 feet of potentially suitable habitat *:*<br>Little Outfit |
| Gila trout<br>*Oncorhynchus gilae* | T | Gila River system in New Mexico and Arizona. Clear, cold mountain streams in arid regions where they congregate in deeper pools and in shallow water only where there are protective debris or plant beds. | None | No suitable habitat within proposed PR training sites.<br>*Within 500 feet of potentially suitable habitat *:*<br>Sprucedale Guest Ranch |
| **Amphibians** | | | | |
| Chiricahua leopard frog<br>*Rana chiricahuensis* | T | Southern Arizona and New Mexico (bordering with Mexico). Permanent waters in ponds, tanks, cienegas, and small streams. Currently restricted to springs, livestock tanks, and streams in upper portions of watersheds that are free from nonnative predators or where marginal habitat for nonnative predators exists. | None | *Within 500 feet of potentially suitable habitat:*<br>Little Outfit and Sprucedale Guest Ranch |

| Table 3.3-14. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Private Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status*** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Sonoran tiger salamander<br>*Ambystoma tigrinum stebbinsi* | E | Southern Arizona (near Nogales). Natural pools, cienegas, and springs; rodent burrows; rotted logs; and other moist cover sites that are near water sources. Aquatic habitats are needed from January through June for breeding. Terrestrial adults are found in the grassland/oak-juniper woodlands and make extensive use of mammal burrows or loose soils to shelter from extreme temperatures. | None | *Within 500 feet of potentially suitable habitat:*<br>Little Outfit |
| **Reptiles** | | | | |
| Northern Mexican gartersnake<br>*Thamnophis eques megalops* | T | Arizona, southeastern California, and southwestern New Mexico. Mid-elevation wetlands with highly organic, reducing soils, small earthen impoundments, large river riparian woodlands and forests, and well-developed broadleaf deciduous riparian forests with limited, if any, herbaceous ground cover or dense grass. | Little Outfit | *Within 500 feet of potentially suitable habitat:*<br>Little Outfit and Sprucedale Guest Ranch |
| Sonoyta mud turtle<br>*Kinosternon sonoriense longifemorale* | E | Southern Arizona (near Nogales). Spring-fed pools, ponds, and stream courses with perennial or near-perennial water. | None | No suitable habitat within proposed PR training sites |
| **Birds** | | | | |
| California condor<br>*Gymnogyps californianus* | E/EXPN | Southern and central coastal California, Grand Canyon in Arizona. Large areas of remote country for foraging, roosting, and nesting. Condors roost on large trees or snags, or on isolated rocky outcrops and cliffs. Nests are located in shallow caves and rock crevices on cliffs where there is minimal disturbance. Foraging habitat includes open grasslands and oak savanna foothills that support populations of large mammals such as deer and cattle. Condors are known to fly 150 miles a day in search of food. | None | No suitable habitat within proposed PR training sites |
| California least tern<br>*Sterna antillarum browni* | E | Coastal California. Open beaches free of vegetation. | None | No suitable habitat within proposed PR training sites |

| Table 3.3-14. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Private Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status*** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Mexican spotted owl<br>*Strix occidentalis lucida* | T | Utah, Colorado, Arizona, New Mexico and southwestern Texas. Old-growth or mature forests that possess uneven aged stands, high canopy closure, multi-storied levels, high tree density; and canyons with riparian or conifer communities, in areas with some type of water source. | Sprucedale Guest Ranch | *Within 500 feet of potentially suitable nesting habitat:*<br>Cattle and HLZ 5 |
| Yellow-billed cuckoo<br>*Coccyzus americanus* | T | Arizona, western New Mexico, and western coastal California. Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites. | None | No suitable habitat within proposed PR training sites |
| **Mammals** | | | | |
| Jaguar<br>*Panthera onca* | E | Southeastern Arizona. Thornscrub, desert scrub, and grasslands. Vegetation communities used in Arizona range from Sonoran desert scrub at lower elevations to subalpine mixed conifer in the mountain ranges. | Little Outfit | No suitable habitat within proposed PR training sites |
| Mexican wolf<br>*Canis lupus baileyi* | EXPN | Central and southern Arizona and New Mexico. Not limited to any particular habitat type, but viable populations occur only where human population density and persecution levels are low and prey densities are high. | None | Sprucedale Guest Ranch |

| Table 3.3-14. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Private Property | | | | |
|---|---|---|---|---|
| **Common Name<br>Scientific Name** | **Federal Status*** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| New Mexico meadow jumping mouse<br>*Zapus hudsonius luteus* | E | Southern Colorado, central (north to south) New Mexico, and central-eastern Arizona. Persistent emergent herbaceous wetlands (i.e., beaked sedge [*Carex rostrata*] and reed canarygrass [*Phalaris arundinacea*] alliances); and scrub-shrub wetlands (i.e., riparian areas along perennial streams that are composed of willows [*Salix* sp.] and alders [*Alnus* sp.]). Especially uses microhabitats of patches or stringers of tall dense sedges on moist soil along the edge of permanent water. | None | No suitable habitat within proposed PR training sites |
| Ocelot<br>*Leopardus [=Felis] pardalis* | E | Southeastern Arizona and southern Texas. Dense cover in brushy forests and semiarid deserts. | None | No suitable habitat within proposed PR training sites |
| Sonoran pronghorn<br>*Antilocapra americana sonoriensis* | EXPN | Southwestern Arizona. Broad alluvial valleys separated by granite mountains and mesas; areas with small-leaf trees and numerous species of cacti scattered over rocky hills and coarse-soiled slopes; and with triangle-leaf bursage (*Ambrosia deltoidea*) or brittle bush (*Encelia* sp.) almost always present. | None | *Within 500 feet of potentially suitable habitat:*<br>Three Points Public Shooting Range |
| **Plants** | | | | |
| Canelo Hills ladies-tresses<br>*Spiranthes delitescens* | E | Southeastern Arizona. Isolated cienegas, periodically or annually saturated spring-fed marshes. | None | No suitable habitat within proposed PR training sites |
| Fickeisen plains cactus<br>*Pediocactus peeblesianus fickeiseniae* | E | Northern Arizona. Plains and Great Basin grasslands and Great Basin Desert Scrub in shallow soils derived from exposed layers of Kaibab limestone, with most populations occurring on the margins of canyon rims, on flat terraces or benches, or on the toe of well-drained hills with less than 20 percent slope. | Sinkhole | Panda and Sinkhole |
| Huachuca water-umbel<br>*Lilaeopsis schaffneriana* var. *recurve* | E | Southeastern Arizona. Between 4,000 and 6,500 feet in cienegas, springs, and other healthy riverine systems. | None | No suitable habitat within proposed PR training sites |

| Table 3.3-14. Special-Status Species Potentially Occurring within Proposed PR Training Sites on Private Property | | | | |
|---|---|---|---|---|
| **Common Name Scientific Name** | **Federal Status*** | **Distribution & Habitat Preference** | **Proposed PR Training Sites Occurring within Critical Habitat** | **Proposed PR Training Sites with Potential Species Occurrence** |
| Pima pineapple cactus *Coryphantha scheeri* var. *robustispina* | E | Southeastern Arizona. Alluvial basins and hillsides in semi-desert grasslands, desert scrub, and the transition area between the two. Most commonly found in open areas on flat ridge-tops or slopes of less than 10 to 15 percent. | None | No suitable habitat within proposed PR training sites |

* Federal Status: E – Endangered
T – Threatened
EXPN – Experimental Population, Non-Essential
DZ – Drop Zone
HLZ – Helicopter Landing Zone
PR – Personnel Recovery

* Habitat (creek/stream/river) for fish species is more than 200 feet from proposed PR training site. Species excluded from potential occurrence in analysis because the distance between the PR training site and the species' habitat is considered sufficient to not affect the habitat as a result of erosion or ground disturbance.

#### 3.3.2.4.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

As shown in Table 3.3-15, three of the proposed PR training sites on private property occur on or within 0.5 mile of a federally listed species critical habitat. Activities proposed at the PR training sites would not significantly affect designated critical habitat as they would occur mostly within already disturbed areas, and the activities do not propose to alter the habitat. PR training activities that have potential to alter critical habitat would be restricted to avoid disturbances.

**Table 3.3-15. Proximity of PR Training Sites on Private Property to Critical Habitat**

| Critical Habitat | Proposed PR Training Sites within Critical Habitat That Provide Potentially Suitable Habitat | Proposed PR Training Sites within Critical Habitat That do not Provide Potentially Suitable Habitat | Proposed PR Training Sites within 0.5 mile of Critical Habitat That Provide Potentially Suitable Habitat | Proposed PR Training Sites within 0.5 mile of Critical Habitat That Do Not Provide Potentially Suitable Habitat |
|---|---|---|---|---|
| **Reptiles** | | | | |
| Northern Mexican gartersnake *Thamnophis eques megalops* | None | *Within 500 feet of suitable habitat:* Little Outfit | None | None |
| **Birds** | | | | |
| Mexican spotted owl *Strix occidentalis lucida* | None | Sprucedale Guest Ranch | None | None |
| **Plants** | | | | |
| Fickeisen plains cactus *Pediocactus peeblesianus fickeiseniae* | Sinkhole | None | None | None |

PR – Personnel Recovery
Source: USFWS 2018.

**Wetlands**

Wetlands within the proposed PR training sites on private property include the following:

- The Sprucedale Guest Ranch PR training site contains two types of natural wetlands. The areas are identified as freshwater pond and riverine on NWI maps (USFWS 2018).
- The Three Points Public Shooting Range PR training site contains a natural wetland. The area is identified as riverine on NWI maps (USFWS 2018).

### 3.3.3 Environmental Consequences

This section presents the potential effects of the Proposed Action and the No-Action Alternative on biological resources within the ROI. Large Force, Medium Force, and Small Force training within the Proposed Action would all have similar impacts to biological resources; therefore, they are collectively referred to in this section as the Proposed Action. Biological resources were evaluated in terms of compliance with Section 7 of the federal Endangered Species Act (ESA) and related laws and authorities. Informal consultation under Section 7 of the ESA was

conducted with the USFWS to address effects to federally listed species. On 17 December 2019, the USFWS concurred that the Proposed Action would "not likely adversely affect" federally listed species as discussed in the Proposed Action's Biological Evaluation (provided in Appendix G of this EA) and summarized below.

The assessment of potential impacts focused on the location of the proposed PR training sites and the existing biological resources in these areas. Impacts to biological resources can result in direct and indirect impacts due to ground disturbance, vehicle and equipment movement, artillery fire, aircraft and helicopter operations, increased noise and human presence. Direct impacts may include disruption of foraging and roosting/resting activities, nest/den abandonment during breeding seasons, loss of habitat, and injury or mortality due to collisions and trampling. Indirect impacts may include increased erosion and sedimentation (due to ground disturbances) and subsequent loss of vegetation. These impacts may be short-term, such as the temporary avoidance of habitat due to increased noise or human presence, or long-term and permanent, such as the loss of habitat or mortality due to trampling and collisions.

Impact significance on biological resources was assessed by evaluating:

- Potential for loss or alteration of suitable habitat and the proximity of similar habitat,
- Proportion of the resource that would be affected relative to its occurrence in the region,
- Sensitivity of the resource to proposed activities, and
- Duration of ecological impacts.

As discussed in Section 3.3.1, proposed PR training activities at San Clemente Island (and near waters), Leon, and WSMR sites are equivalent to activities currently implemented by the U.S. Navy and U.S. Army at these locations. Discussion of the environmental consequences to terrestrial and marine biological resources at these sites are excluded from the discussion in the sections that follow as they were extensively analyzed in previous documents incorporated by reference (see Section 3.3.1 for specific documents).

#### 3.3.3.1 Proposed Action

The Proposed Action would occur within 0.3 to 2.7 acres of mostly previously disturbed areas at each PR training site.

##### 3.3.3.1.1 Department of Defense Property

###### 3.3.3.1.1.1 Vegetation

Under the Proposed Action, with the exception of light foot-traffic, PR training activities would be restricted to already disturbed areas. Vegetation has the potential to be trampled or crushed by personnel and training-related equipment; military vehicles and equipment could also compact soil. However, adverse effects would be minimal, brief, and infrequent (a few hours several times annually) allowing the vegetation time to recover between site uses. Riparian vegetation would be avoided at all proposed PR training sites. Therefore, no significant impacts on vegetation are anticipated.

###### 3.3.3.1.1.2 Wildlife

Wildlife species occupying habitat at and around the proposed PR training sites would be temporarily disturbed during training activities potentially resulting in short-term displacement

under the Proposed Action. Bird species protected under the MBTA and the BGEPA have the potential to occur within the ROI. Bird species protected under the MBTA and the BGEPA would be avoided to the maximum extent possible. Individuals may temporarily avoid the proposed PR training sites as a result of the Proposed Action; however, no significant impacts to wildlife populations are anticipated.

#### 3.3.3.1.1.3 Threatened and Endangered Species

**Amphibians**

**Arroyo Toad.** Potentially suitable habitat is present within 500 feet of Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites.

Proposed training activities at sites where Arroyo toad may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Toads within the path of equipment and vehicles could be injured or killed, and pedestrian traffic could trample individuals. Adverse effects may also occur if training groups move through riparian areas potentially disturbing egg masses and daily activities and movements of adult toads. Parachute or ground operations near the Las Flores Creek could result in a temporary increase in sediment runoff into the creek, potentially decreasing water quality in the immediate area. A decrease in water quality can lead to a decrease in riparian habitat quality for the arroyo toad. To avoid these potential short-term and long-term direct and indirect effects, foot-traffic and training activities would avoid riparian areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Reptiles**

**Northern Mexican Gartersnake.** Potentially suitable habitat is present within 500 feet of Metz Tank and Navajo West sites.

Proposed training activities at sites where northern Mexican gartersnake may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; and pyrotechnic use.

Parachute or ground operations near streams or riparian areas could result in a temporary increase in sediment runoff, potentially decreasing water quality. This can lead to a decrease in riparian habitat quality and prey abundance, a long-term, indirect adverse effect. Equipment and vehicle traffic could result in injury or mortality of individuals, a long-term, direct adverse effect. To avoid adverse effects, foot-traffic, vehicle traffic and training activities would not occur in streams or riparian areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Birds**

**Least Bell's Vireo.** Potentially suitable habitat is present within 500 feet of Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites.

Proposed training activities at sites where Least Bell's vireo may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Parachute and/or ground operations near the banks of the Las Flores Creek could result in a temporary increase in sediment runoff, potentially decreasing water quality that can lead to a decrease in riparian habitat quality and prey abundance, a long-term, indirect adverse effect. Training activities, including helicopter noise and increased human noise/activity in and near riparian areas could temporarily cause the Least Bell's vireo to avoid the area as noise levels increase during training altering their foraging, roosting, and breeding behavior, a short-term, direct adverse effect. Trampling of vegetation and erosion of the creek banks could occur because of the movement of equipment and the activity from the personnel involved in training. To avoid adverse effects on this species, foot-traffic and training activities would avoid riparian areas and be scheduled outside of the breeding season (March through August) for this species. Thus, impacts as a result of the Proposed Action would be less than significant.

**Mexican Spotted Owl** may occur at the L Tank site. Potentially suitable habitat is present within 500 feet of Fort Tuthill, Metz Tank, Navajo East, Neil Flat, Rogers Lake (Logger Camp), and Rogers Wren sites.

Proposed training activities at sites where Mexican spotted owl may occur include HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; pyrotechnic use; HLZs/DZs/overwater hoist operations; and amphibious operations.

Parachute, helicopter, plane, and/or ground/water operations could cause the Mexican spotted owl to avoid the areas and impact daily activities and movement, and breeding behavior, resulting in short-term, direct adverse effects. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. To avoid adverse effects on this species, training activities at these sites would be scheduled outside of the nesting season (March through August). Thus, impacts as a result of the Proposed Action would be less than significant.

**Mammals**

**Sonoran Pronghorn** may occur at the NATO Hill, OP Charlie, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad, South Tactical Range, and Target 333 sites.

Proposed training activities at sites where Sonoran pronghorn may occur include HLZs/DZs; parachute operation; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; technical rope work; pyrotechnic use; and shooting/firing range.

Parachute, helicopter, and/or ground operations, including human activity and noise, may cause the Sonoran pronghorn to avoid the areas, affecting its daily activities and movement, resulting

in short-term, direct adverse effects. Because of the avoidance expected due to the human disturbance and noise, it is highly unlikely that pronghorn would be exposed to potential collision or injury/mortality due to vehicles/equipment and artillery fire. Further, with the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Stephens' Kangaroo Rat** may occur at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites.

Proposed training activities at sites where Stephens' kangaroo rat may occur include HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Parachute, helicopter, and/or ground operations could cause the Stephens' kangaroo rat to avoid the areas and potentially affect its daily activities and movement, resulting in a short-term, direct adverse effect. There is also a potential for injury to occur due to vehicle traffic. However, the presence of humans and associated noise is likely to cause the animals to flush from the area, reducing this potential risk. Additionally, with the exception of light foot-traffic, training activities would be restricted to already disturbed areas, which are less likely to be inhabited by kangaroo rats. Thus, impacts as a result of the Proposed Action would be less than significant.

**Plants**

**Thread-leaved Brodiaea** may occur at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites.

**Acuna cactus** may occur at the Target 333 site.

Proposed training activities at sites where thread-leaved brodiaea and acuna cactus may occur include HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; technical rope work, pyrotechnic use, and shooting/firing range.

Potential long-term, direct adverse effects from include trampling or crushing could include injury of individuals from personnel movement and training-related equipment such as parachute, helicopter, or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance, a long-term, indirect adverse effect. However, proposed PR training activities would be restricted to already disturbed areas at the sites and only for short durations (few hours once a year). Avoidance of the blooming period (March through June for thread-leaved brodiaea and March through April for the acuna cactus) would further reduce the potential for adverse effects. Because of the limited area and duration of proposed activities, impacts as a result of the Proposed Action would be less than significant.

#### 3.3.3.1.1.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

None of the proposed PR training sites on DoD property are in or within 0.5 mile of a federally listed species critical habitat.

**Wetlands**

All wetlands within or near the following sites will be avoided: Fort Tuthill, Metz Tank, Navajo East, Navajo West, Neill Flat, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad, and Target 333. Therefore, no impacts to wetlands are anticipated at these proposed PR training sites as a result of the Proposed Action.

Training activities at the Rogers Lake (Logger Camp) site includes amphibious operations. Water operations will avoid riparian vegetation and vegetated wetland habitats. Therefore, no impacts to wetlands are anticipated at these proposed PR training sites.

### 3.3.3.1.2 U.S. Forest Service or Other Federal Land

#### 3.3.3.1.2.1 Vegetation

Under the Proposed Action, with the exception of light foot-traffic, PR training activities would be restricted to already disturbed areas. Vegetation has the potential to be trampled or crushed by personnel and training-related equipment movement; military vehicles and equipment could also compact soil. However, adverse effects would be minimal, brief, and infrequent (a few hours several times annually) allowing the vegetation time to recover between site uses. Riparian vegetation will be avoided at all proposed PR training sites. Therefore, no significant impacts to vegetation are anticipated.

#### 3.3.3.1.2.2 Wildlife

Wildlife species occupying habitat at and around the proposed PR training sites would be temporarily disturbed during training activities potentially resulting in short-term displacement. Bird species protected under the MBTA and the BGEPA have the potential to occur within the ROI. Bird species protected under the MBTA and the BGEPA would be avoided to the maximum extent possible. Individuals may temporarily avoid the proposed PR training sites as a result of the Proposed Action; however, no significant impacts to wildlife populations are anticipated.

#### 3.3.3.1.2.3 Threatened and Endangered Species

**Fish**

**Colorado Pikeminnow** may occur at the Roosevelt Lake, site.

**Gila Topminnow** may occur at the Roosevelt Lake site.

**Razorback Sucker** may occur at the Roosevelt Lake site.

**Spikedace** may occur at the Roosevelt Lake site.

Proposed training activities at sites where Colorado pikeminnow, Gila topminnow, razorback sucker, and spikedace may occur include HLZs/DZs; parachute operations; camping,

bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; technical rope work; HLZs/DZs overwater hoist operations; and amphibious operations.

Long-term, adverse effects may occur due to trampling during amphibious operations. However, fish are highly mobile species that avoid disturbances in their immediate vicinity; thus, this adverse effect is not anticipated. Parachute or ground operations near the banks of waterways and lakes could result in a temporary increase in sediment runoff, potentially decreasing water quality in the immediate area. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by these species. Due to the brief nature of the training activities (a few hours annually) and the limited area this potential indirect adverse effect would be short-term. Thus, impacts as a result of the Proposed Action would be less than significant.

**Amphibians**

**Chiricahua Leopard Frog.** Potentially suitable habitat is present within 500 feet of the Devon and Portal Cabin and CCC Bunkhouse sites.

Proposed training activities at sites where Chiricahua leopard frog may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Short-term, and long-term direct adverse effects to the species at these sites could occur if training groups move through riparian areas potentially disturbing egg masses and adult frogs, and if frogs within the path of equipment and vehicles are crushed or pedestrian traffic tramples individuals. Parachute or ground/water operations near the banks of water features, could result in a temporary increase in sediment runoff into the water, potentially decreasing water quality in the immediate area. A decrease in water quality can lead to a decrease in habitat quality for the Chiricahua leopard frog, a short-term, indirect adverse effect. To avoid adverse effects on the Chiricahua leopard frog, personnel would limit their training activities at these sites to areas where human activity is more prevalent, avoid riparian habitat, and avoid the species' breeding season (eggs are typically laid March through June at elevations below 5,900 feet [USFWS 2019]). Thus, impacts as a result of the Proposed Action would be less than significant.

**Reptiles**

**Northern Mexican Gartersnake** may occur at the Mormon Lake - USFS Helitack Base, Roosevelt Lake, and Spring Valley Cabin sites. Potentially suitable habitat is present within 500 feet of the Portal Cabin and CCC bunkhouse site.

Proposed training activities at sites where northern Mexican gartersnake may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; technical rope work.

Parachute or ground/water operations near the banks of streams and rivers and in riparian areas could result in a temporary increase in sediment runoff, potentially decreasing water quality. This can lead to a decrease in riparian habitat quality and prey abundance, a long-term, indirect adverse effect. Equipment and vehicle traffic could result in injury or mortality, a long-term,

direct adverse effect. To avoid adverse effects, foot-traffic, vehicle traffic and training activities would not occur in streams or riparian areas. Vehicle traffic would be restricted to non-vegetated open areas, and would not occur within streams, creeks or ponds. Thus, impacts as a result of the Proposed Action would be less than significant.

**Birds**

**California Condor** have potential to occur as flyovers at the Pittman Valley, Tribeland and Mohawk PR training sites.

Proposed PR training activities at sites where California condors may occur as flyovers include: HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

The PR training sites do not support suitable habitat for condors and condors have rarely been observed in the southern portion of the Kaibab National Forest (Tusayan and Williams Ranger Districts) where the PR training sites are located. For these reasons, it is highly unlikely that the short-term PR training activities would result in any adverse effects to condors that may flyover the sites during PR training events. If condors were to flyover during PR training events, they may be temporarily diverted from their intended flight path due to aerial activities such as helicopter approach or parachuting personnel. In addition, ground operations (human and equipment presence and noise) are not anticipated to cause any adverse response on condor behavior as they are not expected to occur within ground level at the sites due to lack of suitable habitat for roosting, foraging and nesting. Thus, impacts as a result of the Proposed Action would be less than significant.

**Mexican Spotted Owl** may occur at the Charouleau Gap, Comanche, Hannagan Meadow – USFS Helitack Base, Helibase Circular, Portal Cabin and CCC Bunkhouse, Ranger, and Rucker HLZ sites. Potentially suitable habitat is present within 500 feet of the Black Mesa – USFS Helitack Base, Devon, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base – USFS Helitack Base, Negrito Airstrip, Overgaard – USFS Helitack Base, Rainy Mesa, Saddle Mountain West, Spring Valley Cabin, and Tribeland sites.

Proposed training activities at sites where Mexican spotted owl may occur include HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; pyrotechnic use; shooting/firing range; HLZs/DZs/overwater hoist operations; and amphibious operations.

Parachute, helicopter, plane, and/or ground/water operations could cause the Mexican spotted owl to avoid the areas and impact daily activities and movement, and breeding behavior, resulting in short-term, direct adverse effects. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. To avoid adverse effects on this species during the breeding season, PR training activities at these sites would be scheduled outside of the nesting season (March through August) and would follow the terms and

conditions of ESA consultation for this species on National Forest lands. Thus, impacts as a result of the Proposed Action would be less than significant.

**Northern Aplomado Falcon** may occur at the Portal Cabin and CCC Bunkhouse, Ranger, and Rucker HLZ sites.

Proposed training activities at sites where northern aplomado falcon may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; survival training/natural resource consumption; and technical rope work.

With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Helicopter and/or ground operations could cause the northern aplomado falcon to avoid the areas, alter daily activities and movement, and disrupt breeding behavior, resulting in short-term, direct adverse effects. To avoid adverse effects on this species, training activities at these sites would be scheduled outside of the breeding season (January through June) for this species. Thus, impacts as a result of the Proposed Action would be less than significant.

**Southwestern Willow Flycatcher** may occur at the Roosevelt Lake and Verde River sites.

**Yellow-billed Cuckoo** may occur at the Portal Cabin and CCC Bunkhouse, Roosevelt Lake, and Verde River sites. Potentially suitable habitat is present within 500 feet of the Saguaro Lake Ranch site.

Proposed training activities at sites where southwestern willow flycatcher and yellow-billed cuckoo may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; technical rope work; HLZs/DZs overwater hoist operations; and amphibious operations.

With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Parachute or ground/water operations near the banks of lakes, creeks and rivers could result in a temporary increase in sediment runoff, potentially decreasing water quality that can lead to a decrease in riparian habitat quality and prey abundance. Trampling of vegetation and erosion of river or lake banks could occur as a result of the movement of equipment and personnel movement. PR training activities in the open water could temporarily cause the southwestern willow flycatcher to avoid the area as noise levels increase during training. Helicopter noise and increased human noise/activity in the riparian areas could cause both species to temporarily avoid the area and impact foraging and roosting activities and movement, as well as breeding behaviors. To avoid these short-term, and long-term direct and indirect adverse effects, training activities at lakes, creeks and rivers would be scheduled outside of the southwestern willow flycatcher breeding season (April through September) at Roosevelt Lake and Verde River sites; with the exception of light foot-traffic, training activities would be restricted to already disturbed areas and avoid riparian areas at all the sites. Thus, impacts as a result of the Proposed Action would be less than significant.

**Yuma Clapper Rail** may occur at the, Roosevelt Lake and Verde River sites. Potentially suitable habitat is present within 500 feet of the Saguaro Lake Ranch site.

Proposed training activities at sites where Yuma clapper rail may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; technical rope work; HLZs/DZs overwater hoist operations; and amphibious operations.

Parachute or ground/water operations near lakes and rivers, and trampling of vegetation and erosion of the banks could result in a temporary increase in sediment runoff, potentially decreasing water quality in the area. A decrease in water quality can lead to a decrease in riparian habitat quality for the Yuma clapper rail over time, a long-term, indirect adverse effect. Short-term, direct adverse effects could occur as a result of helicopter noise and increased human noise/activity in the riparian areas, which could cause the Yuma clapper rail to temporarily avoid the training areas and impact daily activities and movement. Training activities in the open water could also temporarily cause the Yuma clapper rail to avoid the area as noise levels increase during training. To avoid adverse effects on this species, foot-traffic and training activities would avoid riparian areas, and training activities at these sites would be scheduled outside of the breeding season (March through September) for this species; personnel would avoid areas of heavy riparian vegetation. Thus, impacts as a result of the Proposed Action would be less than significant.

**Mammals**

**Jaguar** may occur at the Devon, Portal Cabin and CCC Bunkhouse, Ranger, Redington Pass, and Rucker HLZ sites.

Proposed training activities at sites where jaguar may occur include HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; survival training/natural resource consumption; and technical rope work.

Noise and human activity would temporarily exceed typical disturbance levels within the proposed training sites. If any jaguars were present during the Proposed Action, they might temporarily avoid the training area, or otherwise temporarily modify their behavior; however, jaguars are uncommon and infrequent in these areas. The temporary and infrequent noise by people, vehicles, and helicopters would be expected to have a short-term, negligible effect on the jaguar through habitat avoidance. The training activities would not impede long distance movements of the jaguars and may only temporarily displace native prey species. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Mexican Wolf** may occur at the Glenwood Ranger Station, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, Negrito South, Overgaard – USFS Helitack Base, Rainy Mesa, and Reserve Ranger Station sites.

Proposed training activities at sites where Mexican wolf may occur include HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Parachute, helicopter, and/or ground operations, including human activity and noise, could cause the Mexican wolf to avoid the areas and affect its daily activities and movement, resulting in short-term, direct adverse effects. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. Also, prior to the start of PR training activities, the USAF would coordinate with the Gila National Forest and USFWS' Wolf Reintroduction Program and Interagency Field Team when activities need to occur within wolf sensitive areas (wolf dens and wolf rendezvous sites). If feasible, the Proposed Action would avoid Mexican wolf sensitive areas between April 1 and September 30. If proposed PR training activities cannot be avoided at wolf sensitive sites during this time period, PR training activities would be coordinated with the Gila National Forest and USFWS' Wolf Reintroduction Program and Interagency Field Team. Additionally, 1-mile buffers would be established around active wolf dens between April 1 and July 31, and around active wolf rendezvous sites between June 1 and September 30. Thus, potential impacts as a result of the Proposed Action would be less than significant.

**Plants**

No special-status plant species have potential to occur at PR training sites located within USFS or other federal land.

#### 3.3.3.1.2.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

**Mexican Spotted Owl Critical Habitat**. No adverse effects to designated critical habitat are anticipated as a result of the Proposed Action. Although critical habitat occurs at multiple sites (Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Longview – USFS Helitack Base, Mesa, Mogollon Rim (General Crook), Negrito Airstrip, Rainy Mesa, Ranger, Rucker HLZ), implementing the Proposed Action would not adversely affect critical habitat because activities would not require vegetation removal and would occur over a short duration (few hours annually).

**Northern Mexican Gartersnake Proposed Critical Habitat**. The Proposed Action would not adversely modify proposed critical habitat for the following reasons:

- None of the sites within proposed critical habitat (Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West) contain suitable habitat for the northern Mexican gartersnake.
- Foot-traffic would not occur in streams or riparian areas and the training activities would occur within a very small area (0.3 to 2.7 acres) in mostly previously disturbed areas.

**Wetlands**

All wetlands within or near the following PR training sites would be avoided: Black Mesa – USFS Helitack Base, Comanche, Longview – USFS Helitack Base, Mormon Lake - USFS Helitack Base, Negrito Airstrip, Negrito Center, Negrito North, Negrito Helibase, Negrito South, Portal Cabin and CCC Bunkhouse, Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Spring Valley Cabin. Therefore, no impacts to wetlands are anticipated at these proposed PR training sites as a result of the Proposed Action.

PR training activities at the following sites include amphibious operations: Roosevelt Lake, Saguaro Lake Ranch, and Verde River. Water operations would avoid riparian vegetation and vegetated wetland habitats. Therefore, no impacts to wetlands are anticipated at these proposed PR training sites as a result of the Proposed Action.

#### 3.3.3.1.3 Other Land (Municipal, City, County, State or Tribal)

##### 3.3.3.1.3.1 Vegetation

Under the Proposed Action, with the exception of light foot-traffic, PR training activities would be restricted to already disturbed areas. Vegetation has the potential to be trampled or crushed by personnel and training-related equipment; military vehicles and equipment could also compact soil. However, adverse effects would be minimal, brief, and infrequent (a few hours several times annually) allowing the vegetation time to recover between site uses. Riparian vegetation will be avoided at all proposed PR training sites. Therefore, no significant impacts to vegetation are anticipated.

##### 3.3.3.1.3.2 Wildlife

Wildlife species occupying habitat at and around the proposed PR training sites would be temporarily disturbed during training activities potentially resulting in short-term displacement under the Proposed Action. Bird species protected under the MBTA and the BGEPA have the potential to occur within the ROI. Bird species protected under the MBTA and the BGEPA would be avoided to the maximum extent possible. Individuals may temporarily avoid the proposed PR training sites as a result of the Proposed Action; however, no significant impacts to wildlife populations are anticipated.

##### 3.3.3.1.3.3 Threatened and Endangered Species

**Fish**

**Bonytail Chub** may occur at the Colorado River site.

**Colorado Pikeminnow** may occur at Salt River High and Salt River Low sites.

**Gila Topminnow** may occur at Lake Patagonia and Lake Pleasant sites.

**Razorback Sucker** may occur at the Colorado River, Salt River High, and Salt River Low sites.

Proposed training activities at sites where bonytail chub, Colorado pikeminnow, Gila topminnow, and razorback sucker may occur include HLZs/DZs; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; technical rope work; HLZs/DZs overwater hoist operations; and amphibious operations.

Long-term, adverse effects may occur due to trampling during amphibious operations. However, fish are highly mobile species that flush from disturbances in their immediate vicinity; thus, this adverse effect is not anticipated. Parachute or ground operations near the banks of waterways and lakes could result in a temporary increase in sediment runoff, potentially decreasing water quality in the immediate area. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by these species. Due to the brief nature of the training activities (a few hours annually) this potential adverse effect would be short-term, indirect. Thus, impacts as a result of the Proposed Action would be less than significant.

### Snails

**Three Forks Springsnail** may occur at the Caldwell Meadows site.

Proposed training activities at sites where three forks springsnail may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

As this species is strictly aquatic, and the proposed PR training activities will be restricted from the Black River at this site, no direct adverse effects (such as trampling) are anticipated. Parachute or ground operations near the banks of the Black River, could result in a temporary increase in sediment runoff, potentially decreasing water quality in the immediate area. A decrease in water quality would be a long-term, indirect adverse effect to the springsnail as clean water is a primary constituent element. To avoid this adverse effect, training activities would not occur in the vicinity of the river banks. Thus, impacts as a result of the Proposed Action would be less than significant.

### Amphibians

**Chiricahua Leopard Frog** may occur at the Caldwell Meadows, Lake Patagonia, Salt River High, and Salt River Low sites. Potentially suitable habitat is present within 500 feet of the Rancho Seco HLZ/DZ site.

Proposed training activities at sites where Chiricahua leopard frog may occur include HLZs/DZs; parachute operations; camping, bivouacking, assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work; HLZs/DZs overwater hoist operations; and amphibious operations.

Short-term, and long-term direct adverse effects to the species at these sites may occur if training groups move through riparian areas potentially disturbing egg masses and adult frogs, and if frogs within the path of equipment and vehicles are crushed or pedestrian traffic tramples individuals. Parachute or ground/water operations near the banks of water features, could result in a temporary increase in sediment runoff into the water, potentially decreasing water quality in the immediate area. A decrease in water quality can lead to a decrease in habitat quality for the Chiricahua leopard frog, a short-term, indirect adverse effect. To avoid adverse effects on the Chiricahua leopard frog, personnel would limit their training activities at these sites to areas where human activity is more prevalent, avoid riparian habitat, and avoid the species' breeding season (eggs are typically laid March through June at elevations below 5,900 feet [USFWS 2019]). Thus, impacts as a result of the Proposed Action would be less than significant.

### Reptiles

**Northern Mexican Gartersnake** may occur at the Caldewell Meadows, Colorado River, Lake Patagonia, Lake Pleasant, Salt River High, and Salt River Low. Potentially suitable habitat is present within 500 feet of the Rancho Seco HLZ/DZ site.

**Sonoyta Mud Turtle.** Potentially suitable habitat is present within 500 feet of the Rancho Seco HLZ/DZ site.

Proposed training activities at sites where northern Mexican gartersnake and Sonoyta mud turtle may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; technical rope work; amphibious operations; and pyrotechnic use.

Parachute or ground/water operations near the banks of lakes and rivers and drop zone operations near the Rancho Seco HLZ/DZ Tank could result in a temporary increase in sediment runoff, potentially decreasing water quality. This can lead to a decrease in riparian habitat quality and prey abundance, a long-term, indirect adverse effect. Equipment and vehicle traffic could result in injury or mortality, a long-term, direct adverse effect. To avoid adverse effects, foot-traffic, vehicle traffic and training activities would not occur in streams or riparian areas. Vehicle traffic would be restricted to non-vegetated open areas, and would not occur within streams, creeks or ponds. Thus, impacts as a result of the Proposed Action would be less than significant.

**Birds**

**Mexican Spotted Owl** may occur at the Lake Patagonia site. Potentially suitable nesting habitat is present within 500 feet of the Brooke, Jenna HLZ/DZ, Salt River High and Salt River Low sites.

Proposed training activities at sites where Mexican spotted owl may occur include HLZs/DZs; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; technical rope work; HLZs/DZs/overwater hoist operations; and amphibious operations.

Parachute, helicopter, plane, and/or ground/water operations could cause the Mexican spotted owl to avoid the areas and impact daily activities and movement, and breeding behavior, resulting in short-term, direct adverse effects. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. To avoid adverse effects on this species, training activities at these sites would be scheduled outside of the nesting season (March through August). Thus, impacts as a result of the Proposed Action would be less than significant.

**Southwestern Willow Flycatcher** may occur at the Colorado River site.

**Yellow-billed Cuckoo** may occur at the Colorado River and Lake Patagonia sites.

Proposed training activities at sites where southwestern willow flycatcher and yellow-billed cuckoo may occur include HLZs/DZs; technical rope work; HLZs/DZs overwater hoist operations; and amphibious operations.

With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Parachute or ground/water operations within or near the banks of lakes, creeks and rivers could result in a temporary increase in sediment runoff, potentially decreasing water quality that can lead to a decrease in riparian habitat quality and prey abundance. Trampling of vegetation and erosion of river or lake banks could occur as a result of the movement of equipment and activity from the personnel involved in training. Training activities in the open water could temporarily cause the southwestern willow flycatcher to avoid the area as noise levels increase during training. Helicopter noise and increased human noise/activity in the riparian areas could cause both species to temporarily avoid the areas and impact their foraging and roosting

activities and movement, as well as their breeding behaviors. To avoid these short-term, and long-term direct and indirect adverse effects, training activities at lakes, creeks and rivers would be scheduled outside of the southwestern willow flycatcher breeding season (April through September) at sites where the species may occur; at sites where yellow-billed cuckoo may occur, foot-traffic and training activities would avoid riparian areas at all times. Thus, impacts as a result of the Proposed Action would be less than significant.

**Yuma Clapper Rail** may occur at the Colorado River site.

Proposed training activities at sites where Yuma clapper rail may occur include HLZs/DZs overwater hoist operations; and amphibious operations.

Parachute or ground/water operations near lakes and rivers, and trampling of vegetation and erosion of the banks could result in a temporary increase in sediment runoff, potentially decreasing water quality in the area. A decrease in water quality can lead to a decrease in riparian habitat quality for the Yuma clapper rail over time, a long-term, indirect adverse effect. Short-term, direct adverse effects could occur as a result of helicopter noise and increased human noise/activity in the riparian areas, which could cause the Yuma clapper rail to temporarily avoid the areas and impact daily activities and movement. Training activities in the open water could also temporarily cause the Yuma clapper rail to avoid the area as noise levels increase during training. To avoid adverse effects on this species, foot-traffic and training activities would avoid riparian areas, and training activities at these sites would be scheduled outside of the breeding season (March through September) for this species; personnel would avoid areas of heavy riparian vegetation. Thus, impacts as a result of the Proposed Action would be less than significant.

**Mammals**

**Jaguar.** Potentially suitable habitat is present within 500 feet of the Black Mountain Reservoir site.

Proposed training activities at sites where jaguar may occur include amphibious operations.

Noise and human activity would temporarily exceed typical disturbance levels within the proposed training sites. If any jaguars were present during the Proposed Action, they might temporarily avoid the training area, or otherwise temporarily modify their behavior; however, jaguars are uncommon and infrequent in these areas. The temporary and infrequent noise by people, vehicles, and helicopters would be expected to have a short-term, negligible adverse effect on the jaguar through habitat avoidance. The training activities would not impede long distance movements of the jaguars and may only temporarily displace native prey species. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Mexican Long-nosed Bat** may occur at the Playas Training and Research Center site.

Proposed training activities at sites where Mexican long-nosed bat may occur include HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; technical rope work; pyrotechnic use; and shooting/firing range.

Parachute, helicopter, and/or ground operations could cause the Mexican long-nosed bat to avoid the areas and could affect its nightly foraging activities and movement, a short-term, direct adverse effect. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Mexican Wolf** may occur at the Caldwell Meadows, Catron County Fairgrounds, Gila County Sheriff Roosevelt Substation, Playas Training and Research Center, Salt River High, Salt River Low, and Tombstone 8 HLZ sites.

Proposed training activities at sites where Mexican wolf may occur include HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; survival training/natural resource consumption; technical rope work; pyrotechnic use; shooting/firing range HLZs/DZs/overwater hoist operations, and amphibious operation.

Parachute, helicopter, and/or ground operations, including human activity and noise, could cause the Mexican wolf to avoid the areas and affect its daily activities and movement, resulting in short-term, direct adverse effects. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. Thus, impacts as a result of the Proposed Action would be less than significant.

**Sonoran Pronghorn** may occur at the Blackhills HLZ/DZ, Lost Acre HLZ/DZ, Penitas, Pond HLZ/DZ, Prieto HLZ/DZ, Rancho Seco HLZ/DZ, Ruby Fuzzy Paladins, Sierrita HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ sites. Potentially suitable habitat is present within 500 feet of the Black Mountain Reservoir site.

Proposed training activities at sites where Sonoran pronghorn may occur include HLZs/DZs; parachute operation; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; and amphibious operations.

Parachute, helicopter, and/or ground operations, including human activity and noise, is likely to cause the Sonoran pronghorn to avoid the areas, affecting its daily activities and movement, resulting in short-term, direct adverse effects. Because of the avoidance expected due to the human disturbance and noise, it is highly unlikely that pronghorn would be exposed to potential collision or injury/mortality due to vehicles/equipment and artillery fire. Further, with the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Plants**

**Cochise Pincushion Cactus** may occur at the Highway 80 Paladins (TW-2 Paladins) site.

**Fickeisen Plains Cactus** may occur at the Babbitt Ranch 1 site.

Proposed training activities at sites where Fickeisen plains cactus may occur include HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle)

movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Potential long-term, direct adverse effects would include trampling or crushing of individuals by personnel and training-related equipment such as helicopter or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance, a long-term, indirect adverse effect. However, proposed PR training activities would be restricted to already disturbed areas at the sites and only for short durations (few hours once a year). Avoidance of the blooming period (late April through May) would further reduce the potential for adverse effects. Because of the limited area and duration of proposed activities, impacts as a result of the Proposed Action would be less than significant.

**Nichol's Turk's Head Cactus** may occur at the Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ sites.

Proposed training activities at sites where Cochise pincushion cactus, Pima pineapple cactus, and Nichol's Turk's head cactus may occur include HLZs/DZs; parachute operation; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; and amphibious operations.

Potential long-term, direct adverse effects would include trampling or crushing of individuals by personnel and training-related equipment such as parachute, helicopter, or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance, a long-term, indirect adverse effect. However, proposed PR training activities would be restricted to already disturbed areas at the sites and only for short durations (few hours once a year). Avoidance of the blooming period (mid-March to mid-April for Cochise Pincushion Cactus; mid-April through July for Nichol's Turk's Head Cactus; mid-July through August for Pima Pineapple Cactus) would further reduce the potential for adverse effects. Because of the limited area and duration of proposed activities, impacts as a result of the Proposed Action would be less than significant.

**Pima Pineapple Cactus** may occur at the Blackhills HLZ/DZ, Caliente, Penitas, Ruby Fuzzy Paladins, and Sierrita HLZ/DZ sites. Potentially suitable habitat is present within 500 feet of the Black Mountain Reservoir site.

#### 3.3.3.1.3.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

**Mexican Spotted Owl Critical Habitat**. No adverse effects to designated critical habitat are anticipated as a result of the Proposed Action. Proposed PR training activities within designated critical habitat at Caldwell Meadows would not require vegetation removal, would occur over a short duration (hour to few hours), and would be restricted to already disturbed upland areas, which do not provide suitable habitat for this species.

**Narrow-headed Gartersnake Proposed Critical Habitat**. The Proposed Action would not adversely modify proposed critical habitat for the following reasons:

- The Salt River High site is outside the river channel and training activities would not occur in or near the river.
- During amphibious operations at Salt River Low, personnel movement could trample aquatic vegetation and temporarily increase stream sedimentation; however, given the short duration of the disturbances (a few hours per year), this adverse effect would be short-term. Personnel involved in training activities would avoid entering the Salt River in riparian areas with heavy vegetation and unstable stream banks.

**New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*) Critical Habitat**. No adverse effects to designated critical habitat are anticipated as a result of the Proposed Action. Proposed PR training activities within designated critical habitat at Caldwell Meadows would be restricted to already disturbed upland areas and would not occur in the creek or riparian areas. Minor foot-traffic may occur in the upland area adjacent to the creek and near critical habitat.

**Razorback Sucker Critical Habitat**. The Proposed Action would not adversely modify designated critical habitat. During amphibious operations personnel movement could trample aquatic vegetation and temporarily increase stream sedimentation. However, given the short duration of the disturbances (a few hours per year), this adverse effect would be short-term. Additionally, personnel involved in training activities would avoid entering the Salt River in riparian areas with heavy vegetation and unstable stream banks.

**Yellow-billed Cuckoo Proposed Critical Habitat**. The Proposed Action would not adversely modify proposed critical habitat for the following reason: During amphibious training activities at the site within proposed critical habitat (Lake Patagonia), personnel involved in the training activities would avoid entering the water in riparian areas with heavy vegetation and unstable shoreline to void trampling riparian and aquatic vegetation.

**Wetlands**

All wetlands within or near the following sites would be avoided: Caldwell Meadows, Playas Training and Research Center, Pond HLZ/DZ, Salt River High, and Sierrita HLZ/DZ. Therefore, no impacts to wetlands are anticipated at these proposed PR training sites as a result of the Proposed Action.

Training activities at the following sites include amphibious operations: Colorado River, Lake Patagonia, Lake Pleasant, and Salt River Low. Water operations will avoid riparian vegetation and vegetated wetland habitats. Therefore, no impacts to wetlands are anticipated at these proposed PR training sites as a result of the Proposed Action.

#### 3.3.3.1.3.5 Activation of Playas Temporary MOA

Aerial activities at the Playas Temporary MOA are not anticipated to cause long-term disturbances to either the Mexican wolf or the Mexican long-nosed bat. The Mexican wolf may be temporarily disturbed by noise from aerial training events. The Mexican long-nosed bat is unlikely to be active (flying) during daylight hours when aerial training would occur. Thus, impacts as a result of the Proposed Action would be less than significant.

#### 3.3.3.1.4 Private Property

##### 3.3.3.1.4.1 Vegetation

Under the Proposed Action, with the exception of light foot-traffic, PR training activities would be restricted to already disturbed areas. Vegetation has the potential to be trampled or crushed by personnel and training-related equipment; military vehicles and equipment could also compact soil. However, adverse effects would be minimal, brief, and infrequent (a few hours several times annually) allowing the vegetation time to recover between site uses. Riparian vegetation would be avoided at all proposed PR training sites. Therefore, no significant impact to vegetation is anticipated.

##### 3.3.3.1.4.2 Wildlife

Wildlife species occupying habitat at and around the proposed PR training sites would be temporarily disturbed during training activities potentially resulting in short-term displacement under the Proposed Action. Bird species protected under the MBTA and the BGEPA have the potential to occur within the ROI. Bird species protected under the MBTA and the BGEPA would be avoided to the maximum extent possible. Individuals may temporarily avoid the proposed PR training sites as a result of the Proposed Action; however, no significant impact to wildlife populations is anticipated.

##### 3.3.3.1.4.3 Threatened and Endangered Species

**Amphibians**

**Chiricahua Leopard Frog.** Potentially suitable habitat is present within 500 feet of the Little Outfit, and Sprucedale Guest Ranch sites.

Proposed training activities at sites where Chiricahua leopard frog may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, and long-term direct adverse effects to the species at these sites may occur if training groups move through riparian areas potentially disturbing egg masses and adult frogs, and if frogs within the path of equipment and vehicles are crushed or pedestrian traffic tramples individuals. Parachute or ground operations near water features could result in a temporary increase in sediment runoff into the water, potentially decreasing water quality in the immediate area. A decrease in water quality can lead to a decrease in habitat quality for the Chiricahua leopard frog, a short-term, indirect adverse effect. To avoid adverse effects on the Chiricahua leopard frog, personnel would limit their training activities at these sites to areas where human activity is more prevalent, avoid riparian habitat, and avoid the species' breeding season (eggs are typically laid March through June at elevations below 5,900 feet [USFWS 2019]). Thus, impacts as a result of the Proposed Action would be less than significant.

**Sonoran Tiger Salamander.** Potentially suitable habitat is present within 500 feet of the Little Outfit site.

Proposed training activities at sites where Sonoran tiger salamander may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country

dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Adverse effects may occur if training disturbed daily activities and movements of salamanders. Salamanders within the path of equipment and vehicles could be crushed, and pedestrian traffic could trample individuals. Parachute or ground operations near water features could result in a temporary increase in sediment runoff, potentially decreasing water quality. A decrease in water quality can lead to a decrease in riparian habitat quality for the Sonoran tiger salamander over time. To avoid these potential long-term, direct and indirect and short-term, direct, adverse effects, foot-traffic and training activities would avoid riparian areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Reptiles**

**Northern Mexican Gartersnake.** Potentially suitable habitat is present within 500 feet of the Little Outfit and Sprucedale Guest Ranch sites.

Proposed training activities at sites where northern Mexican gartersnake may occur include HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Parachute or ground operations near water features could result in a temporary increase in sediment runoff, potentially decreasing water quality. This can lead to a decrease in riparian habitat quality and prey abundance, a long-term, indirect adverse effect. Equipment and vehicle traffic could result in injury or mortality, a long-term, direct adverse effect. To avoid adverse effects, foot-traffic, vehicle traffic and training activities would not occur in streams or riparian areas. Vehicle traffic would be restricted to non-vegetated open areas, and would not occur within streams, creeks or ponds. Thus, impacts as a result of the Proposed Action would be less than significant.

**Birds**

**Mexican Spotted Owl.** Potentially suitable nesting habitat is present within 500 feet of the Cattle and HLZ 5 sites.

Proposed training activities at sites where Mexican spotted owl may occur include HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Parachute, helicopter, plane and ground operations could cause the Mexican spotted owl to avoid the areas and impact daily activities and movement, and breeding behavior, resulting in short-term, direct adverse effects. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. To avoid adverse effects on this species, training activities at these sites would be scheduled outside of the nesting season (March through August). Thus, impacts as a result of the Proposed Action would be less than significant.

**Mammals**

**Mexican Wolf** may occur at the Sprucedale Guest Ranch site.

Proposed training activities at sites where Mexican wolf may occur include camping, bivouacking, and assembly area use. However, the activity would be limited to use of existing cabins and there would be no ground disturbance.

Human activity and noise could result in short-term, direct adverse effects as the Mexican wolf may avoid the area, which would affect its daily activities and movement. With the exception of light foot-traffic, training activities would be restricted to existing cabins. Thus, impacts as a result of the Proposed Action would be less than significant.

**Sonoran Pronghorn.** Potentially suitable habitat is present within 500 feet of the Three Point Public Shooting Range site.

Proposed training activities at sites where Sonoran pronghorn may occur include shooting/firing range.

Ground operations could cause the Sonoran pronghorn to avoid the area and affect its daily activities and movement, resulting in short-term, direct adverse effects. Because of the avoidance expected due to the human disturbance and noise, it is highly unlikely that pronghorn would be exposed to potential injury/mortality due to artillery fire. Further, with the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Thus, impacts as a result of the Proposed Action would be less than significant.

**Plants**

**Fickeisen Plains Cactus** may occur at the Panda and Sinkhole sites.

Proposed training activities at sites where Fickeisen plains cactus may occur include HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Potential long-term, direct adverse effects would include trampling or crushing of individuals by personnel and training-related equipment such as helicopter or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance, a long-term, indirect adverse effect. However, proposed PR training activities would be restricted to already disturbed areas at the sites and only for short durations (few hours once a year). Avoidance of the blooming period (late April through May) would further reduce the potential for adverse effects. Because of the limited area and duration of proposed activities, impacts as a result of the Proposed Action would be less than significant.

#### 3.3.3.1.4.4 Sensitive Habitats

**Federally Listed Species Critical Habitat**

**Mexican Spotted Owl Critical Habitat**. No adverse effects to designated critical habitat are anticipated as a result of the Proposed Action. Although critical habitat occurs at the Sprucedale Guest Ranch PR training site, implementing the Proposed Action would not adversely affect critical habitat because activities would not require vegetation removal and would occur over a short duration (few hours annually).

**Northern Mexican Gartersnake Proposed Critical Habitat**. The Proposed Action would not adversely modify proposed critical habitat for the following reasons:

- None of the sites within proposed critical habitat (Little Outfit) contain suitable habitat for the northern Mexican gartersnake.
- Foot-traffic would not occur in streams or riparian areas and the training activities would occur within a very small area (0.3 to 2.7 acres) in mostly previously disturbed areas.

**Fickeisen Plains Cactus Critical Habitat**. The Proposed Action would not adversely modify critical habitat for the following reason: Proposed PR training activities within designated critical habitat at Sinkhole would be restricted to already disturbed areas that do not contain suitable habitat and be limited in area and duration.

**Wetlands**

All wetlands within or near the following sites would be avoided: Sprucedale Guest Ranch and Three Points Public Shooting Range. Therefore, no impacts to wetlands are anticipated at these proposed PR training sites as a result of the Proposed Action.

#### 3.3.3.1.5 Operational Constraints

Avoidance and minimization measures would be implemented under the Proposed Action as follows:

**Riparian and Wetlands**

- Riparian vegetation will be avoided to the maximum extent possible at all PR training sites.
- Open water will only be used at PR training sites designated for water operation training activities.
- Wetlands and wetland vegetation will be avoided at all proposed PR training sites.
- Water operation training activities will only use unvegetated areas for ingress and egress to the water.
- With the exception of light foot-traffic, proposed PR training activities will be restricted to already disturbed areas.

**Threatened and Endangered Snails**

- To minimize disturbances to the three forks springsnail, PR training activities will be restricted from the Black River and its banks at the Caldwell Meadows site.

**Threatened and Endangered Amphibian**

- To minimize disturbances to the Arroyo toad, PR training activities at Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites will be restricted to areas where human activity is more prevalent and avoid riparian habitat.
- PR training activities will avoid the Chiricahua leopard frog breeding season, March through June, at the following proposed PR training sites: Caldwell Meadows, Devon, Lake Patagonia, Little Outfit, Portal Cabin and CCC Bunkhouse, Rancho Seco HLZ/DZ, Salt River High, Salt River Low, and Sprucedale Guest Ranch.

- If the breeding season cannot be avoided, pre-activity surveys will be conducted by a qualified biologist to determine presence/absence at each of the sites.
- To avoid disturbances to Sonoran tiger salamander, foot-traffic and PR training activities will avoid riparian areas at the Little Outfit site.

**Threatened and Endangered Reptiles**

- To avoid and minimize adverse effects to the narrow-headed gartersnake, northern Mexican gartersnake, and the Sonoyta mud turtle, the following activities will be restricted at the Caldewell Meadows, Colorado River, Lake Patagonia, Lake Pleasant, Little Outfit, Metz Tank, Mormon Lake - USFS Helitack Base, Navajo West, Portal Cabin and CCC Bunkhouse, Rancho Seco HLZ/DZ, Salt River High, Salt River Low, Spring Valley Cabin, Sprucedale Guest Ranch sites:
- No foot-traffic, vehicle traffic or PR training activities will occur in streams, or riparian areas.
- Vehicle traffic will be restricted to non-vegetated open areas and will not enter any streams, creeks or pond.

**Threatened and Endangered Birds**

PR training activities will be restricted as follows:

- Foot-traffic and training activities will avoid riparian areas and be scheduled outside of the Least Bell's vireo breeding season (March through August) at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites.
- Training activities will be scheduled outside of the Mexican spotted owl breeding season (March through August) at the following sites: Black Mesa – USFS Helitack Base, Brooke, Cattle, Charouleau Gap, Comanche, Devon, Flagstaff Hotshot – USFS Helitack Base, Fort Tuthill, Hannagan Meadow – USFS Helitack Base, Helibase Circular, HLZ 5, Jenna HLZ/DZ, KP Circular, KP Tank, L Tank, Lake Patagonia, Longview – USFS Helitack Base, Mesa, Metz Tank, Mogollon Rim (General Crook), Mormon Lake - USFS Helitack Base, Navajo East, Negrito Airstrip, Neill Flat, Overgaard – USFS Helitack Base, Portal Cabin and CCC Bunkhouse, Rainy Mesa, Ranger, Rogers Lake (Logger Camp), Rogers Napier, Rogers Wren, Ranger, Rucker HLZ, Saddle Mountain West, Salt River High, Salt River Low, Spring Valley Cabin, and Tribeland.
- Training activities will be scheduled outside of the northern aplomado falcon breeding season (January through June) at the Portal Cabin and CCC Bunkhouse, Ranger, and Rucker HLZ sites.
- Training activities will be scheduled outside of the southwestern willow flycatcher breeding season (April through September) at the: Colorado River, Roosevelt Lake, and Verde River sites.
- To minimize disturbances to the yellow-billed cuckoo, foot-traffic and training activities will avoid riparian areas at all times at the Colorado River, Lake Patagonia, Portal Cabin and CCC Bunkhouse, Roosevelt Lake, Saguaro Lake Ranch and Verde River sites.

- Training activities will be scheduled outside of the Yuma clapper rail breeding season (March through September) at the: Colorado River, Roosevelt Lake, and Verde River sites.
- If the breeding season cannot be avoided as detailed above, a qualified biologist will conduct a pre-activity nesting bird survey to determine presence/absence at each of the sites for each listed bird species. If nests are found, the USFWS shall be consulted to determine the appropriate course of action.

**Threatened and Endangered Mammals**

- To minimize disturbances to the jaguar, PR training activities (except for light foot-traffic) will be restricted to already disturbed areas at Black Mountain Reservoir, Devon, Portal Cabin and CCC Bunkhouse, Ranger, Redington Pass, and Rucker HLZ sites.
- To minimize disturbances to the Mexican long-nosed bat, PR training activities (except for light foot-traffic) will be restricted to already disturbed areas at the Playas Training and Research Center site.
- To minimize disturbances to the Mexican wolf, PR training activities (except for light foot-traffic) will be restricted to already disturbed areas and open water at the Caldwell Meadows, Catron County Fairgrounds, Gila County Sheriff Roosevelt Substation, Glenwood Ranger Station, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Overgaard – USFS Helitack Base, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center Negrito Helibase, Negrito North, Negrito South, Playas Training and Research Center, Rainy Mesa, Reserve Ranger Station, Salt River High, Salt River Low, and Sprucedale Guest Ranch sites.
- To minimize disturbances to the Sonoran pronghorn, PR training activities (except for light foot-traffic) will be restricted to already disturbed areas at the Black Mountain Reservoir, Blackhills HLZ/DZ, Lost Acre HLZ/DZ, NATO Hill, OP Charlie, Penitas, Pond HLZ/DZ, Prieto HLZ/DZ, Rancho Seco HLZ/DZ, Range 3-HLZ 1, Range 3-HLZ 2, Range 3-HLZ 3, Range 3-HLZ 4, Range 3-HLZ 5, Range 3-HLZ 6, Range 3-Tower Helipad, Ruby Fuzzy Paladins, Sierrita HLZ/DZ, Silvermine HLZ/DZ, South Tactical Range, Target 333, Three Point Public Shooting Range, and Waterman HLZ/DZ sites.
- To minimize disturbances to the Stephens' kangaroo rat, PR training activities (except for light foot-traffic) will be restricted to already disturbed areas at Camp Pendleton Off-Road Trail, and Camp Pendleton PDL sites.

**Threatened and Endangered Plants**

PR training activities will be restricted as follows:

- Training activities will be scheduled outside of the thread-leaved brodiaea blooming season, March through June, at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites.
- Training activities will be scheduled outside of the Cochise pincushion cactus blooming season, mid-March through mid-April, at the Highway 80 Paladins (TW-2 Paladins) site.
- Training activities will be scheduled outside of the Pima pineapple cactus blooming season, mid-July through August, at the Black Mountain Reservoir, Blackhills HLZ/DZ, Caliente, Penitas, Ruby Fuzzy Paladins, and Sierrita HLZ/DZ sites.

- Training activities will be scheduled outside of the acuna cactus blooming season, late-March through April, at the Target 333 site.
- Training activities will be scheduled outside of the Nichol's Turk's head cactus blooming season, mid-April through July, at the Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ sites.
- Training activities will be scheduled outside of the Fickeisen plains cactus blooming season, late-April through May, at Babbitt Ranch 1, Panda, and Sinkhole sites.
- If the blooming season cannot be avoided (as detailed above), a qualified biologist will conduct pre-activity surveys to determine presence/absence at each of the sites listed above for each listed plant species. If plants are found, the USFWS shall be consulted to determine the appropriate course of action.

#### 3.3.3.2 No-Action Alternative

Under the No-Action Alternative, PR forces would continue existing training activities, utilizing the same equipment, personnel, airspace, and training locations. Limited resources would continue to be overutilized. Less realistic training scenarios would minimize the ability of PR forces to keep pace with changes in the global operating environment. The lack of adequate and available proposed PR training sites would continue to present challenges in meeting training requirements and sustaining readiness.

Under the No-Action Alternative, the USAF would continue to:

- Conduct overwater training operations at existing WTAs off the coast of San Diego, California (utilizing sea dye markers, lightsticks, and marine flares) and also other WTAs in Arizona (lakes, rivers, and pools);
- Conduct sortie-operations by HH-60 and HC-130 aircraft within the Sells Low MOA, Jackal Low MOA, 305 East and West LATN areas, BMGR and associated Restricted Areas (R-2301E, R-2305, and R-2304), and the Yuma TACTS Range (R-2301W);
- Conduct HH-60 weapons training operations within previously approved target areas at the BMGR involving smoke grenades, aircraft-mounted 7.62 mm, and .50 cal. machine guns;
- Conduct AR operations between HH-60 and HC-130 aircraft in the Sells Low and Jackal Low MOAs; and
- Conduct ground and parachute training for PR personnel within previously approved ranges, HLZs, DZs, LZs, and small arms training ranges.

In addition to the above training events, the USAF would conduct limited biannual Large Force rescue events using pre-approved proposed PR training sites throughout the southwestern U.S.

Each biannual Large Force training event would consist of a three-week event with multiple training missions (components of the scenario developed for the training event). The events would provide training scenarios for PR and supporting forces, to include interagency and international partners. The first week of an event involves classroom training of support personnel, followed by a two- to three-day mobilization period, 10 to 11 days of field training, one day of de-mobilization, and return to home base.

The USAF evaluated the potential for significant effects to biological resources in 2002 (Environmental Assessment for the West Coast Combat Search and Rescue [CSAR] Beddown [USAF 2002]) and in 2017 (Final Rescue Group Personnel Recovery Supplemental Environmental Assessment Davis-Monthan Air Force Base, Arizona [USAF 2017i]). The biological resources evaluations identified 16 federally threatened, endangered or candidate terrestrial wildlife and plant species with potential to occur in the area: Arizona tree frog, Chiricahua leopard frog, Huachuca spring snail, lesser long-nosed bat, jaguar, Mexican spotted owl, northern Mexican garter snake, ocelot, Sonoran desert tortoise, southwestern willow flycatcher, Sonoran pronghorn, Sprague's pipit, yellow-billed cuckoo, Stephan's riffle beetle, Wright's marsh thistle, Pima pineapple cactus, and Nichol's Turk's head cactus. No designated critical habitat occurs within the area.

In these documents, the USAF determined that minor, temporary impacts to plants and wildlife species could occur during training. Wildlife species most directly impacted would be small mammal, reptile, and amphibian species. However, the majority of mobile animals, including birds, would generally move to areas of similar habitat when disturbances occur. In general, vegetation at the sites would incur minor disturbances during training. The USAF concluded that, with implementation of avoidance and minimization measures, proposed PR training activities would not result in significant impacts to protected species or designated critical habitats.

## 3.4 CULTURAL RESOURCES

### 3.4.1 Definition of Resource

Cultural resources consist of sites, buildings, structures, objects, and districts or other places of human activity that are considered significant to a community, culture, or ethnic group. They include archaeological resources, historic architectural resources, and traditional cultural resources. These may be historic or prehistoric in age, or a combination of both. Historic properties are cultural resources, including those prehistoric in age, that are eligible for, or listed in, the National Register of Historic Places (NRHP). Evaluation criteria for the NRHP are provided in 36 CFR 60 as detailed below.

The following section provides further discussion of the regulatory requirements concerning cultural resources applicable to the Proposed Action.

**Regulatory Requirements Applicable to the Proposed Action**

***NHPA***

The NHPA, as amended (54 U.S.C. 306108), is the fundamental law concerning the protection of cultural resources on federal land. In compliance with the NHPA, its amendments, and its implementing regulations, federal agencies are required to responsibly manage federally owned or controlled cultural resources. Federal agency requirements pertinent to the Proposed Action are addressed in Section 106 of the NHPA and its implementing regulations. Section 106 of the NHPA requires federal agencies to take into consideration the potential effects of their undertakings on historic properties and is generally applicable when an undertaking is the type of activity that has the potential to affect such properties. Federal undertakings include federal projects, permits, grants, and loans. Section 106 regulations (36 CFR 800.16[1]) define historic properties as archaeological sites, districts, buildings, structures, or objects that are included or

eligible for inclusion in the NRHP (36 CFR 60). Significance in American history, architecture, archaeology, engineering, and culture is defined as follows:

> …districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association; and (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Typically, to be eligible for listing in the NRHP, a property must be at least 50 years old, or have reached 50 years old by the project completion date and retain a high level of integrity of those attributes that contribute to the property's qualifications for the NRHP. However, properties less than 50 years in age may be listed in the NRHP "if they are of exceptional importance or if they are integral part of districts that are eligible for listing in the NRHP or if they fall within the following categories:

> (a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or (b) A building or structure removed from its original location, but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or (c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or (d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or (e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or (f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or (g) A property achieving significance within the past 50 years if it is of exceptional importance (Sherfy and Luce 1979).

Section 106 and the implementing regulations provide a systematic mechanism for taking into account the effects on NRHP-eligible resources from actions that are federally sponsored, funded, or licensed. Section 106 regulations (36 CFR 800.8) provide cultural resources compliance for NEPA. Section 106 requires that the SHPO/ THPO, the Advisory Council on Historic Preservation (ACHP), Native American tribes with historic ties to the area, representatives of local governments, and other interested parties be afforded an opportunity to comment on the Proposed Action. At DoD installations, this requirement is addressed through the installation's existing operating procedures for the environmental review process, per each installation's Integrated Cultural Resource Management Plan (ICRMP) or Integrated Natural and Cultural Resources Management Plan (INCRMP) and Programmatic Agreement (PA) (Apple and Wahoff 2012; ASM 2017; Dietler and Akyüz 2013; Gold et al. 2019; Kirvan and Rogge 2009; Pumphrey et al. 2012; SWCA 2009; URS 2012; USAF 2018b, 2018c, 2018k, 2018l,

2018m; USAF 2017g, 2017e; U.S. Army Garrison White Sands 2015) and range regulations (USMC 2018d). Copies of the Section 106 correspondence and responses to date are provided in Appendix B of this EA. Contacts consulted with are presented in Section 7.0 of this EA.

### *Archaeological Resources Protection Act*

Passed in 1979, the Archaeological Resources Protection Act (ARPA) (16 U.S.C. 470aa-470mm) established civil and criminal penalties for theft or damage to archaeological resources from federally owned land. The ARPA also established a permitting process for archaeological work that plans for excavation or removal of archaeological materials on federal land. The ARPA contains provisions for the preservation of archaeological collections and data, and for maintaining the confidentiality of archaeological location information.

### *Archaeological and Historic Preservation Act*

Passed in 1974, the Archaeological and Historic Preservation Act (AHPA) (54 U.S.C. 312505-312508) directs federal agencies to notify the Secretary of the Interior when any federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data. The AHPA also provides funding criteria for historical and archaeological protection for such projects and programs.

### *American Indian Religious Freedom Act*

The American Indian Religious Freedom Act (AIRFA) (42 U.S.C. 1996) establishes as U.S. policy the protection of the rights of American Indians to practice their traditional religions. These practices include "access to sites (sacred places), possession of sacred objects, and the freedom to worship through ceremonies and traditional rite" (42 U.S.C. 1996). The AIRFA requires federal agencies to consider the effects of their actions on the exercise of Native American religion and to review policies and procedure, in consultation with traditional religious leaders, to determine appropriate measures to protect and preserve Native American religious cultural rights and practices.

### *Native American Graves Protection and Repatriation Act*

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (25 U.S.C. 3000–3013, 18 U.S.C. 1170) includes three primary components: (1) procedures for the inadvertent discovery of Native American remains or sacred or funerary objects found on federal land; (2) requirements for the inventory of federal curation facilities with the subsequent repatriation of Native American remains and sacred objects to Native American descendants; and (3) provisions for the prosecution of those who knowingly sell, purchase, or transport Native American remains or sacred objects. Guidance for federal agency implementation of the NAGPRA is found in 43 CFR 10.

### *Executive Order 13007*

Executive Order 13007 (24 May 1996) provides for the protection of Native American sacred sites.

### *DoD Directive 4710.1*

DoD Directive 4710.1 (21 June 1984) describes policy to integrate archaeological and historic preservation requirements with the planning and management of DoD activities. The directive assigns responsibilities and outlines procedures for DoD branches and departments.

### *DoD Directive 4710.2*

DoD Directive 4710.2 (14 September 2006) implements DoD policy, assigns responsibilities, and provides procedures for DoD interactions with federally recognized Native American tribes.

### *AFI 32-7065*

This instruction (19 November 2014, incorporating Change 1, 6 October 2016) supplements USAF policy for managing cultural resources to support the military mission and to meet legal requirements (USAF 2016c). It implements Air Force Policy Directive (AFPD) 32-70, Environmental Quality, and DoD Instruction 4715.3 Environmental conservation Program (May 1996). The instruction establishes guidelines for managing cultural resources on property affected by USAF operations in the U.S., U.S. territories, and positions.

### *AFI 90-2002*

AFI 90-2002 (19 November 2014) is intended to implement DoD Directive 4710.02 for DoD interactions with federally recognized tribes (USAF 2015a). This instruction clarifies USAF policies, procedures, and responsibilities when consulting with representatives of federally recognized Native American tribes on issues with the potential to impact protected tribal resources and rights.

## 3.4.2 Affected Environment

The USAF conducted Section 106 consultation concurrent with the NEPA process. In accordance with Section 106, the USAF consulted with the Arizona, California, New Mexico, and Nevada SHPOs and THPOs of affiliated tribes. The USAF also invited affiliated tribes for Arizona, California, New Mexico, and Nevada to consult on the Proposed Action (see also Section 1.6.3 of this EA). The tribal consultation was completed on 14 January 2020.

The USAF submitted a finding of no adverse effect to the California and Nevada SHPOs on 16 October 2019, to the New Mexico SHPO on 19 November 2019, and to the Arizona SHPO on 2 January 2020. On 3 December 2019, the California SHPO determined that the PR Training Program is not an undertaking with regards to the proposed PR training sites in California that were included in the Section 106 consultation process for this EA. Concurrence with this finding of no adverse effect was received from the Arizona SHPO on 17 January 2020 and the New Mexico and Nevada SHPOs on 30 January 2020.

Although the Proposed Action was determined as having no adverse effect, Davis-Monthan AFB will conduct further Section 106 consultation on a case-by-case basis for each PR training event. Initial planning would begin to identify proposed PR training activities, dates, and sites for use approximately six months prior to the PR training event. A list of sites would generally be finalized approximately three months prior to the PR training event, at which time consultation with the SHPOs, land managers, and other necessary agencies would be conducted as identified in the following sections if not already completed.

As part of the Section 106 process, the USAF has defined the undertaking as the Proposed Action, and with some exceptions, the Area of Potential Effect (APE) is defined as a 330-foot radius around proposed PR training sites in Arizona, New Mexico, California, and Nevada (see Table E-1 in Appendix E of this EA for site-specific APE definitions). The APE for the Playas Temporary MOA is the airspace and all lands underlying the Playas Temporary MOA. These proposed PR training sites are provided on maps in Appendix A of this EA. As described in Section 2.1.4.3, mounted movements would occur only on existing roads and trails, except for off-road travel that may occur within 200 feet of an HLZ. For purposes of this analysis, the ROI for cultural resources is synonymous with the APE.

A summary of the cultural resource records search and survey information for all 175 proposed PR training sites is provided in Table E-2 in Appendix E of this EA. Note that cultural resource surveys have not been completed for 20 of the 175 PR training sites and have thus been removed from the Section 106 consultation process at this time. Of these 20 PR training sites, two are located in New Mexico on USFS land (Negrito North and Negrito South). The remaining 18 PR training sites are located in Arizona and consist of the following: five PR training sites on USFS land (Comanche, Rough Rider, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West); six PR training sites on other land (Babbitt Ranch 1, Babbitt Ranch 3, Highway 80 Paladins [TW 2 Paladins], Powerline, Ruby Fuzzy Paladins, and Tombstone Paladins); and seven PR training sites on private property (Cattle, Cattle LTFW, Elk, Gerbil, HLZ 5, Panda, and Squirrel). PR training activities will not be conducted at these 20 PR training sites until it can be determined through the Section 106 process that the Proposed Action would not result in impacts to cultural resources at these sites.

Table 3.4-1 presents a summary of the proposed PR training sites' NRHP eligibility by land ownership. This information is provided in more detail in the sections below.

**Table 3.4-1. Summary of National Register and Unevaluated Sites by Land Ownership**

| Land Ownership | No. of Sites | NRHP | Unevaluated Sites[1] |
|---|---|---|---|
| DoD | 44 | 19 | 7 |
| USFS or Other Federal | 20 | 6 | 11 |
| Other (Municipal, City, County, State, or Tribal) | 27 | 8 | 17 |
| Private | 11 | 8 | 2 |
| **Total** | **102** | **41** | **39** |

DoD – U.S. Department of Defense
NRHP – National Register of Historic Places
USFS – U.S. Forest Service
[1] Includes sites that are unevaluated or the NRHP status is unknown.
Sources: Miljour and Wegener2019, USAF 2017d

### 3.4.2.1 Department of Defense Property

The 55 proposed PR training sites on DoD property are located within military installations in Arizona, California, New Mexico, and Nevada (see Table E-2 in Appendix E of this EA). These proposed PR training sites on DoD property are currently used and approved for training activities similar to the Proposed Action, which are managed consistent with each installation's cultural resource policies and procedures. The USAF conducted searches of publicly available

records, the NRHP, Arizona's Cultural Resource Inventory (AZSITE), the New Mexico Cultural Resources Information System (NMCRIS), the Arizona Department of Emergency and Military Affairs Cultural Resource Team, and the Nevada Cultural Resources Information System to determine the extent of previous cultural resource inventories and to identify known cultural resources at those proposed PR training sites. The USAF also reviewed available resource management plans and other documentation for these installations (e.g., ICRMPs, INCRMPs, INRMPs, etc.) and consulted with the installations' personnel to determine whether proposed PR training sites have cultural resource concerns. In addition, records searches for BMGR adhered to the previously established standard for CV/MV-22 HLZs of an area of nine acres centered on the HLZ. A list of the documents reviewed is provided in Table E-3 in Appendix E of this EA.

Based on the document review and consultation with installations' personnel, it was found that 51 of the 55 proposed PR training sites on DoD property have been surveyed or are in disturbed, developed, or water areas where archaeological sites would not be expected (see Table E-2 in Appendix E of this EA). The proposed PR training sites that have been surveyed and have recorded cultural resources are provided in Table 3.4-2 and discussed below.

**Table 3.4-2. Cultural Resources at Proposed PR Training Sites on DoD Property**

| Proposed PR Training Site | Site Number | Description | NRHP Status |
|---|---|---|---|
| Aux 6 | AZ Z:1:29(ASM) | Prehistoric field camp/WWII-era airfield | Eligible (mitigated) |
| | AZ Z:1:30(ASM) | Prehistoric site | Eligible (mitigated) |
| Aux 6 Circular | AZ Z:1:29(ASM) | Prehistoric field camp/WWII-era airfield | Eligible (mitigated) |
| | AZ Z:1:30(ASM) | Prehistoric site | Eligible (mitigated) |
| Aux 6 Rectangular | AZ Z:1:29(ASM) | Prehistoric field camp/WWII-era airfield | Eligible (mitigated) |
| | AZ Z:1:30(ASM) | Prehistoric site | Eligible (mitigated) |
| Metz | AZ I:13:40 (ASM) | Roger Lake North Logging Railroad Line Segment D | Not Eligible |
| Rogers Lake | AZ I:13:40 (ASM) | Roger Lake North Logging Railroad Line Segment B | Eligible |
| Camp Pendleton PDL; and Camp Pendleton Off Road Trail | CA-SDI-18990 | Shell and lithic scatter | Eligible |
| | CA-SDI-18991 | Shell and lithic scatter | Eligible |
| | CA-SDI-18992 | Shell and lithic scatter | Eligible |
| | CA-SDI-22371 | Shell and lithic scatter | Unevaluated |
| | CA-SDI-22372 | Shell and lithic scatter | Unevaluated |
| | CA-SDI-22373 | Shell and lithic scatter | Unevaluated |
| | CA-SDI-22374 | Shell and lithic scatter | Unevaluated |
| Camp Pendleton Red Beach | CA-SDI-10725 | Habitation | Not Eligible |
| Camp Pendleton NFG | CA-SDI-10156/ 12599/H | Habitation, ranch complex | Listed |
| | CA-SDI-10157 | Shell Scatter | Not Eligible |
| | CA-SDI-14005H | Railroad alignment | Eligible |
| Camp Pendleton HOLF | CA-SDI-13659 | Artifact scatter | Not Eligible |
| | CA-SDI-14345 | Artifact scatter | Not Eligible |
| | CA-SDI-14428 | Artifact scatter | Not Eligible |

| Table 3.4-2. Cultural Resources at Proposed PR Training Sites on DoD Property | | | |
|---|---|---|---|
| Davis-Monthan AFB | AZ BB:13:908 | Army Dump | Not Eligible |
| | AZ BB:13:913 | Multiple trash disposal events | Not Eligible |
| | AZ BB:13:941 | Historic period habitation trash scatter | Not Eligible |
| | AZ BB:13:948 | Multicomponent; resource procurement and processing, transportation | Prehistoric: Eligible; Euroamerican: Not Eligible |
| | AZ BB:13:949 | Prehistoric ash stain | Eligible |
| | AZ BB:13:953 | John H. Scott Homestead | Eligible |
| | AZ BB:13:962 | SPRR Artifact Scatter No. 8 - Railroad catering and maintenance trash, roadway trash scatter, railroad and utility demolition scatter | Not Eligible |
| | AZ BB:13:916 | SPRR Artifact Scatter No. 2 – Railroad trash scatter | Not Eligible |
| Florence Military Reservation | AZ U:15:313(ASM) | Artifact scatter with rock features and earthen mounds | Eligible |
| | AZ FF:9:17(ASM), AZ I:3:10(ASM) | US Highway 80 and 89 (now State Route 79) | Eligible |
| Florence Range HLZ | AZ U:5:318 (ASM) | Artifact scatter | Not Relocated |
| Gila Bend Air Force Auxiliary Base | (Unrecorded) | Gila Bend Auxiliary Airfield | Not Eligible |
| Libby Army Airfield | AZ EE:7:23 | Possibly 19th century rock alignment suggestive of grave outline | Destroyed |
| | AZ EE:7:24 | Circa 1908-1930+ U.S. Army trash dump | Destroyed |
| | AZ EE:7:25 | Undated rectangular rock alignment | Destroyed |
| | AZ EE:7:26 | Twenty-one prehistoric rock alignments | Destroyed |
| March ARB | P-33-009191 | March Field Historic District | Eligible |
| NATO Hill (WPT 74) | AZ Z:06:052(ASM)[1] | Prehistoric site | Unknown |
| | AZ Z:06:052(ASM)[1] | Prehistoric site | Unknown |
| Nellis AFB | B13548 | Historic small aircraft maintenance dock/hangar | Eligible as contributor a to a potential Red Flag Historic District |
| | B13549 | Historic small aircraft maintenance dock/hangar | Eligible as contributor a to a potential Red Flag Historic District |
| | B13550 | Historic small aircraft maintenance dock/hangar | Eligible as contributor a to a potential Red Flag Historic District |
| | B13549 | Historic aircraft maintenance shop | Eligible as contributor a to a potential Red Flag Historic District |
| | B13558 | USAF Fighter Weapons school (Waxman Hall) | Eligible |
| | B13551 | Thunderbird maintenance hangar | Eligible |
| WSMR Stallion Army Airfield | LA51270 | Prehistoric lithic scatter | Unevaluated |

**Table 3.4-2. Cultural Resources at Proposed PR Training Sites on DoD Property**

[1] near but outside the APE

AFB – Air Force Base
AFR – Air Force Range
ARB – Air Reserve Base
DoD – U.S. Department of Defense
HLZ – Helicopter Landing Zone
HOLF – helicopter outlying landing field
SPRR – Southern Pacific Railroad
Sources: Heilen and Vanderpot 2013; Keane et al. 1997, 1998; Kirvan and Rogge 2009Miljour et al. 2017; personal communication with AETC 56 RMO/ESMC 2019; personal communication with NGAZ-FMO-EMO 2019; personal communication with U.S. Army Ft. Huachuca 2019; Stein 1993; SWCA 2009; URS 2012; USAF 2017d; USMC 2018a.

As shown in Table 3.4-2, cultural resources concerns were identified at 11 installations: BMGR, Camp Navajo, MCB Camp Pendleton, Davis-Monthan AFB, Florence Military Reservation, March ARB, Nellis AFB and WSMR. Of these, two unidentified prehistoric sites were identified at the NATO Hill (WPT 74) PR training site on BMGR. The two prehistoric sites are near, but outside of the proposed PR training site. A multi-component site has been recorded at the BMGR Aux 6, Aux 6 Circular, and Aux 6 Rectangular training sites that includes the Auxiliary Airfield 6 (Aux 6) and a prehistoric field camp referred to as the Mobak site (Heilen and Vanderpot 2013). Also, within these proposed training sites is a prehistoric site known as the Rainy Day site. Both archaeological sites are NRHP-eligible, and adverse effects from ongoing training activities have been resolved through prior data recovery (Hill and Bruder 2000 in Heilen and Vanderpot 2013), and the proposed PR training activities would not impact historic properties (personal communication with AETC 56 RMO/ESMC 2019).

Two proposed PR training sites at Camp Navajo each have a segment of the historical Roger Lake North Logging Railroad Line. A portion of NRHP-eligible segment B is within the Rogers Lake site. Segment D, which is not eligible for the NRHP (Tremblay et al. 2008), is partially within the proposed Metz site.

Also, as shown in Table 3.4-2, five proposed PR training sites at MCB Camp Pendleton each have cultural resources and/or historic properties in the vicinity. Camp Pendleton PDL and Camp Pendleton Off Road Trail PR training sites are listed together in the table as their APEs overlap. These cultural resources at MCB Camp Pendleton are predominantly prehistoric; however, they also include a historic railroad alignment, and a site with both a prehistoric habitation component and a historic period ranch complex. The latter is an NRHP listed site which partially underlies an existing airfield; those cultural deposits are buried under fill soils (York and Brogan 2002) and would not be impacted by the proposed PR training activities. NRHP-eligible and unevaluated prehistoric resources are located within and adjacent to an existing MOUT in the Camp Pendleton PDL and Camp Pendleton Off Road Trail PR training sites.

Davis-Monthan AFB was previously completely surveyed (Miljour et al. 2017). The majority of the sites recorded on base are historic trash scatters that SHPO has concurred are not eligible for the NRHP; five of these are located within 330 feet of the airfield APE (Table 3.4-2), of which three are associated with the Southern Pacific Railroad (SPRR) (AZ BB:13:913, AZ BB:13:916, AZ BB:13:962) one is the army dump (AZ BB:13:908) and one consists of habitation debris (AZ

BB:13:941). The Proposed Action activities and use of the runways would not impact the homestead site, the prehistoric ash stain, nor the multi-component site.

A prehistoric archaeological site was previously recorded at the Florence Range HLZ PR training site. Although a recent survey failed to relocate any surface materials, a subsurface deposit could still exist. The AZARNG determined that proposed training activities at this training site would not impact historic properties (personal communication with NGAZ-FMO-EMO 2019). It should be noted though that data call requests are currently required prior to all training (and construction or other) activities on AZARNG installations, to support the AZARNG Section 106 requirements, with which the Proposed Action would be required to comply. Resources at the Florence Military Reservation proposed PR training site are a prehistoric site and the historic Highways 80 and 89. The unevaluated prehistoric site is located near small arms ranges. Highways 80 and 89, now State Route 79, both recommended NRHP-eligible, are unlikely to be impacted by the proposed PR training activities.

The March ARB has been previously completely surveyed for cultural resources (URS 2012). No archaeological sites are present; however, a portion of the March Field Historic District (P-33-009191) is within the ARB. Contributing elements to the district include several buildings adjacent to the airstrip pavements (Mikesell and Wee 1992). The buildings are approximately 1300 feet from the airfield runways and impacts from the proposed PR training activities would be less than significant.

No archaeological sites are within the Nellis AFB APE. A 2014 survey and evaluation (JRP Historical Consulting, LLC 2014) of the historic buildings on Nellis AFB recommended four buildings (three small aircraft maintenance dock/hangars [Buildings 222, 224, and 226], and an aircraft maintenance shop [Building 228]) eligible for the NRHP as contributors to a potential Red Flag Historic District under Criterion A, although not individually eligible. Two additional buildings, a USAF Fighter Weapons school (Waxman Hall) (Building 282) and the Thunderbird maintenance hangar (Building 292), were recommended as individually NRHP-eligible under Criterion A. Although these buildings are adjacent to the airport pavements, they are approximately 900 feet or more from the runways and the training activities would not significantly impact the buildings.

An unevaluated prehistoric lithic scatter at the WSMR Stallion Army Airfield is located between existing runways and would not be impacted by use of the airfield. Cultural resources are within the existing designated maneuver areas (WSMR Sierra Maneuver Area, WSMR Thurgood West Maneuver Area, and WSMR Otero Maneuver Area); the maneuver areas have been previously surveyed and the resources are marked by Seibert stakes (personal communication with White Sands Army Garrison 2019). WSMR has protocols and practices in place for the protection of cultural resources, including the established siting process, designated maneuver areas, and the above mentioned marking of cultural resources.

No cultural resources concerns were identified for the remaining 17 proposed PR training sites that were evaluated.

To identify historic properties of traditional religious or cultural significance that may be affected by the undertaking, the USAF consulted with federally recognized Native American tribes whose lands fall within the APE. Specifically, information was solicited regarding areas or locations in which any traditional cultural uses or activities would be encroached by the

proposed PR training areas on DoD lands, or any areas of recurring ceremonial use that are established as Traditional Cultural Properties. Copies of the consultation letters and all responses to date are provided in Appendix B. Tribes consulted with are included in Section 7.0 of this EA.

#### 3.4.2.2 U.S. Forest Service or Other Federal Land

Forty-four proposed PR training sites are located on USFS or other federal land. These are primarily on USFS land in Arizona and New Mexico, with the exception of two proposed PR training sites on BLM land in Arizona and Nevada, respectively, and one proposed PR training site on NPS land in Arizona (see Table E-2 in Appendix E of this EA).

For all proposed PR training sites on USFS or other federal land, the USAF conducted searches of publicly available records, the NRHP, AZSITE, the NMCRIS, the National Forests, and federally recognized tribes to determine the extent of previous cultural resource inventories and to identify known cultural resources at those proposed PR training sites. Records search data from the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d) were used for this analysis, as well as from the sources listed above. Many of the proposed PR training sites were previously surveyed for cultural resources or assessed under the Final Cultural Resources Survey in Support of Personnel Recovery Activities, 563rd Rescue Group, Davis-Monthan Air Force Base, Tucson, Arizona (USAF 2013), the Rescue Group Personnel Recovery Supplemental Environmental Assessment, Davis-Monthan Air Force Base, Arizona (USAF 2017i), or are at sites that are paved and/or heavily disturbed, or that are currently in use for similar purposes. At proposed PR training sites with natural surfaces where no prior cultural resources investigations have been conducted, intensive pedestrian surveys were performed to identify whether resources are present within the APE (Kirvan and Rogge 2019b; Miljour and Wegener 2019).

Records search information was obtained by the USAF for the 44 proposed PR training sites (see Table E-2 in Appendix E of this EA). The records search data identified that cultural resources survey has been conducted for 16 proposed PR training sites. In addition, as part of the Section 106 consultation for the Angel Thunder EA, the AZ SHPO concurred that no survey is needed for 11 of the proposed PR training sites (existing helipads, helibases, and recreation areas) providing there would be no change in use by the Proposed Action and no improvements needed (Davis 2018; see Table E-2). As discussed in Section 3.4.2, an additional seven proposed PR training sites on USFS land with no prior survey (Comanche, Negrito North, Negrito South, Rough Rider, Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West) have been removed from Section 106 consultation at this time. Cultural resources survey was conducted in support of this EA at five proposed PR training sites (Kirvan and Rogge 2019b; Miljour and Wegener 2019).

Eight of the proposed PR training sites where no, or very limited, survey has been conducted, have little potential for impacts to historic properties. These are established off-road areas used by the public, locations where activities would occur in water and using existing boat launch facilities and roads, existing heliports with paved or disturbed surfaces, the Portal Cabin, and Delamar Dry Lake lakebed.

The records search and field survey investigations identified 20 cultural resources sites at 12 proposed PR training sites; of these, five are not recorded. These results are provided in Table 3.4-3 and discussed below.

**Table 3.4-3. Cultural Resources at Proposed PR Training Sites on U.S. Forest Service or Other Federal Lands**

| Proposed PR Training Site | Site Number | Description | NRHP Eligibility |
|---|---|---|---|
| Black Mesa - USFS Helitack Base | (Unrecorded) | Unidentified, potentially historic buildings | Unevaluated |
| Devon | AR-03-05-02-00610 | Historic-period pipeline (Ruby Pipeline) segment and historic-period artifacts | NRHP-listed (non-contributing element) |
| | AR-03-05-02-00926 | Prehistoric lithic scatter | Eligible |
| | AR-03-05-02-00927 | Prehistoric flaked stone scatter | Not Eligible |
| Glenwood Ranger Station | (Unrecorded) | Administrative buildings/sites | Unevaluated |
| Hannagan Meadow - USFS Helitack Base; and, Helibase Circular | (Incomplete record) | Unidentified | Unevaluated |
| Longview - USFS Helitack Base | NA20311 | Historic-period cabins | Unevaluated |
| Mormon Lake | (Unrecorded) | Unidentified, potentially historic-period buildings | Unevaluated |
| Negrito Center | (Unrecorded) | Negrito Airfield | Unevaluated |
| Portal Cabin and CCC Bunkhouse | Unknown SHPO Cochise County 114 | Historic Portal Cabin | NRHP-listed |
| Reserve Airport | (Unrecorded) | Reserve Airport | Unevaluated |
| | 33974 | Multicomponent archaeological site with artifacts and features | Eligible |
| | 39977 | Prehistoric archaeological site with artifacts | Unevaluated |
| | 69064 | Prehistoric archaeological site with artifacts | Unevaluated |
| Reserve Airport (continued) | 70194 | Prehistoric archaeological site with artifacts and features | Unknown |
| | 149438 | Historic-period archaeological site with artifacts and features | Eligible |
| Reserve Ranger Station | 33624 | Prehistoric archaeological site with artifacts | Not eligible |
| Saguaro Lake Ranch | AZ U:6:194 (ASM) | Stewart Martin Dam construction camp | Eligible |
| | AZ U:6:195 (ASM) | Rock alignment and historic artifact scatters | Unevaluated |
| Spring Valley Cabin | Unknown | Spring Valley Cabin | Eligible |

NRHP – National Register of Historic Places
PR – Personnel Recovery
SHPO – State Historic Preservation Officer
USFS – U.S. Forest Service
Sources: Miljour and Wegener 2019; personal communication with AETC 56 RMO/ESMC 2019; personal communication with USFS 2019a, 2019c; USAF 2017d.

Of the cultural resources sites noted above, 12 recorded resources were identified under Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d): three prehistoric archaeological sites, including one with features, one multicomponent site, and one historic-period archaeological site with features at the Reserve Airport PR training site; a prehistoric site at the Reserve Ranger Station PR training site; historic cabins at the Longview – USFS Helitack Base PR training site; an unidentified site within Hannagan Meadow – USFS Helitack Base and Helibase Circular PR training sites; and a Stewart Martin Dam construction camp and multicomponent site with a rock alignment and historic artifact scatters at the Saguaro Lake Ranch PR training site. Also among these resources is the cabin at the Portal Cabin and CCC Bunkhouse PR training site, which has been determined eligible for the NRHP. The cabin is available for rent to the public and would have a similar use by the proposed PR training activities. Unrecorded resources identified included the historic-period Negrito Airfield at the Negrito Center PR training site and the Reserve Airport PR training site administrative building/sites at the Glenwood Ranger Station PR training site, and unrecorded historic buildings may be present at the Black Mesa – USFS Helitack Base and Mormon Lake PR training sites.

Recent cultural resources investigations identified four additional sites: two prehistoric lithic scatters and a segment of the historic-period Ruby Pipeline with historic-period artifacts at the Devon PR training site; and the Spring Valley Cabin. Also, on USFS land is the Spring Valley Cabin, which is eligible for the NRHP. The use of the cabin for the proposed PR training activities would be similar to its ongoing use as a rental recreation cabin and would not adversely affect any characteristics that make the cabin eligible for the NRHP (personal communication with USFS 2019a). Sites for which the eligibility is unknown or has not been evaluated are considered eligible for the purposes of this analysis and Section 106 consultation.

No cultural resources concerns were identified for the remaining 25 proposed PR training sites that were evaluated and included in the Section 106 consultation.

To identify historic properties of traditional religious or cultural significance that may be affected by the undertaking, the USAF consulted with federally recognized Native American tribes whose lands fall within the APE. Specifically, information was solicited regarding areas or locations in which any traditional cultural uses or activities would be encroached by the proposed PR training areas on USFS or other federal land, or any areas of recurring ceremonial use that are established as Traditional Cultural Properties. Copies of the consultation letters and all responses to date are provided in Appendix B. Tribes consulted with are included in Section 7.0 of this EA.

#### 3.4.2.3 Other Land (Municipal, City, County, State, or Tribal)

Fifty-seven proposed PR training sites are located on other land (municipal, city, county state, or tribal). For all proposed PR training sites on other land, the USAF conducted searches of publicly available records, the NRHP, AZSITE, the NMCRIS, and federally recognized tribes to determine the extent of previous cultural resource inventories and to identify known cultural resources at those proposed PR training sites. Records search data from Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d) were used for this analysis, as well as from the sources listed above. Many of the proposed PR training sites were previously surveyed for cultural resources or assessed under the Final Cultural Resources Survey in Support of Personnel

Recovery Activities, 563rd Rescue Group, Davis-Monthan Air Force Base, Tucson, Arizona (USAF 2013), the Rescue Group Personnel Recovery Supplemental Environmental Assessment, Davis-Monthan Air Force Base, Arizona (USAF 2017i), or are at sites that are paved and/or heavily disturbed, or that are currently in use for similar purposes. At proposed PR training sites with natural surfaces where no prior cultural resources investigations have been conducted, intensive pedestrian surveys were performed to identify whether resources are present within the APE (Kalosky 2019 and Kirvan and Rogge 2019a).

Records search data was obtained for 48 of the 57 proposed PR training sites on other land. Nine proposed training sites with no records search are locations where activities would occur in water and using existing boat launch facilities and roads, existing airports with paved and disturbed surfaces, and developed urban settings.

Of those remaining 48 proposed PR training sites on other land, cultural resources surveys have been conducted at 34 sites, and 14 sites have had no survey. Among these latter proposed PR training sites on other land are six sites that were identified under the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d) as requiring surveys (Babbitt Ranch 1, Babbitt Ranch 3, Highway 80 Paladins [TW 2 Paladins], Powerline, Ruby Fuzzy Paladins, and Tombstone Paladins), which have been removed from Section 106 consultation, as discussed under Section 3.4.2. The remaining 8 proposed PR training sites with no prior survey include the Playas Training and Research Center, a former mining town, that has been used for decades for similar training activities. The Playas Training and Research Center and the Playas Temporary MOA are discussed below in Section 3.4.2.3.1. For two of the proposed PR training sites with no prior survey, the White Mountain Apache THPO was consulted for similar training activities under the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d). The remaining five training sites with no prior survey have little potential for impacts to cultural resources and are existing pools, locations where activities would occur in water and using existing boat launch facilities and roads, existing airports with paved and disturbed surfaces, disturbed dirt or paved surfaces in existing facilities, developed urban settings, and the two locations on White Mountain Apache tribal lands mentioned above.

In total, cultural resources surveys are known to have been conducted at 34 proposed PR training sites, which have resulted in the identification of 15 recorded cultural resources sites within the APE at five proposed PR training sites, as shown in Table 3.4-4 below.

**Table 3.4-4. Cultural Resources at Proposed PR Training Sites on Other Land**

| Proposed PR Training Site | Site Number | Description | NRHP Eligibility |
|---|---|---|---|
| Bisbee Douglas IAP | (Unrecorded) | Bisbee Douglas IAP | Unevaluated |
| Coolidge Airport | (Unrecorded) | Coolidge Airport | Unevaluated |
| Flagstaff Pulliam Airport | (Unrecorded) | Flagstaff Pulliam Airport | Unevaluated |
| | NA14166 | Prehistoric lithic quarry and scatter | Unevaluated |
| Grand Canyon National Park Airport | (Unrecorded) | Grand Canyon National Park Airport | Unevaluated |

| Table 3.4-4. Cultural Resources at Proposed PR Training Sites on Other Land | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Site Number** | **Description** | **NRHP Eligibility** |
| Grand Canyon Valle Airport | (Unrecorded) | Grand Canyon Valle Airport | Unevaluated |
| H.A. Clark Memorial Field | (Unrecorded) | H.A. Clark Memorial Field | Unevaluated |
| Kingman Airport | AZ G:9:8 (ASM) | Kingman Army Airfield | Eligible |
| Marana Regional Airport | (Unrecorded) | Marana Regional Airport | Unevaluated |
| Phoenix Sky Harbor IAP | AZ AA:12:875 (ASM) | El Paso Natural Gas Pipeline No. 1007 | Eligible |
| | AZ T:12:131 (ASM) | Canal Patricio System | Eligible |
| | P:3:6 (GP) | Unidentified | Unevaluated |
| | AZ T:12:62 (ASM) | Dutch Canal Ruin | Eligible |
| | AZ T:12:47 (ASM) | Pueblo Salado | Eligible |
| | AZ:U:9:237 (ASM) | Hohokam canals and artifacts | Eligible |
| | AZ U:9:297 (ASM) | Possible pithouse | Unevaluated |
| | AZ T:10:84 (ASM) | Southern Pacific Railroad: Welton-Phoenix-Eloy Spur | Unevaluated |
| | (Unrecorded) | Phoenix Sky Harbor IAP (not recorded) | Unevaluated |
| Prescott Airport | (Unrecorded) | Ernest L. Love Field | Unevaluated |
| | AZ N:3:32 (ASM) | Santa Fe, Prescott & Phoenix Railway, abandoned segment | Not Eligible |
| | AZ N:7:212 (ASM | Chino Valley Irrigation Ditch (no longer extant within Prescott Airport) | Eligible |
| | AZ N:7:353 (ASM) | Chino Valley Irrigation Ditch, abandoned lateral | Not Eligible |
| Saguaro Lake | AZ U:6:194 (ASM) | Stewart Martin Dam Construction Camp | Eligible |
| | AZ U:6:195 (ASM) | Rock alignment and historic artifact scatters | Unevaluated |
| Springerville Airport | (Unrecorded) | Springerville Airport | Unevaluated |
| Tombstone 19 HLZ | IO1 to IO3 | Isolated prehistoric finds | Not eligible |
| Winslow-Lindbergh Regional Airport | (Unrecorded) | Winslow-Lindbergh Regional Airport | Unevaluated |
| Yuma Airport | (Unrecorded) | Fly Field | Unevaluated |

NRHP – National Register of Historic Places
PR – Personnel Recovery
Sources: Armstrong 2014; Kirvan and Rogge 2019a; USAF 2017d.

Of these 15 recorded resources, 12 were identified under the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d): a construction camp and a rock alignment with historic artifacts at the Saguaro Lake PR training site; prehistoric canals and two prehistoric canal systems, a pueblo, a pithouse, a historic railroad, a historic pipeline and canal, and an unidentified site at the Phoenix Sky Harbor IAP PR training site; a prehistoric lithic quarry and scatter at the Flagstaff Pulliam Airport PR training site; and the Kingman Army Airfield at the Kingman Airport PR training site. In addition, the Chino Valley Irrigation ditch and an

abandoned lateral of the irrigation ditch have been recorded at the Prescott Airfield, and the Santa Fe, Prescott & Phoenix Railway is located just east of the airport.

Recent surveys conducted in support of this EA identified three prehistoric isolated finds at Tombstone 19 HLZ (Kirvan and Rogge 2019a).

In addition, nine proposed PR training sites are located at historic airports that have not been recorded or evaluated for the NRHP: Bisbee Douglas IAP, Coolidge Airport, Flagstaff Pulliam Airport, Grand Canyon National Park Airport, H.A. Clark Memorial Field, Marana Regional Airport, Phoenix Sky Harbor IAP, Prescott Regional Airport (Ernest A. Love Field), Winslow-Lindbergh Regional Airport, and Yuma Airport (Fly Field) (Table 3.4-4). The Bisbee Douglas IAP's Master Plan indicates historic facilities are present and additional cultural resources may be present in the surrounding area (Armstrong 2014). The Coolidge Airport Master Plan (Coffman 2011) indicated a potential for cultural resources and that survey would be required for ground-disturbing activities. The Flagstaff Airport Master Plan identified survey of much of the airport in support of an EA for runway expansion found no historical or cultural resources; however, additional surveys may be required if development projects are planned for areas not previously disturbed and with no prior survey (Coffman 2007). The H. A. Clark Airport Master Plan identified that cultural resources survey conducted in support of an EA for development of portions of the airport and for land acquisition found three historic archaeological sites; SHPO and the Forest Service concurred that none of the sites are NRHP eligible (Stantec Consulting and Coffman 2007). The Marana Airport Master Plan indicated the potential for historic buildings and structures also at this facility (Armstrong 2017). Sites for which the eligibility is unknown or has not been evaluated are considered eligible for the purposes of this analysis and Section 106 consultation.

No cultural resources concerns were identified for the remaining 27 proposed PR training sites that were evaluated and included in the Section 106 consultation.

#### 3.4.2.3.1 Activation of Playas Temporary MOA

The aerial extent of the Playas Temporary MOA is 520 square miles, which encompasses the Playas Training and Research Center. The USAF conducted searches of publicly available records, the NRHP, the NMCRIS, and federally recognized tribes to determine the extent of previous cultural resource inventories and to identify known cultural resources at the proposed Playas Temporary MOA. Records on file at the NMCRIS and NM SHPO indicated that 98 cultural resources surveys totaling 8,198 acres have been conducted within the Playas Temporary MOA APE; none are within the Playas Training and Research Center. These investigations identified 51 archaeological sites. These investigations identified 51 archaeological sites. These results are presented in Appendix E (specifically, in Tables E-4 and E-5) of this EA and summarized below.

**Archaeological and Architectural Resources**

Cultural resources in this region include a wide variety of prehistoric and historic sites and architectural resources. Prehistoric sites typically consist of artifact scatters, but may include a range of habitation debris, rock art, cooking features, mortuary sites, and trails, as well as the remains of prehistoric houses and agricultural features. Based on pottery and other artifact

forms, many of the sites occupied within the last two millennia of the prehistoric period are ascribed to the Mimbres culture within the larger Mogollon region of the ancestral Pueblo.

The region's historic resources exhibit a similar variety, and may include homesteads, mining sites and associated structures and artifacts, refuse disposal, cemeteries, travel routes and associated debris, railroads, and historic buildings. In the vicinity of the Playas Temporary MOA, the 39 prehistoric sites identified by the records search include 26 undated artifact scatters, two sites ascribed to the Archaic period (ca. 11,500 – 2500 cal BP), and 11 that contain ceramic sherds indicating affiliation with Puebloan groups. Of the eleven historic-period sites, four are not described other than to identify them as historic-period; three are mining-related; two are structural remains; and two are railroad alignments. Finally, one site is a simple rock cairn and may be either prehistoric or historic (see Table E-5 in Appendix E of this EA).

Of the archaeological resources, seven prehistoric and three historic sites have been determined eligible for the NRHP. All were determined eligible under NRHP Criterion D (research values), while two historic railroad alignments were also determined eligible under Criterion A for their association with important historical events. One site, the Old Hachita (or Hatchet) Mine, is listed on the New Mexico State Register of Cultural Properties. Four prehistoric sites have been determined not eligible for the NRHP. Based on the archival research, no historic structures within the APE are listed on or have been determined eligible for the NRHP.

**Traditional Cultural Properties**

To identify historic properties of traditional religious or cultural significance that may be affected by the undertaking, the USAF consulted with federally recognized Native American tribes whose lands fall within the APE. Specifically, information was solicited regarding areas or locations in which any traditional cultural uses or activities would be encroached by the proposed Playas Temporary MOA, or proposed PR training sites on other land, or any areas of recurring ceremonial use that are established as Traditional Cultural Properties. Copies of the consultation letters are provided in Appendix B. Tribes consulted with are included in Section 7.0 of this EA.

#### 3.4.2.4 Private Property

Nineteen proposed PR training sites are on private property. For proposed PR training sites on private property, the USAF conducted searches of publicly available records, the NRHP, AZSITE, the NMCRIS, and federally recognized tribes to determine the extent of previous cultural resource inventories and to identify known cultural resources at those proposed PR training sites. Records search data from the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d) were used for this analysis, as well as from the sources listed above. Many of the proposed PR training sites are at sites that are paved and/or heavily disturbed or are currently in use for similar purposes. At proposed PR training sites with natural surfaces where no prior cultural resources investigations have been conducted, intensive pedestrian surveys were performed to determine whether resources are present within the APE.

Records searches data was obtained for 18 of the proposed PR training sites on private land. Cultural resources survey has been conducted for 7 of the 19 proposed PR training sites, including survey of one proposed PR training site conducted in support of this EA (Miljour and

Wegener 2019) (see Table E-2 in Appendix E of this EA). Of the 12 proposed PR training sites where no cultural resources survey has occurred, or there is no information available regarding a prior survey, one is the Sprucedale Guest Ranch, three are existing airfields (Eloy South, FR 320/311, and Little Outfit PR training sites), one is a sports field (HLZ 6), and one is a developed pool facility (Ott Family YMCA of Tucson Pool). Use of the existing guest ranch structures for billeting and an operations center would be consistent with its ongoing use. Eloy South is in use by Skydive Arizona for same activities as proposed by the USAF. The Arizona SHPO concurred that no survey is needed for this location providing there would be no change in use and no improvements needed (Davis 2018). Proposed PR activities at FR 320/311 and Little Outfit would occur on airport pavements and disturbed areas. The HLZ 6 PR training site is an existing sports field with a disturbed surface. The remaining six proposed PR training sites with no survey (Cattle, Elk, Gerbil, HLZ 5, Panda, and Squirrel) have been removed from Section 106 consultation, as discussed in Section 3.4.2.

Cultural resources were identified in the APE at five proposed PR training sites, as shown below in Table 3.4-5.

**Table 3.4-5. Cultural Resources at Proposed PR Training Sites on Private Property**

| Proposed PR Training Site | Site Number | Description | NRHP Eligibility |
|---|---|---|---|
| Eloy North | AZ AA:12:875(ASM) | El Paso Natural Gas Pipeline No. 1007 | Eligible |
| FR 320/311 | (Unrecorded) | Unidentified Historic Buildings | Unevaluated |
| Grand Canyon Valle Airport | (Unrecorded) | Grand Canyon Valle Airport | Unevaluated |
| | AZ H:8:3(ASM) | Scatter of flaked stone | Eligible |
| | AZ H:8:4(ASM) | Scatter of flaked stone | Eligible |
| | AZ H:8:5(ASM) | Scatter of flaked stone | Eligible |
| | AZ H:8:6(ASM) | Scatter of flaked stone | Eligible |
| | AZ H:8:7(ASM) | Scatter of flaked stone | Eligible |
| Sinkhole | AZ 1:7:5 | Gray Mountain Site lithic quarry and reduction area | Eligible |
| Three Points Public Shooting Range | AZ Z:14:127 (ASM) | Telegraph and telephone lines | Not eligible |
| | AZ AA:16:377 (ASM) | State Route 86 | Eligible |

NRHP – National Register of Historic Places
PR – Personnel Recovery
Sources: Miljour and Wegener 2019; USAF 2017d.

Of these sites, four were identified under the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017d): a historic gas pipeline at the Eloy North PR training site, a historic road and telegraph and telephone lines at the Three Points Public Shooting Range PR training site, and a lithic quarry area known as the Gray Mountain Site at the Sinkhole PR training site. Unrecorded historic structures were also identified near the FR 320/311 PR training site. In addition, five prehistoric flaked stone scatters recommended NRHP-eligible have been recorded near, but outside of the runways of the Grand Canyon Valle Airport, which is a historic airport that has not been previously recorded or evaluated for the NRHP.

Sites for which the eligibility is unknown or has not been evaluated are considered eligible for the purposes of this analysis and Section 106 consultation.

No known cultural resources concerns were identified for the remaining four proposed PR training sites that were evaluated and included in the Section 106 consultation.

To identify historic properties of traditional religious or cultural significance that may be affected by the undertaking, the USAF consulted with federally recognized Native American tribes whose lands fall within the APE. Specifically, information was solicited regarding areas or locations in which any traditional cultural uses or activities would be encroached by the proposed PR training areas on private land, or any areas of recurring ceremonial use that are established as Traditional Cultural Properties. Copies of the consultation letters and all responses to date are provided in Appendix B. Tribes consulted with are included in Section 7.0 of this EA.

### 3.4.3 Environmental Consequences

Impacts to cultural resources would be significant if activities related to the Proposed Action meet the criteria of adverse effect specified in federal regulations (36 CFR 800.5). Criteria for an adverse effect (36 CFR 800.5) are when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Under the NHPA, resource significance is determined through application of NRHP criteria (36 CFR Part 60.4) in consultation with SHPO. For the purposes of this EA analysis, cultural resources that have not been evaluated or their evaluation status is unknown are considered NRHP-eligible.

Under NEPA, impacts on cultural resources must be addressed to determine the significance of a project's anticipated environmental effects. The potential for adverse effects on cultural resources is considered in this NEPA assessment. An adverse effect on a historic property, however, does not necessarily equate to a significant impact under NEPA. Under NEPA, a significant impact can be mitigated to less than significant through data recovery or other treatment measures. In assessing impacts on cultural resources under NEPA, 40 CFR 1508.27 defines significance in terms of context and intensity. These elements include consideration of the impacts on the community, the importance of a site, the unique characteristics, and the severity of the impact.

Minimization activities, identified in this EA as operational constraints, would occur under the Proposed Action; as a result, no mitigation measures would be required. Avoidance and minimization of significant impacts to cultural resources would be addressed through the implementation of operational constraints specific to each jurisdiction, and Section 106 consultation on a case-by-case basis for each training event, as discussed in Section 2.3. Operational constraints are designed primarily to avoid impacts to cultural properties and other culturally sensitive areas and are outlined by jurisdiction below.

#### 3.4.3.1 Types of Impacts

As indicated above, impacts on cultural resources can be either direct or indirect. Direct impacts on archaeological resources usually result from ground disturbance. Architectural resources may be directly impacted by modifications to the respective structure. Indirect impacts on significant

cultural resources, including Native American Traditional Cultural Properties (TCPs), can involve alterations to a resource's setting, increased access leading to vandalism, or changes in land status without adequate protection. Specific PR training activities that may significantly impact cultural resources include flight, ground, and water operations.

### *Flight Operations*

*Flight Operations:* Flight Operations conducted primarily in the airspace and using established air fields, heliports, helibases, and established landing zones, and on either paved or disturbed dirt surfaces (F1, F3, F5, F8, and F10; Section 2.1.4) would have limited impacts on cultural resources. Under the Proposed Action, these would be limited to indirect effects resulting in minor changes in visual, atmospheric (e.g. contrails), and subsonic noise intrusions and direct effects resulting from airplane crashes and vibration effects from subsonic flights. Effects to cultural resources sites from vibration and noise due to fixed wing aircraft overflights would be transient in nature and brief in duration. Analyses of vibration effects associated with subsonic aircraft (USACE 2000) have indicated that overflights above 200 feet AGL do not generate significant levels of noise-induced structural vibration. Vibration effects are more likely to occur with subsonic aircraft flights below 200 feet AGL and/or helicopter overflight flight operations. Furthermore, the subsonic flights, including LATN operations and close air support, are transient in nature and brief in duration. PR flight operations at existing airports and airfields would be consistent with ongoing use. The potential for a direct effect due to an aircraft crash to occur anywhere within the study area is extremely low given compliance with existing flight rules (civil and military), air traffic services, and airspace access requirements to ensure PR training is conducted safely and efficiently within the NAS, as discussed in Section 3.1.

Under the Proposed Action, potential impacts from flight operations activities associated with RAs (F4) and Warning Areas upon cultural resources would include similar indirect effects due to minor changes in visual, atmospheric, and subsonic noise intrusions and direct effects resulting from airplane crashes and vibration effects from subsonic flights as discussed above.

FARPs (F6) have the potential to impact cultural resources through ground disturbance, and fuel spills, and/or fire. The FARPs would be established on disturbed or paved surfaces with the appropriate safety measures, as discussed in Section 3.8, and would therefore have no potential to impact cultural resources.

Potential impacts to cultural resources could also occur from HLZs (F7), which may be established at either dedicated airfields/helipads or in undeveloped areas. Training activities at the HLZs would have a duration of thirty minutes to four hours. As discussed in Section 2.1.4.15, landings at the HLZs are typically completed within two minutes, with the helicopter spending approximately 60 percent of its time hovering 10 to 70 feet above ground surface. Similar to the flight operations discussed above, potential impacts to cultural resources from HLZ training activities could include direct effects resulting from airplane crashes and vibration effects from subsonic flights, as well as indirect effects resulting from minor changes in visual and subsonic noise intrusions. Indirect impacts to cultural resources from noise or visual intrusions are anticipated to be negligible, as such intrusions would be very limited in duration and not significantly diminish the setting or context of any archaeological resources, historic structures or TCPs within the APE.

Direct effects from HLZ training activities would result primarily from rotor wash from larger craft such as the CV/MV-22 Osprey, the CH-53K, and the CH-47 Chinook helicopter, which could cause loss of topsoil, ground surface deflation, displacement of cultural materials, and subsequent secondary disturbance from water erosion. Disturbance to structures could also occur, depending on their condition. The CV/MV-22 HLZs would be located within the BMGR and at the Playas Training and Research Center, in locations with no historic buildings or structures. The BMGR has a requirement of a nine-acre survey area centered on the HLZs where CV/MV-22 landings could occur. For HLZ locations at established paved or disturbed settings, there would be little increase in impacts from proposed PR training activities to cultural resources. As discussed in Section 3.8, the potential for a direct effect due to an aircraft crash to occur anywhere within the study area is extremely low and the potential for direct impact of a crash on any particular resource is not considered reasonably foreseeable. Impacts to cultural resources in undeveloped settings could occur from HLZ activities; however, implementing the identified operational constraints would reduce the impacts to less than significant.

Parachute operations (F9) include drops of personnel, supplies, and/or equipment, and can occur over land or over water. Direct effects to cultural resources from air drops of personnel would be negligible. Over land equipment drops of up to 3,000 pounds have a higher potential for adverse impacts to cultural resources; however, these would occur within previously approved ranges and DZs and would be less than significant. Overwater drops of zodiac boats at lakes, ponds or rivers would occur at bodies of water within previously approved ranges and locations with ongoing recreation use, and no disturbance would occur along the shorelines except at dedicated boat launch facilities. Therefore, the potential for parachute operations to impact cultural resources would be less than significant.

### *Ground Operations*

Primary ground disturbance from the Proposed Action would potentially occur from some specific ground operations activities (G1, G3, and G4). Use of hardened camping facilities, or existing buildings for billeting, assembly, and classroom purposes (G1) would have no impacts to cultural resources. Camping with tents could cause some surface ground disturbance, extending to depths of approximately 6 inches for tent pegs, and also for activities such as the installation of temporary nylon or plastic fencing along campsites. Large Force training events or frequent use of specific locations could result in increased erosion, which has the potential to impact cultural sources. Impacts to cultural resources could occur from bivouacking and camping activities. However, following identified operational constraints would reduce the impacts to less than significant. Specific operational constraints are identified below for proposed PR training sites

Vehicle movement (G3) would be limited primarily to existing established roads and trails. The potential to impact cultural resources would occur when the vehicle is off-road. As described in Section 2.1.4.3, off-road travel would typically be conducted within 200 feet of an HLZ and occur approximately five percent of the time. Vehicle movement activities are proposed at some installations where off-road vehicle activities are prohibited. Following identified operational constraints would reduce the impacts to cultural resources from off-road vehicle movements to less than significant.

Survival training (G4) is a critical component of military readiness and PR training (e.g., SERE). Survival training takes place at Davis-Monthan AFB and would occur at a number of other locations on DoD; USFS and other federal land; private; and municipal, county, or state land that have a variety of plants. Survival training during Large Force and Medium Force training events consists primarily of classroom training and field familiarity of edible plants. Use of UTVs to travel on existing roads and trails to training locations would cause no impacts to cultural resources, nor would classroom activities. Flares/smoke could be used at any proposed PR training site where survival training activities are proposed, as well as in association with other ground, flight, and water operations (i.e., cross-country dismounted movement [G2], mounted vehicle movement [G3], pyrotechnic use [G7], Established MOAs [F1], RAs [F4], and HLZs/DZs/overwater hoist operations [W1]), unless prohibited by the installation-specific range protocols or conditions of a Special Use permit. Flares/smoke are used only when the fire danger is low and on bare ground or paved surfaces on approved sites, which are cleared of any vegetation within a three-foot by three-foot area prior to use of flares and smoke. Vegetation clearance could cause surface disturbance to cultural resources but would consist of small areas of disturbance. The potential for survival training to impact cultural resources would be less than significant

Cross-country dismounted movement (G2) with Small or Medium Force training events would have negligible disturbance to all but extremely fragile or sensitive cultural materials or resources (e.g., basketry, ceramics, or human burials or cremations). Large Force training events or frequent use of specific locations could result in increased erosion, which has the potential to impact cultural resources. Dismounted movements are generally not prohibited on installation ground operations training ranges but may be prohibited within specific sensitive cultural resource locations which are identified according to the installation's environmental protocols and procedures (e.g., signs, stakes, and/or electronic global positioning system coordinates). Following identified operational constraints would reduce the impacts to cultural resources from dismounted movements to less than significant.

Ground operations that would have negligible or no ground-disturbance include MOUT (G5), ground-based technical rope work (G6), pyrotechnic use (G7), and small arms firing range (G8). Pyrotechnics would use airsoft rifles, which shoot a 6mm biodegradable pellet; a variety of implements to simulate munitions and battle noise; and flares and burn barrels. Flares would be used on paved surfaces or would involve clearance of vegetation from a three-foot by three-foot area prior to the use of flares. These activities would have a negligible impact to cultural resources. Small arms use would occur in existing facilities approved for that purpose. There would be no impact to cultural resources from small arms used in existing, approved firing ranges.

### *Water Operations*

Water operations (W1 and W2) have little potential to affect cultural resources, as these would be located in training areas offshore or in recreational use areas. Access to these locations would be from the aircraft, boats, or at approved access areas. Open circuit dive operations and use of sonar would have no impact to cultural resources.

#### 3.4.3.2 Proposed Action

This section presents the potential effects of the Proposed Action and the No-Action Alternative on cultural resources within the APEs for each of the identified property types. Because Large Force, Medium Force, and Small Force training within the Proposed Action each have similar impacts to cultural resources, they will collectively be referred to in this section as the Proposed Action.

##### 3.4.3.2.1 Department of Defense Property

Proposed PR training activities would occur at 55 training sites that are located on DoD property. These proposed PR training sites are permitted sites already approved for the types of activities covered under the Proposed Action. The training operations at these proposed PR training sites consist of ground, flight, and water operations that are consistent with current training activities at these proposed PR training sites. As discussed above, the specific activities with the potential for impacts to cultural resources includes camping with tent and installation of temporary fencing (G1), G3 vehicle movement – off-road, the clearance of vegetation in small areas that is associated with use of flares for G4 activities, dismounted movements (G2), HLZs (F7) and Parachute Operations/DZs (F9).

Three proposed PR training sites in California (San Clemente Island NALF, San Clemente Island Surrounding Off-Shore Areas, and Leon [Beringer DZ]) have been previously analyzed for the activities proposed at those sites in this EA under the 2008 SOCAL EIS/OEIS and 2018 HSTT EIS/OEIS, and therefore will not be further analyzed for the PR EA. The PR training activities would comply with the mitigation measures and any operational constraints identified in those documents, as well as comply with the procedures identified in the NALF San Clemente Island Instruction 1700.1A (Navy 2016). Under the 2008 OEIS/EIS, impacts to cultural resources would be less than significant for offshore training, and for on-shore activities would be less than significant after consultation and resolution of adverse effects under the NRHP prior to implementation of operations. Under the 2018 OEIS/EIS, impacts to cultural resources from training activities within the SOCAL Range Complex would be less than significant.

Also, four proposed PR training sites in New Mexico at WSMR (WSMR Stallion Army Airfield, WSMR Sierra Maneuver Area, WSMR Thurgood West Maneuver Area, and WSMR Otero Maneuver Area) have been previously analyzed for the activities proposed at those sites under the 2009 Final Environmental Impact Statement (FEIS) for Development and Implementation of Range-Wide Mission and Major Capabilities at WSMR (White Sands Test Center Operations Office 2009); also, another PR training site at WSMR (WSMR Small Arms Range) has also been previously analyzed for the activities proposed at this site under the 2011 Final EA for the Network Integration Evaluation at WSMR (White Sands Test Center Operations Office 2011). The proposed WSMR PR training sites are also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties (U.S. Army Garrison White Sands 2015). The APE for this proposed undertaking on WSMR falls within the area addressed by that PMOA. The WSMR PR training activities would comply with the mitigation measures and any operational constraints identified in those documents, and with WSMR's INCRMP, PMOA, and Range Regulation 200-2 (WSMR Directorate of Public Works 2013). Under the 2009 FEIS, impacts to cultural resources for range activities were found to be less than significant through compliance with the 1985 PMOA and the measures outlined in the

INCRMP. Under the 2011 Final EA, there would be no impacts to cultural resources from PR training activities at the WSMR Small Arms Range. Given this, these WSMR PR training sites are not further analyzed in this EA.

The USAF is considering PR training sites at MCB Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. The six proposed PR training sites (Camp Pendleton Cartwright Water, Camp Pendleton PDL, Camp Pendleton Off-Road, Camp Pendleton Red Beach, Camp Pendleton NFG, and Camp Pendleton HOLF) are included for reference purposes only and are not part of this consultation. If a training event is proposed for the sites, USMC has indicated that they would engage in Section 106 consultation related to proposed activities on their property.

Proposed DoD training locations with identified eligible or unevaluated cultural resources are identified in Table 3.4-2, and include BMGR, MCB Camp Pendleton, Davis-Monthan AFB, Florence Military Reservation, March ARB, and Nellis AFB. Proposed PR training activities at the NATO Hill location at BMGR, Camp Pendleton PDL, Camp Pendleton Off-Road, Camp Pendleton Red Beach, Camp Pendleton NFG, Camp Pendleton HOLF, Davis-Monthan AFB, and Florence Military Reservation, March ARB, and Nellis AFB would avoid sensitive cultural areas through identified operational constraints. The Proposed Action activities on military installations in Arizona, California, New Mexico, and Nevada would have no new direct impacts on cultural resources.

The Proposed Action would result in no modifications to buildings, nor have any TCPs been identified in the area of the project APEs. Proposed PR training sites on DoD property are restricted to military personnel or other appropriate personnel for DoD purposes. Proposed PR training activities would use existing roads, trails and access locations, and would be subject to established operational constraints designed to avoid or minimize impacts to cultural resources (see below).

Operational constraints identified for PR training activities on DoD property include:

- Consultation with appropriate range, cultural resources, and other installation personnel when scheduling training activities. The consultation would identify specific constraints, which may include, but are not limited to:
  - Culturally sensitive locations that must be avoided by bivouacking, camping, assembly, over land equipment air drops, and dismounted movement activities.
  - Ranges or specific culturally sensitive locations where off-road movement is prohibited.
- Consultation with WSMR Cultural Resource Personnel on the condition of Seibert Stakes for the WSMR Otero Maneuver Area, the WSMR Sierra Maneuver Area, and the WSMR Thurgood West Maneuver Area training sites.
- Data call requests to AZARNG are currently required prior to each training event at Camp Navajo and Florence Military Reservation; completed data requests identify specific operational constraints for training sites.
- All proposed training events on Camp Navajo would require project specific NEPA and Section 106 review/documentation prepared by the AZARNG before the start of the event. The review/documentation may include, but is not limited to, an Army National

Guard (ARNG) Environmental Checklist and Record of Environmental Consideration (Personal communication with Arizona Army National Guard Environmental Office 2019).

- Activities would follow established range regulations and environmental procedures for each installation (e.g., USMC's Environmental Operation Map Environmental Security MCI West – MCB Camp Pendleton [USMC 2018a], USMC's Range and Training Area Standard Operating Procedures MCI West – MCB Camp Pendleton [USMC 2018d], NALF San Clemente Island Instruction 1700.1A [Navy 2016], and WSMR Range Regulation 200-2 [WSMR Directorate of Public Works 2013]). These would identify, but are not limited to:
  - Culturally sensitive locations that must be avoided.
  - Ranges where off-road vehicle movement is prohibited.
- Range regulations and range operations maps are periodically updated: the most recent versions of these and similar documents, as appropriate, would be obtained prior to initiation of training activities.

The possibility exists for cultural resources or cultural deposits to be discovered during training or other activities. If archaeological materials or potential human remains are discovered on the ground or below the soil surface:

- Disturbing or removing any archaeological material or potential human remains would be avoided.
- No photography of cultural material or potential human remains would occur.
- The installation environmental personnel would be notified and provided with the coordinates of the potential discovery.
- The policies and procedures for archaeological discovery identified in each installation's ICRMP would be followed.

Implementation of the operational constraints and Section 106 consultation on a case-by-case basis for each training event, as discussed in Section 2.3, would reduce potential impacts to cultural resources on DoD property to below a level of significance. Therefore, the Proposed Action would result in no significant impacts.

#### 3.4.3.2.2 U.S. Forest Service or Other Federal Land

Proposed PR training activities would occur at 44 proposed PR training sites that are located on USFS or other federal property. Thirteen proposed PR training sites in Arizona USFS or other federal land were previously addressed under separate undertakings (see Table E-2 of Appendix E of this EA). Of these, two proposed PR training sites were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental Environmental Assessment (USAF 2017i), which SHPO concurred (USAF 2017i Appendix A). The remaining 11 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred, providing there will be no change in use or improvements needed (Davis 2018).

Proposed DoD training locations on USFS or other federal property with identified eligible or unevaluated cultural resources are identified in Table 3.4-2. These include Delamar Dry Lake,

which is an established landing zone that has been in use for similar activities by the USAF for approximately 30 years. Under the Proposed Action, potential impacts upon cultural resources from the Delamar Dry Lake MOA (F1) and Fixed-wing (F8) activities would include indirect effects due to minor changes in visual, atmospheric, and subsonic noise intrusions and direct effects resulting from airplane crashes and vibration effects from subsonic flights. Although only a small portion of the APE has been previously surveyed, the records search results indicate that cultural resources within the APE would consist primarily of artifact scatters. No significant impacts to archaeological resources are expected to result from the Proposed Action. Activities proposed at the Delamar Dry Lake training site must fall under the definition of "casual use" (USAF 1988); any proposed activities that fall outside of that definition are outside the scope of this EA. Casual use would include Medium and Small Force training; however, the number of aircraft involved with Large Force training may exceed the definition of casual use.

Other proposed PR training sites with historic properties or unevaluated resources are Devon, Glenwood Ranger Station, and Reserve Ranger Station. Under the Proposed Action, potential impacts to historic properties or unevaluated resources would be reduced to less than significant though the implementation of identified operational constraints. The proposed training activities at the Portal Cabin and Civilian Concentration Corps (CCC) Bunkhouse and Spring Valley Cabin would be similar to its use as rental recreation facilities and would not adversely affect any characteristics that make the cabin eligible for the NRHP. Training activities at the Proposed Reserve Airport would occur on airport pavements and would not impact cultural resources.

The Proposed Action would result in no modifications to buildings, nor have any TCPs been identified in the area of the Proposed Action APEs. Proposed PR training activities would use existing roads, trails, and access locations. Therefore, use of existing access on USFS and other federal land associated with proposed PR training activities would not have an increased impact on cultural resources. The Proposed Action would result in no indirect impacts.

Operational constraints identified for PR training activities on USFS or other federal lands include:

- Both USFS and NPS require permits for Special Use activities. The PR training activities would be considered Special Uses and require permits from USFS and NPS.
- Advance coordination with the USFS for training activities at the Glenwood Ranger Station and the Reserve Ranger Station training sites, as these are residences for USFS staff. The coordination would include establishment of specific coordinates for proposed bivouacking or camping locations, as these may be adjusted to avoid culturally sensitive areas.
- Training activities would avoid physical disturbance to any areas within 50 feet of a historic property or unevaluated resource. If avoidance would not be feasible, the USAF would not use that training location, until/unless mitigation and Section 106 consultation have been completed and any adverse effect(s) resolved.
- Activities proposed at Delamar Dry Lake training site must fall under the definition of "casual use" (USAF 1988); any proposed activities that fall outside of that definition are outside the scope of this EA. Casual use would include Medium and Small Force training; however, the number of aircraft involved with Large Force training may exceed the definition of casual use.

- Advance coordination with the USFS for all proposed PR training bivouacking, camping, and off-road vehicle activities. The coordination would include establishment of specific coordinates for proposed bivouacking or camping locations, as these may be adjusted at the discretion of the USFS or NPS to avoid culturally sensitive areas.

- Reengage with the New Mexico SHPO and Gila National Forest and complete any additional surveys that may be required prior to bivouacking (G1) at the Glenwood Ranger Station, Negrito Airstrip, Negrito Center, Negrito Helibase, Rainy Mesa, Reserve Airport, and Reserve Ranger Station PR training sites.

Additional conditions requested to be implemented under the Proposed Action by National Forests are discussed in Section 3.5.3.1.2 of this EA (also, see Appendix H for the National Forests' comment letters).

The possibility exists for cultural resources or cultural deposits to be discovered during training or other activities. If archaeological materials or potential human remains are discovered on the ground or below the soil surface:

- Disturbing or removing any archaeological material or potential human remains would be avoided.
- No photography of cultural material or potential human remains would occur.
- The USFS, BLM, or NPS District office archaeologist, as appropriate, would be notified and provided with the coordinates of the potential discovery.
- No PR training activities would occur within a radius of 50 feet around the find until the USAF is notified by the USFS, BLM, or NPS District office archaeologist, as appropriate, that the activities may resume.

Implementation of the operational constraints and Section 106 consultation on a case-by-case basis for each training event, as discussed in Section 2.3, would reduce potential impacts to cultural resources on USFS or other federal land to below a level of significance. Therefore, the Proposed Action would result in no significant impacts.

#### 3.4.3.2.3 Other Land (Municipal, City, County, State, or Tribal)

Proposed PR training activities would occur at 57 proposed PR training sites that are located on other lands. Among these is the Playas Training and Research Center, which is analyzed below under the Playas Temporary MOA.

Fifteen proposed PR training sites at other land in Arizona are not part of this consultation (see Table E-2 of Appendix E of this EA). The proposed PR training activities at these sites were previously addressed under a separate undertaking, the Rescue Group Personnel Recovery Supplemental Environmental Assessment (USAF 2017i), which SHPO concurred (USAF 2017i Appendix A).

In addition, nine training sites are located at historic airports that have not been recorded or evaluated for the NRHP: Bisbee Douglas IAP, Coolidge Airport, Flagstaff Pulliam Airport, Grand Canyon National Park Airport, H.A. Clark Memorial Field, Marana Regional Airport, Phoenix Sky Harbor IAP, Prescott Regional Airport (Ernest A. Love Field), Winslow-Lindbergh Regional Airport, and Yuma Airport (Fly Field). Activities at these locations would occur on

paved/developed surfaces and existing buildings and would not have the potential to impact cultural resources.

Operational constraints identified for PR training activities on other lands include:

- The PR training activities would be considered special uses and require right-of-entry and/or Special Use permits from municipal, city, county, and state controlling agencies, and comply with the respective jurisdictions' land use plans, policies, and regulations.
- Activities at the Catron County Fairgrounds will be coordinated with Catron County.
- Training activities would avoid physical disturbance to any areas within 50 feet of a historic property or unevaluated resource. If avoidance would not be feasible, the USAF would not use that training location, until/unless mitigation and Section 106 consultation have been completed and any adverse effect(s) resolved.
- The USAF will reengage with the New Mexico SHPO and complete any additional surveys required prior to conducting PR training at the Catron County Fairgrounds.

The Proposed Action would result in no modifications to buildings, nor have any TCPs been identified in the area of the Proposed Action APEs. Proposed PR training activities would use existing roads, trails, and access locations. Therefore, use of existing access on other land associated with proposed PR training activities would not have an increased impact on cultural resources.

The possibility exists for cultural resources or cultural deposits to be discovered during training activities on other land. If archaeological materials or potential human remains are discovered on the ground or below the soil surface:

- Disturbing or removing any archaeological material or potential human remains would be avoided.
- No photography of cultural material or potential human remains would occur.
- The municipal, county, or tribal archaeologist or historic preservation office, as appropriate, would be notified and provided with the coordinates of the potential discovery.
- The municipal, county, or tribal authority (e.g., police department, Sheriff's office, or tribal office) would be notified if human remains or potential remains are found.
- The municipal, county, or tribal archaeologist or historic preservation office, as appropriate, would formulate a plan for the assessment and evaluation of the find. If found to be NRHP-eligible, a plan for avoidance or for data recovery would be prepared.
- No PR training activities would occur within a radius of 50 feet around the find until the USAF is notified by the municipal, county, or tribal archaeologist or historic preservation office, as appropriate, that the activities may resume.
- State and local regulations regarding the discovery of human remains would apply.

Implementation of the operational constraints and Section 106 consultation on a case-by-case basis for each training event, as discussed in Section 2.3, would reduce potential impacts to cultural resources on other land to below a level of significance. Therefore, the Proposed Action would result in no significant impacts.

#### 3.4.3.2.3.1 Activation of Playas Temporary MOA

The FAA considers the establishment of a Temporary MOA an undertaking under Section 106. Potential impacts from the establishment of a MOA are the introduction of visual, audible, or atmospheric elements that are out of character with the property or that could alter any of the characteristics of the surrounding environment that contribute to resource significance (FAA Order 1050.1F). Also analyzed in this section is the Playas Training and Research Center proposed PR training site (from which the Playas Temporary MOA would be activated), located within the APE for the Playas Temporary MOA as defined above in Section 3.4.2. Proposed PR training activities in the Playas Temporary MOA would consist of flight operations; ground operation training activities would also occur at designated areas (Zones F, H and associated housing zones; New Mexico Tech and U.S. Department of Homeland Security 2006) at the Playas Training and Research Center.

**Potential Impacts**

Under the Proposed Action, effects upon cultural resources would include indirect effects due to minor changes in visual and subsonic noise intrusions and direct effects resulting from airplane crashes and vibration effects from subsonic flights. The potential for a direct effect due to an aircraft crash to occur anywhere within the study area is extremely low, and the potential for direct impact of a crash on any particular resource is not considered reasonably foreseeable. Potential effects to different categories of cultural resources are discussed below.

**Archaeological Resources**

Effects from vibration and noise due to overflights would be transient in nature and brief in duration. Records search data indicate that the great majority of archaeological resources within the APE of the Playas Temporary MOA consist of artifact scatters, which would not be physically impacted by noise vibrations. Moreover, because the significance of the identified NRHP-eligible archaeological resources within the APE lies in their research values (NRHP Criterion D) rather than their setting or context, any impacts to such resources from noise, visual, or atmospheric (e.g., contrails) intrusions are anticipated to be negligible.

Within the Playas Training and Research Center, flight operations refueling activities (F6) and fixed-wing LZ (F8) would occur on graded or paved surfaces and use of the facility airstrip or helipad would have no impacts to cultural resources. Potential impacts to cultural resources from overland personnel parachute drops (F9) would be less than significant. Equipment drops, which would be up to 3,000 pounds, would have the potential for impacts to cultural resources within the Playas Training and Research Center. As discussed in Section 3.4.3.1, rotor wash from CV/MV-22 helicopter during hovering and landings (F7) has the potential to impact archaeological sites in undeveloped areas; PR training activities on and over paved or developed areas would result in no impacts to cultural resources.

Ground operations activities proposed for the Playas Training and Research Center with the potential to impact cultural resources include camping and bivouacking (G1) (disturbance due to installation/removal of tent stakes and temporary fencing) and off-road vehicle use in undeveloped areas (G3).

Ground operations proposed for the Playas Training and Research Center that have less than significant impacts to cultural resources include technical rope work (G6), the

insertion/extraction of personnel via helicopter; and pyrotechnics (small arms) (G7). Use of the existing firing range (G8) would not impact cultural resources, nor would MOUT activities (G5) as none of the buildings and structures date from prior to 1972, and it is unlikely that these would meet the criteria for eligibility to the NRHP.

Prior Section 106 consultation has been conducted for similar DoD training activities at Playas Training and Research Center (FAA 2019b; USMC 2017, 2018c; USAF 2018k). The proposed PR training activities would be a continuation of ongoing DoD training at the facility. The proposed PR training activities would occur in previously disturbed, paved, or MOUT areas in designated training zones (Zones F, H, and associated housing zone[s]; New Mexico Tech and U.S. Department of Homeland Security 2006). In the event that PR training activities are proposed in areas with no prior disturbance, implementation of the measures specified in the PA, including cultural resources survey and treatment, would reduce potential impacts to cultural resources to below a level of significance. Therefore, based on the lack of ground disturbance and the negligible vibration, visual, and atmospheric effects associated with the use of the proposed Playas Temporary MOA, and the operational constraints discussed above, no significant impacts to archaeological resources are expected to result from the Proposed Action.

**Architectural Resources**

Analyses of vibration effects associated with subsonic fixed-wing aircraft (USACE 2000) have indicated that overflights above 200 feet AGL do not generate significant levels of noise-induced structural vibration. Vibration effects are more likely to occur with subsonic aircraft flights below 200 feet AGL and/or helicopter overflight operations. Furthermore, the flights are transient in nature and brief in duration, and direct vibrational impacts to architectural resources are expected to be negligible. Moreover, because the proposed use of the Playas Temporary MOA would represent only a temporary increase in the frequency of existing overflight operations, it would not significantly diminish the setting or context of any historic structures within the APE. No historic structures are within the Playas Training and Research Center, where ground operation activities would occur. Therefore, no significant impacts to historic structures is expected to result from the Proposed Action.

**Traditional Cultural Properties**

The USAF consulted with federally recognized Native American tribes whose lands fall within the APE, as described in Section 3.4.2.3.1.

#### 3.4.3.2.4 Private Property

Proposed PR training activities would occur at 19 proposed PR training sites that are located on private property. One proposed PR training site (Eloy South) on private property is not part of this consultation (see Table E-2 of Appendix E of this EA). This training site was addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred that no survey would be needed, providing there would be no change in use or improvements needed (Davis 2018).

Under the Proposed Action, effects upon cultural resources would include indirect effects due to minor changes in visual and subsonic noise intrusions and direct effects resulting from airplane crashes and vibration effects from subsonic flights. Proposed PR training activities at existing air fields would be consistent with ongoing use and would occur on paved or disturbed surfaces;

there would be little potential for direct impacts to cultural resources. The potential for a direct effect due to an aircraft crash to occur at the proposed PR training sites area is extremely low, and the potential for direct impact of a crash on any particular resource is not considered reasonably foreseeable. Indirect impacts from vibrations could occur to fragile buildings and structures.

One PR training site, Grand Canyon Valle Airport, is at an airport which has not been evaluated for the NRHP. Ground operations training activities would occur on paved surfaces and would have little potential to impact potential historic buildings or structures and would avoid the NRHP-eligible prehistoric sites.

Proposed PR training activities at Eloy North, HLZ 6, Little Outfit, Sinkhole, and Grand Canyon Valle Airport would occur on paved or airfield disturbance area and would have little potential to impact cultural resources. Use of the Three Points Public Shooting Range would not impact historic State Route 86.

Operational constraints identified for PR training activities on private property include:

- Compliance with terms and agreements prepared between the USAF and property land owners, including prior coordination as required.
- Training activities would avoid physical disturbance to any areas within 50 feet of a historic property or unevaluated resource. If avoidance would not be feasible, the USAF would not use that training location, until/unless mitigation and Section 106 consultation have been completed and any adverse effect(s) resolved.

The proposed PR training activities would use existing roads, trails, and access locations, and would have little potential for indirect impacts to cultural resources due to changes in access. Consultation with tribes regarding TCPs, as described in Section 3.4.3.2, is currently ongoing.

The possibility exists for cultural resources or cultural deposits to be discovered during training activities on private property. If archaeological materials or potential human remains are discovered on the ground or below the soil surface:

- Disturbing or removing any archaeological material or potential human remains would be avoided.
- No photography of cultural material or potential human remains would occur.
- The municipal or county archaeologist or historic preservation office, as appropriate, would be notified and provided with the co-ordinates of the potential discovery.
- The municipal or county authority (e.g., police department or Sheriff's office) would be notified if human remains or potential remains are found.
- The municipal or county archaeologist or historic preservation office, as appropriate, would formulate a plan for the assessment and evaluation of the find. If found to be NRHP-eligible, a plan for avoidance or for data recovery would be prepared.
- No PR training activities would occur within a radius of 50 feet around the find until the USAF is notified by the municipal or county archaeologist or historic preservation office, as appropriate, that the activities may resume.
- State and local regulations regarding the discovery of human remains would apply.

Implementation of the operational constraints and Section 106 consultation on a case-by-case basis for each training event, as discussed in Section 2.3, would reduce potential impacts to cultural resources on private property to below a level of significance. Therefore, the Proposed Action would result in no significant impacts.

#### 3.4.3.3 No-Action Alternative

Under the No-Action Alternative, existing PR training activities, equipment, personnel, airspace, and training locations currently used by the individual rescue units would continue. Under the No-Action Alternative, baseline cultural resource conditions would remain unchanged. Therefore, the No-Action Alternative would not result in a significant impact related to cultural resources.

## 3.5 LAND USE AND AESTHETICS

### 3.5.1 Definition of Resource

The term land use refers to real property classifications that denote either natural conditions or the types of human activities occurring on a defined parcel of land. In many cases, land use descriptions are codified in local comprehensive plans and zoning laws. Land use planning ensures orderly growth and compatibility between nearby property parcels or land areas. Recreational resources are frequently considered as part of land use. Recreational resources include: federal, state, regional, and local parks; trails; scenic areas; beaches; indoor and outdoor community recreation centers; and playgrounds. The term aesthetics refers to federal, state, regional, or locally designated visual resources (also referred to as atmospheric elements, scenic areas, and/or scenic resources [note that terminology varies by jurisdiction]) in comprehensive plans, zoning laws, and/or by statute (e.g. Wild and Scenic Rivers Act [16 U.S.C. 1271–1287], etc.).

### 3.5.2 Affected Environment

The ROI for land use and aesthetics includes recreation areas/uses located within 0.5 mile of the proposed PR training sites located on USFS or other federal land, other land (e.g., municipal, city, county, state, or tribal), and private property that could be disrupted as a result of PR training activities.

#### 3.5.2.1 Department of Defense Property

Similar PR training activities already occur on DoD properties within designated areas that would be utilized for the Proposed Action (see Appendix A for list of DoD properties).

#### 3.5.2.2 U.S. Forest Service or Other Federal Land

Of the 44 proposed PR training sites on USFS or other federal land, all except one (Kinder HLZ/DZ PR training site located on BLM land) are located within 0.5 mile of recreation areas/uses. Most of these proposed PR training sites are on USFS lands with the exception of the Lees Ferry PR training site (located on National Park Service [NPS] land within the Glen Canyon National Recreation Area) and Delamar Dry Lake PR training site (located on BLM land) (Google Earth Pro 2019; NPS 2015, 2019b; BLM 2008). Specifically, six proposed PR training sites are located in the Apache-Sitgreaves National Forest, six are located in the Coconino National Forest, 12 are located in the Coronado National Forest, nine are located in the Gila National Forest, four are located in the Kaibab National Forest, and four are located in the

Tonto National Forest (Google Earth Pro 2019; USFS 2014, 2017b, 2017c, 2017d, 2018b, 2018c, 2019t, 2019w). However, it should be noted that although theReserve Airport is on USFS land, this facility is under Special Use permit to Catron County for its maintenance and administration and would require coordination with Catron County regarding use of this facility (personal communication with USFS 2019b). The recreation land use and visual quality for the 43 proposed PR training sites within 0.5 mile of recreation areas/uses are discussed below by jurisdiction.

**USFS**

USFS manages Special Use activities on national forest land, which include military training activities. A Special Use permit would be required for PR training activities at the USFS PR training sites which would be issued based on a determination by USFS of general suitability depending on the land classification and proposed activity. However, USFS' identification of an area as suitable for various uses is guidance for project and activity decision-making and is not a resource commitment or final decision approving projects and activities. Final decisions by USFS on resource commitments are made at the project level (USFS 2014, 2017b, 2017c, 2017d, 2018b, 2018c, 2019t, 2019w).

USFS specifically manages land use for each national forest via a Land and Resource Management Plan (also referred to as a "Forest Plan"). The Forest Plan serves as a guide for the management of the respective forest land for approximately the next 15 years, including classification and management of recreation and scenic resources (referred to as the Recreation Opportunities Spectrum [ROS] and Scenic Integrity Objectives [SIO], respectively), and defining suitability of uses in such areas (USFS 2014, 2017b, 2017c, 2017d, 2018b, 2018c, 2019t, 2019w). Under the ROS, recreation opportunities are arranged across a spectrum of the following main classes: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban. Also, under SIO, scenic resources are classified into the following levels (SIOs): very high, high, moderate, low, and very low. These ROS and SIO classifications are defined below.

- Primitive ROS: Characterized by essentially unmodified natural environment. Interaction between users is very low and evidence of other users is minimal. Essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is generally not permitted. Very high probability of experiencing solitude, closeness to nature, tranquility, self-reliance, and risk.
- Semi-Primitive Non-Motorized ROS: Characterized by a predominantly natural or natural appearing environment. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum onsite controls and restrictions may be present but are subtle. Motorized use is generally not permitted. High probability of experiencing solitude, closeness to nature, tranquility, self-reliance, and risk.
- Semi-Primitive Motorized ROS: Characterized by a predominantly natural or natural appearing environment. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum onsite controls and restrictions may be present but are subtle. Motorized use is generally permitted.

Moderate probability of experiencing solitude, closeness to nature, tranquility, self-reliance, and risk.

- Roaded Natural ROS: Characterized by a predominantly natural appearing environment with moderate evidence of the sights and sounds of other humans. Such evidence usually harmonizes with the natural environment. Interaction between users may be low to moderate but with evidence of other users prevalent. Resource modification and utilization practices are evident but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities. Opportunity to affiliate with other users in developed sites but with some chance for privacy.
- Rural ROS: Characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available. Opportunity to observe and affiliate with other users is important, as is convenience of facilities.
- Urban ROS: Characterized by a substantially urbanized environment, although the background may have natural appearing elements. Resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans onsite are predominant. Large numbers of users can be expected, both onsite and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site. Opportunity to observe and affiliate with other users is very important, as is convenience of facilities.
- Very High SIO (unaltered): A scenic integrity level that generally provides for ecological change only.
- High SIO (appears unaltered): Human activities are not visually evident. In high scenic integrity areas, activities may only repeat attributes of form, line, color, and texture found in the existing landscape character.
- Moderate SIO (slightly altered): Landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.
- Low SIO (moderately altered): Human activities must remain visually subordinate to the attributes of the existing landscape character. Activities may repeat form, line, color, or texture common to these landscape characters, but changes in quality of size, number, intensity, direction, pattern, and so on, must remain visually subordinate to these landscape characters.
- Very Low SIO (heavily altered): Human activities of vegetative and landform alterations may dominate the original, natural landscape character but should appear as natural occurrences when viewed at background distances.

In addition, land use zones were developed specifically by the Coronado National Forest to encompass multiple strategies and resources all in one cohesive and comprehensive system,

including ROS and suitability of uses in these zones (USFS 2018b). There are five land use zones in Coronado National Forest Land. These land use classifications are defined below.

- Wild Backcountry: This land use zone is managed to maintain natural features and landscapes with minimum infrastructure necessary to support a range of nonmotorized uses. Motorized access is available via primitive, infrequently maintained roads. It includes inventoried roadless areas, areas adjacent to wilderness, and other relatively pristine, sparsely roaded areas. This zone offers recreational opportunities in the Primitive to Semi-Primitive ROS. This means settings can be primitive, with wilderness-like areas that are natural and provide many opportunities for nonmotorized recreation that include challenge and solitude. It also includes roadless areas that provide many dispersed nonmotorized recreation opportunities such as hiking, camping, and birdwatching, but are closer to roads and have more visitors than the most primitive settings. Additionally, this land use zone offers similar areas that are accessed by primitive roads or motorized trails and are used for a wide variety of activities, both recreational and other, including enjoyment of scenery, escape from the crowded areas, hunting, off-highway vehicle use, dispersed camping, hiking, horseback riding, mountain biking, mining, and cutting firewood. Generally, the only facilities in these areas are primitive roads and trails.
- Roaded Backcountry: This land use zone is managed for a balance of dispersed motorized, nonmotorized, and quiet recreation uses. The natural character and recreation settings are retained and development is limited. This zone offers a range of ROS. Remote areas are roadless, have no facilities other than trails, and are available only for nonmotorized recreation where encounters with other visitors are infrequent. This setting offers many opportunities for privacy and challenges to visitors' self-reliance and outdoor skills. The most accessible areas are near roads and contain settings that, while predominantly naturally appearing, show some evidence of resource modification and utilization. Road densities tend to be higher and roads are better than primitive. In these settings, the number of interactions between users may be moderate to high and evidence of other users can be prevalent. Self-reliance on outdoor skills is only of moderate importance with little opportunity for challenge and risk.
- Developed Recreation: This land use zone includes the majority of public access corridors into the Coronado National Forest. The roads in this zone are mostly paved and are popular sightseeing routes. In some cases, the main roads are designated as scenic byways. Visitors often spend the day in these areas, and destinations include campgrounds, picnic areas, vista points, visitor centers, and lakes. Organization camps and recreational residences are found in some areas. There are many popular trailheads in these areas, and hiking trails generally provide access to Roaded Backcountry and Wild Backcountry zones and Wilderness Areas. Utilitarian facilities such as communication sites and astrophysical facilities found in this area have limited or no public access and sometimes are considerably different in terms of setting from the surrounding landscape and public facilities.
- Motorized Recreation: This land use zone is assigned to areas that have a high level of motorized use. Two different types of motorized use areas are included in this zone: highway corridors that cross Coronado National Forest land (where vehicles are traveling at high speeds and most travelers are simply passing through the national forest) and off-

highway vehicle corridors (where facilities for off-highway vehicle use are provided). This zone provides a wide variety of recreational experiences—including driving for pleasure—while reducing effects of motorized use and minimizing conflicts with other users.

- Designated Wilderness Area: The ecological systems within wilderness areas across the Coronado National Forest vary naturally over time and space. Wilderness areas provide a wide variety of opportunities for exploration, solitude, natural risk, challenge, and primitive and unconfined recreation. Wild landscapes harbor the Coronado's richest concentration of quiet places, with the sights and sounds of humankind substantially unnoticeable. Developments (such as fences, structures, and water containment features) are rare; those that exist offer visitors a glimpse of past cultures and traditional land uses. There are eight Designated Wilderness Areas in Coronado National Forest: Chiricahua, Galiuro, Miller Peak, Mount Wrightson, Pajarita, Pusch Ridge, Rincon Mountain, and Santa Teresa.

Table 3.5-1 shows the ROS/land use and SIO classifications for the proposed PR training sites.

**Table 3.5-1. Recreation and Scenic Land Classifications of Proposed PR Training Sites on USFS Land**

| Proposed PR Training Site | Recreation Opportunities Spectrum (ROS)/ Land Use Classification[1,2] | Scenic Integrity Objective (SIO) Classification |
|---|---|---|
| **APACHE-SITGREAVES NATIONAL FOREST** | | |
| Black Mesa - USFS Helitack Base | Roaded Natural | Moderate |
| Hannagan Meadow – USFS Helitack Base | Roaded Natural | High |
| Helibase Circular | Roaded Natural | High |
| KP Circular | Roaded Natural | High |
| KP Tank | Roaded Natural | High |
| Overgaard – USFS Helitack Base | Rural | Moderate |
| **COCONINO NATIONAL FOREST** | | |
| Comanche | Roaded Natural | Moderate |
| Flagstaff Hotshot – USFS Helitack Base | Semi-Primitive Motorized | High |
| Longview – USFS Helitack Base | Semi-Primitive Motorized | High |
| Mogollon Rim (General Crook) | Semi-Primitive Motorized | High |
| Mormon Lake – USFS Helitack Base | Rural | High |
| Rough Rider | Semi-Primitive Non-Motorized | High |
| **CORONADO NATIONAL FOREST** | | |
| Charouleau Gap | Roaded Backcountry | High |
| Devon | Roaded Backcountry | High |
| Mesa | Galiuro Wilderness | Very High |
| Mount Lemmon (Windy Point) | Developed Recreation | High |
| Portal Cabin and CCC Bunkhouse | Developed Recreation | High |
| Portal HLZ | Wild Backcountry | High |
| Ranger | Developed Recreation | High |
| Redington Pass | Roaded Backcountry | High |
| Rucker HLZ | Developed Recreation | High |
| Saddle Mountain East | Roaded Backcountry | High |
| Saddle Mountain South | Roaded Backcountry | High |
| Saddle Mountain West | Roaded Backcountry | High |

| Table 3.5-1. Recreation and Scenic Land Classifications of Proposed PR Training Sites on USFS Land | | |
|---|---|---|
| **Proposed PR Training Site** | **Recreation Opportunities Spectrum (ROS)/ Land Use Classification[1,2]** | **Scenic Integrity Objective (SIO) Classification** |
| **GILA NATIONAL FOREST[3]** | | |
| Glenwood Ranger Station | Roaded Natural | -- |
| Negrito Airstrip | Semi-Primitive Motorized | -- |
| Negrito Center | Semi-Primitive Motorized | -- |
| Negrito Helibase | Semi-Primitive Motorized | -- |
| Negrito North | Semi-Primitive Motorized | -- |
| Negrito South | Semi-Primitive Motorized | -- |
| Rainy Mesa | Roaded Natural | -- |
| Reserve Airport[4] | Roaded Natural | -- |
| Reserve Ranger Station | Roaded Natural | -- |
| **KAIBAB NATIONAL FOREST** | | |
| Mohawk | Semi-Primitive Motorized | High |
| Pittman Valley | Roaded Natural | Moderate |
| Spring Valley Cabin | Roaded Natural | High |
| Tribeland | Roaded Natural | High |
| **TONTO NATIONAL FOREST[3]** | | |
| Grapevine HLZ/DZ | Semi-Primitive Motorized | -- |
| Roosevelt Lake | Roaded Natural | -- |
| Saguaro Lake Ranch | Roaded Natural | -- |
| Verde River | Roaded Natural | -- |

Notes:

1 In the Apache-Sitgreaves, Coconino, Gila, Kaibab, and Tonto National Forests, the ROSs Roaded Natural, Semi-Primitive Motorized, and Rural are suitable for mechanized/motorized use; however, the ROSs Primitive and Semi-Primitive Non-Motorized are generally not suitable for motorized/mechanized use.

2 In the Coronado National Forest, motorized access and dispersed motorized camping are suitable uses in all land use zones but are not suitable in Designated Wilderness Area. Also, military training activities are suitable uses in the Roaded Backcountry land use zone, but are not suitable uses in the Developed Recreation, Wild Backcountry, and Designated Wilderness Area. Military training includes tracking classes, frequency testing, unmanned aerial vehicle use and testing, and downed pilot search and rescue.

3 The Gila and Tonto National Forests do not have SIO classifications as they have older Forest Plans from the 1980s which pre-date the USFS' Scenery Management System developed in 1995 with these SIO classifications (USFS 2017b, 2017c); however, updates are underway for these Forest Plans and assessments have been recently completed with ROS classification data available, which is provided in this table.

4 Although the Reserve Airport is on USFS land, this facility is under Special Use permit to Catron County for their maintenance and administration and would require coordination with Catron County regarding use of this facility.

"--" – No data available.
DZ – Drop Zone
HLZ – Helicopter Landing Zone
PR – Personnel Recovery
ROS – Recreation Opportunities Spectrum
SIO – Scenic Integrity Objective
USFS – U.S. Forest Service
Sources: USFS 2014, 2017b, 2017c, 2017d, 2018b, 2018c, 2019t, 2019w; personal communication with USFS 2019b.

As shown in Table 3.5-1, most of the proposed PR training sites located in the Apache-Sitgreaves, Coconino, Gila, Kaibab, and Tonto National Forests are classified as Roaded Natural or Semi-Primitive Motorized, with the following exceptions: Two are classified as Rural (Overgaard – USFS Helitack Base PR training site in Apache-Sitgreaves National Forest, and

Mormon Lake – USFS Helitack Base PR training site in Coconino National Forest); and, one is classified as Semi-Primitive Non-Motorized (Rough Rider PR training site in Coconino National Forest) (Google Earth Pro 2019; USFS 2014, 2017b, 2017c, 2017d, 2018b, 2019t, 2019w).

Also, as shown in Table 3.5-1, two of the national forests (Gila and Tonto National Forests) do not have SIO classifications as they have older Forest Plans from the 1980s which pre-date the USFS' Scenery Management System developed in 1995 with these SIO classifications (USFS 2017b, 2017c); however, updates are underway for these Forest Plans and assessments have been recently completed with ROS classification data available, which is provided in the table above. For the proposed PR training sites in Apache-Sitgreaves, Coconino, and Kaibab National Forests, as shown in Table 3.5-1, most of these proposed PR training sites have high-level SIO with the following exceptions: Three have moderate-level SIO (Black Mesa - USFS Helitack Base, Overgaard – USFS Helitack Base, and Comanche PR training sites) (Google Earth Pro 2019; USFS 2017d, 2018c).

According to the Forest Plans for Apache-Sitgreaves, Coconino, Gila, Kaibab, and Tonto National Forests, the Roaded Natural, Semi-Primitive Motorized, and Rural classes are suitable for mechanized/motorized use (USFS 2014, 2017b, 2017c, 2017d, 2018c, 2019t, 2019w). However, the Primitive and Semi-Primitive Non-Motorized classes are generally not suitable for motorized/mechanized use. However, as discussed above, the determination of an area as suitable for a particular use does not mean that the use would not occur in specific areas. The identification of an area as suitable for various uses is guidance for project and activity decision-making and is not a resource commitment or final decision approving projects and activities. Final decisions on resource commitments are made at the project level.

Regarding the proposed PR training sites in the Coronado National Forest, as shown in Table 3.5-1, most of the 12 proposed PR training sites are within the Roaded Backcountry land use zone, with the exception of Mesa PR training site (located in Galiuro Wilderness), and Mount Lemmon [Windy Point] and Portal Cabin and CCC Bunkhouse PR training sites (located in Developed Recreation zone) (Google Earth Pro 2019; USFS 2018b). Also, most of the 12 proposed PR training sites have high-level SIO, with the exception of the Mesa PR training site, which has a very high-level SIO.

The Coronado National Forest Plan, similar to the Forest Plans for Apache-Sitgreaves, Coconino, Gila, Kaibab, and Tonto National Forests, indicates that motorized access and dispersed motorized camping are suitable uses in all land use zones but are not suitable in Designated Wilderness Area. In addition, the Coronado National Forest indicates that off-highway vehicle-focused recreation is only suitable in Motorized Recreation land use zone (USFS 2018b).

Also, unlike the other National Forests, the Coronado National Forest Plan includes a specific discussion regarding suitability of military training activities in select land use zones/areas. It defines military training activities as the following: "tracking classes, frequency testing, unmanned aerial vehicle use and testing, and downed pilot search and rescue" (USFS 2018b). According to the Coronado National Forest Plan, military training activities are suitable uses in the Roaded Backcountry land use zone, but are not suitable uses in the Developed Recreation, Wild Backcountry, and Designated Wilderness Area (USFS 2018b). However, as discussed above, the determination of an area as suitable for a particular use does not mean that the use will

not occur in specific areas. The identification of an area as suitable for various uses is guidance for project and activity decision-making and is not a resource commitment or final decision approving projects and activities. Final decisions on resource commitments are made at the project level.

**NPS**

As discussed above, the Lees Ferry PR training site is located at the NPS' Glen Canyon National Recreation Area which is a high-quality scenic area (Google Earth Pro 2019; NPS 2015). Glen Canyon National Recreation Area NPS does not have a land use plan for the Glen Canyon National Recreation Area, but does manage Special Use activities, which include military training activities. A Special Use permit would be required for PR training activities at the Lees Ferry PR training site. In addition, as noted in the NPS' Special Use permit application, the use of aircraft in connection with this permit may require a Certificate of Waiver, issued by the FAA, granting a waiver of FAR 91.119, Minimum Safe Altitude (NPS 2017).

**BLM**

Section 102 of the Federal Land Policy and Management Act directs the BLM to prepare land use plans (referred to as Resource Management Plans [RMPs]) that serve as the basis for all activities that occur on BLM-administered lands. An RMP has been prepared for the BLM Ely District, in which the Delamar Dry Lake PR training site is located within (BLM 2008). Based on a review of the maps in the BLM Ely District RMP, the Delamar Dry Lake PR training site is not located within a Special Recreation Management Area or within a Scenic Area. However, it still managed as a recreation area (with "REC-5" designation) where the majority of the area is available for dispersed, backcountry, and undeveloped recreational uses. In addition, according to the BLM Ely District RMP, the Delamar Dry Lake PR training site is within the Desert MOA and notes that the DoD utilizes much of the airspace above and has numerous surface activities in the planning area. It further notes that the military has used and is expected to continue using public lands in the planning area through the next 20 years. Typical military uses include: overflights; fixed and rotary wing landing areas; FARP; electronic communication (fixed and mobile) and threat operations; DZ operations (airdrops from 500 feet AGL to 10,000 feet AGL of equipment or personnel); no-drop visual-only convoy targets; and emergency access and response (BLM 2008). This RMP further notes that land use in this planning area is restricted to uses compatible with the MOAs to ensure the ability to conduct training essential to the combat readiness of the military would be preserved (BLM 2008). Thus, military activities similar to the proposed PR training activities (i.e., F1 and F8) have and continue to occur at the Delamar Dry Lake PR training site. However, BLM has indicated that any military training activity on public land is required to be limited to types that would be considered "casual use" under 43 CFR 2800, which is by definition "activities ordinarily resulting in no or negligible disturbance of the public lands, resources, or improvements" (personal communication with BLM 2019).

#### 3.5.2.3 Other Land (Municipal, City, County, State, or Tribal)

Of the 57 proposed PR training sites on other land (e.g., municipal, city, county, state, or tribal), a total of 14 proposed PR training sites are located within 0.5 mile of recreation areas/uses. The land classification and nearby recreation uses/areas of these proposed PR training sites are summarized in Table 3.5-2 and discussed further below by jurisdiction.

| Table 3.5-2. Land Classification of Proposed PR Training Sites on Other Land within 0.5 Mile of Recreation Uses/Areas | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Land Jurisdiction** | **Land Classification** | **Recreation Uses/Areas within 0.5 Mile of Proposed PR Training Site** |
| **ARIZONA** | | | |
| Caldwell Meadows[1] | Arizona Game and Fish Department | Recreation | Surrounded by the Apache-Sitgreaves National Forest (located near Black River Mainstream Trail #61). |
| City of Flagstaff[2] | Arizona Board of Regents (NAU) | Special District/ Public Facility | Located near the Riordan Mansion State Historic Park and Central Quad Recreation Area on NAU campus. |
| City of Winslow | City of Winslow | Multi-Family Residential | Located near the Winslow City Park and Winslow Parks. |
| Jeep HLZ/DZ[3] | State of Arizona (State Trust land) | Grazing Lease | Located near BLM's Redfield Canyon Wilderness Area (East). |
| Lake Patagonia | Arizona State Parks | Recreation Park | Located at Patagonia Lake State Park. |
| Lake Pleasant[4] | City of Peoria | Park/Open Space | Located at Lake Pleasant Regional Park. |
| Lost Acre HLZ/DZ[3] | State of Arizona (State Trust land) | Grazing Lease | Located in the planning area of the IFNM (surrounded by IFNM's OHV Designated Recreation Management Area). |
| Sahuarita Lake | Town of Sahuarita | Medium Density Residential/ Rural Homestead | Located at Sahuarita Lake Park. |
| Silvermine HLZ/DZ[3] | State of Arizona (State Trust land) | Grazing Lease | Located in the planning area of the IFNM (surrounded by IFNM's OHV Designated Recreation Management Area). |
| University of Arizona Dive Pool[5] | Arizona Board of Regents (University of Arizona) | Precinct 1 | Located at University of Arizona Dive Pool |
| University of Arizona Medical Center[5] | Arizona Board of Regents (University of Arizona) | Precinct 2 | Located near an open space/park (unnamed). |

| Table 3.5-2. Land Classification of Proposed PR Training Sites on Other Land within 0.5 Mile of Recreation Uses/Areas | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Land Jurisdiction** | **Land Classification** | **Recreation Uses/Areas within 0.5 Mile of Proposed PR Training Site** |
| Waterman HLZ/DZ[3] | State of Arizona (State Trust land) | Grazing Lease | Located in the planning area of the IFNM (surrounded by IFNM's OHV Designated Recreation Management Area). |
| **NEVADA** | | | |
| Colorado River | Nevada Division of State Parks (NDSP) | Public Recreation Area | Located in the Big Bend of the Colorado State Recreation Area. |
| **NEW MEXICO** | | | |
| Catron County Fairgrounds | Catron County | --[8] | Located at the Catron County Fairgrounds. |

Notes:

1 The Arizona Game and Fish Department, the controlling agency of the Caldwell Meadows PR training site, does not have a land use plan associated with the Caldwell Meadows PR training site. However, in the Apache County's Character Areas Map, it shows this proposed PR training site having a "Recreation" designation. Also, this proposed PR training site is surrounded by Apache-Sitegreaves National Forest; the forest land surrounding this proposed PR training site has a Semi-Primitive Motorized ROS classification and a medium-level SIO (USFS 2017d).

2 The City of Flagstaff PR training site is located on NAU, which is governed by the Arizona Board of Regents (NAU 2010). No land use classification is specified in the 2010 NAU Master Plan. However, the City of Flagstaff's Regional Plan notes that NAU is within a "Special District" (with reference to the NAU Master Plan) and indicates that NAU is intended to become more urban. The City of Flagstaff also notes a "Public Facility" zoning designation.

3 While the Jeep HLZ/DZ, Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ PR training sites currently have grazing leases, they are not located on prime farmland (USDA NRCS 2019).

4 While the Lake Pleasant Regional Park is owned by Maricopa County, the City of Peoria was granted land use authority of the park and surrounding land when they were annexed in 1999. The City of Peoria's General Plan land use designation for the park is "Park/Open Space." The Park/Open Space designation is reserved for open space, passive recreational activities and support facilities. The Park and Open Space designation also provides venues for seasonal activities and short-term events such as arts and crafts sales, farmers' markets, out-door performances and similar uses in an urban park-like setting.

5 According to the University of Arizona's 2009 Comprehensive Campus Plan, the University of Arizona Dive Pool PR training site is located in the central campus within the area designated as "Precinct 1." This core of the campus is well established and only required a few modifications to the 2003 Plan. In addition, the University of Arizona Medical Center PR training site is located in the Arizona Health Sciences Center in north campus within the area designated as "Precinct 2." This area is a high-growth area where several significant projects have been completed since 2003. This is one of the most complex areas of the campus with the greatest demand and capacity for continued future growth.

6 According to the Winslow Municipal Code, the Multi-Family Residence District is intended to promote and preserve residential development consisting of single-family, two-family and multifamily dwelling units in areas appropriate for high density residential development as indicated by the General Plan. However, certain essential and complementary uses are permitted under conditions and standards which assure their compatibility with the character of the district.

7 According to the Town of Sahuarita's General Plan Land Use Map, the Lake Sahuarita PR training site has a "Medium Density Residential" land use designation and "Rural Homestead" zoning designation, which are characterized by single-family suburban residential development with a range of subdivided lots. According to the Sahuarita Town Code, the Rural Homestead zone is intended to encourage rural development in areas lacking facilities for urban development and to provide for commercial and industrial development only where appropriate and necessary to serve the needs of the rural area. This zone allows for governmental uses.

| Table 3.5-2. Land Classification of Proposed PR Training Sites on Other Land within 0.5 Mile of Recreation Uses/Areas | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Land Jurisdiction** | **Land Classification** | **Recreation Uses/Areas within 0.5 Mile of Proposed PR Training Site** |

[8] The Catron County Comprehensive Land Plan is the land use plan for the County. This plan does not provide a land use designation for the Catron County Fairgrounds PR training site.

ASLD – Arizona State Land Department
BLM – U.S. Bureau of Land Management
DZ – Drop Zone
HLZ – Helicopter Landing Zone
IFNM – Ironwood Forest National Monument
NAU – Northern Arizona University
NRCS – Natural Resources Conservation Service
NDSP – Nevada Division of State Parks
OHV – Off-Highway Vehicle
PR – Personnel Recovery
USDA – U.S. Department of Agriculture
Sources: Apache County 2003; ASLD 2019d; Arizona State Parks 2018; BLM 2011, 2019a, 2019b; Catron County 2012; City of Peoria 2010, 2019; City of Flagstaff 2018; City of Winslow 2002, 2008, 2019b; Google Earth Pro 2019; Maricopa County Parks and Recreation Department 2019b; NDSP 2016; Town of Sahuarita 2015, 2019a, 2019c; University of Arizona 2009; USDA NRCS 2019; USFS 2017d.

### Arizona Game and Fish Department

As shown in Table 3.5-2, the Caldwell Meadows PR training site is surrounded by Apache-Sitgreaves National Forest (which includes the Black River Mainstream Trail #61). The forest land surrounding this proposed PR training site is classified as Semi-Primitive Motorized ROS with a moderate-level SIO (USFS 2017d). The Arizona Game and Fish Department, the controlling agency for this proposed PR training site, does not have a land use plan associated with this proposed PR training site. However, the Apache County's Character Areas Map shows this proposed PR training site having a "Recreation" designation (Apache County 2003).

### Arizona Board of Regents (Northern Arizona University [NAU] and University of Arizona)

As shown in Table 3.5-2, the City of Flagstaff PR training site is located on NAU, which is governed by the Arizona Board of Regents (NAU 2010). It is located within 0.5 mile of the Riordan Mansion State Historic Park and Central Quad Recreation Area on NAU campus (Google Earth Pro 2019). No land use classification is specified in the 2010 NAU Master Plan for this proposed PR training site. However, the City of Flagstaff's Regional Plan notes that NAU is within a "Special District" (with reference to the NAU Master Plan) and indicates that NAU is intended to become more urban (City of Flagstaff 2018). The City of Flagstaff also notes a "Public Facility" zoning designation for NAU. This proposed PR training site is not within a scenic area.

Also, as shown in Table 3.5-2, the University of Arizona Dive Pool PR training site is located at the University of Arizona Dive Pool recreation facility, and the University of Arizona Medical Center is located within 0.5 mile of an unnamed open space/park (Google Earth Pro 2019). The University of Arizona's 2009 Comprehensive Campus Plan serves as physical development and

land management plan for the university (University of Arizona 2009). According to the University of Arizona's 2009 Comprehensive Campus Plan, the University of Arizona Dive Pool PR training site is located in the central campus within the area designated as "Precinct 1," which is a well-established urban area. In addition, the University of Arizona Medical Center PR training site is located in the Arizona Health Sciences Center in north campus within the area designated as "Precinct 2" (University of Arizona 2009). The medical center has a heliport at the top of the building (AirNav 2019). This area is a high-growth area where several significant projects have been completed since 2003. This is one of the most complex areas of the campus with the greatest demand and capacity for continued future growth. The dive pool and medical center are not within a scenic area.

**Arizona State Parks**

As shown in Table 3.5-2, the Lake Patagonia PR training site is located at the Arizona State Parks' Patagonia Lake State Park. Arizona State Parks' Six-2030 Agency Master Plan is their long-term document that sets overall agency direction for the next twelve years, consistent with statewide plans and priorities (Arizona State Parks 2018). According to the Six-2030 Agency Master Plan, Patagonia Lake is classified as a "Recreation Park." It explains that the primary purpose of recreation parks is the provision of active and passive recreational opportunities for the visiting public along with allowing access and development for recreational uses. It also notes that recreation parks possess outstanding scenic and natural qualities to ensure a recreation opportunity of high quality in a natural setting. Also, according to the Arizona State Parks' Patagonia Lake State Park website, both motorized and non-motorized boating are allowed at Patagonia Lake. However, Personal Water Craft, jet-skis, waterbikes, above-water exhausts boats, and V-8 jet boats are all prohibited (Arizona State Parks 2019d).

**State of Arizona (State Trust land)**

As shown in Table 3.5-2, the Jeep HLZ/DZ, Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ PR training sites are on Arizona State Trust land located within the Ironwood Forest National Monument (IFNM) planning area (surrounded by IFNM's OHV Designated Recreation Management Area) (BLM 2011, 2019a). These proposed PR training sites currently have grazing leases, though it should be not that they are not on prime farmland (USDA NRCS 2019). The IFNM's RMP notes that due to the highly intermingled land ownership, recreational use occurs on monument lands in conjunction with use on Arizona State Trust land, which are open to hunting, and other recreational use by the public under a permit required by the Arizona Land Department (ASLD) (BLM 2011). Also, according to this RMP, the proposed PR training sites are surrounded by land designated with a BLM Visual Resource Inventory (VRI) Classes II and III, indicating high scenic quality where the level of change to the characteristic landscape is required to be low to moderate.

**City of Peoria**

As shown in Table 3.5-2, Lake Pleasant PR training site is located at the Lake Pleasant Regional Park. While the Lake Pleasant Regional Park is owned by Maricopa County, the City of Peoria was granted land use authority of the park and surrounding land when they were annexed in 1999 (City of Peoria 2010). The City of Peoria's General Plan land use designation for the park is "Park/Open Space," which is reserved for open space, passive recreational activities and support facilities as well as provides venues for seasonal activities and short-term events. Policy 3.8.1 in

the City of Peoria's General Plan notes to "[e]xplore potential partnerships with federal, state, and county agencies to capitalize on the economic and recreational opportunities presented by Lake Pleasant Regional Park" (City of Peoria 2010). Also, Policy 3.C.1 notes to "[c]ontinue building a partnership with Maricopa County and the use of the Lake Pleasant Regional Park recreational facilities to conduct diversified programs than can help augment the City's Parks and Recreation System and benefit the County through increased Park user fees" (City of Peoria 2010). The Lake Pleasant Regional Park has a high scenic quality.

**City of Winslow**

As shown in Table 3.5-2, the City of Winslow PR training site is located within 0.5 mile of the Winslow City Park and Winslow Parks (Google Earth Pro 2019). The City of Winslow's General Plan shows the proposed PR training site with a "Multi-Family Residential" land use/zoning designation (City of Winslow 2002, 2008). The Multi-Family Residential classification allows the most intense residential uses, including condominiums, apartments and townhouses on single or multiple floors. The compact development assumes on-property open space and/or common residential facilities (e.g., fitness centers, meeting rooms). This category occurs in close proximity to Downtown and commercial nodes. The range of density is 12 or more dwelling units per acre. It is not located within a scenic area. According to the City of Winslow Municipal Code for Multi-Family Residence District, certain essential and complementary uses are permitted under conditions and standards which assure their compatibility with the character of the district (City of Winslow 2019a).

**Town of Sahuarita**

As shown in Table 3.5-2, the Lake Sahuarita PR training site is located at Sahuarita Lake Park within the Rancho Sahuarita master planned community in the Town of Sahuarita. According to the Town of Sahuarita's General Plan Land Use Map, the Lake Sahuarita PR training site has a "Medium Density Residential" land use designation and "Rural Homestead" zoning designation, which are characterized by single-family suburban residential development with a range of subdivided lots. According to the Sahuarita Town Code, the Rural Homestead zone is intended to encourage rural development in areas lacking facilities for urban development and to provide for commercial and industrial development only where appropriate and necessary to serve the needs of the rural area (Town of Sahuarita 2019c). This zone allows for governmental uses. Sahuarita Lake Park features a 10 surface-acre lake, grassy areas and approximately 1-mile path surrounding it. While the park is not within a scenic area, it provides a visual respite for residents and visitors, augmenting the more distant scenic views to the mountains beyond (Town of Sahuarita 2015).

**Nevada Division of State Parks (NDSP)**

As shown in Table 3.5-2, the Colorado River PR training site is located in the NDSP's Big Bend of the Colorado State Recreation Area, which is situated on the shores of the Colorado River. Given this, the Colorado River is the main attraction of the park. NDSP does not have a land use plan associated with the Big Bend of the Colorado State Recreation Area; however, NDSP's Nevada Comprehensive Outdoor Recreation Plan (2016-2021), a planning document designed to assist in the improvement and expansion of outdoor recreation opportunities, notes that this park is a public recreation area that offers picnicking, fishing, boating, camping, Jet Skiing, hiking, and swimming (NDSP 2016). Also, on the NDSP website for the Big Bend of the Colorado

State Recreation Area, it indicates the park area is rich with rock formations and scenic viewpoints (NDSP 2019a). In addition, this website indicates that for Special/Commercial Use of the park, a Special/Commercial Use permit is required where the permit applicant must meet basic liability and public safety standards and may need necessary liability insurance (NDSP 2019a).

**Catron County**

As shown in Table 3.5-2, the Catron County Fairgrounds PR training site is located on Catron County land. The PR training site is located at the fairgrounds itself, which hosts the Catron County Fair in August (Catron County Fair 2019), and possibly other special events during the year. The Catron County Comprehensive Land Plan, which is the land use plan for the County, does not provide a land use designation for the Catron County Fairgrounds PR training site (Catron County 2012).

#### 3.5.2.3.1 Activation of the Playas Temporary MOA

The Playas Training and Research Center is a facility that provides opportunities for physical security training and not recreation. In addition, there are no recreation areas/uses within 0.5 mile of the Playas Temporary MOA (Google Earth Pro 2019). It is also not located within a scenic area.

### 3.5.2.4 Private Property

Of the 19 proposed PR training sites on private property, six proposed PR training sites are located within 0.5 mile of recreation areas/uses. These are the following: one in the City of Eloy (Eloy North PR training site); one in the City of Tucson (Ott Family YMCA of Tucson Pool PR training site); one in the City of Scottsdale (Scottsdale Osborn PR training site); two in Coconino County (Elk and Squirrel PR training sites); and, one in Pima County (Three Points Public Shooting Range PR training site). Even though these proposed PR training sites are located on private property, they are subject to the land use regulations of the jurisdiction they are located within. The land classification and nearby recreation uses/areas of these proposed PR training sites are summarized in Table 3.5-3 and discussed further below by jurisdiction.

**Table 3.5-3. Land Classification of Proposed PR Training Sites on Private Property within 0.5 Mile of Recreation Uses/Areas**

| Proposed PR Training Site | Land Jurisdiction | Land Classification[1,2,3,4,5] | Recreation Uses/Areas within 0.5 Mile of Proposed PR Training Site |
|---|---|---|---|
| **ARIZONA** | | | |
| Elk | Coconino County | General-10AC Minimum | Surrounded by Coconino National Forest |
| Eloy North | City of Eloy | Light Industrial (I-1)/ Aviation Overlay District | Located at Skydive Arizona |
| Ott Family YMCA of Tucson Pool | City of Tucson | Residence Zone (R-2 & RX-1) | Located at the Ott Family YMCA of Tucson Pool. |
| Scottsdale Osborn | City of Scottsdale | Downtown Medical/Special Campus Downtown Overlay (D/M-2 SC DO) | Located near the Scottsdale Stadium and Osborn Park. |
| Squirrel | Coconino County | General-10AC Minimum | Located near the Arizona |

**Table 3.5-3. Land Classification of Proposed PR Training Sites on Private Property within 0.5 Mile of Recreation Uses/Areas**

| Proposed PR Training Site | Land Jurisdiction | Land Classification[1,2,3,4,5] | Recreation Uses/Areas within 0.5 Mile of Proposed PR Training Site |
|---|---|---|---|
| | | | Trail. |
| Three Points Public Shooting Range | Pima County | Planning Area (East) 4, Altar Valley, LIR/RH Zone | Located at the Three Points Shooting Range. |

Notes:

1 According to the City of Eloy Zoning Ordinance, the following are permitted uses in the Aviation Overlay District: temporary campgrounds for special events in conjunction with the airport; fixed base operators; and, heliports, glider operations, skydiving operations and grounds school training.

2 According to the City of Tucson Zoning Code, RX-1 provides for suburban, low density, single-family, residential development, agriculture and other compatible neighborhood uses; and R-2 provides for medium density, single-family and multifamily, residential development, together with schools, parks, and other public services necessary for an urban residential environment. Select other uses, such as day care and urban agriculture, are permitted that provide reasonable compatibility with adjoining residential uses.

3 According to the City of Scottsdale Zoning Code, helipad is a permitted use within the Downtown Medical Subdistrict.

4 According to the Coconino County Zoning Code, the "General" zoning designation requires a Conditional Use Permit for airports, landing field, heliports and related activities, and recreational facilities. This zone is a general rural land-use category intended for application to those unincorporated areas of the County not specifically designated in any other zone classification. Only those Uses are permitted which are complementary and compatible with a rural environment.

5 According to the Pima Prospers Comprehensive Plan Initiative, Three Points Public Shooting Range has land use category of "Low Intensity Rural (LIR)," which has an objective to designate areas for residential uses at densities consistent with rural and resource-based characteristics. Also, according to Pima County's Zoning Map (PimaMaps), this proposed PR training site has a "RH" zoning designation, which permits governmental uses per the County's Zoning Code.

LIR – Low Intensity Rural
PR – Personnel Recovery
RH – Rural Homestead
Sources: City of Eloy 2018a, 2018b, 2018c, 2018d; City of Scottsdale 2019a, 2019b; City of Tucson 2019a, 2019b; Coconino County 2017, 2019b; Google Earth Pro 2019; Pima County 2015, 2019a, 2019b.

### City of Eloy

As shown in Table 3.5-3, the Eloy North PR training site is located at Skydrive Arizona in the City of Eloy. This proposed PR training site has a "Light Industrial" land use designation and "Aviation Overlay District" zoning designation (City of Eloy 2018a, 2018b, 2018c, 2018d). According to the City of Eloy Zoning Ordinance, the following are permitted uses in the Aviation Overlay District: temporary campgrounds for special events in conjunction with the airport; fixed base operators; and, heliports, glider operations, skydiving operations and grounds school training (City of Eloy 2018c). Also, it should be noted that Skydive Arizona allows for military training on their property, which would be coordinated through their Military Department (Skydive Arizona 2019). They also allow camping on their property. This proposed PR training site is not located within a scenic area.

### City of Scottsdale

As shown in Table 3.5-3, the Scottsdale Osborn PR training site is located within 0.5 mile of the Scottsdale Stadium and Osborn Park (Google Earth Pro 2019). It is located at the Scottsdale Osborn Honorhealth Hospital in an urban area of the City of Scottsdale. The hospital has a heliport at the top of the building (SkyVector 2019). This proposed PR training site has a

"Downtown Medical/Special Campus Downtown Overlay (D/M-2 SC DO)" zoning designation (City of Scottsdale 2019a). According to the City of Scottsdale Zoning Code, a helipad is a permitted use within the Downtown Medical Subdistrict (City of Scottsdale 2019b). This proposed PR training site is not located within a scenic area.

### City of Tucson

As shown in Table 3.5-3, the Ott Family YMCA of Tucson PR training site is located in the City of Tucson at the Ott Family YMCA of Tucson recreation facility. Use of the YMCA pool is based on membership to the YMCA and requires payment of membership fees (YMCA of Southern Arizona 2019). This proposed PR training site has a "Residence Zone (R-2 & RX-1)" zoning designation (City of Tucson 2019a). According to the City of Tucson Unified Development Code, RX-1 provides for suburban, low density, single-family, residential development, agriculture and other compatible neighborhood uses; and, R-2 provides for medium density, single-family and multifamily, residential development, together with schools, parks, and other public services necessary for an urban residential environment. Select other uses, such as day care and urban agriculture, are permitted that provide reasonable compatibility with adjoining residential uses (City of Tucson 2019b). This proposed PR training site is not located within a scenic area.

### Coconino County

As shown in Table 3.5-3, the Elk PR training site is located in unincorporated Coconino County surrounded by the Coconino National Forest (Google Earth Pro 2019). The forest land surrounding the Elk PR training site is classified as Semi-Primitive Motorized ROS (USFS 2018c). Also, the Squirrel PR training site is located in unincorporated Coconino County within 0.5 mile of the Arizona Trail (Google Earth Pro 2019). Both proposed PR training sites have a "General-10AC Minimum" zoning designation (Coconino County 2019b). According to the Coconino County Zoning Ordinance, the "General" zoning designation requires a Conditional Use Permit for airports, landing field, heliports and related activities, and recreational facilities (Coconino County 2017). This zone is a general rural land-use category intended for application to those unincorporated areas of Coconino County not specifically designated in any other zone classification. Only those uses are permitted which are complementary and compatible with a rural environment (Coconino County 2017). Neither proposed PR training site is located within a scenic area. However, the forest land surrounding the Elk PR training site has a moderate-level SIO (USFS 2018c).

### Pima County

As shown in Table 3.5-3, the Three Points Shooting Range PR training site is located at the Three Points Shooting Range in unincorporated Pima County. This proposed PR training site is within Pima County's "Planning Area (East) 4, Altar Valley" with a "Low Intensity Rural (LIR)" land use designation and has a "Rural Homestead Zone (RH)" zoning designation (Pima County 2015, 2019a, 2019b). According to the Pima Prospers Comprehensive Plan Initiative, the LIR land use designation has an objective to designate areas for residential uses at densities consistent with rural and resource-based characteristics (Pima County 2015). Also, according to Pima County's Zoning Code, "Rural Homestead (RH)" zoning designation permits governmental uses (Pima County 2019a). This PR training is not located within a scenic area.

### 3.5.3 Environmental Consequences

Impacts related to land use would be considered significant if the Proposed Action resulted in inconsistency or noncompliance with existing federal, state, regional, or local land use plans or policies, and incompatibility with adjacent land uses. Impacts related to aesthetics would be considered significant if the Proposed Action resulted in impairment to federal, state, regional, or locally designated visual resources. The focus of this analysis is recreation areas/uses located within 0.5 mile of the proposed PR training sites located on USFS or other federal land, other land (municipal, city, county, state, or tribal), and private property that could be disrupted as a result of proposed PR training activities. No significant impacts to areas used for recreational purposes on DoD properties are anticipated to occur as proposed PR training activities already occur on these properties within designated areas; furthermore, the proponent would coordinate with each military installation and comply with the respective installation's land use controls, policies, programs, rules, and regulations for conducting PR training activities on their property. Given this, it is therefore not further discussed below.

#### 3.5.3.1 Proposed Action

##### 3.5.3.1.1 Department of Defense Property

The proponent would coordinate with each military installation and comply with the respective installation's land use controls, policies, programs, rules, and regulations for conducting PR training activities on their property. Thus, the Proposed Action would not change the land use or visual landscape and would not significantly impact areas used for recreational purposes.

##### 3.5.3.1.2 U.S. Forest Service or Other Federal Land

As discussed previously in Section 3.5.2.2, a total of 43 proposed PR training sites would occur on USFS land or other federal land within 0.5 mile of recreation areas/uses (i.e., 41 on USFS land, one on NPS land, and one on BLM). The land use and aesthetics impacts resulting from implementation of the Proposed Action are discussed below by jurisdiction.

**USFS**

The 41 proposed PR training sites that would occur on USFS land within 0.5 mile of recreation areas/uses would consist of ground, flight, and water operation activities, which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, aircraft, and watercraft. As discussed previously in Section 3.5.2.2, two of the proposed PR training sites on USFS land (Rough Rider and Mesa PR training sites) are in areas not generally suitable for mechanized/motorized use (Google Earth Pro 2019; USFS 2018b, 2018c). In addition, the Coronado National Forest Plan indicates that military training activities are not suitable uses in the Mesa, Mount Lemmon [Windy Point] and Portal Cabin and CCC Bunkhouse PR training sites (USFS 2018b). However, as discussed in Section 3.5.2.2, final decisions on resource commitments are made at the project level. Given that existing PR training activities have occurred in similar areas under operation of Special Use permits from USFS, it is anticipated that the proposed PR training activities would be similarly permitted under operation of Special Use permits. Under the Proposed Action, the proponent would obtain the necessary Special Use permits from USFS. Also, as noted previously in Section 2.1.4.3 of this EA, for any PR training sites located on USFS land, motor vehicle use off designated roads and trails and outside designated areas would be prohibited in compliance with 36 CFR 212.50. Furthermore, the proponent would comply with the airspace and public safety conditions

requested by the National Forests noted previously in Section 3.1.3.1.2 and other conditions requested by the National Forests listed below (see Appendix H of this EA for the National Forests' comment letters):

- The USAF shall notify the appropriate District Ranger/Office when training activities are planned and prior to the start of PR training events (at least one week in advance) in order to:
    - Address public questions or concerns;
    - Minimize public access limitations;
    - Coordinate and notify the public of any temporary closures of roads, trails, and areas;
    - Coordinate any issues with permittees or public use, when necessary;
    - Notify USAF personnel if there is active livestock grazing in and around PR training activities, and
    - Ensure personnel, equipment, residents, and livestock (if possible) are out of the way for PR training activities.
- The USAF shall discuss fire risks with the relevant National Forest to ensure appropriate fire precautions and tools to assist in extinguishing fires are readily available during PR training activities and are part of the terms and conditions of the Special Use permit.
- Prior to the start of PR training events, the USAF shall photo document the conditions of any USFS helispot, airstrip, roads, or facilities prior to their use. If any damage or rutting to the surface of any USFS helispot, airstrip, road or facility occurs during PR training events, the damage will be immediately be repaired to pre-training event conditions and photo documented. The Forest Service Aviation Officer and Forest Engineer shall be notified regarding damages and repairs or if repairs cannot be completed immediately.
- Prior to the start of PR training events, personnel shall be notified that livestock and range improvements (e.g., waters, fences, pipelines, etc.) exist on the ground and will be photo documented. If damage occurs to improvements, they will be repaired to pre-training event conditions and photo documented. The appropriate District Ranger will be notified regarding damages and repairs or if repairs cannot be completed immediately.
- Prior to the start of "blackout" driving, the USAF shall assess the roadway conditions and ensure appropriate safety precautions are implemented, including protecting any exposed utility pipelines.

Also, the proponent would coordinate with Catron County regarding use of the Reserve Airport PR training site. No PR training activity would occur unless the appropriate current permit/access approvals are obtained. All proposed PR training activities would occur in compliance with the USFS' Special Use permit terms and conditions, as well as any terms and conditions with Catron County. Therefore, the Proposed Action would not result in inconsistency or noncompliance with USFS Forest Plans and policies.

In addition, the proposed PR training activities on USFS land would not restrict the ability of individuals to use or access recreational areas. Regarding water operations, amphibious activities would avoid those waterways used extensively for recreational purposes and sensitive habitats and would mostly utilize larger bodies of water given the size requirements for the

amphibious watercraft. Should recreational users and military trainees be present on the same body of water, proposed PR training activities would not impede canoers, kayakers, or tubers/skiers.

Also, while the most of the proposed PR training sites on USFS land are located within scenic areas classified with high scenic quality, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape within the proposed PR training sites. Therefore, the Proposed Action would not result in impairment to scenic resources.

**NPS**

Regarding the one proposed PR training site on NPS within 0.5 mile of recreation areas/uses (Lees Ferry PR training site located at the NPS' Glen Canyon National Recreation Area), the proposed activities that would occur at this location would consist of ground and flight operations, which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, and aircraft. Under the Proposed Action, the proponent would obtain the required Special Use permit from NPS for PR training activities at the Lees Ferry PR training site. In addition, given the proposed activities at this location involve the use of aircraft, the proponent would also obtain the Certificate of Waiver in conjunction with this permit as required by NPS. Therefore, the Proposed Action would not result in inconsistency or noncompliance with NPS policies, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on NPS land would not restrict the ability of individuals to use or access recreational areas. It would also not result in any physical disturbance of recreational areas. In addition, similar to the USFS land discussion above, while the Lees Ferry PR training site is located within a high-quality scenic area on NPS land, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape within this proposed PR training site.

**BLM**

As discussed above, military activities similar to the proposed PR training activities (i.e., F1 and F8) have and continue to occur at the Delamar Dry Lake PR training site. However, BLM has indicated that any military training activity on public land is required to be limited to types that would be considered "casual use" under 43 CFR 2800, which is by definition "activities ordinarily resulting in no or negligible disturbance of the public lands, resources, or improvements" (personal communication with BLM 2019). As discussed through this EA, implementation of the Proposed Action would not result in any significant impacts to public lands, resources, or improvements. Also, as an operational constraint, only Medium and Small Force training would occur on BLM land. Thus, the proposed activities would result in negligible disturbance of BLM land. Given this, the proposed activities on BLM would be consistent with "casual use" under 43 CF Part 2800. Therefore, the Proposed Action would not result in inconsistency or noncompliance with BLM Ely District RMP or requirements, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on NPS land would not restrict the ability of individuals to use or access recreational areas. It would also not

result in any physical disturbance of recreational areas. In addition, as described above, the Delamar Dry Lake is not within a scenic area and thus would have no significant impact to aesthetics.

**Impact Summary**

In summary, the Proposed Action would result in a less than significant impact related to land use and aesthetics on proposed PR training sites on USFS or other federal land.

#### 3.5.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

As discussed previously in Section 3.5.2.3, a total of 13 proposed PR training sites would occur on other land within 0.5 mile of recreation areas/uses. The land use and aesthetics impacts resulting from implementation of the Proposed Action are discussed below by jurisdiction.

**Arizona Game and Fish Department**

The Caldwell Meadows PR training site, which is located on Arizona Game and Fish Department land, consists of both ground and flight operations, which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, and aircraft. Also, while it is classified as "Recreation" by the Apache County, the County does not have land authority over this site. Although there is no land use plan in place for this proposed PR training site, the proponent would coordinate with Arizona Game and Fish Department to obtain the necessary right-of-entry and Special Use permits and/or other approvals required for proposed activities at this site. The proponent would also coordinate with USFS for access approval given their land surrounds this proposed PR training site. No training activity would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with Arizona Game and Fish Department policies and would be compatible with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on Arizona Game and Fish land would not restrict the ability of individuals to use or access recreational areas. It would also not result in any physical disturbance of recreational areas.

In addition, while this proposed PR training site is surrounded by a scenic area, similar to USFS land discussion above, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape around this proposed PR training site.

**Arizona Board of Regents (NAU and University of Arizona)**

The City of Flagstaff PR training site, located on NAU, consists of ground (MOUT only) and flight (Established MOA and LATN only) operations which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, and aircraft. The proponent would coordinate with NAU to obtain the necessary right-of-entry and Special Use permits and/or other approvals required for proposed activities at this site, which has no land use classification. Also, regarding the MOUT activities, as described in Section 2.1.4.5, the proposed activities would be conducted in accordance with the normal everyday use of the existing businesses/facilities and with prior coordination with local officials and law enforcement. Local law enforcement may also participate in the training activities. These activities consist of the personnel moving on foot and blending in with the existing

environments. No pyrotechnic use would occur. No training activity would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with 2010 NAU Master Plan, nor would it result in incompatibility with adjacent land uses.

Also, the University of Arizona Dive Pool PR training site consists of water operations (amphibious operations only), which would include open circuit dive operations of personnel/equipment and use of sonar to locate subsurface items. Given this proposed PR training site is located within an indoor pool, no watercraft would be used. In addition, the University of Arizona Medical Center PR training site consists of flight (HLZ only) operations, which would involve insertion/extraction of personnel conducted via helicopter landing, fast rope, rappel, rope ladder, or hoist. No permitted uses or land use restrictions are noted in the University of Arizona's 2009 Comprehensive Campus Plan for these sites. However, the proponent would coordinate with the University of Arizona to obtain the necessary right-of-entry and Special Use permits and/or other approvals required for proposed activities at this site, as well as pay for any use-fees. Regarding the HLZ activities, the proponent would also coordinate with local officials and law enforcement to obtain the necessary approvals required for the proposed activities. No training activity would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with University of Arizona's 2009 Comprehensive Campus Plan, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on NAU and University of Arizona land would not restrict the ability of individuals to use or access nearby recreational areas. It would also not result in any physical disturbance of nearby recreational areas. In addition, as described above, these proposed PR training sites are not within a scenic area and thus would have no significant impact to aesthetics.

**Arizona State Parks**

The Lake Patagonia PR training site, located at the Arizona State Parks' Patagonia Lake State Park, consists of ground (technical rope work only), flight, and water operations, which would include the use of light vans, trucks, aircraft, and watercraft. According to the Six-2030 Agency Master Plan, Patagonia Lake is classified as a "Recreation Park": however, the master plan does not specify permitted uses or land use restrictions. The proponent would coordinate with the Arizona State Parks to obtain the necessary Special Use permits and/or other approvals required for proposed activities at this site, as well as pay for any use-fees. The proponent would also comply with Patagonia Lake State Parks' rules and regulations, including use and type of watercraft (for example, no jet-skis would be used for the proposed activities). No training activity would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with Arizona State Parks' Six-2030 Agency Master Plan or rules and regulations, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on Arizona State Parks land would not restrict the ability of individuals to use or access the Patagonia Lake State Park. It would also not result in any physical disturbance of the Patagonia Lake State Park. Regarding water operations, amphibious activities would avoid those waterways used

extensively for recreational purposes and sensitive habitats and would mostly utilize larger bodies of water given the size requirements for the amphibious watercraft. Should recreational users and military trainees be present on the same body of water, proposed PR training activities would not impede canoers, kayakers, or tubers/skiers.

In addition, while this proposed PR training site is within a high-quality scenic area, similar to USFS land discussion above, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape around this proposed PR training site.

**State of Arizona (State Trust land)**

The Jeep HLZ/DZ, Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ PR training sites, located on Arizona State Trust land, consist of ground and flight operations, which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, and aircraft. There is no ASLD land use plan for these proposed PR training sites, which currently have grazing leases. The proponent would coordinate with ASLD and the lease holders to obtain the necessary right-of-entry and Special Use permits and/or other approvals required for proposed activities at this site, as well as pay for any use-fees. Also, the proponent would coordinate with BLM to obtain access approval given the IFNM surrounds the proposed PR training sites. No training activity would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with ASLD regulations, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on ASLD land would not restrict the ability of individuals to use or access the nearby IFNM. It would also not result in any physical disturbance of the nearby IFNM.

In addition, while this proposed PR training sites are surrounded by high quality scenic areas (VRI Classes II and III), similar to USFS land discussion above, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape around this proposed PR training site.

**City of Peoria**

The Lake Pleasant PR training site, located at the Lake Pleasant Regional Park (owned by Maricopa County and on City of Peoria land), consists of water operations (amphibious operations only), which would include the use of watercraft. The Proposed Action would involve pursuing a partnership with the City of Peoria and Maricopa County to use this park for proposed PR training activities, consistent with the Policy 3.8.1 (described in Section 3.5.2.3). Also, the use of this park would be for short-term training events. In addition, the proponent would coordinate with City of Peoria and Maricopa County (owner) to obtain the necessary Special Use permits and/or other approvals required for proposed activities at this site, as well as pay for any use-fees. No training activity would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with City of Peoria's General Plan or Zoning Code, or Maricopa County requirements, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on City of Peoria land would not restrict the ability of individuals to use or access the Lake Pleasant Regional Park. It would also not result in any physical disturbance of the Lake Pleasant Regional Park. Regarding water operations, amphibious activities would avoid those waterways used extensively for recreational purposes and sensitive habitats and would mostly utilize larger bodies of water given the size requirements for the amphibious watercraft. Should recreational users and military trainees be present on the same body of water, proposed PR training activities would not impede canoers, kayakers, or tubers/skiers.

In addition, while this proposed PR training site is within a high-quality scenic area, similar to USFS land discussion above, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape around this proposed PR training site.

**City of Winslow**

The City of Winslow PR training site, located on City of Winslow land, consists of ground (MOUT only) and flight (Established MOA and LATN only) operations which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, and aircraft. These proposed activities would occur within 0.5 mile of the Winslow City Park and Winslow Parks. The City of Winslow's General Plan shows the proposed PR training site with a "Multi-Family Residential" land use/zoning designation (see Section 3.5.2.3 for more details). The proponent would coordinate with City of Winslow to obtain the necessary right-of-entry and Special Use permits and/or other approvals required for proposed activities at this site. Also, regarding the MOUT activities, as described in Section 2.1.4.5, the proposed activities would be conducted in accordance with the normal everyday use of the existing businesses/facilities and with prior coordination with local officials and law enforcement. Local law enforcement may also participate in the training activities. These activities consist of the personnel moving on foot and blending in with the existing environments. No pyrotechnic use would occur. No training activity would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with City of Winslow's General Plan or Municipal Code, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on City of Winslow land would not restrict the ability of individuals to use or access nearby recreational areas. It would also not result in any physical disturbance of nearby recreational areas. In addition, as described above, this proposed PR training site is not within a scenic area and thus would have no significant impact to aesthetics.

**Town of Sahuarita**

The Lake Sahuarita PR training site, located at Sahuarita Lake Park, consists of water operations (amphibious operations only), which would include the use of watercraft. According to the Town of Sahuarita's General Plan Land Use Map, the Lake Sahuarita PR training site has a "Rural Homestead" zoning designation. This zone allows for governmental uses and thus proposed activities could be permitted. Regardless, the proponent would coordinate with the Town of Sahuarita and to obtain the necessary Special Use permits and/or other approvals required for proposed activities at this site, as well as pay for any use-fees. No training activity

would occur unless the appropriate permits and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with the Town of Sahuarita's General Plan or Town Code, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on Lake Sahuarita Park would not restrict the ability of individuals to use or access the Lake Sahuarita Park. It would also not result in any physical disturbance of the Lake Sahuarita Park. Regarding water operations, amphibious activities would avoid those waterways used extensively for recreational purposes and sensitive habitats and would mostly utilize larger bodies of water given the size requirements for the amphibious watercraft. Should recreational users and military trainees be present on the same body of water, proposed PR training activities would not impede canoers, kayakers, or tubers/skiers.

In addition, while this proposed PR training site is within an area offering distant scenic views to the mountains beyond, similar to USFS land discussion above, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape around this proposed PR training site.

**NDSP**

The Colorado River PR training site, located at NDSP's Big Bend of Colorado State Recreation Area, consists of only water operations, which would include the use of watercraft. As discussed previously, NDSP does not have a land use plan associated with the Big Bend of the Colorado State Recreation Area. On the NDSP website for the Big Bend of the Colorado State Recreation Area, it indicates that for Special/Commercial Use of the park, a Special/Commercial Use permit is required (NDSP 2019a). The proponent would coordinate with NDSP to obtain the necessary Special Use/Commercial permit (including meeting basic liability and public safety standards and providing liability insurance), as well as obtain any other approvals required for proposed activities at this site. No training activity would occur unless the appropriate permit and/or approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with NDSP requirements, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on Big Bend of Colorado State Recreation Area would not restrict the ability of individuals to use or access the Big Bend of Colorado State Recreation Area. It would also not result in any physical disturbance of the Big Bend of Colorado State Recreation Area. Regarding water operations, amphibious activities would avoid those waterways used extensively for recreational purposes and sensitive habitats and would mostly utilize larger bodies of water given the size requirements for the amphibious watercraft. Should recreational users and military trainees be present on the same body of water, proposed PR training activities would not impede canoers, kayakers, or tubers/skiers.

In addition, while this proposed PR training site is within a high-quality scenic area, similar to USFS land discussion above, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape around this proposed PR training site.

### Catron County

The Catron County Fairgrounds PR training site, located at the Catron County Fairgrounds, consists of ground and flight operations which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/bicycles, and aircraft. As discussed previously, the Catron County's Comprehensive Land Use Plan does not provide land use designation for the Catron County Fairgrounds PR training site. The proponent would coordinate with Catron County regarding use of the Catron County Fairgrounds PR training site. No PR training activity would occur unless the appropriate current permit/access approvals are obtained. All proposed PR training activities would occur in compliance with any terms and conditions from Catron County.

The proposed PR training activities at the Catron County Fairgrounds could restrict the ability of individuals to use or access the fairgrounds for other events. Therefore, as discussed in Section 3.9 of this EA, an operational constraint for this PR training site would be to schedule proposed PR training activities when there are no special events planned at the fairgrounds. The Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would not alter the visual landscape around this proposed PR training site.

### Impact Summary

Therefore, the Proposed Action would result in a less than significant impact related to land use and aesthetics on proposed PR training sites on other land.

#### 3.5.3.1.3.1 Activation of Playas Temporary MOA

As discussed above in Section 3.5.2.3, the Playas Training and Research Center is a facility that provides opportunities for physical security training and not recreation. In addition, there are no recreation areas/uses within 0.5 mile of the Playas Temporary MOA. Given this, the activation of the Playas Temporary MOA would result in no significant impact related to land use and aesthetics.

#### 3.5.3.1.4 Private Property

As discussed previously in Section 3.5.2.4, a total of six proposed PR training sites would occur on private property within 0.5 mile of recreation areas/uses. These are the following: one in the City of Eloy (Eloy North PR training site); one in the City of Tucson (Ott Family YMCA of Tucson Pool PR training site); one in the City of Scottsdale (Scottsdale Osborn PR training site); two in Coconino County (Elk and Squirrel PR training sites); and, one in Pima County (Three Points Public Shooting Range PR training site). As discussed previously, even though these proposed PR training sites are located on private property, they are subject to the land use regulations of the jurisdiction they are located within. The land use and aesthetics impacts resulting from implementation of the Proposed Action are discussed below by jurisdiction.

### City of Eloy

The Eloy North PR training site, located at Skydive Arizona, would consist of ground and flight operations, which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, and aircraft. This proposed PR training site has an "Aviation Overlay District" zoning designation, which allows for several air-related permitted

uses (City of Eloy 2018c). Also, it should be noted that Skydive Arizona allows for military training on their property, which would be coordinated through their Military Department (Skydive Arizona 2019). Given this, the proposed activities would be consistent with existing activities and would be an allowable land use. However, the proponent would coordinate with City of Eloy to obtain any necessary permits or approvals. In addition, the proponent would coordinate with Skydive Arizona's Military Department to obtain any required agreement for proposed activities on their property and would comply with its terms and conditions. No training activity would occur unless the appropriate terms, agreements, and approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with City of Eloy's General Plan or Zoning Ordinance, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on City of Eloy land would not restrict the ability of individuals to use or access Arizona Skydive. It would also not result in any physical disturbance of Arizona Skydive property. In addition, as described above, this proposed PR training site is not within a scenic area and thus would have no impact to aesthetics.

**City of Scottsdale**

The Scottsdale Osborn PR training site, located at the Scottsdale Osborn Honorhealth Hospital, consists of flight (HLZ only) operations, which would involve insertion/extraction of personnel conducted via helicopter landing, fast rope, rappel, rope ladder, or hoist. This proposed PR training site has a "Downtown Medical/Special Campus Downtown Overlay (D/M-2 SC DO)" zoning designation (City of Scottsdale 2019a), under which a helipad is a permitted use (City of Scottsdale 2019b). Thus, the proposed HLZ would be consistent with the existing land use and would be an allowable use. Regardless, the proponent would coordinate with the City of Scottsdale to obtain any necessary permits and/or other approvals required for proposed activities at this site. The proponent would also coordinate with Scottsdale Osborn Honorhealth Hospital to obtain necessary agreement and terms to use the site for the proposed activities. The proponent would comply with the agreement's terms and conditions. Regarding the HLZ activities, the proponent would also coordinate with local officials and law enforcement to obtain the necessary approvals required for the proposed activities. No training activity would occur unless the appropriate permits, agreement, and approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with City of Scottsdale's General Plan or Zoning Code, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on City of Scottsdale land would not restrict the ability of individuals to use or access nearby recreational areas. It would also not result in any physical disturbance of nearby recreational areas. In addition, as described above, this proposed PR training site is not within a scenic area and thus would have no significant impact to aesthetics.

**City of Tucson**

The Ott Family YMCA of Tucson Pool PR training site consists of water operations (amphibious operations only), which would include open circuit dive operations of personnel/equipment and use of sonar to locate subsurface items. Given this PR training site is located within an indoor pool, no watercraft would be used. This proposed PR training site has a "Residence Zone (R-2

& RX-1)" zoning designation (City of Tucson 2019a). While not clear if the proposed activities would fall under "other uses" allowed in this zone, the proposed activities would be consistent with existing use (water recreational activities) at the site. Regardless, the proponent would coordinate with the City of Tucson to obtain any necessary permits or approvals for the proposed activities at this site. Also, the proponent would coordinate with the Ott Family YMCA of Tucson Pool to obtain any necessary agreement and would be pay membership fee for use of their facility. The proponent would comply with this agreement's terms and conditions. No training activity would occur unless the appropriate permits, agreement, and approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with City of Tucson's General Plan or Development Code, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities at the Ott Family YMCA of Tucson Pool would not restrict the ability of individuals to use or access the Ott Family YMCA of Tucson Pool. It would also not result in any physical disturbance of the Ott Family YMCA of Tucson Pool property. In addition, as described above, this proposed PR training site is not within a scenic area and thus would have no significant impact to aesthetics.

**Coconino County**

Both the Elk and Squirrel PR training sites, located in unincorporated Coconino County (surrounded by Coconino National Forest and within 0.5 mile of the Arizona Trail, respectively), consist of ground and flight operations, which would include mechanized/motorized uses such as personnel vehicles, all-terrain vehicles, motorcycles/ bicycles, and aircraft. Both proposed PR training sites have a "General-10AC Minimum" zoning designation (Coconino County 2019b), which requires a Conditional Use Permit for airports, landing field, heliports and related activities, and recreational facilities (Coconino County 2017). As mentioned above, the proposed flight activities (which would involve landing field, heliports and related activities) are conditionally permitted and thus would be compatible with this rural environment. The proponent would coordinate with Coconino County to obtain the necessary Conditional Use Permit and any other approvals required for proposed activities at these sites. In addition, the proponent would coordinate with the property owner to obtain the necessary agreement to use their property for the proposed activities. The proponent would comply with the terms and conditions of this agreement. No training activity would occur unless the appropriate permit, agreement, and approvals are obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with Coconino County's Zoning Code, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on Coconino County land would not restrict the ability of individuals to use or access nearby Arizona Trail. It would also not result in any physical disturbance of nearby Arizona Trail. In addition, as described above, this proposed PR training site is not within a scenic area and thus would have no significant impact to aesthetics.

Also, while the Elk PR training site is surrounded by a scenic area, similar to USFS land discussion above, the Proposed Action does not include vegetation removal or grading, demolition, or building construction or renovation activities; thus, the Proposed Action would

not alter the visual landscape around this proposed PR training site. Therefore, no significant impact to aesthetics would occur.

**Pima County**

The Three Points Shooting Range PR training site, located at the Three Points Shooting Range in unincorporated Pima County, consists of ground operations (small arms firing range only), which would include use of a small arms firing ranges to enhance weapons training skills. The caliber of the weapons used for the proposed training would not exceed the design, capacity, or certification of the facilities. Small arms training would occur during normal operating hours of the facilities. This proposed PR training site is within Pima County's "Rural Homestead Zone (RH)" zoning designation, which according to Pima County's Zoning Code, permits governmental uses (Pima County 2019a). Given the existing land use is a small arms firing range and the zoning allows for government uses, the proposed activities would be consistent with the existing land use and would be a permitted use. The proponent would coordinate with the Three Points Shooting Range to obtain any necessary agreements and/or pay use-fees to use the facility for the proposed activities. The proponent would comply with terms and conditions in the agreement. No training activity would occur unless the necessary agreement is obtained. Therefore, the Proposed Action would not result in inconsistency or noncompliance with Pima County's Comprehensive Plan Initiative or Zoning Code, nor would it result in incompatibility with adjacent land uses.

Also, similar to USFS land discussion above, the proposed PR training activities on Pima County land would not restrict the ability of individuals to use or access the Three Points Shooting Range. It would also not result in any physical disturbance of the Three Points Shooting Range. In addition, as described above, this proposed PR training site is not within a scenic area and thus would have no significant impact to aesthetics.

**Impact Summary**

Therefore, the Proposed Action would result in a less than significant impact related to land use and aesthetics on proposed PR training sites on private property.

#### 3.5.3.2 No-Action Alternative

Under the No-Action Alternative, PR forces would continue existing PR training activities approved under prior NEPA documents and comply with required minimization and operational constraints identified in these documents. The existing PR training activities would also continue operating under existing Special Use permits and terms and agreements on non-DoD property. As a result, the No-Action Alternative would remain consistent and in compliance with federal, state, regional, or local land use plans and policies, and would continue to be compatible with adjacent land uses. In addition, given that no vegetation removal or grading, demolition, or building construction or renovation activities would occur under the No-Action that could alter the visual landscape, the No-Action Alternative would continue to not impact scenic quality or visual resources. Therefore, the No-Action Alternative would not result in a significant impact related to land use and aesthetics.

## 3.6 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

### 3.6.1 Definition of Resource

Hazardous materials are defined by 49 CFR 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in [49 CFR 173]." Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR 105–180. Under CERCLA (also referred to as "Superfund") and the Solid Waste Disposal Act, as amended by RCRA, "hazardous materials" refers to any item or agent (biological, chemical, or physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. A complete list of federally recognized hazardous substances as well as their reportable quantities is provided in 40 CFR 302.4.

Hazardous wastes are defined by RCRA at 42 U.S.C. 6903(5), as amended by the Hazardous and Solid Waste Amendments, as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR 273. Four types of waste are currently covered under the universal waste regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

For the USAF, AFPD 32-70, Environmental Quality, and the AFI 32-7000 series incorporate the requirements of all federal regulations, and other AFIs and DoD Directives for the management of hazardous materials, hazardous wastes, and special hazards. These requirements include the implementation of Hazardous Materials Management Plans, Hazardous Waste Management Plans (HWMPs), SPCCPs, Pollution Prevention Plans, and Environmental Restoration Program (a program designed to identify and clean up past contamination from hazardous substances, pollutants, and contaminants, which is organized into three categories – Installation Restoration Program [IRP], Military Munitions Response Program, and Building Demolition/Debris Removal). Also, for some activities requiring real property actions, Environmental Baseline Surveys may be required per AFI 32-7066, Environmental Baseline Surveys in Real Property Transactions (USAF 2015c).

### 3.6.2 Affected Environment

The primary ROI for the hazardous materials and hazardous waste management analysis includes hazardous material sites (i.e., CERCLA [Superfund and brownfield], IRP, etc.) and hazardous waste generator (RCRA) sites located within 0.5 mile of the proposed PR training sites.

#### 3.6.2.1 Department of Defense Property

Of the 55 proposed PR training sites on DoD properties, a total of four are located within 0.5 mile of hazardous material sites with open cases, as shown in Table 3.6-1 below. However, as

shown in Table 3.6-1, none of these PR training sites are located on these hazardous material sites.

**Table 3.6-1. PR Training Sites on DoD Property Located within 0.5-mile of Hazardous Material Sites with Open Cases**

| Training Site | Hazardous Material Site | Site Type | Distance (Miles) |
|---|---|---|---|
| Davis-Monthan AFB | ST-36 | IRP | 0.18 |
| | PFAS Study Area | IRP | 0.42 |
| March ARB | March Field (80000870) | FUDS | 0.10 |
| | Site 33 Panero Aircraft Fueling System (T0606500146) | IRP | 0.13 |
| | OU2B – Site 8 Flightline Shop Zone (DOD100321100) | IRP | 0.28 |
| | OU2-B – Site 36 Bldg 458 Leach Pit (DOD100321200) | IRP | 0.32 |
| | Hot Site #1 (T06019708151) | Military UST | 0.40 |
| | Imperial Beach Outlying Landing Field (80001253) | SWRCB Corrective Action | 0.44 |
| | Site 7 (UST Bldg 1290) | IRP | 0.40 |
| | UST Bldg 39 (NADEP) (T0607301050) | Military UST | 0.48 |
| Nellis AFB | H-000078 | Non-LUST Corrective Action (solvents released into groundwater) | 0.40 |
| San Clemente Island NALF | San Diego NALF (AUXLNDFL) - Site 17 (Power Plant Building) (T0603727324) | IRP | 0.40 |
| | San Diego NALF (AUXLNDFL) (71000017) | DTSC Cleanup Site | 0.30 |
| | Site 12 (T10000006171) | IRP | 0.40 |
| | Site 13 (T10000006170) | IRP | 0.40 |
| | San Clemente Isl AFS (80000089) | DTSC Cleanup Site | 0.35 |
| | San Clemente Isl VHF 8K2 (80000446) | DTSC Cleanup Site | 0.45 |

DTSC – California Department of Toxic Substance Control
FUDS – Formerly Used Defense Sites
LUST – Leaking Underground Storage Tank
NALF – Naval Auxiliary Land Facility
OU – Operable Unit
PFAS – Per and Polyfluorinated Alkyl Substances
Sources: ADEQ 2018b, 2018c, 2019a, 2019b, 2019c, 2019d; Google Earth Pro 2019; Naval Base Coronado 2013; Nevada Division of Environmental Protection 2019b; New Mexico Environment Department 2019a; State of California Water Resources Control Board (SWRCB) 2019; USAF 2014b; USEPA 2019a.

In addition, one PR training site is located within 0.5 mile of an active hazardous waste generator (RCRA) site, as shown in Table 3.6-2 below. However, as shown in Table 3.6-2, this PR training site is not located on the RCRA site.

**Table 3.6-2. PR Training Sites on DoD Property Located within 0.5-mile of Hazardous Waste Generator Sites (RCRA)**

| Training Site | Hazardous Waste Generator (RCRA) Site | RCRA Site Type | Distance (Miles) |
|---|---|---|---|
| Navajo Railroad | National Guard Camp Navajo | LQG | 0.21 |

Notes:
LQG – Large Quantity Generator (i.e., generates 1,000 kilograms or more per month of hazardous waste or more than 1 kilogram per month of acutely hazardous waste)
RCRA = Resource Conservation and Recovery Act
Sources: ADEQ 2019a; Google Earth Pro 2019; USEPA 2019a.

### 3.6.2.2 U.S. Forest Service or Other Federal Land

There are no hazardous material sites with open cases or active hazardous waste generator (RCRA) sites located within 0.5 mile of the proposed PR training sites on USFS or other federal land (ADEQ 2019a; Google Earth Pro 2019; New Mexico Environment Department 2019a; USEPA 2019a).

### 3.6.2.3 Other Land (Municipal, City, County, State, or Tribal)

Of the 57 proposed PR training sites on other land (e.g., municipal, city, county, state, or tribal), only two are located within 0.5 mile of hazardous material sites with open cases, as shown in Table 3.6-3 below.

**Table 3.6-3. PR Training Sites on Other Land Located within 0.5-mile of Hazardous Material Sites with Open Cases**

| Training Site | Hazardous Material Site | Site Type | Distance (Miles) |
|---|---|---|---|
| Phoenix Sky Harbor IAP | Motorola 52nd Street | Superfund NPL | 0.39 |
| St. Johns Industrial Air Park | St. Johns Cemetery | Brownfield | 0.37 |

NPL – National Priorities List
Sources: ADEQ 2019a; Google Earth Pro 2019; New Mexico Environment Department 2019a; Nevada Division of Environmental Protection 2019b; USEPA 2019a.

In addition, a total of four PR training sites on other land are within 0.5 mile of active hazardous waste generator (RCRA) sites, as shown in Table 3.6-4 below. However, as shown in Table 3.6-4, none of the PR training sites are located on these RCRA sites.

**Table 3.6-4. PR Training Sites on Other Land Located within 0.5-mile of Hazardous Waste Generators (RCRA)**

| Training Site | Hazardous Waste Generator (RCRA) Site | RCRA Site Type | Distance (Miles) |
|---|---|---|---|
| Phoenix Sky Harbor IAP | Aviation Management System | LQG | 0.50 |

| Table 3.6-4. PR Training Sites on Other Land Located within 0.5-mile of Hazardous Waste Generators (RCRA) | | | |
|---|---|---|---|
| **Training Site** | **Hazardous Waste Generator (RCRA) Site** | **RCRA Site Type** | **Distance (Miles)** |
| Prescott Airport | Sturm Ruger & Co | LQG | 0.25 |
| University of Arizona Dive Pool | Aura National Optical Astronomy | LQG | 0.34 |
| University of Arizona Medical Center | University of Arizona | LQG | 0.12 |
| | University Medical Center | LQG | 0.20 |
| | Aura National Optical Astronomy | LQG | 0.39 |
| Notes:<br>LQG – Large Quantity Generator (i.e., generates 1,000 kilograms or more per month of hazardous waste or more than 1 kilogram per month of acutely hazardous waste)<br>RCRA – Resource Conservation and Recovery Act<br>Sources: ADEQ 2019a; Google Earth Pro 2019; New Mexico Environment Department 2019a; Nevada Division of Environmental Protection 2019b; USEPA 2019a. | | | |

#### 3.6.2.3.1 Activation of Playas Temporary MOA

There are no hazardous material sites with open cases or active hazardous waste generator (RCRA) sites within 0.5 mile of the Playas Training and Research Center PR training site or Playas Temporary MOA (New Mexico Environment Department 2019a). Note there was a confirmed release associated with a UST approximately 0.2 mile from the Playas Training and Research Center; however, the release has been cleaned up and a No Further Action has been issued (New Mexico Environment Department 2019a).

### 3.6.2.4 Private Property

Of the 19 proposed PR training sites on private property, only one is located within 0.5 mile of a hazardous material site with an open case, as shown in Table 3.6-5 below. However, as shown in Table 3.6-5, this PR training site is not located on the hazardous material site.

| Table 3.6-5. PR Training Sites on Private Property Located within 0.5-mile of Hazardous Material Sites with Open Cases | | | |
|---|---|---|---|
| **Training Site** | **Hazardous Material Site** | **Site Type** | **Distance (Miles)** |
| Ott Family YMCA of Tucson Pool | Broadway-Pantano | WQARF | 0.26 |
| Notes:<br>WQARF – Water Quality Assurance Revolving Fund (a State of Arizona program created under the Environmental Quality Act of 1986 that supports ADEQ in identifying, prioritizing, assessing, and resolving the threat of contaminated soil and groundwater sites in the state).<br>ADEQ – Arizona Department of Environmental Quality<br>Sources: ADEQ 2019a, 2019f, 2019g. | | | |

In addition, there are no active hazardous waste generator (RCRA) sites located within 0.5 mile of the proposed PR training sites on private property (ADEQ 2019a; Google Earth Pro 2019; USEPA 2019a).

### 3.6.3 Environmental Consequences

Impacts related to hazardous materials or waste would be considered significant if the Proposed Action resulted in personnel exposure to hazardous materials or waste, or if the action generated quantities of these materials or waste beyond the capability of current management procedures. In addition, impacts related to hazardous waste management would be considered significant if the Proposed Action resulted in noncompliance with applicable federal, state, or local regulations.

#### 3.6.3.1 Proposed Action

The Proposed Action's potential impacts to hazardous materials and hazardous waste management are described below by jurisdiction.

Note that during implementation of the Proposed Action, no hazardous materials or waste would be stored or used at the proposed PR training sites. Furthermore, the Proposed Action would not result in an increase in hazardous materials or waste in quantities beyond the capability of current management procedures. However, the Proposed Action could cause minor quantities of fuel or oils to be released to the environment during a vehicle or aircraft breakdown or refueling. Any spills or leaks though would be handled in compliance with Davis-Monthan AFB's SPCCP, Pollution Prevention Plan, and HWMP, the respective military installation's land use controls, regulations, policies, programs, and procedures, as well as all federal, state, and local regulations. In addition, refueling of event aircraft and vehicles would occur at established refueling locations (e.g., gasoline stations and airports), which would have adequate spill containment materials for accidental release during fueling.

##### 3.6.3.1.1 Department of Defense Property

While there four proposed PR training sites on DoD property within 0.5 mile of hazardous material sites with open cases and one within 0.5 mile of an active hazardous waste generator (RCRA) site, the proposed PR training activities would not occur on any of these sites. Furthermore, the contaminants at these sites are site-specific (i.e., within a contained area of soil or groundwater, or stored within sealed containers); thus, despite their proximity to the proposed PR training sites, personnel would not be exposed to hazardous materials from these sites.

Regarding the San Clemente Island PR training sites, it should be noted that the proposed activities at these sites (i.e., G2, G3, F4, F6, F7, F8, F9, W1, and W2) were previously cleared under NEPA in the Navy's 2008 SOCAL Range Complex EIS/OEIS and the 2013 and 2018 HSTT EIS/OEISs, including an analysis of hazardous materials and hazardous waste management (Navy 2008, 2013, 2018b). These environmental documents concluded impacts would be less than significant and identified operational constraints (e.g., compliance with the Navy's general instructions along with their training activity planning and review processes). The Proposed Action would also comply with the same operational constraints.

Therefore, the Proposed Action would result in a less than significant impact related to hazardous materials or hazardous waste management on proposed PR training sites on DoD property.

#### 3.6.3.1.2 U.S. Forest Service or Other Federal Land

There are no hazardous material sites with open cases or active hazardous waste generator (RCRA) sites located within 0.5 mile of the proposed PR training sites on USFS or other federal land (ADEQ 2019a; New Mexico Environment Department 2019b; Google Earth Pro 2019; USEPA 2019a). Thus, the Proposed Action would not expose personnel to hazardous materials or waste from such sites.

Therefore, the Proposed Action would result in a less than significant impact related to hazardous materials or hazardous waste management on proposed PR training sites on USFS or other federal land.

#### 3.6.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

While there two proposed PR training sites on other land within 0.5 mile of hazardous material sites with open cases and four within 0.5 mile of active hazardous waste generator (RCRA) sites, the proposed PR training activities would not occur on any of these sites. Furthermore, the contaminants at these sites are site-specific (i.e., within a contained area of soil or groundwater, or stored within sealed containers); thus, despite their proximity to the proposed PR training sites, personnel would not be exposed to hazardous materials from these sites.

Therefore, the Proposed Action would result in a less than significant impact related to hazardous materials or hazardous waste management on proposed PR training sites on other land.

##### 3.6.3.1.3.1 Activation of Playas Temporary MOA

There are no hazardous material sites with open cases or active hazardous waste generator (RCRA) sites located within 0.5 mile of the Playas Training and Research Center PR training site or Playas Temporary MOA (New Mexico Environment Department 2019b). Thus, the Proposed Action would not expose personnel to hazardous materials or waste from such sites.

Therefore, the Proposed Action would result in a less than significant impact related to hazardous materials or hazardous waste management associated with the activation of the Playas Temporary MOA.

#### 3.6.3.1.4 Private Property

While there is one PR training site on private property within 0.5 mile of a hazardous material site with an open case, the proposed PR training activities would not occur at this site. Furthermore, the contaminants at this site are site-specific (i.e., within a contained area of groundwater); thus, despite its proximity to the proposed PR training site, personnel would not be exposed to hazardous materials from this site. In addition, there are no active hazardous waste generator (RCRA) sites located within 0.5 mile of the proposed PR training sites on private property (ADEQ 2019a; Google Earth Pro 2019; USEPA 2019a). Thus, the Proposed Action would not expose personnel to hazardous materials from such sites.

Therefore, the Proposed Action would result in a less than significant impact related to hazardous materials or hazardous waste management on proposed PR training sites on private property.

#### 3.6.3.2 No-Action Alternative

Under the No-Action Alternative, PR forces would continue existing PR training activities approved under prior NEPA documents and comply with required minimization and operational constraints identified in these documents. The existing PR training activities would also continue to comply with Davis-Monthan AFB's SPCCP, Pollution Prevention, HWMP, as well as all federal, state, and local regulations. Given this, the No-Action Alternative would not result in a significant impact related to hazardous materials or hazardous waste management.

## 3.7 NOISE

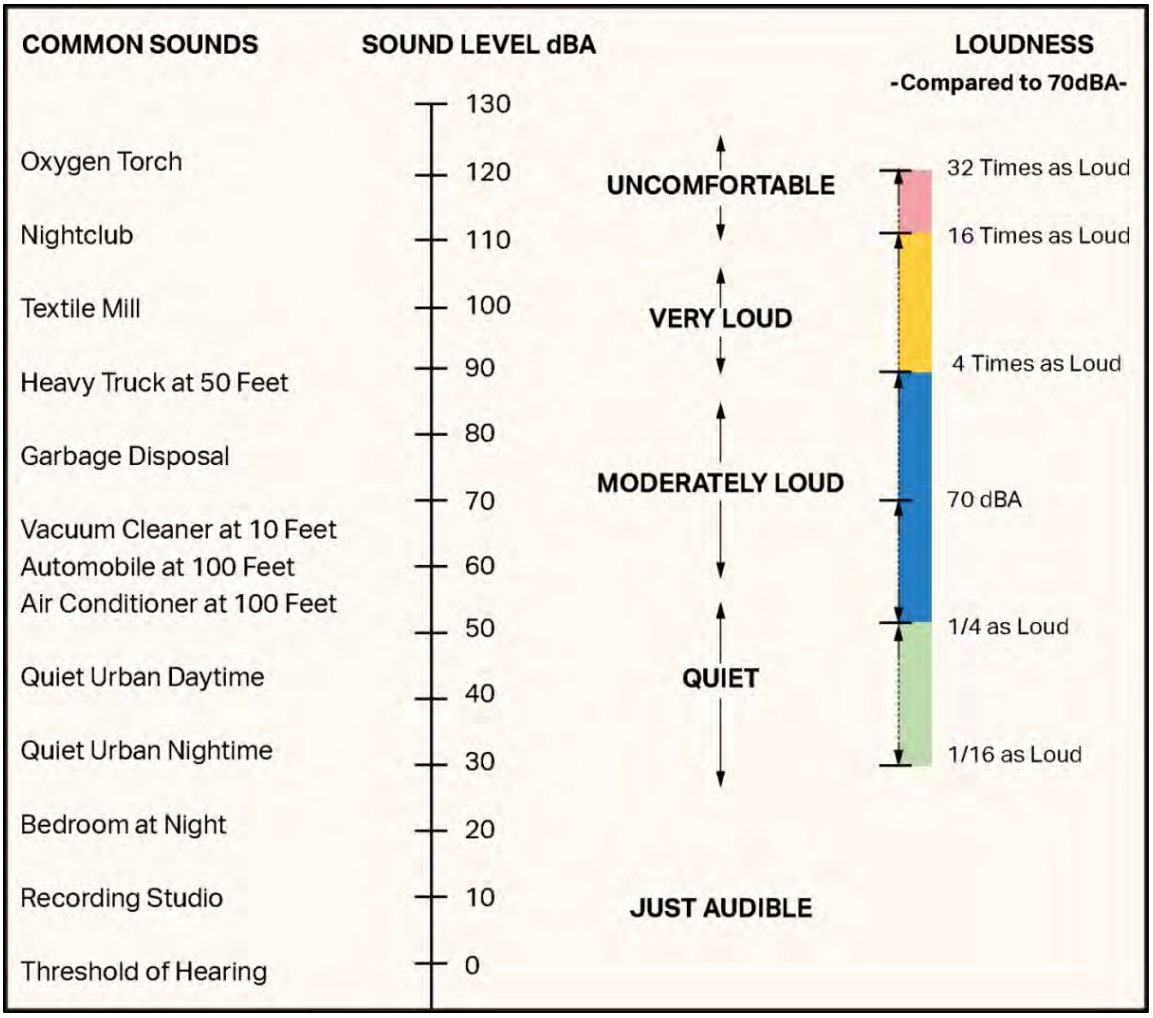
### 3.7.1 Definition of Resource

Sound is vibrations in the air, which can be generated by a multitude of sources to include roadway traffic, a barking dog, a radio—or aircraft operations. The vibrations are known as compression waves. Just like a pebble dropped into a pond creates ripples, the compression waves—formed of air molecules pressed together—radiate out, decreasing with distance. If these vibrations reach your eardrum, at a certain rate and intensity, we perceive it as sound. When the sound is unwanted, we refer to it as noise. Generally, sound becomes noise to a listener when it interferes with normal activities. Sound has three components: intensity, frequency, and duration.

- Intensity or loudness is related to sound pressure change. As the vibrations oscillate back and forth, they create a change in pressure on the eardrum. The greater the sound pressure change, the louder it seems.
- Frequency determines how the pitch of the sound is perceived. Low-frequency sounds are characterized as rumbles or roars, while high-frequency sounds are typified by sirens or screeches. Sound frequency is measured in terms of cycles per second or hertz (Hz). While the range of human hearing goes from 20 to 20,000 Hz, we hear best in the range of 1,000 to 4,000 Hz. For environmental noise, we use A-weighting, which focuses on this range, to best represent human hearing. While A-weighted decibels may be written as "dBA", if it is the only weighting being discussed, the "A" is generally dropped.
- Duration is the length of time the sound can be detected.

The loudest sounds that can be comfortably heard by the human ear have intensities a trillion times higher than those of sounds barely heard. Because such large numbers become awkward to use, we measure noise in decibels (dB), which uses a logarithmic scale that doubles the noise energy every 3 dB.

Figure 3.7-1 is a chart of A-weighted sound levels from common sources. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB begin to be felt inside the human ear as discomfort, while sound levels between 130 and 140 dB are felt as pain.




Sources: FICAN 1997; Harris 1979

**Figure 3.7-1. Sound Levels of Typical Sources and Environments**

**Noise Metrics**. The sound environment around an air installation or an aircraft training site like an HLZ used for the PR training is typically described using a measure of cumulative exposure that results from all aircraft operational events. The metric used to account for this is A-weighted day and night noise level (DNL) and is the standard noise metric used by the U.S. Department of Housing and Urban Development (HUD), FAA, USEPA, and DoD. Since the length and number of events—the total noise energy—and the time of day play key roles in our perception of noise, to reflect these concerns, USAF uses DNL metric to describe the cumulative noise exposure that results from all aircraft operations.

DNL, when used as a metric for aircraft noise, represents the accumulation of noise energy from all individual aircraft noise events in a 24-hour period. Because aircraft operations at military airfields or HLZs/LZs fluctuate from day to day, the DNL value is typically based on an entire year of operations and thus represents the annual average day of aircraft events. Additionally, for all operations between 10:00 p.m. and 7:00 a.m., a 10 dB-penalty is added to each event to account for the intrusiveness of nighttime operations.

DNL is not a level of noise heard at any given time, but represents long-term noise exposure. Scientific studies of community response to numerous types of environmental noise have found strong correlation between the level of annoyance and the level of average noise exposure measured in DNL.

To address the potential impacts of aircraft operations on land use, the USAF has defined certain noise zones and provided associated recommendations regarding compatible land uses in Air Installation Compatible Use Zone program instructions as described in AFI 32-7070, Air Force Noise Program (USAF 2016a), and AFI 32-7063, Air Installations Compatible Use Zones Program (USAF 2015b). Within the Playas Temporary MOA where an FAA approval is required, the EA also follows the FAA-defined noise analysis procedures and criteria.

**Methodology.** The main sources of sound at air installations and proposed HLZs/DZs/LZs are generally related to aircraft flight operations, closed pattern sorties, static run-up operations, and maintenance run-up operations around each site as applicable. A noise analysis was conducted to develop noise contours at (1) Davis-Monthan AFB, the airfield that commands the PR training under the Proposed Action, (2) typical HLZ where low altitude in-flight and patterns from aircraft (particularly helicopters) are present, and (3) Playas Temporary MOA used for the Large Force PR training.

**Airfield, HLZ or LZ**

The noise analysis uses NOISEMAP (USAF 1992), a widely accepted computer-based modeling program that projects noise impacts around an airfield, HLZ, or LZ to develop noise contours based on information regarding PR operations and the following typical factors:

- Type of operation (e.g., arrival, departure, pattern)
- Number of operations per day
- Time of operation
- Flight track and vertical profile
- Aircraft power settings, speeds, and altitudes

For those helicopters for which NOISEMAP does not have source data such as the MV-22, the Advanced Acoustical Model was used. The noise levels predicted over the same contour grid by two models for respective aircraft were acoustically combined to produce the overall noise contours with the NMPlot software.

The noise assessment for this EA focuses on the ground level noise around each proposed HLZ site within four states and data sources for establishing such noise conditions include interviews with pilots, planners, and schedulers. To assemble flight operation input data to predict contours on an annual average day requires a range of data from many sources. These sources provide representative annual average scenarios, distribution of overall sorties over four states, and descriptions of the types and frequency of noise-generating operations occurring at and around proposed HLZs. The data from these sources are compiled and integrated into the noise prediction model. The modeled aircraft operations are defined by the number of takeoffs, landings, patterns, and low altitude overfly during specific flight missions (sorties) of all aircraft at one typical HLZ.

Because each refueling or landing practice for C-130s within an LZ for PR training typically occurs along specific routes or LZs that are close to airfields and far from HLZs with very limited operations in several per week (less than one practice per annual average day), noise levels around these LZs are anticipated to be minimal. Therefore, the ground level noise prediction was performed around a typical HLZ where various low altitude flying aircraft would practice, including:

- Helicopters such as HH-60s during landing and takeoff, pattern practice, and hovering.
- Fixed-wing fighter jets such as A-10s during low altitude flyovers for escorting and combating.
- C-130 low altitude air dropping practice.

Under various proposed scenarios, the low altitude aircraft training type and duration per sortie around one HLZ would essentially remain the same. During the two-hour event duration under Large Force training, flight training would involve two HLZs that could be separated in 3 miles and each helicopter sortie would conduct approximately 10 pattern flights around each HLZ with a total of 20 patterns at two HLZs combined. Under Medium or Small Force training, during the four-hour training event at an HLZ, each helicopter sortie would conduct an average of 20 patterns. Therefore, for a specific sortie event at an HLZ, the pattern flight noise generated from helicopter sorties would double under Medium and Small Force training as compared to Large Force raining. For a fixed-wing aircraft such as the A-10, due to the limitation in flying hours in each event, the total number of low altitude overflights around an HLZ would generally be the same under Large, Medium, and Small Force training in either a two-hour or four-hour event. This is also the same for C-130 air dropping practice around an HLZ. For other fixed-wing aircraft participating in Large Force training, because of de-conflicting airspace for various aircraft types, only limited aircraft such as A-10s, F-16s, etc. could practice overfly around an HLZ for low altitude escorting or combating training. Other fixed-wing aircraft would be restricted to fly in airspace at much higher altitude resulting in minimal ground level noise impact at an HLZ.

Depending on the prevailing wind condition, the flight tracks around each HLZ could vary among different events. Therefore, it is conservatively assumed in noise contour prediction that, on an annual average day, the flight track would be oriented in one direction resulting in the maximum directional noise contours. However, such contours could occur in every direction pending on the wind condition; therefore, a circle with the maximum directional contour around an HLZ was conservatively used to determine the worst-case contour footprint around an HLZ in this EA.

**Playas Temporary MOA**

Military aircraft operating in MOAs generate a noise environment that is somewhat different from that associated with airfield, HLZ or LZ operations with noise events in MOAs being highly sporadic and often seasonal. Individual low altitude and high-airspeed flyover could have a rather sudden onset, exhibiting a rate of increase in sound level (onset rate). To reflect such on set effects, the conventional DNL metric is adjusted to account for the "surprise" effect of the sudden onset of aircraft noise events on humans. This measurement is called the Onset-Rate Adjusted Day-Night Average Sound Level or $L_{dnmr}$.

When the aircraft flight tracks are not well defined and are distributed over a wide area, such as in MOAs, the USAF uses the Military Operating Area and Range Noise Model (MR_NMAP) program (Lucas et al. 1997). MR_NMAP is a distributed flight track and area model that allows for entry of airspace information, the distribution of operations, flight profiles (average power settings, altitude distributions, and speeds), and numbers of sorties. The core program of MR_NMAP incorporates the number of operations by time, specified distributions, volume of the airspace being modeled, and profiles of the aircraft primarily to calculate average $L_{dnmr}$ for entire airspaces.

For modeling noise levels in MOAs, the USAF uses $L_{dmnr}$ where the operations during the busiest month are averaged over 30 days to get average busy month noise levels. The FAA uses DNL, which is the total annual operations averaged over 365 days. Because $L_{dnmr}$ uses the busiest month's operations, there is a denser concentration of operations in its equation than the DNL over an average annual day. This results in $L_{dnmr}$ calculating a more conservative, or louder, noise level than the average annual day DNL. Both USAF and FAA metrics were considered by using FAA-approved MR_NMAP model for the Large Force training noise impact within the Playas Temporary MOA. Detail modeling methodology and result discussion can be found in Appendix D.

**Noise Guidelines and Criteria.** Federal agencies have adopted various guidelines for assessing noise impacts. These regulations and guidelines are useful to review because they provide both a characterization of the quality of the existing noise environment and a measure of project-induced impacts when applicable.

In June 1980, the Federal Interagency Committee on Urban Noise (FICUN) published guidelines relating DNL to compatible land uses (FICUN 1980). This committee was composed of representatives of DoD, the U.S. Department of Transportation, HUD, USEPA, and the Veterans Administration. Since the issuance of these guidelines, federal agencies have generally incorporated the discussion of compatibility into their comprehensive planning in analysis of noise effects.

The land use compatibility guidelines that USAF uses are consistent with FICUN guidelines. In general, residential land uses are not compatible with an outdoor DNL above 65 dBA and this threshold was used in this EA as a criterion for potential significant noise impacts to sensitive land uses around an HLZ.

FAA Order 1050.1F provides agency-wide guidance for implementing NEPA requirements consistent with CEQ regulations (FAA 2015). Per FAA Order 1050.1F, the FAA's noise significance threshold is DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the No-Action Alternative for the same timeframe. Also, per FAA Order 1050.1F, the definition of a noise sensitive area is the following: "An area where noise interferes with normal activities associated with its use. Normally, noise sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas, areas with wilderness characteristics, wildlife and waterfowl refuges, and cultural and historical sites" (FAA 2015).

### 3.7.2 Affected Environment

The ROI for noise includes airfields, LZs, HLZs, and DZs around proposed PR training sites within four states. The existing noise conditions and contributed noise sources in these areas are described below.

#### 3.7.2.1 Department of Defense Property

**Airfield Noise Condition.** Since Davis-Monthan AFB is the command center for the PR training in the region, it is the airfield that could be impacted by the Proposed Action. A total of 57,599 annual sorties currently occur at Davis-Monthan AFB. Among these total sorties, approximately 3,894 sorties are contributed to the PR training missions as summarized in Table 3.7-1. The NOISEMAP-predicted baseline DNL noise contours at Davis-Monthan AFB are depicted in Figure 3.7-2. The 65 dBA DNL or greater contours are mostly confined to the airfield. Only small portions the 65 dBA DNL contour extend over the base northeast and southwest areas. However, these contour tips overlap with light industrial and commercial land uses. Therefore, the existing aircraft operations result in no incompatible land uses around Davis-Monthan AFB. For other airfields, it is anticipated the contribution to baseline noise contours from the PR training would be minimal given negligible flight events associated with the training.

**Table 3.7-1. Existing Condition PR Aircraft Sorties**

| Aircraft | Annual Sorties |
|---|---|
| A-10 | 1,854 |
| F-16 and other Fixed-Wing Fighter | 156 |
| HC-130 | 736 |
| HH-60 | 1,148 |
| **TOTAL** | **3,894** |

Source: Personal communication with AFCEC and Leidos 2018.

**HLZs/LZs/DZs Noise Condition.** Other than large airfields, the LZs are either small in size, remote, or both. For the PR training, the LZs are typically located in close proximity to airfields but away from the HLZs. Given limited landing and takeoff practice and away from sensitive land uses, aircraft operations at LZs are normally not sufficient enough to generate 65 dBA DNL contours that would extend into sensitive land uses. Noise condition around DZs is dominated by overflights when present from both fixed-wing aircraft and rotary wing helicopters, including those C-130s and HH-60s used for PR training. As compared to landing, takeoff and pattern flights at an airfield or LZ, overflights at relatively high altitudes at DZs would unlikely be of concern to ground level noise.

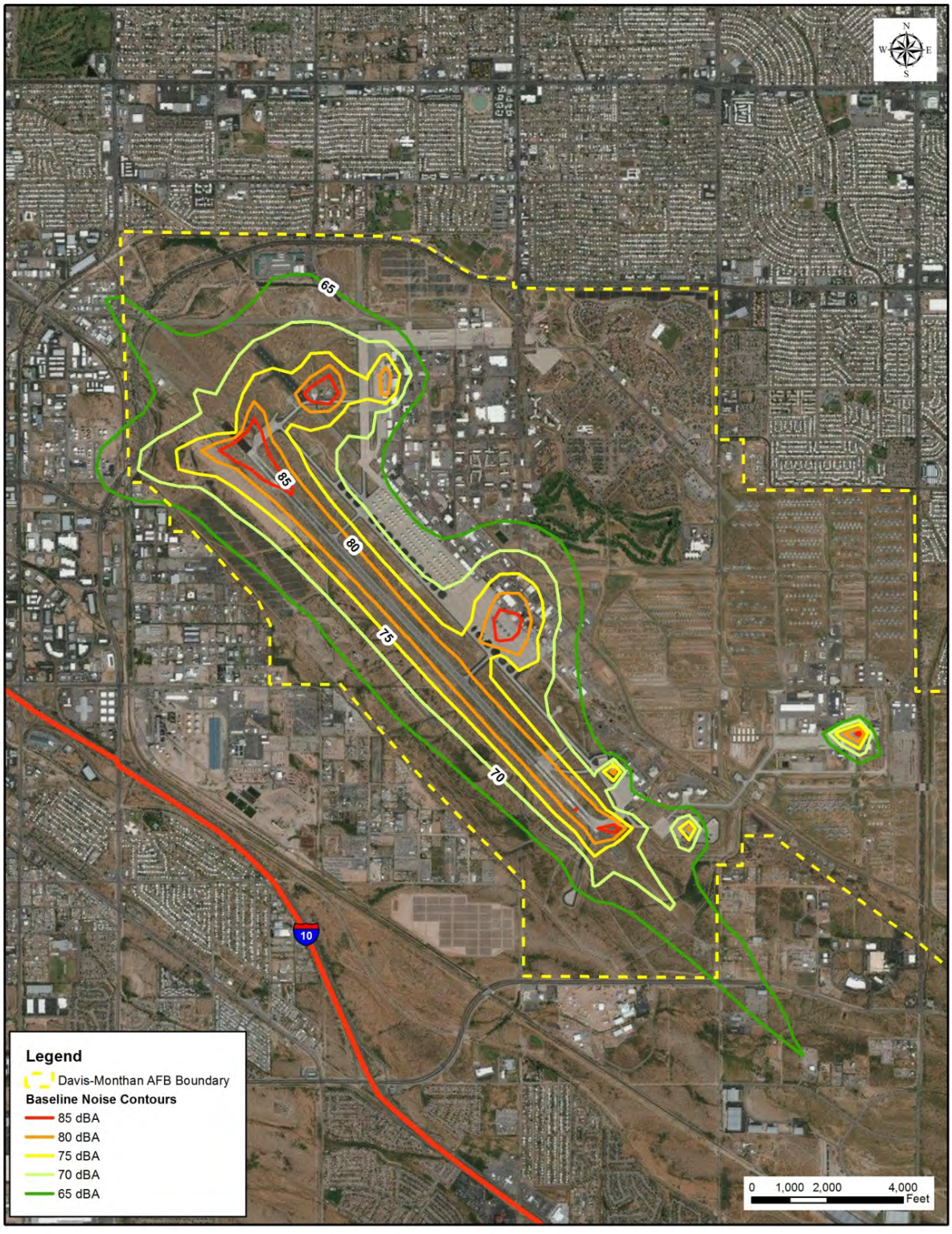



**Figure 3.7-2. Baseline Davis-Monthan AFB Baseline DNL Contours**

In the immediate area surrounding HLZs, the noise is dominated by helicopter takeoff and landing activities. Low altitude overflight from fixed-wing fighters such as A-10s during the PR training could also contribute to the noise around HLZs. Currently, approximately 70 percent of PR training around HLZs takes place within the BMGR ranges with no sensitive land uses in close proximity. Conservatively predicted unit level DNL noise contours around an HLZ are discussed in the Section 3.7.3.

#### 3.7.2.2 U.S. Forest Service or Other Federal Land

Proposed PR training sites controlled by USFS or other federal agencies are primarily HLZs and DZs. The existing noise condition at these sites is similar to that of HLZs and DZs on DoD property described above. However, they would normally support fewer PR training activities and would experience a smaller scale of aircraft operations on an annual average day resulting in lower noise levels in general as compared to HLZs and DZs on DoD property.

#### 3.7.2.3 Other Land (Municipal, City, County, State, or Tribal)

Proposed PR training sites controlled by local, regional, and state agencies are primarily HLZs and DZs. The existing noise condition at these proposed PR training sites is similar to that of HLZs and DZs on DoD property described above. However, they would normally support fewer PR training activities and would experience a smaller scale of aircraft operations on an annual average day resulting in lower noise levels in general as compared to HLZs and DZs on DoD property.

##### 3.7.2.3.1 Activation of Playas Temporary MOA

The existing PR training related aircraft sorties within the Playas Temporary MOA are summarized in Table 3.7-2. Taking into account noise generated from baseline airspace sorties and the environmental background noise level in a rural/wilderness environment (ANSI 2013), the baseline noise condition for the Playas Temporary MOA was predicted using MR_NMAP to be approximately 46 dBA DNL. Noise levels in $L_{dnmr}$ were found to be essentially the same as the DNL.

**Table 3.7-2. Existing Annual Aircraft Sorties in Playas Temporary MOA**

| Aircraft | Sorties |
|---|---|
| A-10 | 96 |
| HC-130 | 36 |
| HH-60* | 50 |
| F-16* | 144 |
| **TOTAL** | **326** |

* Include various model types.
Source: Personal communication with AFCEC and Leidos 2018.

#### 3.7.2.4 Private Property

Proposed PR training sites on private property are all within Arizona. The existing noise condition at these proposed PR training sites is similar to that of HLZs and DZs on DoD property as described above.

### 3.7.3 Environmental Consequences

With implementation of the Proposed Action, the existing unit level for proposed PR training activities would essentially become Medium and Small Force training at existing training sites and proposed new sites as described in Section 2.0 of this EA. Under Large Force training, the biannual Large Force training events around HLZs would be conducted within the Temporary Playas Temporary MOA and/or BMGR and other established MOAs if available.

At a typical LZ outside of MOA around an airfield, HC-130 would typically conduct four landings per week and four crash rescue patterns per sortie. Given the limited PR training at an LZ, aircraft noise impacts are anticipated to be minimal and not warranted for further impact modeling analysis.

The DNL contours at an HLZ were developed based on the information collected from on-site interviews and using the modeling methodologies described previously in Section 3.7.1 in establishing a prototypical annual average day operational scenario around an HLZ where helicopters and low flying jets conduct PR that would have potential noise impacts in the HLZ neighborhood. Detail modeling data are provided in Appendix F of this EA.

#### 3.7.3.1 Proposed Action

**Airfield Noise Conditions.** Under the Proposed Action, a slight decrease in fixed-wing jet sorties and an increase in helicopter sorties were predicted and summarized in Table 3.7-3. The overall net increase of 1,350 PR training sorties is contributed mostly by HH-60 arrival, departure, and pattern flight operations at the base. Since the landing and takeoff noise from a fixed-wing jet flight event is generally much greater than a helicopter event around an airfield, the increase in helicopter noise is somewhat offset by the decrease in fixed-wing jet noise. Furthermore, during an aircraft flight event, a three-dB change, which would barely be perceived, would occur when the noise energy doubles or halves (i.e., the number of operations for a specific aircraft doubles or halves). Comparing with the 57,599 baseline sorties, the net increase of 1,350 PR sorties dominated by helicopters under the Proposed Action represents only an approximately two percent increase over the baseline base-wide sorties. Therefore, the change in DNL levels under the Proposed Action would not be perceptible and the baseline DNL contours as depicted in Figure 3.7-1 and shown previously in Section 3.7.2.1, would essentially remain the same resulting in minimal noise impacts at Davis-Monthan AFB. For the same reason, potential noise impacts to other airfields with potential to be involved in the PR training would be negligible.

**Table 3.7-3. Proposed Net Change in Annual PR Sorties at Davis-Monthan AFB Compared with No-Action Alternative**

| Aircraft | Change in Sorties |
|---|---|
| AV-8 | 80 |
| A-10 | -670 |
| EC-130H | 80 |
| HC-130 | -76 |

| Table 3.7-3. Proposed Net Change in Annual PR Sorties at Davis-Monthan AFB Compared with No-Action Alternative | |
|---|---|
| **Aircraft** | **Change in Sorties** |
| F-15 | 204 |
| F-16 | |
| F-18 | |
| F-22 | |
| F-35 | |
| HH-60 | 992 |
| AH-1 | 80 |
| UH-1 | 160 |
| CH-47 | 120 |
| CH-53 | 80 |
| CV/MV-22 | 160 |
| KC-135 | 40 |
| MQ-1 or MQ-9 | 40 |
| MC-12 | 40 |
| F-21 (Columbian Fighter) | 20 |
| **TOTAL** | **1,646** |
| Source: USAF 2018-2019. | |

**HLZ Noise Conditions.** Under Large Force training, two HLZs within Playas Temporary MOA or BMGR would be selected and the flight operations during one event would involve:

- 10 events per two weeks and twice per year.
- Two HLZs that are separated by a distance of approximately 3 nautical miles during the same event.
- 20 aircraft at a maximum in a two-hour event.
- 80 total annual sorties for fighter jets that are considered extremely conservative since not all fighter jets could participate at the same time for all events given the limited de-conflicted airspace within Established MOAs or Temporary MOAs.
- F-15, F-16, F-18, F-35 that would fly within 19,000–21,000 feet MSL space as the base MSL is 4,000 feet.
- Escorting training for F-16, A-10, and AV-8 that typically occurs within a band of 10,000–17,000 feet MSL.
- A-10 that conducts average seven low-altitude overflight strike per sortie regardless the training is a two- or four-hour event.
- C-130 air drop operations typically occurring twice per sortie above 3,000 feet AGL.
- Helicopters that all fly within 0–1,000 feet AGL.
- Helicopter air refueling training that would typically take place outside the established training MOAs and mostly along routes such as AR-135V and AR-136V currently available.

- HC-130 refueling helicopters at no lower than 1,000 feet AGL and KC-135 refueling jets at above 10,000 feet AGL.
- 20 percent training at acoustic nighttime hours after 2200.
- 10 patterns per helicopter sortie with five overhead circles approximately 500 meters away from the HLZ and five drops or pickups similar to touch & go at each HLZ.
- Helicopter hovering that would include five minutes per Insertion Extraction method with a minimum of two methods training per sortie within an HLZ. These training methods include Air Land, Hoist, Fast Rope, Rope Ladder, and Rappel.
- Random flying direction pending on prevailing wind condition.

Potential PR training noise impacts around an HLZ are anticipated to be dominated by low altitude flying aircraft. At a typical HLZ, these low altitude flight operations on a per sortie basis from either fixed-wing or rotary-wing aircraft remain essentially the same under each scale of training, as summarized in Table 3.7-4.

**Table 3.7-4. Low Altitude Flight Operations per Sortie around Typical HLZ**

| Aircraft | Overflight Circles | Touch and Go | Helicopter Hovering (minute) | Air Dropping or Overfly |
|---|---|---|---|---|
| AV-8 | – | – | – | 7 |
| A-10 | – | – | – | 7 |
| EC-130H | – | – | – | 2 |
| HC-130 | – | – | – | 2 |
| F-16 | – | – | – | 7 |
| HH-60 | 5 | 5 | 15 | |
| AH-1 | 5 | 5 | 15 | |
| UH-1 | 5 | 5 | 15 | |
| CH-47 | 5 | 5 | 15 | |
| CH-53 | 5 | 5 | 15 | |
| CV/MV-22 | 5 | 5 | 15 | |

Source: USAF 2018-2019.

To predict the annual average DNL contours around an HLZ, total annual PR training sorties over the four state training sites were distributed geographically in the same way as previously described in Section 3.2 of this EA. In the modeling analysis, it is conservatively assumed that, at a given year, all distributed sorties could occur at one HLZ site in that state except for Arizona where approximately 80 percent of total PR trainings would be conducted over majority of training sites. Among these training events, approximately 70 percent of them are anticipated to occur within the BMGR based on the current training assignments. Therefore, the annual sorties at an HLZ outside of the BMGR could involve a maximum of 24 percent of annual total sorties (30 percent of 80 percent total combined PR sorties). However, given the large number of existing and proposed PR training sites, the annual PR training events are anticipated to spread over many sites as compared to 24 percent of total sorties occurring at one HLZ in a given year.

Therefore, the DNL contours predicted at an HLZ in Arizona reflect presence of a maximum of five percent of total annual sorties as summarized in Table 3.7-5.

The predicted typical annual average day worst-case DNL contours for Large Force training at the HLZ sites within the Playas Temporary MOA and BMGR are shown in Figure 3.7-3 and no sensitive land uses would be within the 65-dBA contour. Therefore, Large Force training would result in a less than significant noise impact.

**Table 3.7-5. Annual PR Sorties Distribution**

| Aircraft | Biannual Large Force Sorties at Playas Temporary MOA or BMGR HLZs | Medium and Small Force Annual Sorties | Modeled Medium and Small Force Sorties in Arizona excluding Operations at BMGR (5 percent of Total) | Modeled Medium and Small Force Sorties in New Mexico (10 percent of Total) | Modeled Medium and Small Force Sorties in California or Nevada (5 percent of Total) |
|---|---|---|---|---|---|
| AV-8 | 80 | – | – | – | – |
| A-10 | 160 | 1,320 | 66 | 132 | 66 |
| EC-130H | 80 | – | – | – | – |
| HC-130 | 80 | 580 | 29 | 58 | 29 |
| F-15 | 80 | – | – | – | – |
| F-16 | 80 | – | – | – | – |
| F-18 | 40 | – | – | – | – |
| F-22 | 80 | – | – | – | – |
| F-35 | 80 | – | – | – | – |
| HH-60 | 80 | 2,060 | 103 | 206 | 103 |
| AH-1 | 80 | 40 | 2 | 4 | 2 |
| UH-1 | 80 | 40 | 2 | 4 | 2 |
| CH-47 | 80 | 40 | 2 | 4 | 2 |
| CH-53 | 80 | – | – | – | – |
| CV/MV-22 | 80 | 80 | 4 | 8 | 4 |
| KC-135 | 40 | – | – | – | – |
| MQ-1 or MQ-9 | 40 | – | – | – | – |
| MC-12 | 40 | – | – | – | – |
| F-21 | 20 | – | – | – | – |
| **TOTAL** | **1,380** | **4,160** | **208** | **416** | **208** |

Source: USAF 2018-2019; Appendix F of this EA.

For the remaining Medium and Small Force training events, the predicted conservative DNL contours around a typical HLZ within four states indicate that sensitive land uses in close proximity of several HLZs, particularly in urban training areas, could be potentially within the 65 dBA DNL and thus considered potentially incompatible. These proposed PR training sites predicted within Arizona, New Mexico, and Nevada are depicted below in Figures 3.7-4 through 3.7-6, respectively.

It should be noted that the modeling results presented in this EA are considered extremely conservative because five or ten percent of total annual sorties were assumed to occur at one HLZ alone in a given year. Given the short duration of a PR training event at a specific site and

the likely small number of training events each year at these more urbanized HLZs where sensitive land uses are in close proximity, the potential noise impacts at HLZs would be less than significant.

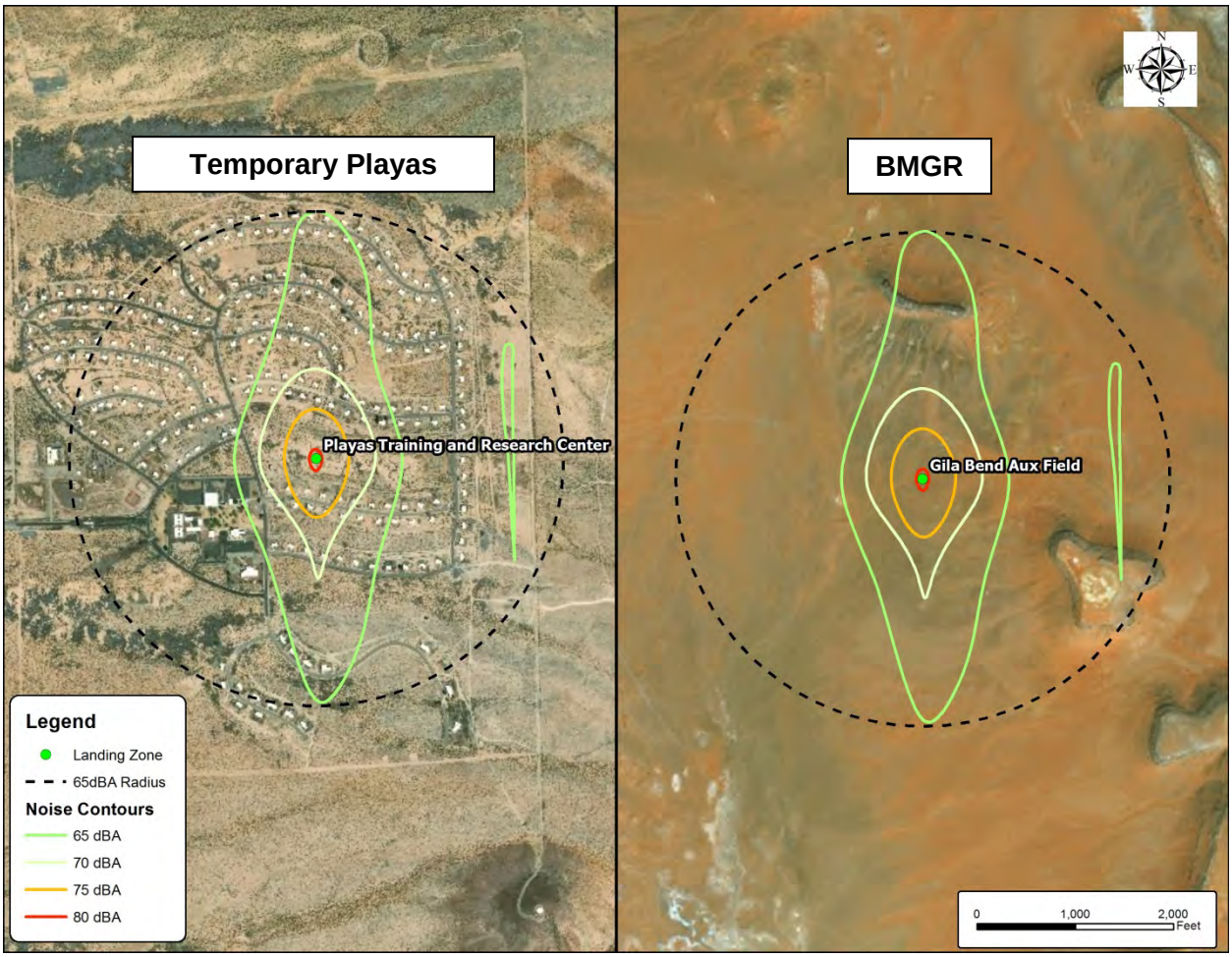



**Figure 3.7-3. DNL Contours at Proposed HLZ PR Training Sites Located at Playas Temporary MOA and BMGR – Large Force Training**

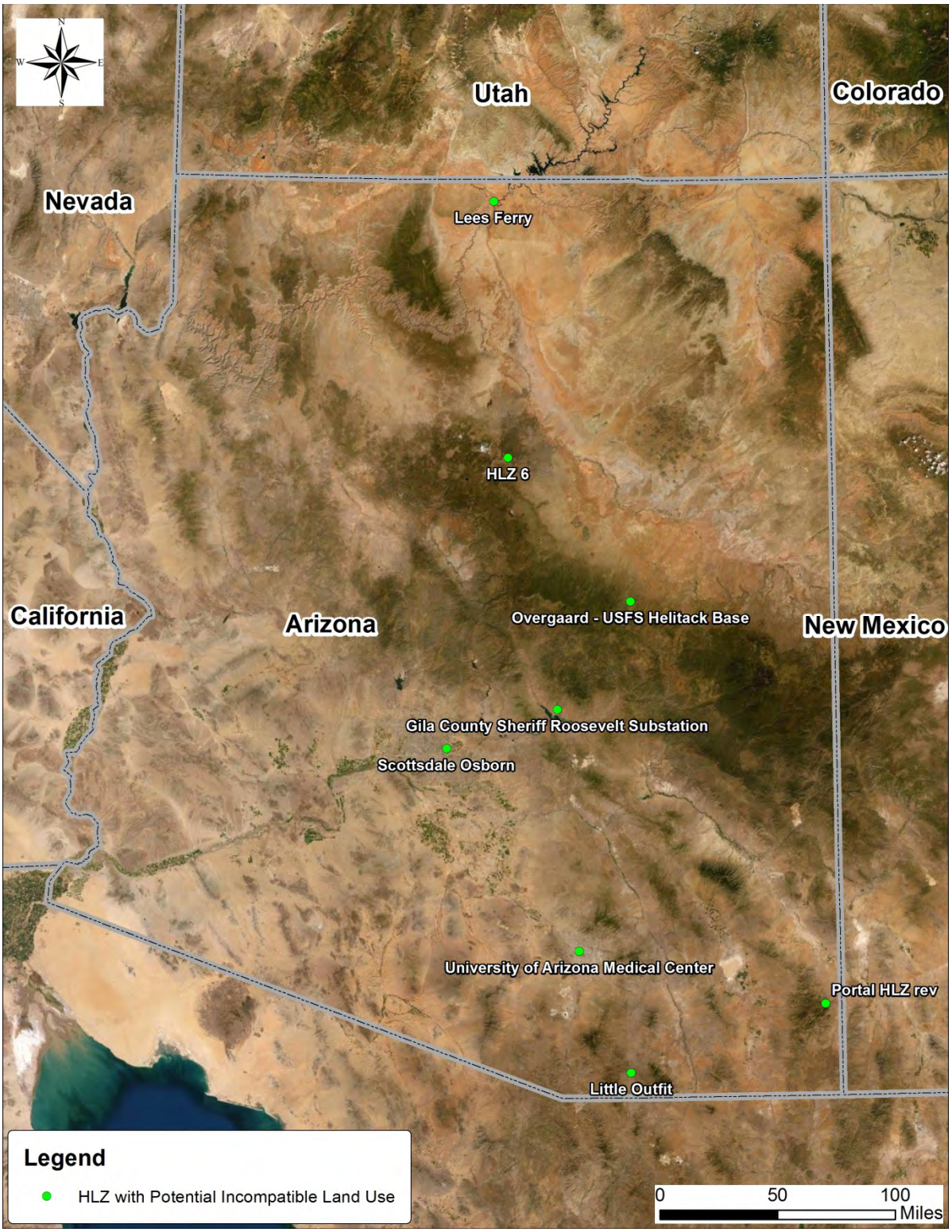



**Figure 3.7-4. Proposed HLZ PR Training Sites in Arizona with Predicted Incompatible Sensitive Receptors — Medium and Small Force Training (5% of Total Sorties)**




**Figure 3.7-5. Proposed HLZ PR Training Sites in New Mexico with Predicted Incompatible Sensitive Receptors– Medium and Small Force Training (10% of Total Sorties)**

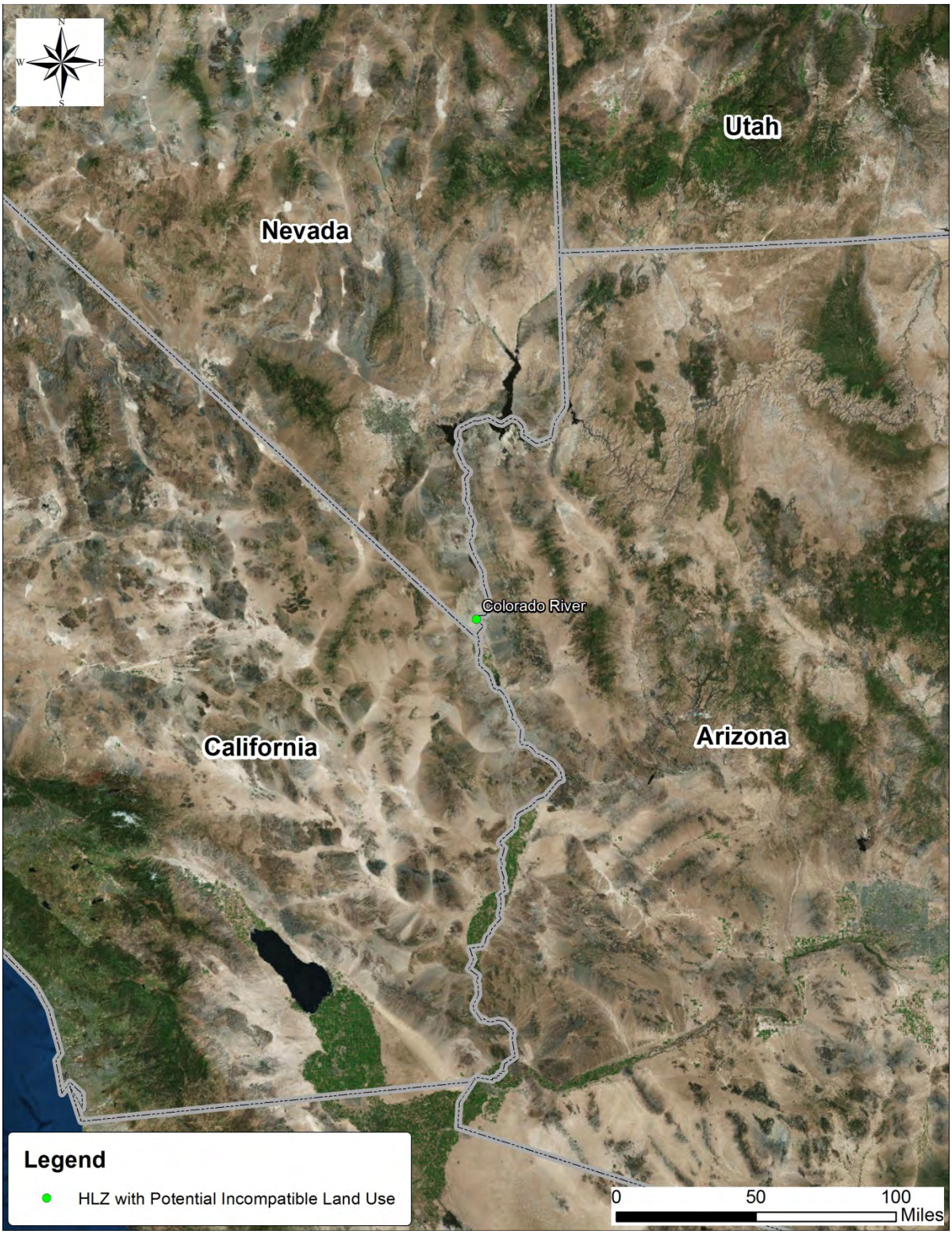



**Figure 3.7-6 Proposed HLZ PR Training Site in Nevada with Predicted Incompatible Sensitive Receptors – Medium and Small Force Training (5% of Total Sorties)**

#### 3.7.3.1.1 Department of Defense Property

Based on the conservative noise modeling results, no potential incompatible land uses would result from proposed PR training activities at any proposed HLZ PR training sites on DoD property. Therefore, the Proposed Action would not result in a noise impact from proposed PR training activities on DoD property.

#### 3.7.3.1.2 U.S. Forest Service or Other Federal Land

No incompatible land uses would result from proposed PR training activities at any proposed HLZ PR training sites on USFS or other federal land except for five sites under very conservative training event distribution, as shown in Table 3.7-6. USAF would limit the number of events at these proposed HLZ PR training sites during annual scheduling to avoid potential impacts. Therefore, the Proposed Action would result in a less than significant noise impact for proposed activities on USFS or other federal land.

**Table 3.7-6. Proposed HLZ PR Training Sites on USFS or Other Federal Land with Potential Incompatible Land Use**

| State | Proposed HLZ PR Training Site |
|---|---|
| AZ | Lees Ferry |
| AZ | Overgaard – USFS Helitack Base |
| AZ | Portal HLZ |
| NM | Glenwood Ranger Station |
| NM | Reserve Ranger Station |

HLZ – Helicopter Landing Zone
PR – Personnel Recovery
USFS – U.S. Forest Service
See Appendix F for noise modeling information.

#### 3.7.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

No incompatible land uses would result from proposed PR training activities at any proposed HLZ PR training sites on other land except for two sites in Arizona, one site in Nevada, and one site in New Mexico with a very conservative training event distribution, as shown in Table 3.7-7. USAF would limit the number of events at these proposed HLZ PR training sites during annual scheduling to avoid potential impacts. Therefore, the Proposed Action would result in a less than significant noise impact for proposed activities on other land.

**Table 3.7-7. Proposed HLZ PR Training Sites on Other Land with Potential Incompatible Land Use**

| State | Proposed HLZ PR Training Site |
|---|---|
| AZ | Gila County Sheriff Roosevelt Substation |
| AZ | University of Arizona Medical Center |
| NV | Colorado River |
| NM | Catron County Fairgrounds |

HLZ – Helicopter Landing Zone
PR – Personnel Recovery
See Appendix F for noise modeling information.

#### 3.7.3.1.3.1 Activation of Playas Temporary MOA

The potential noise impacts from proposed Large Force sorties within the Playas Temporary MOA summarized in Table 2.3-1 were modeled using the same model, MR_NMAP, implemented for the baseline condition. The noise analysis was conducted to predict both DNL and $L_{dnmr}$ noise levels in order to be compliant with USAF and FAA requirements. The modeling results indicate that the Proposed Action would result in 50 dBA DNL, which was a 4 dBA increase over the baseline condition of 46 dBA DNL. The modeling results for $L_{dnmr}$ were the same as the DNL levels. A 4 dBA change between a baseline condition of 45 dBA to <60 dBA does not meet the noise significance threshold. Therefore, the increase in aircraft operations under the Proposed Action associated with the Playas Temporary MOA would result in a less than significant noise impact.

#### 3.7.3.1.4 Private Property

No incompatible land uses would result from proposed PR training activities at any proposed HLZ PR training sites on private properties except for three sites with a very conservative training event distribution, as shown in Table 3.7-8. USAF would limit the number of events at these proposed HLZ PR training sites during annual scheduling to avoid potential impacts. Therefore, the Proposed Action would result in a less than significant noise impact for proposed activities on private property.

**Table 3.7-8. Proposed HLZ PR Training Sites on Private Property with Potential Incompatible Land Use**

| State | Proposed HLZ PR Training Site |
|---|---|
| AZ | HLZ 6 |
| AZ | Little Outfit |
| AZ | Scottsdale Osborn |

HLZ – Helicopter Landing Zone
PR – Personnel Recovery
See Appendix F for noise modeling information.

### 3.7.3.2 No-Action Alternative

Under the No-Action Alternative, PR forces would continue existing PR training activities (described previously in Section 3.7.1 of this EA) which have been approved under prior NEPA documents, and would comply with required minimization and operational constraints identified in these documents. Given this, the No-Action Alternative would not result in a significant noise impact at either airfields or LZ/DZ/HLZ training sites.

## 3.8 SAFETY

### 3.8.1 Definition of Resource

A safe environment is one in which there is no, or there is an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses the safety of all personnel involved in PR training activities and the general public during training events.

Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of

exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, rural training events, and the creation of extremely noisy environments. The proper operation, maintenance, fueling, and repair of vehicles, aircraft, and equipment carry important safety implications. Extremely noisy environments (e.g., involving helicopters) can also mask verbal or mechanical warning signals such as sirens, bells, or horns. An additional safety concern with regard to military training flights is the potential for aircraft mishaps (i.e., crashes), including those caused by adverse weather events and bird-aircraft strikes. The safe and efficient use of available navigable airspace to prevent aircraft mishaps is discussed in Section 3.1 of this EA.

AFI 91-301, Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program (USAF 1996), implements AFPD 91-3, Occupational Safety and Health, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. Also, AFI 91-202, USAF Mishap Prevention Program, establishes mishap prevention program requirements (including Bird/Wildlife Aircraft Strike Hazards) (USAF 2018e). In addition, AFI 91-203, Air Force Occupational Safety, Fire, and Health Standards, implements AFPD 91-2, Safety Programs, along with parts of Occupational Safety and Health Administration (OSHA) 29 CFR; it also includes additional requirements not addressed by the OSHA standard (USAF 2018b). AFI 91-203 compliments AFI 91-202 and assigns responsibilities to individuals or functions to help Commanders manage their safety and health program, ensuring they comply with OSHA and USAF guidance. These AFIs ensure all USAF workplaces meet federal safety and health requirements and applies to all USAF activities.

Also, AFI 13-217, Air Force Special Operations Command, Space, Missile, Command, and Control – Drop Zone and Landing Zone Operations, implements AFPD 13-2, Air Traffic Control, Airspace, Airfield and Range Management, which prescribes the procedures, techniques, and requirements for operating HLZs, DZs, and LZs, including standoff distances to ensure safety to the general public (USAF 2014a).

### 3.8.2 Affected Environment

The ROI for safety includes the safety of all personnel involved in PR training activities and the general public during proposed PR training events.

#### 3.8.2.1 Department of Defense Property

The current activities on DoD property include a wide range of PR training activities (e.g., HLZs, DZs, LZs, FARPs, MOUTs, established roads and trails for mounted movements/blackout driving, firing ranges, camping/assembly areas, technical rope work areas, and WTAs) conducted by different units at different sites, each of which have their own safety measures in place. As with other standard operating procedures, operators follow specific safety guidance for each PR training site/PR training activity. Also, AFIs 91-202, 91-203, and 91-301 apply to all personnel involved in the proposed PR training activities on DoD property (USAF 1996, 2018b, 2018e). In addition, AFI 13-217 apply related to standoff distances during HLZ, DZ, and LZ use to ensure safety to personnel and the general public (USAF 2014a). In addition, the respective military installation's land use controls and safety regulations, plans, policies, programs and procedures apply (such as WSMR Range Regulation 200-2 [WSMR Directorate of Public Works 2013]) to ensure safety of personnel.

#### 3.8.2.2 U.S. Forest Service or Other Federal Land

The current activities on USFS or other federal land include a wide range of PR training activities (e.g., HLZs, DZs, LZs, FARP, MOUT, established roads and trails for mounted movements/blackout driving, camping/assembly areas, technical rope work areas, and WTAs) conducted by different units at different sites, each of which have their own safety measures in place. As with other standard operating procedures, operators follow specific safety guidance for each PR training site/PR training activity. Most of these PR training sites are located in National Forests along with two BLM sites and an NPS site that are not closed off to the public; thus, these sites are used by the public during the PR training activities. AFIs 91-202, 91-203, and 91-301 apply to all personnel involved in the PR training activities on USFS or other federal land (USAF 1996, 2018b, 2018e). Also, AFI 13-217 applies related to standoff distances during HLZ, DZ, and LZ use to ensure safety to personnel and the general public (USAF 2014a). In addition, all rules and regulations provided in Special Use permits are followed when training in these areas. Additionally, it should be noted that roads used for the blackout driving activities are temporarily closed to the public to prevent safety mishaps.

#### 3.8.2.3 Other Land (Municipal, City, County, State, or Tribal)

The current activities on other land (municipal, city, county, state, or tribal) include a wide range of PR training activities (e.g., HLZs, DZs, LZs, FARPs, MOUTs, a technical rope work area, and WTAs) conducted by different units at different sites, each of which have their own safety measures in place. As with other standard operating procedures, operators follow specific safety guidance for each PR training site/PR training activity. Many of these PR training sites are located in areas that are not closed off to the public, such as airports, recreational facilities and parks; thus, these sites are used by the public during the PR training activities. AFIs 91-202, 91-203, and 91-301 apply to all personnel involved in the PR training activities on other land (USAF 1996, 2018b, 2018e). Also, AFI 13-217 applies related to standoff distances during HLZ, DZ, and LZ use to ensure safety to personnel and the general public (USAF 2014a). In addition, all rules and regulations provided in any Special Use permits along with local, state, and federal safety regulations are followed when training in these areas.

##### 3.8.2.3.1 Activation of Playas Temporary MOA

The activation of the Playas Temporary MOA has been conducted by Red Flag-Rescue which has its own safety measures in place. As with other standard operating procedures, Red Flag-Rescue follows specific safety guidance for this activity and FAA requirements. The Playas Temporary MOA has been used during a specified timeframe (up to 45 days, but usually two to three weeks, over a period of four years) with specific times of use announced via Notice to Airmen (a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that can affect the safety of the flight). Also, there are numerous safety and operational policies that are followed by all users of the Playas Training and Research Center. AFIs 91-202, 91-203, and 91-301 apply to all personnel involved in this training activity (USAF 1996, 2018b, 2018e). In addition, AFI 13-217 applies related to standoff distances during HLZ, DZ, and LZ use to ensure safety to personnel and the general public (USAF 2014a). Additionally, all local, state, and federal safety regulations are followed when training in this area along with all terms and agreements prepared between the USAF and the New Mexico Tech.

#### 3.8.2.4 Private Property

The current activities on private property include a wide range of PR training activities (e.g., HLZs, DZs, LZ, MOUT, firing ranges, camping/assembly areas, technical rope work areas, and a WTA) conducted by different units at different sites, each of which have their own safety measures in place. As with other standard operating procedures, operators follow specific safety guidance for each PR training site/PR training activity. Some of these PR training sites are located at airports, an airpark, and a guest ranch that are not closed off to the public; thus, these sites are used by the public during the PR training activities. Also, one of the PR training sites is located at the Three Points Shooting Range and near the Marana Shooting Club, which are also open to the public. There are numerous safety and operational policies that are followed by all users of this range. AFIs 91-202, 91-203, and 91-301 also apply to all personnel involved in the PR training activities on private property (USAF 1996, 2018b, 2018e). Also, AFI 13-217 applies related to standoff distances during HLZ, DZ, and LZ use to ensure safety to personnel and the general public (USAF 2014a). In addition, all terms and agreements prepared between the USAF and the property land owner are followed when training in these areas.

### 3.8.3 Environmental Consequences

The Proposed Action would result in a significant impact with respect to health and safety if the following were to occur:

- Substantially increased risks associated with the safety of personnel involved in PR training activities, or the local community.
- Introduction of a new health or safety risk for which USAF is not prepared or does not have adequate management and response plans in place.

#### 3.8.3.1 Proposed Action

##### 3.8.3.1.1 Department of Defense Property

Proposed PR activities at BMGR would not be increased beyond current levels; also, no off-road driving would occur at BMGR. However, given PR training activities would be expanded at other sites, PR personnel could be exposed to increased safety risks associated with mechanical, health, and biological hazards from proposed PR training activities (e.g., ground, flight, and water operations). These PR training activities would be conducted by different units at different sites; however, each of these units have their own safety measures in place. Also, operators would follow specific safety guidance for each PR training site/PR training activity as with other standard operating procedures, which would minimize safety risks resulting from implementation of the Proposed Action. In addition, safety risks would be minimized through implementation of AFIs 91-202, 91-203, 91-301, and 13-217 (USAF 1996, 2014a, 2018b, 2018e). Also, it should be noted no off-road driving would occur at PR training sites located at BMGR.

Regarding the San Clemente Island and Leon PR training sites, it should be noted that the proposed activities at these sites (i.e., G2, G3, F4, F6, F7, F8, F9, W1, and W2) were previously cleared under NEPA in the Navy's 2008 SOCAL Range Complex EIS/OEIS and the 2013 and 2018 HSTT EIS/OEISs, including an analysis of health and safety (Navy 2008, 2013, 2018b). These environmental documents concluded impacts would be less than significant and identified operational constraints (e.g., compliance with the Navy's general instructions along with their

training activity planning and review processes). The Proposed Action would also comply with the same operational constraints.

In addition, regarding the WSMR training sites, it should be noted that the proposed PR activities at these sites (i.e., G1, G2, G3, G8, F4, and F8) were previously cleared under NEPA in the U.S. Army's 2009 FEIS for Development and Implementation of Range-Wide Mission and Major Capabilities (White Sands Test Center Operations Office 2009), 2011 Final EA for Network Integration Evaluation (White Sands Test Center Operations Office 2011), and the 2015-2019 INCRMP EA (U.S. Army Garrison White Sands 2015). These environmental documents concluded impacts would be less than significant and identified operational constraints (e.g., compliance with appropriate safety standard operating procedures and management practices as required by WSMR Safety as well as compliance with WSMR Range Regulation 200-2 [WSMR Directorate of Public Works]). The Proposed Action would also comply with the same operational constraints.

Also, the Proposed Action would ultimately result in PR personnel that are better prepared for deployment and PR activities, which would result in a long-term, beneficial impact on safety (see Table A-1 provided in Appendix A of this EA for site-specific training activities occurring on DoD property).

Therefore, a less than significant impact related to health and safety would occur at the proposed PR training sites on DoD property.

#### 3.8.3.1.2 U.S. Forest Service or Other Federal Land

PR personnel could be exposed to increased safety risks associated with mechanical, health, and biological hazards from proposed PR training activities (e.g., ground, flight, and water operations) occurring on USFS or other federal land. In addition, most of these proposed PR training sites are located in National Forests along with an NPS site that are not closed off to the public; thus, these sites could be used by the public during the proposed PR training activities, which could potentially expose the public to safety risks. These PR training activities would be conducted by different units at different sites; however, each of these units have their own safety measures in place. Also, operators would follow specific safety guidance for each PR training site/PR training activity as with other standard operating procedures, which would minimize safety risks resulting from implementation of the Proposed Action. In addition, safety risks would be minimized through implementation of AFIs 91-301, 91-202, 91-203, and 13-217 (USAF 1996, 2014a, 2018b, 2018e). Additionally, all rules and regulations provided in Special Use permits would be followed when training in these areas, which would minimize safety risks. The USAF would also comply with the safety conditions requested by the National Forests, previously discussed in Section 3.5.3.1.2 of this EA (see Appendix H for the National Forests' comment letters), which would further minimize safety risks. Also, it should be noted that roads used for the blackout driving activities would be temporarily closed to the public to prevent safety mishaps.

The Proposed Action would ultimately result in PR personnel that are better prepared for deployment and PR activities, which would result in a long-term, beneficial impact on safety (see Table A-1 provided in Appendix A of this EA for site-specific training activities occurring on USFS or other federal land).

Therefore, a less than significant impact related to health and safety would occur at the proposed PR training sites on USFS or other federal land.

#### 3.8.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

PR personnel could be exposed to increased safety risks associated with mechanical, health, and biological hazards from proposed PR training activities (e.g., ground, flight, and water operations) occurring on other land (municipal, city, county, state, or tribal). In addition, many of these proposed PR training sites are located in areas that are not closed off to the public, such as airports, recreational facilities, and parks; thus, these sites could be used by the public during the proposed PR training activities, which could potentially expose the public to safety risks. These PR training activities would be conducted by different units at different sites; however, each of these units have their own safety measures in place. Also, operators would follow specific safety guidance for each PR training site/PR training activity as with other standard operating procedures, which would minimize safety risks resulting from implementation of the Proposed Action. In addition, safety risks would be minimized through implementation of AFIs 91-301, 91-202, 91-203, and 13-217 (USAF 1996, 2014a, 2018b, 2018e). Additionally, all rules and regulations provided in any Special Use permits along with local, state, and federal safety regulations would be followed when training in these areas, which would minimize safety risks.

The Proposed Action would ultimately result in PR personnel that are better prepared for deployment and PR activities, which would result in a long-term, beneficial impact on safety (see Table A-1 provided in Appendix A of this EA for site-specific training activities occurring on other land).

Therefore, a less than significant impact related to health and safety would occur at the proposed PR training sites on other land.

##### 3.8.3.1.3.1 Activation of Playas Temporary MOA

PR personnel could be exposed to increased safety risks associated with mechanical, health, and biological hazards from proposed activation of the Playas Temporary MOA. Also, the Playas Training and Research Center is open to site visits by the public; thus, the Playas Training and Research Center PR training site could be used by the public during the proposed PR training activities, which could potentially expose the public to safety risks. However, there are numerous safety and operational policies that must be followed by all users of the Playas Training and Research Center, which would minimize safety risks. The activation of the Playas Temporary MOA would be conducted by Red Flag-Rescue which has its own safety measures in place. Red Flag-Rescue would follow specific safety guidance for this activity and FAA requirements as with other standard operating procedures. The Playas Temporary MOA would only be used during a specified timeframe (up to 45 days, but usually two to three weeks, over a period of four years) with specific times of use announced via Notice to Airmen (a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of the flight). AFIs 91-301, 91-202, 91-203, and 13-217 would also apply to all personnel involved in this proposed PR training activity, which would minimize safety risks (USAF 1996, 2014a, 2018b, 2018e). In addition, all terms and agreements prepared between the USAF and the New Mexico Tech would be followed when training in these areas along with compliance with all local, state, and federal safety regulations, which would also minimize safety risks.

Therefore, a less than significant impact related to health and safety would occur related to the activation of the Playas Temporary MOA.

#### 3.8.3.1.4 Private Property

PR personnel could be exposed to increased safety risks associated with mechanical, health, and biological hazards from proposed PR training activities (e.g., ground flight, and water operations) occurring on private property. Some of these proposed PR training sites are located at airports, an airpark, and a guest ranch that are not closed off to the public; thus, these sites could be used by the public during the proposed PR training activities, which could potentially expose the public to safety risks. Also, one of the proposed PR training sites would be located at the Three Points Shooting Range and another near the Marana Shooting Club, which are also open to the public. These PR training activities would be conducted by different units at different sites; however, each of these units have their own safety measures in place. Also, operators would follow specific safety guidance for each PR training site/PR training activity as with other standard operating procedures, which would minimize safety risks resulting from implementation of the Proposed Action. In addition, there are numerous safety and operational policies that must be followed by all users of the shooting ranges, which would minimize safety risks. Additionally, AFIs 91-301, 91-202, 91-203, and 13-217 would also apply to all personnel involved in the proposed PR training activities on private property, which would minimize safety risks (USAF 1996, 2014a, 2018b, 2018e). All terms and agreements prepared between the USAF and the property land owner would also be followed when training in these areas in conjunction with compliance with all local, state, and federal safety regulations, which would minimize safety risks.

The Proposed Action would ultimately result in PR personnel that are better prepared for deployment and PR activities, which would result in a long-term, beneficial impact on safety (see Table A-1 provided in Appendix A of this EA for site-specific training activities occurring on private property).

Therefore, a less than significant impact related to health and safety would occur at the proposed PR training sites on private property.

### 3.8.3.2 No-Action Alternative

Under the No-Action Alternative, PR forces would continue existing PR training activities approved under prior NEPA documents and comply with required minimization and operational constraints identified in these documents. The existing PR training activities would continue to comply with AFIs 91-202, 91-203, 91-301, and13-217 (USAF 1996, 2014a, 2018b, 2018e), as well as all local, state, and federal regulations along with existing permit and agreement requirements. There would be no increase in suitable training site access and no expansion of training activities at some sites; thus, no increase to safety risks would occur. Given this, the No-Action Alternative would not result in a significant impact related to health and safety.

## 3.9 SOCIOECONOMICS

### 3.9.1 Definition of Resource

Socioeconomics comprises the basic attributes and resources associated with the entire human environment in the ROI, particularly population and economic activity. Socioeconomic impacts

would be considered significant if the Proposed Action would result in a substantial shift in population trends or notably affect regional employment, earnings, or community resources.

Under the Proposed Action, there would be no increase in personnel due to training activities and no creation or loss of jobs in the ROI. Therefore, the topics of employment, housing, population, or public services are not considered in the following socioeconomic analysis. This socioeconomic analysis also does not consider changes in private property values due to noise because there would be no significant noise impacts, as stated in Section 3.7, and thus increased noise from the Proposed Action would not be anticipated to significantly affect property values.

For this Proposed Action, potential impacts to noise conditions or visual resources as a result of the PR training activities would potentially result in a decrease of visitors at nearby recreation sites. Some training activities located at recreation sites would temporarily prevent the public from using these recreation sites. This would result in a temporary loss of revenue resulting in a socioeconomic impact. Therefore, the socioeconomic analysis included herein focuses on the economic impact from changes to recreation use due to the Proposed Action.

### 3.9.2 Affected Environment

The socioeconomic analysis for the Proposed Action focuses on recreation sites, including where a fee is required to use that particular site or participate in an activity at that site or a fee-based permit is required to use a site, use the area where the site is located, or participate in a certain activity at the site or area. There are also income-generating recreation uses occurring at or near some proposed PR training sites, such as special events (fairs, tournaments, races, etc.), guided trips/activities, and private overnight accommodations. The socioeconomic impact of the Proposed Action is also evaluated for these income-generating recreation uses.

The primary ROI for the socioeconomic analysis includes fee-based public recreation sites and income-generating recreation-related uses within two miles of the proposed PR training sites (unless the proposed PR training activity would only occur within a certain building such as a medical center or law enforcement building). Determination of the presence of these sites and uses was derived from review of on-line maps of recreation sites from USFS and maps of other recreation areas and sites, as well as review of proposed PR training sites within Google Earth.

The following socioeconomic analysis does not discuss recreation impacts such as reductions in recreation use; displacement of visitors to other locations; or changes to recreation opportunities, experiences, and settings that would occur at areas where use is not fee-based. Such recreation impacts are briefly discussed in the analysis below for fee-based recreation sites and income-generating recreation uses to determine the potential for a socioeconomic impact.

#### 3.9.2.1 Department of Defense Property

DoD properties are generally not open for public recreation use or recreation-related business use. Therefore, there is no anticipated fee-based or income-generating recreation use of DoD properties, except for the Titan Missile Museum, which is open for public use and is a fee-based site (Titan Missile Museum 2019).

#### 3.9.2.2 U.S. Forest Service or Other Federal Land

Many of the proposed PR training sites on USFS or other federal lands are not within 2 miles of fee-based recreation sites or other income-generating recreation uses (lodges, etc.). There are

some proposed PR training sites, such as KP Circular, KP Tank, Mogollon Rim, and Pittman Valley that are near recreation sites, but these recreation sites are free to use (e.g., dispersed camping or picnic areas that do not require a fee or fee-based permit to use). There are three proposed PR training sites (Longview-USFS Helitack Base, Portal Cabin and CCC Bunkhouse, and Spring Valley Cabin) where training activities would occur at an existing recreation facility that provides fee-based overnight accommodation (i.e., cabin, house, bunkhouse, etc.) (USFS 2019b, 2019h, 2019i, 2019j, 2019l). At these three proposed PR training sites, the USAF would pay the existing fees for rental or use of the facility and there would be no fee revenue lost due to training activities. Therefore, these proposed PR training sites are not discussed further in Section 3.9. 3 of this EA, except for the Portal Cabin and CCC Bunkhouse which is also within 2 miles of an income-generating recreation use. Of the 44 proposed PR training sites on USFS or other federal lands, a total of 14 proposed PR training sites are within 2 miles of fee-based recreation sites or income-generating recreation uses. Table 3.9-1 lists the proposed PR training sites on USFS or other federal lands that are within 2 miles of fee-based recreation sites or income-generating recreation uses and describes the recreation sites and uses near these proposed PR training sites. Two of the three recreation sites where the USAF would pay the existing rental fees are not included in the table below.

**Table 3.9-1. Fee-Based Recreation Sites and Income-Generating Recreation Uses within 2 Miles of Proposed PR Training Sites on USFS or Other Federal Lands**

| Proposed PR Training Site | Location | Controlling Agency | Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles |
|---|---|---|---|
| Grapevine HLZ/DZ | Lake Roosevelt (Arizona) | Tonto National Forest | Located within 1 mile of Grapevine Bay and Grapevine Group Campground on Lake Roosevelt. The Grapevine Bay portion of Roosevelt Lake requires a day use fee per vehicle and watercraft and is open year-round (USFS 2019r). Grapevine Group Campground requires a per night fee for campground use and is open year-round (USFS 2019s). |
| Hannagan Meadow – USFS Helitack Base | Alpine (Arizona) | Apache-Sitgreaves National Forest | Located within 0.5 mile of Hannagan Meadow Lodge, a privately-owned fee-based overnight accommodation location (Hannagan Meadow Lodge 2019). The lodge is also the starting point for recreational guided summer and winter activities with the privately-owned Arizona White Mountain Adventure Company (Arizona White Mountain Adventure Company 2019). Participation in these activities is fee-based. |

| Table 3.9-1. Fee-Based Recreation Sites and Income-Generating Recreation Uses within 2 Miles of Proposed PR Training Sites on USFS or Other Federal Lands | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Location** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** |
| Helibase Circular | Alpine (Arizona) | Apache-Sitgreaves National Forest | Located within 0.5 mile of Hannagan Meadow Lodge, a privately-owned fee-based overnight accommodation location (Hannagan Meadow Lodge 2019). The lodge is also the starting point for recreational guided summer and winter activities with the privately-owned Arizona White Mountain Adventure Company (Arizona White Mountain Adventure Company 2019). Participation in these activities is fee-based. |
| Lees Ferry | Marble Canyon (Arizona) | NPS | Located within 0.5 mile of the Lees Ferry Campground in the Glen Canyon National Recreation Area. Use of this campground requires a per night fee (NPS 2019a). |
| Mormon Lake – USFS Helitack Base | Flagstaff (Arizona) | Coconino National Forest | Located 1.6 miles from the Mormon Lake Lodge, a privately-owned fee-based overnight accommodation location that also provides horseback riding, skiing, and snowmobile tours for a fee (Forever Resorts 2019). Also located about 1.3 miles from the Mormon Lake Ski Touring Center, which provides 30 miles of groomed trails. Use of this facility requires a trail pass (USFS 2019c). |
| Mount Lemmon (Windy Point) | Tucson (Arizona) | Coronado National Forest | Located about 1.5 miles from Middle Bear Picnic Area, Cypress Picnic Area, and Chihuahua Pine Picnic Area and about 2 miles from the General Hitchcock Campground. All three picnic sites require a Coronado Recreation Pass and the campground requires a per night fee for camping use and a per day fee for day use (USFS 2019d, 2019e, 2019f, 2019g). |
| Overgaard – USFS Helitack Base | Overgaard (Arizona) | Apache-Sitgreaves National Forest | Located across the street from Tall Timbers County Park, which hosts many special events throughout the year (Heber-Overgaard Chamber of Commerce 2019). |

| Table 3.9-1. Fee-Based Recreation Sites and Income-Generating Recreation Uses within 2 Miles of Proposed PR Training Sites on USFS or Other Federal Lands | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Location** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** |
| Portal Cabin and CCC Bunkhouse | Portal (Arizona) | Coronado National Forest | Located at the Portal CCC House and Portal Bunkhouse, both of which require a rental fee and are open year-round (USFS 2019h, 2019i). Also located within 0.55 miles of Cave Creek Ranch, a privately-owned fee-based overnight accommodation location that also provides extensive birding and wildlife viewing opportunities and hosts special events (Cave Creek Ranch 2019). |
| Portal HLZ | Portal (Arizona) | Coronado National Forest | Located within 0.5 miles of Cave Creek Ranch, a privately-owned fee-based overnight accommodation location that also provides extensive birding and wildlife viewing opportunities, and hosts special events (Cave Creek Ranch 2019). Located within 0.7 miles of the Portal CCC House and Portal Bunkhouse, both of which require a rental fee and are open year-round (USFS 2019h, 2019i). |
| Reserve Ranger Station | Reserve (New Mexico) | Gila National Forest | Located within 0.5 mile of the fairgrounds, which hosts the Catron County Fair in August (Catron County Fair 2019), and possibly other special events during the year. |
| Roosevelt Lake | Lake Roosevelt (Arizona) | Tonto National Forest | Located within Roosevelt Lake. Boating on Roosevelt Lake requires a daily pass, watercraft sticker, or annual pass, all of which require payment of a fee. The lake is available for boating year-round (USFS 2019u). The proposed PR Training site would be within 1.25 to 1.5 miles of the Frazier Group Campground, Frazier Horse Camp, and Roosevelt Marina. The campgrounds are both fee-based sites (USFS 2019p, 2019q). The marina has several income-generating uses, including a store, boat rentals, boat moorage, and camping (Roosevelt Lake Marina 2019). |

**Table 3.9-1. Fee-Based Recreation Sites and Income-Generating Recreation Uses within 2 Miles of Proposed PR Training Sites on USFS or Other Federal Lands**

| Proposed PR Training Site | Location | Controlling Agency | Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles |
|---|---|---|---|
| Saguaro Lake Ranch | Mesa (Arizona) | Tonto National Forest | Located adjacent to the Saguaro Lake Guest Ranch, a privately-owned ranch that provides lodging; special events; and kayaking, tubing, and horseback riding trips (Saguaro Lake Guest Ranch 2019). Within 1 mile of the marina and the Saguaro del Norte picnic area and boat launch on Saguaro Lake, which is located within the Tonto National Forest. Fee-based passes are required for day use and boating at the lake (USFS 2019v). Fishing tournaments and other special events held at the lake require a Special Use permit (USFS 2019v). |
| Tribeland | Tusayan (Arizona) | Kaibab National Forest | Located about 1.0 mile from the town of Tusayan, which contains jeep and helicopter tours, visitor center, etc. There are no USFS sites located near this site and it is about 4.5 miles from Grand Canyon Village. |
| Verde River | Mesa (Arizona) | Tonto National Forest | Located within the Verde River between the USFS Coon Bluff Campground/Day Use Area and Phon D Sutton Recreation Area. The campground requires day use and overnight passes (USFS 2019o). The Phon D Sutton Recreation Area is a popular inner tube take-out and requires a day use pass for use of the site (USFS 2019t). Both sites are open year-round. |

HLZ – Helicopter Landing Zone
NPS – National Park Service
PR – Personnel Recovery
USFS – U.S. Forest Service
Sources: Arizona White Mountain Adventure Company 2019; Cave Creek Ranch 2019; Forever Resorts 2019; Hannagan Meadow Lodge 2019; Heber-Overgaard Chamber of Commerce 2019; NPS 2019a;Roosevelt Lake Marina 2019; Saguaro Lake Guest Ranch 2019; USFS 2019c, 2019d, 2019e, 2019f, 2019g, 2019h, 2019i, 2019o, 2019p, 2019q, 2019r, 2019s, 2019t, 2019u, 2019v.

BLM and USFS also issue Special Use permits that authorize a specific use of agency land for a specific period of time. Special Use permits are required if a fee is charged or income is generated from the Special Use (USFS 2019n). Given the areas in which the proposed PR

training sites are located, there are likely at least some Special Use permits authorized for the areas within and surrounding the proposed PR training sites. Specific information regarding the number and uses of Special Use permits within and surrounding the proposed PR training sites is not available.

#### 3.9.2.3 Other Land (Municipal, City, County, State, or Tribal)

Proposed PR training sites on other land (e.g., municipal, city, county, state, or tribal) include both sites at facilities with no recreation use and sites located at or near popular recreation areas. There is no known fee-based or income-generating recreation use of the medical centers, law enforcement buildings, municipal buildings, or Black Mountain Reservoir where proposed PR training sites would be located. Some recreation-related business use of the airports may occur where proposed PR training sites are located, such as helicopter or plane tours, skydiving, etc., that originate at the airport; however, the airports themselves are not considered recreation locations.

Several proposed PR training sites are on State Trust land in both Arizona and New Mexico. The ASLD manages 9.2 million acres of land held in trust for the benefit of public schools and 13 other public institutions (ASLD 2019a). Roughly eight million acres of State Trust land is available for some form of recreation with a recreation permit (ASLD 2019c), which is a one-year fee-based permit to camp, hike, or travel on State Trust land that is designated as open for recreation (ASLD 2019b). The New Mexico State Land Office administers nine million surface acres of State Trust land for the beneficiaries, which include schools, universities, hospitals, and other public institutions (New Mexico State Land Office 2019a). Recreational access to State Trust land in New Mexico for hiking and other purposes requires a one-year fee-based permit (New Mexico State Land Office 2019b).

One proposed PR training site is located at a public pool, the University of Arizona pool, which has a per hour fee for use (University of Arizona 2019).

In addition to this pool, eight proposed PR training sites (Arizona, Nevada, and New Mexico) are located within 2 miles of fee-based recreation sites or income-generating recreation uses. Table 3.9-2 lists the proposed PR training sites on other land (e.g., municipal, city, county, state, or tribal) that are within 2 miles of fee-based recreation sites or income-generating recreation uses and describes the recreation sites and uses near these proposed PR training sites.

**Table 3.9-2. Fee-Based Recreation Sites and Income-Generating Recreation Uses within 2 Miles of Proposed PR Training Sites on Other Land**

| Proposed PR Training Site | Location | Controlling Agency | Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles |
|---|---|---|---|
| Caldwell Meadows | Alpine (Arizona) | Arizona Game and Fish Department | Located near Black River Mainstream Trail #61, a non-fee site, and about 1.4 miles from Caldwell Cabin. Both sites are located in the Apache-Sitgreaves National Forest. Use of the cabin requires a per night fee. The cabin is open from mid-May to early October (USFS 2019a). |

| Table 3.9-2. Fee-Based Recreation Sites and Income-Generating Recreation Uses within 2 Miles of Proposed PR Training Sites on Other Land | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Location** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** |
| Catron County Fairgrounds | Reserve (New Mexico) | Catron County | Located at the fairgrounds, which hosts the Catron County Fair in August (Catron County Fair 2019), and possibly other special events during the year. |
| Colorado River | Bullhead City (Nevada) | NDSP | Located within the Big Bend of the Colorado State Recreation Area, which offers boat launching, hiking, picnicking, and camping. Fees at this recreation area include an entrance fee, boat launch fee, and camping fee (NDSP 2019b). Located within 2 miles of Rotary Park in Bullhead City, which has a boat launch ramp that requires a use fee in the summer (Bullhead City, AZ 2019). |
| Lake Patagonia | Santa Cruz County (Arizona) | Arizona State Park | Located within Patagonia Lake State Park. The park contains 105 developed campsites, seven cabins, 12 boat-in campsites, a marina, and numerous day use areas (Arizona State Parks 2019c). The site is within 1 mile of all of these recreation facilities. Fees at this park include entrance fees, camping fees, and cabin rental fees (Arizona State Parks 2019b, 2019c). |
| Lake Pleasant | Maricopa County (Arizona) | Maricopa Water District | Located within Lake Pleasant Regional Park. Site is located within 2 miles of most of the recreation facilities on the western side of the lake. Fees at this park include day use fees, picnic area rental fees, camping fees, watercraft fees, and Desert Outdoor Center use fees (Maricopa County Parks and Recreation Department 2019a). |
| Sahuarita Lake | Town of Sahuarita (Arizona) | Town of Sahuarita | The Green Valley Model Yacht Club has a permit for special events at this lake (Green Valley Model Yacht Club 2019). Facilities at the lake that require a per hour fee for use include the amphitheater, gazebo, and multi-use turf area (Town of Sahuarita 2019b). |

| Table 3.9-2. Fee-Based Recreation Sites and Income-Generating Recreation Uses within 2 Miles of Proposed PR Training Sites on Other Land | | | |
|---|---|---|---|
| **Proposed PR Training Site** | **Location** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** |
| Salt River High | White River (Arizona) | White Mountain Apache Tribe | Located within the Salt River in the Fort Apache Indian Reservation. A Special Use permit is needed from the White Mountain Apache Tribe for access to the Salt River for all outdoor recreational activities (fishing, camping, hiking, sightseeing). There is a daily fee for this permit (White Mountain Apache Tribe Game and Fish 2019b). |
| Salt River Low | San Carlos (Arizona) | White Mountain Apache Tribe | Located within the Salt River in the Fort Apache Indian Reservation. A Special Use permit is needed from the White Mountain Apache Tribe for access to the Salt River for all outdoor recreational activities (fishing, camping, hiking, sightseeing). There is a daily fee for this permit (White Mountain Apache Tribe Game and Fish 2019b). There is rafting within this section of the Salt River by four commercial rafting outfitters as well as personal rafting use. Personal rafting requires a daily rafting permit, which is also fee-based (White Mountain Apache Tribe Game and Fish 2019a). There is a commercial and private rafting put-in less than 0.5 mile east (over the canyon wall) from the proposed PR training site. The USFS map of the upper Salt River indicates a camping area at the proposed PR training site, as well as three other camping areas between the put-in and the proposed PR training site (on the Mule Hoof river bend) (USFS undated). |

NDSP – Nevada Division of State Parks
USFS – U.S. Forest Service
Sources: Arizona State Parks 2019b, 2019c; Bullhead City, AZ 2019; Catron County Fair 2019; Green Valley Model Yacht Club 2019; Maricopa County Parks and Recreation Department 2019a; NDSP 2019b; Town of Sahuarita 2019b; USFS 2019a, undated; White Mountain Apache Tribe Game and Fish 2019a, 2019b.

#### 3.9.2.3.1 Activation of Playas Temporary MOA

Aircraft operations involving combat maneuvering or flying at high speeds require the establishment of Playas Temporary MOA, as described in Section 2.1.4.10. Because aerial training is planned at the Playas Training and Research Center, the USAF would submit requests to the FAA for the establishment of the Playas Temporary MOA. Though the Playas Training and Research Center is a fee-based site within the Playas Temporary MOA, this facility provides opportunities for physical security training and not recreation.

### 3.9.2.4 Private Property

The private properties where proposed PR training sites would be located are generally not open to public recreation use. However, there could be some income-generating recreation use of the private properties for activities such as shooting range, hunting, guided activities, overnight use, etc. There is one known recreation-related income-generating private property where a proposed PR training site would be located - the YMCA pool in Tucson. Use of this pool is based on membership to the YMCA and requires payment of membership fees (YMCA of Southern Arizona 2019).

## 3.9.3 Environmental Consequences

Impacts related to socioeconomics would be considered significant if the Proposed Action resulted in an unanticipated significant loss of fees due to potential changes in recreation use of fee-based sites or unanticipated significant loss of income from income-generating recreation uses due to potential changes in recreation use.

### 3.9.3.1 Proposed Action

#### 3.9.3.1.1 Department of Defense Property

Most DoD properties are generally not open for public recreation use or recreation-related business use. Therefore, there is no anticipated fee-based or income-generating recreation use of these DoD properties and thus the Proposed Action would not result in a loss of fee revenue or income as there would be no changes in public recreation use of these lands. For the DoD properties where there are fee-based recreation uses, mission requirements on DoD installations take priority over any fee-based recreation uses. Thus, fee-based recreation uses may be temporarily displaced during implementation of the Proposed Action if such uses are located near proposed PR training sites. However, such displacement would be anticipated and it is likely that fee revenue from recreation use of DoD property is minimal. Therefore, use of proposed PR training sites on DoD property would not result in an unanticipated significant loss of fee revenue for the DoD.

The exception on DoD property is the Titan Missile Museum, which is open for public use and is a fee-based site (Titan Missile Museum 2019). Use of this proposed PR training site for rope work (G6) already occurs and does not affect public visitation to the site. Therefore, the Proposed Action would not result in a significant loss of income for this location and thus would result in a less than significant socioeconomic impact on DoD property.

Further, the San Clemente Island Surrounding Off-Shore Areas and Leon (Beringer Drop Zone) PR training sites were reviewed as part of the 2008 SOCAL Range Complex EIS/OEIS and the 2013 and 2018 HSTT EIS/OEISs (Navy 2008, 2013, 2018b). In each of these documents, no

significant socioeconomic impacts were found to occur as a result of implementation for any alternative. NOTAMs, Notice to Mariners (NOTMARs), and installation of a shallow water training range with protective covers were included in the SOCAL Range Complex EIS/OEIS to further minimize potential socioeconomic impacts.

#### 3.9.3.1.2 U.S. Forest Service or Other Federal Land

The proposed PR training sites on USFS or other federal land that are located within 2 miles of fee-based recreation sites or income-generating recreation uses would be the most likely sites where a socioeconomic impact may result from changes in recreation use. For some of these proposed PR training sites, proposed PR training activities would be located at fee-based recreation sites, thereby preventing the public from using these recreation sites and thus reducing fee revenue. At other proposed PR training sites, proposed PR training activities could be loud, disruptive, and/or visually noticeable to people in nearby recreation areas, resulting in visitors being displaced from the recreation sites near proposed PR training activities due to a change in the recreation setting (visual, noise) or changes to recreation opportunities or experiences (e.g., reduction or elimination of fishing or hunting opportunities). This displacement could result in a loss of fee revenue or income if visitors are displaced from income-generating recreation uses.

Most of the USFS or other federal land where a socioeconomic impact could occur are USFS lands and one NPS location. The fees collected at fee-based sites on USFS lands often stay at that specific forest. National Park Service fees are similar. Therefore, the economic impact of fee revenue loss was considered at the specific national forest or park unit level. Given the yearly fees collected at sites over an entire forest or park unit is likely hundreds of thousands of dollars or even millions of dollars, the loss of fee revenue at one site was not considered significant. A cumulative loss of fee revenue for more than one recreation site could be significant for the forest or park unit depending on the current level of use and amount of fees charged for the recreation sites. For income-generating activities, the loss of income was considered significant if it occurred for several weeks.

Table 3.9-3 lists the 14 proposed PR training sites on USFS or other federal land that are located within 2 miles of fee-based recreation sites or income-generating recreation uses, the potential changes in recreation use due to the Proposed Action, the potential socioeconomic impact such changes could have, and USAF actions (operational constraints) that would minimize socioeconomic impacts to less than significant. For all proposed PR training sites on USFS or other federal land that would result in potential socioeconomic impacts (all sites listed in Table 3.9-3), the USAF would advertise upcoming training activities so visitors would know when recreation sites may be closed or affected by training activities and could plan their trips to avoid these times.

There may also be Special Use permits authorized for the areas within and surrounding the proposed PR training sites. It is assumed that USFS or BLM would not issue competing Special Use permits without stipulations regarding timing and location of use to avoid/reduce impacts to the Special Use permit holders (as well as other resources). Therefore, a significant loss of income from Special Use permits within and surrounding the proposed PR training sites would not be expected.

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Grapevine HLZ/DZ | Tonto National Forest | Within 1 mile of Grapevine Bay and Grapevine Group Campground on Lake Roosevelt. The Grapevine Bay portion of Roosevelt Lake requires a day use fee per vehicle and watercraft and is open year-round (USFS 2019r). Grapevine Group Campground requires a per night fee for campground use and is open year-round (USFS 2019s). | Proposed PR training activities at this proposed PR training site would not occur within the lake itself, but noise and visual disruption from proposed PR training activities could displace boaters/anglers. However, the lake is large and boaters/anglers could relocate to other areas of the lake. Therefore, a loss of fee revenue related to boating would not be expected.<br><br>Due to the short distance between the proposed PR training site and the campground, proposed PR training activities may be seen or heard from the campground. Thus, noise and disruption from proposed PR training activities could result in some visitor displacement. Visitor displacement could result in lost campground fees if visitors did not camp within the forest; there would be other campgrounds available at the lake for displaced visitors. This is the only recreation site that may result in lost fee revenue within the Tonto National Forest. Thus, fee revenue lost from proposed PR training activities at this recreation site would not result in a significant loss of fee revenue for the forest overall. | No action required. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Hannagan Meadow – USFS Helitack Base<br><br>and<br><br>Helibase Circular | Apache-Sitgreaves National Forest | Within 0.5 mile of Hannagan Meadow Lodge, a privately-owned fee-based overnight accommodation location (Hannagan Meadow Lodge 2019). The lodge is also the starting point for recreational guided summer and winter activities with the privately-owned Arizona White Mountain Adventure Company (Arizona White Mountain Adventure Company 2019). Participation in these activities is fee-based. | Due to the short distance between the proposed PR training site and the lodge, proposed PR training activities may be seen or heard from the lodge. Thus, noise and disruption from proposed PR training activities could result in some visitor displacement from the lodge and/or activities that begin at the lodge, particularly during Medium and Large Force training events when noise and disruption would be greatest. Visitor displacement during these training events could result in lost income that may occur over several weeks, thus resulting in a socioeconomic impact. | Negotiate an appropriate fee for using the Hannagan Meadow site for Medium or Large Force training events with the lodge and the Arizona White Mountain Adventure Company to minimize or eliminate the potential loss of income from visitor displacement. With implementation of an appropriate fee, the Proposed Action would not result in a significant socioeconomic impact. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Lees Ferry | NPS | Located within 0.5 mile of the Lees Ferry Campground in the Glen Canyon National Recreation Area. Use of this campground requires a per night fee (NPS 2019a). | Due to the distance between the campground and the proposed PR training site and lack of intervening development or major topography, proposed PR training activities may be seen or heard from the campground. Therefore, visitors may be displaced due to the noise and disruption from proposed PR training activities, resulting in a loss of fee revenue if visitors did not camp within the park unit; there would be other campgrounds available within the park unit. This is the only site that may result in lost fee revenue within the Glen Canyon National Recreation Area. Thus, fee revenue lost from proposed PR training activities near this site would not result in a significant loss of fee revenue for the park unit overall. | No action required. |
| Mormon Lake – USFS Helitack Base | Coconino National Forest | Located 1.6 miles from the Mormon Lake Lodge, a privately-owned fee-based overnight accommodation location that also provides horseback riding, skiing, and snowmobile tours for a fee (Forever Resorts 2019). Also located about 1.3 miles from the Mormon Lake Ski Touring Center, which provides 30 miles of groomed trails. Use of this facility requires a trail pass (USFS 2019c). | Given the distance of the proposed PR training site from the ski center and lodge and the intervening vegetation and development, disruption, either audibly or visually, from proposed PR training activities would be minimal. Thus, there may be little to no visitor displacement at the lodge or ski center due to proposed PR training activities. Therefore, the Proposed Action would not result in significant loss of income for income-generating recreation uses (lodge, ski center). | No action required. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Mount Lemmon (Windy Point) | Coronado National Forest | Located about 1.5 miles from Middle Bear Picnic Area, Cypress Picnic Area, and Chihuahua Pine Picnic Area and about 2 miles from the General Hitchcock Campground. All three picnic sites require a Coronado Recreation Pass and the campground requires a per night fee for camping use and a per day fee for day use (USFS 2019d, 2019e, 2019f, 2019g). | Potential loss of fee revenue due to visitor displacement resulting from noise and disruption from proposed PR training activities. Due to the distance between the picnic areas and campground and the proposed PR training site, as well as the lack of intervening development or major topography, proposed PR training activities may be seen or heard from the campgrounds and marina. | Conduct proposed PR training activities to the extent practicable on the side of the ridge (away from the recreation facilities) to reduce visual and audible disruption to the picnic areas and campground. A slightly increased distance and added topography between the site and the recreation facilities would reduce the likelihood of displacement from the recreation facilities due to noise/visual disruption. By conducting proposed PR training activities on the side of the ridge opposite the recreation facilities, the Proposed Action would not result in a significant socioeconomic impact. |
| Overgaard – USFS Helitack Base | Apache-Sitgreaves National Forest | Located across the street from Tall Timbers County Park, which hosts many special events throughout the year (Heber-Overgaard Chamber of Commerce 2019). | Potential loss of income due to noise and disruption from proposed PR training activities discouraging visitors from attending special events at the park. | Schedule proposed PR training activities when there are no special events planned at the park. By avoiding special events at the park, the Proposed Action would not result in a significant socioeconomic impact. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Portal Cabin and CCC Bunkhouse | Coronado National Forest | Located at the Portal CCC House and Portal Bunkhouse, both of which require a rental fee and are open year-round (USFS 2019h, 2019i). Also located within 0.55 miles of Cave Creek Ranch, a privately-owned fee-based overnight accommodation location that also provides extensive birding and wildlife viewing opportunities, and hosts special events (Cave Creek Ranch 2019). | Due to the short distance and lack of topography between the proposed PR training site and the ranch, proposed PR training activities may be seen or heard from the ranch and may also displace birds and wildlife for which the ranch is known. Thus, noise and disruption from proposed PR training activities could result in some visitor displacement from the ranch, particularly during Medium and Large Force training events when noise and disruption would be greatest. Visitor displacement during these training events could result in lost income that may occur over several weeks, thus resulting in a socioeconomic impact. It is assumed that the USAF would pay the existing fees for rental of the CCC House and Portal Bunkhouse and thus there would be no fee revenue lost due to training activities. | Negotiate an appropriate fee for using the Portal Cabin and CCC Bunkhouse site for Medium or Large Force training events with the Cave Creek Ranch to minimize or eliminate the potential loss of income from visitor displacement. With implementation of an appropriate fee, the Proposed Action would not result in a significant socioeconomic impact. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Portal HLZ | Coronado National Forest | Located within 0.5 miles of Cave Creek Ranch, a privately-owned fee-based overnight accommodation location that also provides extensive birding and wildlife viewing opportunities, and hosts special events (Cave Creek Ranch 2019). Located within 0.7 miles of the Portal CCC House and Portal Bunkhouse, both of which require a rental fee and are open year-round (USFS 2019h, 2019i). | Potential loss of fee revenue from noise and disruption from training activities discouraging visitors from using the house or bunkhouse. The CCC House only receives light to medium use and therefore loss of fee revenue from training near this site would likely not be significant even in combination with loss of fee revenue at the Portal Bunkhouse.<br><br>Due to the short distance and lack of topography between the proposed PR training site and the ranch, proposed PR training activities may be seen or heard from the ranch and may also displace birds and wildlife for which the ranch is known. Thus, noise and disruption from proposed PR training activities could result in some visitor displacement from the ranch, particularly during Medium and Large Force training events when noise and disruption would be greatest. Visitor displacement during these training events could result in lost income that may occur over several weeks, thus resulting in a socioeconomic impact. | Negotiate an appropriate fee for using the Portal HLZ site for Medium or Large Force training events with the Cave Creek Ranch to minimize or eliminate the potential loss of income from visitor displacement. With implementation of an appropriate fee, the Proposed Action would not result in a significant socioeconomic impact. |
| Reserve Ranger Station | Gila National Forest | Located within 0.5 mile of the fairgrounds, which hosts the Catron County Fair in August (Catron County Fair 2019), and possibly other special events during the year. | Potential loss of income due to noise and disruption from proposed PR training activities discouraging visitors from attending special events or the county fair at the fairgrounds. | Schedule proposed PR training activities when there are no special events planned at the fairgrounds. By avoiding special events at the fairgrounds, the Proposed Action would not result in a significant socioeconomic impact. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Roosevelt Lake | Tonto National Forest | Located within Roosevelt Lake. Boating on Roosevelt Lake requires a daily pass, watercraft sticker, or annual pass, all of which require payment of a fee. The lake is available for boating year-round (USFS 2019u). The PR training site would be within 1.25 to 1.5 miles of the Frazier Group Campground, Frazier Horse Camp, and Roosevelt Marina. The campgrounds are both fee-based sites (USFS 2019n, 2019p). The marina has several income-generating uses, including a store, boat rentals, boat moorage, and camping (Roosevelt Lake Marina 2019). | Proposed PR training activities would occur within the lake itself and therefore could displace boaters/anglers. However, the lake is large and boaters/anglers could relocate to other areas of the lake. Therefore, a loss of fee revenue related to boating would not be expected.<br><br>Due to the lack of topography between the proposed PR training site and the campgrounds and marina, it is possible that proposed PR training activities may be seen or heard from the campgrounds and marina. Thus, noise and disruption from proposed PR training activities could result in some visitor displacement, particularly from the Horse Camp if horses were bothered by the noise from proposed PR training activities. Visitor displacement could result in lost campground fees or income for the marina if visitors chose not to camp within the forest or buy products or services from the marina. Given that the marina is the only such facility at the lake, it is likely there would be minimal potential for loss of income from displacement. There are also other campgrounds that displaced visitors could use during training; however, the only other campground with equestrian sites is near Payson. | Locate proposed PR training activities as far from the campgrounds and marina as practicable to reduce the potential for visual or audible disturbance to these sites. Conduct proposed PR training activities outside of campground quiet times. A slightly increased distance from the recreation facilities and lack of disruption during sleeping hours would reduce the likelihood of displacement from the campgrounds. By conducting proposed PR training activities as far as practicable from campgrounds and the marina, the Proposed Action would not likely result in a significant socioeconomic impact. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Saguaro Lake Ranch | Tonto National Forest | Located adjacent to the Saguaro Lake Guest Ranch, a privately-owned ranch that provides lodging; special events; and kayaking, tubing and horseback riding trips (Saguaro Lake Guest Ranch 2019). Within 1 mile of the marina and Saguaro del Norte picnic area and boat launch on Saguaro Lake, which is located within the Tonto National Forest. Fee-based passes are required for day use and boating at the lake (USFS 2019v). Fishing tournaments and other special events held at the lake require a Special Use permit (USFS 2019v). | Due to the very short distance from the Salt River and ranch facilities, in-river proposed PR training activities may be seen or heard from the ranch. Thus, noise and disruption from proposed PR training activities could result in some visitor displacement from the ranch, including activities that begin from the ranch, particularly during Medium and Large Force training events when noise and disruption would be greatest. Visitor displacement during these training events could result in lost income that may occur over several weeks, thus resulting in a socioeconomic impact. | Negotiate an appropriate fee for using the Saguaro Lake Ranch site for Medium or Large Force training events with the ranch to minimize or eliminate the potential loss of income from visitor displacement. With implementation of an appropriate fee, the Proposed Action would not result in a significant socioeconomic impact. |
| Tribeland | Kaibab National Forest | Located about 1.0 miles from the town of Tusayan, which contains jeep and helicopter tours, visitor center, etc. There are no USFS sites located near this site and it is about 4.5 miles from Grand Canyon Village. | Given the distance of the proposed PR training site from the town of Tusayan and the intervening topography and development, disruption, either audibly or visually, from proposed PR training activities would be minimal. Thus, there may be little to no visitor displacement due to proposed PR training activities. Therefore, the Proposed Action would not result in significant loss of income for income-generating recreation uses. | No action is necessary. |

| Table 3.9-3. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on USFS or Federal Lands within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Actions (Operational Constraints)** |
| Verde River | Tonto National Forest | Located within the Verde River between the USFS Coon Bluff Campground/ Day Use Area and Phon D Sutton Recreation Area. The campground requires day use and overnight passes (USFS 2019r). The Phon D Sutton Recreation Area is a popular inner tube take-out and requires a day use pass for use of the site (USFS 2019t). Both sites are open year-round. | Potential loss of fee revenue due to visitor displacement resulting from noise and disruption from proposed PR training activities on the water. Due to the distance between the campground and recreation area and the proposed PR training site and lack of intervening development or major topography, proposed PR training activities may be seen or heard from the campground and recreation area.<br><br>Other campgrounds and day use areas in the forest would be available for displaced visitors with the pass required for use of the Coon Bluff site. The Phon D Sutton Recreation Area is used for a more specific activity – inner tube take-out. In-river proposed PR training activities may make inner tubing past the proposed PR training site to the take-out unsafe and thus may result in visitor displacement. | Locate the proposed PR training site downstream of the Phon D Sutton Recreation Area to allow continued use of this area as a take-out for tubers. This location would also reduce the potential for noise and disruption at Coon Bluff and the Phon D Sutton Recreation Area sites. By conducting proposed PR training activities downstream of the Phon D Sutton Recreation Area, the Proposed Action would not result in a significant socioeconomic impact. |

DZ – Drop Zone
HLZ – Helicopter Landing Zone
NPS – National Park Service
PR – Personnel Recovery
USAF – U.S. Air Force
USFS – U.S. Forest Service
Sources: Arizona White Mountain Adventure Company 2019; Cave Creek Ranch 2019; Forever Resorts 2019; Hannagan Meadow Lodge 2019; Heber-Overgaard Chamber of Commerce 2019; NPS 2019a;Roosevelt Lake Marina 2019; Saguaro Lake Guest Ranch 2019; USFS 2019c, 2019d, 2019e, 2019f, 2019g, 2019h, 2019i, 2019o, 2019p, 2019q, 2019r, 2019s, 2019t, 2019u, 2019v.

#### 3.9.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

There is no known fee-based or income-generating recreation use of the medical centers, law enforcement buildings, municipal buildings, or Black Mountain Reservoir. Therefore, no socioeconomic impact would occur related to training use at these sites. There may be some recreation-related business use of the airports where proposed PR training sites are located; however, the airports would continue to operate during proposed PR training activities and thus any recreation-related business use of the airport could continue. Therefore, no socioeconomic impact would occur related to training use of the airport sites. The Playas Training and Research Center is a fee-based site that provides opportunities for physical security training. It is assumed that the USAF would pay the required fees to use this facility for training; thus, a less than significant socioeconomic impact would occur from training use of this proposed PR training site.

Several proposed PR training sites are located on State Trust land in both Arizona and New Mexico. Fee-based permits are required to participate in some recreation activities on these lands. These permits are not site specific, but rather apply to participating in recreation on State Trust land in general. Any visitors displaced from State Trust land in either state due to proposed PR training activities would have millions of acres available for their recreation use with the same permit. Therefore, a less than significant impact would occur from training use on State Trust land sites.

There are also two proposed PR training sites located at public pools. Occupancy of the pools by proposed PR training activities in lieu of fee-paying customers could result in a potentially significant loss of income as Proposed Action use of the pools may be necessary for several weeks at a time for Medium to Large Force training events. However, the USAF would negotiate an appropriate fee for using the pool sites for Medium or Large Force training events, which would reduce socioeconomic impacts to less than significant.

Table 3.9-4 lists the eight proposed PR training sites on other land (e.g., municipal, city, county, state, or tribal) that are within 2 miles of fee-based recreation sites or income-generating recreation uses, the potential changes in recreation use due to the Proposed Action, the potential socioeconomic impact such changes could have, and USAF actions (operational constraints) that would reduce socioeconomic impacts to less than significant. As stated above, for income-generating activities, the loss of income was considered significant if it occurred over for several weeks. For state, tribal, or municipal recreation sites, the significance of fee revenue loss was considered in the context of the extent of fee-based facilities affected and the overall contribution to fee revenue generation for the site.

| Table 3.9-4. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on Other Land (Municipal, City, County, State, or Tribal) within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Action (Operational Constraints)** |
| Caldwell Meadows | Arizona Game and Fish Department | Located near Black River Mainstream Trail #61, a non-fee site, and about 1.4 miles from Caldwell Cabin. Both sites are located in the Apache-Sitgreaves National Forest. Use of the cabin requires a per night fee. The cabin is open from mid-May to early October (USFS 2019a). | Potential loss of fee revenue from proposed PR training activities occupying the cabin instead of fee-paying visitors, or noise and disruption from proposed PR training activities discouraging visitors from using the cabin. There are no other cabin rentals within the forest. However, this is the only site that may result in lost fee revenue within the Apache-Sitgreaves National Forest. Thus, fee revenue lost from proposed PR training activities at this site would not result in a significant loss of fee revenue for the forest overall. | No action is necessary. |
| Catron County Fairgrounds | Catron County | Located at the fairgrounds, which hosts the Catron County Fair in August (Catron County Fair 2019), and possibly other special events during the year. | Potential loss of income due to proposed PR training activities occupying the fairgrounds instead of the county fair or other special events held at the fairgrounds, or noise and disruption from proposed PR training activities discouraging visitors from attending special events or the county fair at the fairgrounds. | Schedule proposed PR training activities when there are no special events planned at the fairgrounds. By avoiding special events at the fairgrounds, the Proposed Action would not result in a significant socioeconomic impact. |
| Colorado River | NDSP | Located across from the Big Bend of the Colorado State Recreation Area, which offers boat launching, hiking, picnicking, and camping. Fees at this recreation area include an entrance fee, boat launch fee, and camping fee (NDSP 2019b). Located within 2 miles of Rotary Park in Bullhead City, which has a boat launch ramp that requires a use fee in the summer (Bullhead City, AZ 2019). | Potential loss of fee revenue due to noise and disruption from proposed PR training activities discouraging visitors from visiting the state recreation area. Medium to Large Force in-water training activities may also make it unsafe for boaters to launch or take-out at the state recreation area boat launch. Given that all state recreation area recreation facilities may be affected by visitor displacement during training, potentially for several weeks, the loss of fee revenue may be significant for NDSP. Due to distance from the Rotary Park, proposed PR training activities at this site would likely not be seen or heard at the park and thus there would be no visitor displacement or resulting loss of fee revenue. | Negotiate an appropriate fee for using the Colorado River site for Medium or Large Force training events with NDSP to mitigate for the potential loss of fee revenue from visitor displacement. With implementation of an appropriate fee, the Proposed Action would not result in a significant socioeconomic impact. |

| Table 3.9-4. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on Other Land (Municipal, City, County, State, or Tribal) within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Action (Operational Constraints)** |
| Lake Patagonia | Arizona State Parks | Located within Patagonia Lake State Park. The park contains 105 developed campsites, seven cabins, 12 boat-in campsites, a marina, and numerous day use areas (Arizona State Parks 2019b). Site is within 1 mile of all of these recreation facilities. Fees at this park include entrance fees, camping fees, and cabin rental fees (Arizona State Parks 2019b, 2019c). | Potential loss of fee revenue due to noise and disruption from proposed PR training activities discouraging visitors from visiting the state park, particularly during Medium and Large Force training events. In-water activities may make boating in the area surrounding proposed PR training activities unsafe and potentially reduce fishing opportunities. Given that all recreation facilities may be affected by visitor displacement during training, potentially for several weeks, the loss of fee revenue may be significant for Arizona State Parks. | Locate training activities as far from the recreation facilities as possible to reduce the likelihood of visual or audible disturbance to visitors at these sites and do not conduct proposed PR training activities during campground quiet times. In combination with a lack of disruption during sleeping hours, the northwest corner of the lake would provide some topography, distance, and indirect line of sight to reduce potential noise and visual disruption for the main recreation facility area of the lake to a level where visitor displacement would be less likely. However, the location of the proposed PR training site in the northwest portion of the lake would still affect boat-in campsites. The potential loss of fee revenue from use of boat-in campsites due to any potential visitor displacement during proposed PR training activities would not be considered significant for Arizona State Parks.<br><br>By conducting proposed PR |

| Table 3.9-4. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on Other Land (Municipal, City, County, State, or Tribal) within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Action (Operational Constraints)** |
| | | | | training activities as far as possible from the recreation facilities, the Proposed Action would not result in a significant socioeconomic impact. |
| Lake Pleasant | Maricopa Water District | Located within Lake Pleasant Regional Park. Site is within 2 miles of most of the recreation facilities on the western side of the lake. Fees at this park include day use fees, picnic area rental fees, camping fees, watercraft fees, and Desert Outdoor Center use fees (Maricopa County Parks and Recreation Department 2019a). | Potential loss of fee revenue due to noise and disruption from proposed PR training activities discouraging visitors from visiting the regional park, particularly during Medium and Large Force training events. In-water activities may make boating in the area surrounding proposed PR training activities unsafe and potentially reduce fishing opportunities. Due to the lack of topography between the proposed PR training site and the recreation facilities, it is possible that proposed PR training activities may be seen or heard from many of the park's recreation facilities. Thus, noise and disruption from proposed PR training activities could result in some visitor displacement.<br><br>Given that most recreation facilities could be affected by visitor displacement during training, potentially for several weeks, the loss of fee revenue may be significant for Maricopa County Parks and Recreation. | Locate proposed PR training activities as far northeast as possible to reduce the likelihood of visual or audible disturbance to visitors at most recreation sites. The northeast portion of the lake would provide some topography, distance, and indirect line of sight to reduce potential noise and visual disruption for the main recreation areas of the lake to a level where visitor displacement would be less likely. By conducting proposed PR training activities as far as possible from the recreation facilities, the Proposed Action would not result in a significant socioeconomic impact. |

| Table 3.9-4. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on Other Land (Municipal, City, County, State, or Tribal) within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Action (Operational Constraints)** |
| Sahuarita Lake | Town of Sahuarita | The Green Valley Model Yacht Club has a permit for special events at this lake (Green Valley Model Yacht Club 2019). Facilities at the lake that require a per hour fee for use include the amphitheater, gazebo, and multi-use turf area (Town of Sahuarita 2019b). | Noise and disruption from proposed PR training activities on the water may disrupt special events on the lake and displace visitors from the facilities at the lake that are fee-based, resulting in a loss of fee revenue. However, it is unlikely that all three facilities are rented every day and there are multiple facilities at five other locations where fee revenue is collected. | Because the fee-based facilities at the lake are unlikely to be rented every day, the potential loss of fee revenue related to these facilities would not be expected to be significant. |
| Salt River High | White Mountain Apache Tribe | Located within the Salt River in the Fort Apache Indian Reservation. A Special Use permit is needed from the White Mountain Apache Tribe for access to the Salt River for all outdoor recreational activities (fishing, camping, hiking, sightseeing). There is a daily fee for this permit (White Mountain Apache Tribe Game and Fish 2019b). | Due to the topography (canyon) at the site and elevation/distance between the road and the site, it is unlikely this proposed PR training site is used for recreation activities such as fishing, camping, hiking, and sightseeing. Therefore, a loss of income would not be expected from proposed PR training activities at this site. | No action required. |

| Table 3.9-4. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on Other Land (Municipal, City, County, State, or Tribal) within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses | | | | |
|---|---|---|---|---|
| **Proposed PR Training Site** | **Controlling Agency** | **Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles** | **Potential Socioeconomic Impacts** | **USAF Action (Operational Constraints)** |
| Salt River Low | White Mountain Apache Tribe | Located within the Salt River in the Fort Apache Indian Reservation. A Special Use permit is needed from the White Mountain Apache Tribe for access to the Salt River for all outdoor recreational activities (fishing, camping, hiking, sightseeing). There is a daily fee for this permit (White Mountain Apache Tribe Game and Fish 2019b). There is rafting within this section of the Salt River by four commercial rafting outfitters as well as personal rafting use. Personal rafting requires a daily rafting permit, which is also fee-based (White Mountain Apache Tribe Game and Fish 2019a). There is a commercial and private rafting put-in less than 0.5 miles east (over the canyon wall) from the proposed PR training site. The USFS map of the upper Salt River indicates a camping area at the proposed PR training site, as well as three other camping areas between the put-in and the proposed PR training site (on the Mule Hoof river bend) (USFS undated). | Potential loss of rafting-related income and tribal permit fee income due to visitor displacement resulting from noise and disruption from training activities. Training activities would be noisy and disruptive at the camping area at the proposed PR training site and may be seen or heard from the nearest upstream camping area as well. Due to the topography (canyon) at the site, in-water proposed PR training activities may not be heard by other upstream camping areas or at the put-in location. In-river training activities may make rafting past the proposed PR training site unsafe and thus may result in visitor displacement. | Negotiate an appropriate fee for using the Salt River Low site for Medium or Large Force training events with the White Mountain Apache Tribe and the relevant commercial rafting companies if training activities would be unsafe for rafters to navigate around to address the potential loss of income from visitor displacement. With implementation of an appropriate fee, the Proposed Action would not result in a significant socioeconomic impact. |

**Table 3.9-4. Potential Socioeconomic Impacts and Operational Constraints for Proposed PR Training Sites on Other Land (Municipal, City, County, State, or Tribal) within 2 miles of Fee-Based Recreation Sites and Income-Generating Recreation Uses**

| Proposed PR Training Site | Controlling Agency | Fee-Based Recreation Sites or Income-Generating Recreation Uses within 2 Miles | Potential Socioeconomic Impacts | USAF Action (Operational Constraints) |
|---|---|---|---|---|

NDSP – Nevada Division of State Parks
PR – Personnel Recovery
USFS – U.S. Forest Service
Sources: Arizona State Parks 2019b, 2019c; Bullhead City, AZ 2019; Catron County Fair 2019; Green Valley Model Yacht Club 2019; Maricopa County Parks and Recreation Department 2019a; NDSP 2019b; Town of Sahuarita 2019b; USFS 2019a, undated; White Mountain Apache Tribe Game and Fish 2019a, 2019b.

#### 3.9.3.1.3.1 Activation of Playas Temporary MOA

There are no fee-based or income-generating recreation uses that fall within the boundaries, or within 2 miles, of the Playas Temporary MOA.

Further, the Playas Temporary MOA was evaluated by the USMC in 2018 (USMC 2018c). During this review, it was found that the Playas Temporary MOA would have a negligible impact on socioeconomics. Therefore, a less than significant impact would occur from PR training activities within the Playas Temporary MOA.

#### 3.9.3.1.4 Private Property

Use of private property for the Proposed Action is at the discretion of the landowner and would be negotiated with the USAF. Therefore, any loss of income-generating public recreation use of the private property would be anticipated and deemed acceptable to the landowner if permission is granted for the Proposed Action. Therefore, the Proposed Action would result in a less than significant socioeconomic impact on private property.

#### 3.9.3.1.5 Operational Constraints

With implementation of the operational constraints identified in Tables 3.9-3 and 3.9-4, potential socioeconomic impacts would be minimized to less than significant. In addition, NOTAMs and NOTMARs would be issued prior to starting training activities, thus further minimizing potential socioeconomic impacts. Therefore, the Proposed Action would result in a less than significant impact related to socioeconomics.

### 3.9.3.2 No-Action Alternative

Under the No-Action Alternative, PR forces would continue existing training activities, utilizing the same equipment, personnel, airspace, and training locations approved under prior NEPA documents and would comply with required minimization and operational constraints identified in these documents. Existing agreements for use of proposed PR training sites for proposed PR training activities would remain in place. Therefore, any loss of fees or income due to changes in recreation use during proposed PR training activities would be anticipated and acceptable. Thus, the No-Action Alternative would not result in a significant socioeconomic impact.

## 3.10 WATER RESOURCES

### 3.10.1 Definition of Resource

Surface water resources are described in terms of water features, water processes and uses, and water quality. Water quality describes the chemical and physical composition of water as affected by natural conditions and human activities. Activities associated with the scope of this environmental analysis are used to assess the potential impacts to the beneficial uses of water resources and the quality of these waters (ponds, lakes, streams, rivers, pools, and ocean).

Several regulatory authorities at the federal, state, and local levels control the quality of water in California, Arizona, New Mexico and Nevada, either directly or indirectly, as discussed in this section.

**Federal Antidegradation Policy.** Federal Antidegradation Policy (40 CFR 131.12) was adopted as part of the 1972 amendments to the Federal Water Pollution Control Act (the Clean

Water Act [CWA]). It was enacted to compel the states to enact policies to fully protect existing instream water uses. This policy at a minimum includes the following provisions:

- Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected;
- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and
- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, water quality shall be maintained and protected.

California (Resolution 68-16), Arizona (Arizona Administrative Code R18-11-107), New Mexico (New Mexico Administrative Code [NMAC] 20.6.4.8), and Nevada (Nevada Revised Statute 445A.565) have adopted the Antidegradation Policy through resolutions and/or administrative codes.

**Federal Water Pollution Control Act/The Clean Water Act.** The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. The following sections of the CWA are important for controlling storm water pollution and avoiding water quality impacts to water bodies.

- **Section 303(d) – Total Maximum Daily Loads**. Section 303(d) of the CWA requires states, territories, and authorized tribes to develop a list of water quality limited segments. These waters on the 303(d) list of impaired waterbodies do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The CWA requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads, to improve water quality.
- **Section 401 – Water Quality Certification.** Section 401 requires an applicant for a federal license, or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the state that the discharge would comply with other provisions of the act.
- **Section 402 – National Pollutant Discharge Elimination System (NPDES) Program.** Section 402 of the CWA establishes the NPDES permit program to regulate the discharge of pollutants from point sources. The CWA defines point sources of water pollutants as "any discernible, confined, and discrete conveyance" that discharges or may discharge pollutants. These are sources from which wastewater is transmitted in some type of conveyance (pipe and channel) to a waterbody; they are classified as municipal or industrial.
- **Section 403 – Ocean Discharge Criteria.** Section 403 of the CWA provides for the protection of ocean waters (waters of the territorial seas, the contiguous zone, and the high seas beyond the contiguous zone) from point-source discharges. Under Section

403(a), USEPA or an authorized state may issue a permit for an ocean discharge only if the discharge complies with CWA guidelines for protection of marine waters.

**Safe Drinking Water Act (SDWA).** The SDWA was established to protect the quality of drinking water in the United States. The SDWA authorized USEPA to set National health-based 18 standards for drinking water and requires many actions to protect drinking water and its sources, including rivers, lakes, reservoirs, springs, and groundwater wells.

**Other Federal Laws.** Other federal laws that protect water quality through the regulation of hazardous waste management and cleanup include the CERCLA (42 U.S.C. 9601 et seq.), and the RCRA. These are discussed in Section 3.5, Hazardous Materials and Hazardous Waste Management, of this EA. NOAA also is responsible for ocean water quality. NOAA has established programs to monitor coastal environmental quality, protect marine habitat, and restore natural resources and administers the Coastal Zone Management Act, and Oil Pollution Act of 1990.

Porter-Cologne Water Quality Control Act. Under the Porter-Cologne Water Quality Control Act (California Water Code Division 7 Section 13000), the State Water Resources Control Board (SWRCB) is provided with the ultimate authority over state water quality policy. However, Porter-Cologne also established nine Regional Water Quality Control Boards (RWQCBs) to provide oversight on water quality issues at regional and local levels. RWQCBs are required to prepare and update a Basin Plan for their respective regions. Pursuant to the CWA NPDES program, RWQCBs also issue permits for point-source discharges that must meet the water quality objectives and must protect the beneficial uses defined in the Basin Plan.

**California.** California establishes water quality standards/criteria under California Fish and Game Code and the California Ocean Plan.

- **California Fish and Game Code.** Under Sections 1601–1603 of the Fish and Game Code, agencies are required to notify the California Department of Fish and Wildlife prior to implementing any project that would divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake.
- **California Ocean Plan.** California Ocean Plan SWRCB 2015) contains water quality standards to prevent marine ecosystem degradation, protect public health, and protect other beneficial uses. The Ocean Plan also prohibits the discharge of waste to designated Areas of Special Biological Significance (ASBS) and prevents alteration of natural water quality.

**Arizona.** Arizona state regulation establishes water quality standards for surface waters of the state under the CWA through Arizona Department of Environmental Quality Revised Statutes Title 49, Environment and Arizona Department of Environmental Quality (ADEQ) programs, and Title 45, Waters (ADEQ 2019d).

**New Mexico.** New Mexico's Water Quality Standards, codified at 20.6.4 NMAC, define water quality goals by designating uses for rivers, streams, lakes, and other surface waters, setting criteria to protect those uses, and establishing antidegradation provisions to preserve water quality (New Mexico Environment Department 2019b). These water quality standards are

adopted by the Water Quality Control Commission, and then are approved by USEPA under the federal CWA. The water quality is protected through following state regulations:

- Standards for Interstate and Intrastate Surface Waters, Title 20, Chapter 6, Part 4
- New Mexico Water Quality Act New Mexico Statute §74-6-1 through 17

**Nevada.** Discharges to surface water bodies are monitored under the NPDES Program pursuant to Section 402 of the federal CWA and the State of Nevada Water Pollution Control Law (Nevada Revised Statute 445A.300-445A.730). The Bureau of Water Pollution Control protects the waters of the State from the discharge of pollutants (Nevada Division of Environmental Protection 2019c).

### 3.10.2 Affected Environment

The primary ROI for water resources analysis includes the nearest waterbody (in or near) to the respective proposed PR training sites. The water operations at these proposed PR training sites include water HLZs/DZs use, overwater hoist operations, and amphibious operations. Refer to Sections 2.1.4.19 and 2.1.4.20 for water operation description details. It should be noted that training at many of the PR training sites discussed below would be similar in nature and frequency to training already occurring there.

#### 3.10.2.1 Department of Defense Property

Of the 55 proposed PR training sites on DoD properties, a total of six sites are used for water operations. As shown in Table 3.10-1, none of the proposed PR training sites would occur in waterbodies that are impaired (SWRCB 2012). The waters surrounding San Clemente Island to a distance of 1.15 miles are considered ASBS (SWRCB 2003) and one of the proposed PR training sites (San Clemente Island Surrounding Off-Shore Areas) is located in this region.

**Table 3.10-1. Waterbodies Near Proposed PR Training Sites on Department of Defense Property**

| Proposed PR Training Site | Location | Approximate Distance from Nearest Waterbody | Waterbody Cause of Impairment |
|---|---|---|---|
| Camp Navajo Army Base | Coconino County, AZ | Located 1.2 miles north of Larger Reservoir (Three Reservoirs) | None |
| Camp Pendleton Cartwright Water | San Diego County, CA | Within the Pacific Ocean | None |
| Camp Pendleton Red Beach | Camp Pendleton, CA | Located 0.3 mile south of Las Flores Creek and 0.2 mile east of Pacific Ocean | None |
| Leon (Beiringer DZ) | San Diego, CA | Within the Pacific Ocean, 7 miles northwest of San Diego Bay and Harbor (Impaired) | None |
| Rogers Lake (Logger Camp) | Coconino County, AZ | Located 0.5 mile from Rogers Lake | None |
| San Clemente Island Surrounding Off-Shore Areas | San Clemente Island, CA | Within the Pacific Ocean | None |

PR – Personnel Recovery
Source: ADEQ 2018a; Google Earth Pro 2019; SWRCB 2003, 2012.

### 3.10.2.2 U.S. Forest Service or Other Federal Land

Of the 44 proposed PR training sites on USFS or other federal land, a total of three sites are used for water operations. As shown in Table 3.10-2, water operations for all three proposed PR training sites would occur in waterbodies that are impaired (ADEQ 2018a).

**Table 3.10-2. Waterbodies Near Proposed PR Training Sites on U.S. Forest Service or other Federal Land**

| Proposed PR Training Site | Location | Approximate Distance from Nearest Waterbody | Waterbody Cause of Impairment |
|---|---|---|---|
| Roosevelt Lake | Tonto National Forest, Gila County, AZ | Within Roosevelt Lake | Mercury in Fish Tissue |
| Saguaro Lake Ranch | Tonto National Forest, Mesa, AZ | Located 0.2 mile south of Saguaro Lake, and 0.05 mile west of Salt River (Impaired) | Salt River – Dissolved Oxygen |
| Verde River | Tonto National Forest, Mesa, AZ | Within Verde River | Dissolved Oxygen |

Source: ADEQ 2018a; Google Earth Pro 2019.

### 3.10.2.3 Other Land (Municipal, City, County, State, or Tribal)

Of the 57 proposed PR training sites on other land (e.g., municipal, city, county, state, or tribal), a total of eight sites are used for water operations. As shown in Table 3.10-3, water operations for three of these proposed PR training sites would occur in waterbodies that are impaired (ADEQ 2018a).

**Table 3.10-3. Waterbodies Near Proposed PR Training Sites on Other Land (Municipal, City, County, State, or Tribal)**

| Proposed PR Training Site | Location | Approximate Distance from Nearest Waterbody | Waterbody Cause of Impairment |
|---|---|---|---|
| Black Mountain Reservoir | South of Drexel Heights, Town of Sahuarita, AZ | Within Black Mountain Reservoir | None |
| Colorado River | Bullhead City, NV | Within Colorado River | Temperature, Selenium (Total)[1] |
| Lake Patagonia | Santa Cruz County, AZ | Within Lake Patagonia, downstream of Sonoita Creek (Impaired) | Sonoita Creek - Dissolved Oxygen, Zinc |
| Lake Pleasant | Maricopa County, AZ | Within Lake Pleasant | Mercury in Fish Tissue |
| Sahuarita Lake | Town of Sahuarita, AZ | Within Sahuarita Lake, 2 miles east of Unnamed Reservoirs | None |
| Salt River High | White River, AZ | Within Salt River | None |
| Salt River Low | San Carlos, AZ | Within Salt River | None |
| University of Arizona Dive Pool | University of Arizona, AZ | Not Applicable | Not Applicable |

[1] Per Arizona's 2018 303(d) List of Impaired Waters (ADEQ 2018a).
Sources: ADEQ 2018a; Google Earth Pro 2019, Nevada Division of Environmental Protection 2019c.

It should be noted that one of the eight proposed PR training sites is contained in a pool (University of Arizona Dive Pool). Water resources regulations are not applicable to this one proposed PR training site and is not discussed further in Section 3.10.3.

#### 3.10.2.3.1 Activation of Playas Temporary MOA

No water operations occur on or near proposed PR training sites located in the Playas Temporary MOA (Google Earth Pro 2019).

### 3.10.2.4 Private Property

Of the 19 proposed PR training sites on private property, one (Ott Family YMCA of Tucson Pool) site is used for water operations. However, water resources regulations are not applicable to this one proposed PR training site and is not discussed further in Section 3.10.3.

## 3.10.3 Environmental Consequences

Impacts related to surface water resources would be considered significant if the Proposed Action resulted in a chemical and physical change of the water quality within certain waterbodies. Impacts related to surface water resources would be considered significant if the Proposed Action resulted in noncompliance with applicable federal and state regulations. It should be noted that training at many of the PR training sites discussed below would be similar in nature and frequency to training already occurring there.

### 3.10.3.1 Proposed Action

#### 3.10.3.1.1 Department of Defense Property

During implementation of the Proposed Action, water operations at the six proposed PR training sites on DoD property would include water HLZ/DZ use, overwater hoist operations, and amphibious operations. Specifically, proposed PR water operations would include the following:

**Water HLZ/DZ Use and Overwater Hoist Operations (W1)**

- Would be utilized as water-based helicopter training sites and drop sites for the deployment of rescue personnel and equipment.
- Would involve hoist recovery of personnel and watercraft over water from hovering aircraft.
- May be used for parachute operations as described in activity type F9.

**Amphibious Operations (W2)**

- Would involve rescue activities in a water environment; loading/unloading teams of five to six personnel (carrying backpacks weighing approximately 50 pounds) to and from boats; and movement in streams, rivers, and lakes as part of egress/ingress operations.
- Would involve rescue personnel performing Open Circuit Dive operations of personnel/equipment using commercial lifting techniques.
- Would involve the use of sonar to locate subsurface items.

In addition to the proposed PR training activities identified above, chaff, marine flares, marine markers (sea dye markers), and lightsticks may be used. The fine chaff streamers act like particulates in the water, temporarily increasing the turbidity of the ocean's surface. They quickly disperse and the widely spaced events have no discernable effect on the marine environment. It should be noted that all the components of chaff's aluminum coating are present in seawater in trace amounts, except magnesium, which is present at 0.1 percent (Navy 2008, 2018b). Aluminum is the most common metal in the earth's crust and also occurs naturally in trace amounts in the aquatic environment. Aluminum oxide and silicon dioxide are the two most common minerals in the earth's crust, and ocean waters are constantly exposed to both minerals, so the addition of small amounts of chaff would not affect water quality (Navy 2008, 2018b). Flares would disperse widely in the atmosphere and are designed to burn completely before settling in the water. The only material that would enter the water would be a small, round, plastic compression pad or piston (Navy 2008, 2018b) which would float in water. An extensive literature review and controlled experiments conducted by the USAF revealed that self-protection flare use poses little risk to the environment or animals (Navy 2008, 2018b). Most pyrotechnics in marine markers are consumed during use and combustion byproducts are expended into the air before the marine marker contacts the water (Navy 2008, 2018b). Based on the results of studies conducted at multiple marine and freshwater ranges where training materials have been used intensively over decades, no significant impacts on water quality from explosives or pyrotechnics in unconsumed flares and marine markers would be expected (Navy 2008, 2018b). Since lightsticks float and are not biodegradable, every practicable effort would be made to retrieve them at the completion of PR training activities in the WTA. Pollutants associated with the training materials discussed above would be released in quantities and at rates such that they would not violate any water quality standard or criteria.

Based on the proposed PR training activities (W1 and W2), there is a potential for release of fuel from watercraft to surface waters. However, this potential adverse impact would be minimized to a negligible level by complying with standard operating procedures for watercraft maintenance and spill prevention. In addition, refueling of watercraft would be conducted at facilities designed for such activities and in strict accordance with USAF standard operating procedures.

Water quality in the marine environment is determined by a complex set of interactions between chemical and physical processes operating continuously in the waterbody system. This dynamic equilibrium is expressed by a variety of indicators, including temperature, turbidity, salinity, dissolved oxygen, and nutrient levels. These proposed PR training activities are not expected to contribute pollutants that would adversely affect the water quality indicators, and would not be anticipated to have a significant negative effect on the water quality.

Therefore, the Proposed Action would result in a less than significant impact related to surface water resources on or near proposed PR training sites that are located on DoD property.

#### 3.10.3.1.2 U.S. Forest Service or Other Federal Land

Similar to the discussion in Section 3.10.3.1.1, pollutants associated with the use of chaff, marine flares, marine markers (sea dye markers), and lightsticks for water operations on USFS land would be released in quantities and at rates such that they would not violate any water quality standard or criteria.

Also, during implementation of the Proposed Action, water operations at the three proposed PR training sites on USFS land (Roosevelt Lake, Saguaro Lake Ranch, and Verde River) would include water HLZ/DZ use, overwater hoist operations and amphibious operations (W1 and W2). As shown in Table 3.10-2, water operations for the three proposed PR training sites would occur in waterbodies that are impaired. However, similar to the discussion in Section 3.10.3.1.1, potential adverse impacts related to refueling would be minimized to a negligible level by being conducted at facilities designed for such activities and compliance with standard operating procedures.

If parachute or water operations occur near the bank of the lake, a temporary increase in sediment runoff into the lake may occur, potentially impacting water quality in the immediate area. However, impacts to surface water would be minimized to less than significant levels by limiting training activities to designated LZs and by rotating landing zones when these areas show signs of erosion. Movement in streams or rivers as part of egress/ingress operations has the potential to increase erosion, potentially impacting water quality in the immediate area. However, impacts to surface water would be minor because it would be localized and recoverable via natural processes. Over the short term, sediments in flowing streams or rivers would settle rapidly and water clarity would return, causing the streams or rivers to return to their former state once training personnel move out of the area.

Also, similar to the discussion in Section 3.10.3.1.1, the proposed PR training activities are not expected to contribute pollutants that would adversely affect the water quality indicators, and would not be anticipated to have a significant negative effect on the water quality.

Therefore, the Proposed Action would result in a less than significant impact related to surface water resources on or near proposed PR training sites located on USFS or other federal land.

#### 3.10.3.1.3 Other Land (Municipal, City, County, State, or Tribal)

Similar to the discussion in Section 3.10.3.1.1, pollutants associated with the use of chaff, marine flares, marine markers (sea dye markers), and lightsticks for water operations on other land (municipal, city, county, state, or tribal) would be released in quantities and at rates such that they would not violate any water quality standard or criteria.

Also, during implementation of the Proposed Action, water operations at the seven proposed PR training sites on other land (Black Mountain Reservoir, Colorado River, Lake Patagonia, Lake Pleasant, Sahuarita Lake, Salt River High, and Salt River Low) would include water HLZ/DZ use, overwater hoist operations, and amphibious operations (W1 and W2). As shown in Table 3.10-3, water operations for three of these proposed PR training sites (Colorado River, Lake Patagonia, and Lake Pleasant) would occur in waterbodies that are impaired. However, similar to the discussion in Section 3.10.3.1.1, potential adverse impacts related to refueling would be minimized to a negligible level by being conducted at facilities designed for such activities and compliance with standard operating procedures.

If parachute or water operations occur near the banks of a lake, a temporary increase in sediment runoff into the lake may occur, potentially impacting water quality in the immediate area. However, impacts to surface water would be minimized to less than significant levels by limiting proposed PR training activities to designated LZs and by rotating landing zones when these areas show signs of erosion. Movement in streams or rivers as part of egress/ingress operations has

the potential to increase erosion, potentially impacting water quality in the immediate area. However, impacts to surface water would be minor because it would be localized and recoverable via natural processes. Over the short term, sediments in flowing streams or rivers would settle rapidly and water clarity would return, causing the streams or rivers to return to their former state once training personnel move out of the area.

Similar to the discussion in Section 3.10.3.1.1, the proposed PR training activities are not expected to contribute pollutants that would adversely affect the water quality indicators and would not be anticipated to have a significant negative effect on the water quality.

Therefore, the Proposed Action would result in a less than significant impact related to surface water resources on or near proposed PR training sites located on other land.

#### 3.10.3.1.3.1 Activation of Playas Temporary MOA

No water operations occur on or near proposed PR training sites located in the Playas Temporary MOA; therefore, no impact would occur.

### 3.10.3.1.4 Private Property

No water operations occur on or near proposed PR training sites located on private property; therefore, no impact would occur.

### 3.10.3.2 No-Action Alternative

Under the No-Action Alternative, the USAF would not conduct proposed PR training activities (water operations) in the WTA. The stressors potentially impacting water quality (e.g., metals, explosives, explosive byproducts, or pollutants) would not be introduced into the environment. Therefore, baseline conditions of the existing environment would either remain unchanged or would improve slightly after cessation of ongoing training activities.

# 4.0 CUMULATIVE AND OTHER IMPACTS

## 4.1 CUMULATIVE IMPACTS

CEQ regulations for implementing NEPA require that the cumulative impacts of a Proposed Action be assessed (40 CFR 1500–1508). A cumulative impact is defined as the following (40 CFR 1508.7):

> *"Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

Cumulative impacts are most likely to arise when a relationship exists between a Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to a Proposed Action would be expected to have more potential for a relationship than those more geographically separated.

### 4.1.1 Considerations for Potential Cumulative Impacts

In this section, an effort has been made to identify past and present actions on or in the vicinity of the Proposed Action and those reasonably foreseeable actions that are in the planning phase or unfolding at this time. A summary of past, present, and future military and non-military actions at Davis-Monthan AFB and potentially within the Proposed Action's ROI, as discussed in Section 3.0, Affected Environment and Environmental Consequences, compiled by the USAF that have a potential to interact with the Proposed Action is presented in Table 4-1 below. This approach enables decision makers to have the most currently available information to evaluate the environmental consequences of the Proposed Action. A cumulative evaluation of the Proposed Action is presented by resource in subsections below.

**Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action**

| Action | Action Type | Brief Description | Status and Schedule |
|---|---|---|---|
| **Military Actions** | | | |
| Davis-Monthan AFB Installation Development Plan | Construction | The Proposed Action at Davis-Monthan AFB includes the implementation of 16 representative projects, which include MILCON, additions and renovations, and demolition projects. Several of the MILCON projects also include a demolition component. In many cases, Alternative Actions have been considered. Implementation of these projects provides for the continuously evolving mission of the 355 WG and their tenants. Proposed projects meet applicable DoD installation master planning criteria, consistent with UFC 2-100-29 01, AFI 32-7062 (USAF 2018c), and AFPD 32-10. The No Action Alternative reflects the status quo, where no Installation Development Plan infrastructure improvement would occur at this time. | Present and Future |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| Red Flag-Rescue (Angel Thunder) | Training | The USAF conducts biannual personnel recovery training operations using DoD and non-DoD LZs, DZs, ground training sites, and aircraft sorties at Davis-Monthan AFB, Arizona. | Present and Future |
| BMGR Withdrawal Application | Land Withdrawal | The BMGR East land withdrawal will terminate in October 2024. The Secretary of the Air Force and the Secretary of the Navyhave filed an application to extend the land withdrawal to serve the continuing military need for this range, extending from Yuma to 25 miles east of Gila Bend, Arizona. | Present and Future |
| BMGR East Enhancements | Construction and Improvement | The 56 FW proposed a number of enhancements in 2010. Of these, six actions involving construction or other ground disturbing activity were selected for implementation in a Record of Decision and are completed, awaiting funds, or on hold indefinitely.<br><br>1. Developing a sensor training area (not funded, on hold)<br>2. Developing moving vehicle target on the North Tactical Range (not funded, pending)<br>3. Converting the southern portion of Range 3 into a helicopter gunnery range (completed)<br>4. Constructing a new taxiway and air traffic control tower at Gila Bend Air Force Auxiliary Field (not funded, pending)<br>5. Proposed Manned Range 1 to Range Munitions Consolidation Point 1 Road Pavement (not funded, pending)<br>6. Proposed Excavation and Use of Sand and Gravel on BMGR East (pending permitting) | Past and Future |
| BMGR East Combined Air-Ground Operations | Training | Supporting limited on-the-ground operations (small teams, specific areas on BMGR East) was selected for implementation in a Record of Decision. | Present and Future |
| Operational Change, R-2301E | Training | Authorizing overflight of a portion of the Cabeza Prieta National Wildlife Refuge, Arizona, between 500 feet and 1,500 feet AGL was selected for implementation in a Record of Decision. However, it will not be implemented until an agreement between the Department of Interior and the DoD has been negotiated. | Future |
| AFRC F-35A Operational Beddown EIS | Beddown | The AFRC is proposing a beddown and operation of 24 Primary Aerospace Vehicles Authorized F-35A aircraft with two BAI in one squadron at one base in the continental U.S. Preferred alternative is NAS Fort Worth Joint Reserve Base, Texas, and one of the reasonable alternatives is Davis-Monthan AFB, Arizona. | Present and Future |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| EC-130 Rehost | Training | The USAF will rehost 14 EC-130H aircraft at Davis-Monthan AFB with 10 EC-37B aircraft. There is no approved MILCON for the weapon system action, and the expedited execution date drives in-place rehost of the current mission. Pilots would be trained commercially; the aircraft would be Contractor Logistics Support maintained.<br>• Currently 14 aircraft, 10 Primary Mission Aircraft Inventory, two BAI, two Attrition Reserve A/R<br>• Replace 14 x EC-130Hs with 10 x new EC-37Bs<br>• Manpower Reduction of 516 (49 Operations, 467 Maintenance: five Officers, 467 Enlisted)<br>• 755th Aircraft Maintenance Squadron Flag Stand-down<br>• Contract Maintenance Support end state TBD, expected to be 125–130 contract personnel | Present and Future |
| MQ-9 Operations Group Beddown (Base X) | Beddown | The purpose of the USAF Proposed Action is beddown of an MQ-9 Operations Group at an active-duty USAF installation in the U.S. Establishment of this Operations Group would take place over a period of four years and would involve the basing of personnel needed to remotely operate the aircraft, not located at Base X, and constructing the associated facilities. Davis-Monthan AFB not selected for beddown. | Past |
| 2009 Solar Power System EA | Construction | The USAF proposes to allow the construction of a SPS at Davis-Monthan AFB. The USAF would lease three noncontiguous parcels (Chevron Parcel (54 acres), West Airfield Parcel (155 acres), and Valencia Road Parcel (38 acres) of land to a private contractor, who would be required to construct and maintain the facility. The SPS would generate a minimum of 1 megawatt of electricity for use by Davis-Monthan AFB. This would reduce electricity expenses paid by the base, and also comply with the Energy Policy Act of 2005 and Executive Order 13423. | Past, Present, Future |
| RC-26 Beddown | Relocation | This proposed action includes the relocation of one RC-26 aircraft and associated manpower to Davis-Monthan AFB in existing TFTC facilities would also serve to consolidate 214th ATKG assets and operations in a common location. The manpower footprint of the RC-26 program includes nine aircrew (5–6 full-time), one full-time administrative support staff, and 3 full-time contract logistics support/maintenance personnel. Operational activities average one four- to five-hour sortie per day (time of day dependent upon customer requirements), 27 sorties per month, and 324 sorties per year. | Future |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| Taiwan Air Force to TIA Beddown | Construction and Improvement | The Air Education and Training Command is proposing to relocate 14 Taiwan Air Force F-16 aircraft and associated personnel from their current location to Tucson ANGB. Infrastructure improvements at Tucson ANGB will include the reconfiguration of aircraft sunshades, interior renovations and minor additions to Buildings 1 and 40, construction of a new entry control facility, and in-kind replacement of Aerovation Hangar on Tucson Airport Authority property.<br><br>EA process underway. | Future |
| Army General Instructional Building | Construction | The USAF is proposing to construct a General Instructional Building on Davis-Monthan AFB. The Proposed Action would add approximately 159 permanent staff and approximately 126 transient students to the base population. | Present and Future |
| 309th AMARG Expansion/Status Change to Depot Function | Expansion | The USAF Material Command's AMARG is looking to make the AMARG located on Davis-Monthan AFB into a Depot. | Future |
| Davis-Monthan AFB Airspace Optimization EIS | Airspace Utilization | The purpose of this USAF Proposed Action is to improve and optimize Davis-Monthan AFB's airspace, especially the Tombstone MOA. | Present and Future |
| Playas Temporary MOA | Training and Airspace Utilization | Establish Playas MOA/ATCAA. The Playas Temporary MOA/ATCAA will be activated as needed to support multi-service training requirements and will be controlled by the 355 OSS. When activated, 355 OSS personnel will notify Albuquerque Control (FAA) and request an FAA NOTAMs be published for the activation. The Playas Temporary MOA would be a 20 NM X 20 NM block of SUA centered on Playas, New Mexico. The Playas Training and Research Center is located in Grant and Hidalgo counties, in the southwestern corner of the State of New Mexico. | Past, Present, and Future |
| Potential Increase of Personnel Rescue Assets | Expansion | This would consist of potential increase of personnel rescue assets at Davis-Monthan AFB. | Present and Future |
| Personnel Recovery Campus | Construction and Improvement | Enhance and sustain the Rescue Groups' mission at Davis-Monthan AFB with flexible infrastructure through an effective, consolidated campus. | Present and Future |
| Proposed Basilone Road Realignment –MCB Camp Pendleton | Construction and Improvement | The USMC's construction of roadway realignment includes clearing and grubbing, demolition of existing pavements, earthwork (cut and fill), grading, drainage structures, full depth pavement, curb, erosion control, hydroseeding, guard rails, and utilities relocation on MCB Camp Pendleton. | Present |
| USMC Forces Special Operations Command Expansion Project – MCB Camp Pendleton | Construction | The USMC is proposing construction, maintenance, and operation of new facilities within and adjacent to the 41 Area and the expansion of three existing facilities in the same area on MCB Camp Pendleton. | Present and Future |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| Operations Access Points (P-159 Red Beach) – MCB Camp Pendleton | Construction | The USMC proposed improvements to the tactical vehicle and troop transit between Red Beach and inland training areas at MCB Camp Pendleton and to construct a bridge system that would facilitate an increase in capacity and reliability by allowing trains to pass. | Past |
| Expansion of the U.S. Customs and Border Protection Riverside Air and Marine Operations Center | Construction and Improvement | The AFRC expansion of administrative space at March ARB, provide warehouse space and required parking, and develop a park for static displace of Air Marine Operation Center equipment. Also includes infrastructure and facility improvements. | Present |
| Supplemental Programmatic EA for Army 2020 Force Structure Realignment | Management | This Army Supplemental Programmatic EA addresses the potential environmental impacts of the proposed further reductions in the active component Soldier and Army civilian workforce to enable force structure decisions for the potential end-strengths outlined in the 2014 Quadrennial Defense Review. | Present and Future |
| Fort Huachuca Sentinel Landscape | Management | The Sentinel Landscapes Partnership is a broad coalition of federal agencies, state and local governments, and non-governmental organizations that works with private landowners to advance sustainable land management practices around military installations and ranges. While the three founding agencies maintain oversite of the Partnership, sentinel landscapes are predominantly local enterprises. To date, the Partnership has selected seven locations as sentinel landscapes, one of which is Fort Huachuca (established in 2015). The Fort Huachuca Sentinel Landscape plays an active role in efforts to protect grassland and forest habitat, the species that rely on those habitats, and the water resources Fort Huachuca, wildlife, and the region need. Funding acquired through the DoD's Readiness and Environmental Protection Integration Program has helped the U.S. Arrmy conserve 13,857 acres within Fort Huachuca's Buffalo Soldier Electronic Test Range, decreasing the probability of incompatible development within the range complex and beneath the installation's restricted airspace. Additionally, partners used funds from the Arizona Military Installation Fund and private organizations to preserve local wetlands, which in turn created 4,371 acre-feet of water savings for Fort Huachuca and significantly lessened the burden on groundwater within the Upper San Pedro River watershed. | Past, Present, and Future |
| NTTR Military Land Withdrawal LEIS | Management | The current NTTR land withdrawal expires in November, 2021. In accordance with the Military Lands Withdrawal Act of 1999, the USAF has notified Congress of a continuing military need for the NTTR withdrawal, at Nellis AFB, Nevada. The LEIS will analyze alternatives for military land withdrawal of the NTTR to improve the range capacity and capability to support military test and training requirements now and into the future. | Present and Future |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| Final EA for the Range Wash From Las Vegas Boulevard to the Confluence Detention Basin Project | Management/ Construction | This USAF EA addresses the potential effects from all reasonable alternatives, beneficial and adverse, resulting from the construction, operation, and maintenance of flood control facilities that the City of North Las Vegas proposes to construct for the Range Wash – Hollywood Branch and Range Wash – East Tributary in Nellis AFB. | Present |
| Environmental Assessment for the Beddown of Tactical Air Support Squadron, Nellis AFB | Management | The USAF is proposing to stand up the Tactical Air Support Squadron at Nellis AFB, Nevada, using excess F-16 aircraft from Hill AFB, Utah. Implementation of the proposed action would improve and expand training opportunities for both aviators and in-demand Joint Terminal Attack Controllers and the Close Air Support environment. | Present and Future |
| EA for Nellis Reclaimed Waterline Project | Construction | This USAF EA assessed the potential environmental consequences associated with the construction of a pipeline to carry reclaimed water from a water reclamation facility operated by the City of North Las Vegas to the grounds of the Nellis AFB Golf Course, Nellis AFB, Clark County, Nevada. | Present |
| Advanced Gunfire EA WSMR | RDT&E | The WSMR Army Garrison's EA evaluates possible environmental effects associated with the proposed RDT&E activities and construction of a test facility in support of the DoD's hypervelocity projectile and electromagnetic railgun technologies on WSMR, New Mexico. | Present |
| SUA Optimization at Holloman AFB EIS | Airspace Utilization | The USAF EIS evaluates the potential environmental consequences associated with modifying existing or creating new SUA used by Holloman AFB, and relinquishing to the NAS SUA incompatible for today's USAF mission. Alternative 2 would modify the existing Cato/Smitty MOA/ATCAA and create a new Lobos MOA to the west of WSMR, New Mexico. Each alternative includes aircraft activity down to 500 feet AGL, supersonic activity at or above 30,000 feet MSL, and the use of defensive chaff and flares within certain parameters. | Present and Future |
| EA, Granite Target Site at WSMR, New Mexico: Permit for Incidental Disturbance Take of Golden Eagles | Management Plan | The USFWS prepared the EA to evaluate the effects of issuing a one-year permit for take of golden eagles (*Aquila chrysaetos*) that is incidental to otherwise lawful activities associated with the operation of the Granite Target Site (target site) at WSMR, New Mexico. | Present and Future |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| Draft Commercial Crew Transportation System EA For the Boeing Starliner Launch from Cape Canaveral Air Force Station and Landing and Recovery at the U.S. Army WSMR | Management Plan | The NASA proposed action is to allow the NASA Commercial Crew Transportation System initiative to launch the Boeing CST-100 Starliner spacecraft from Cape Canaveral Air Force Station and to perform landing and recovery operations for two WSMR, Nevada, sites for two test missions, followed by subsequent missions up to two times per year. | Present and Future |
| MSS-TB at, San Clemente Island, California, Programmatic EA/Overseas EA | Construction | The purpose of the Navy's Proposed Action at San Clemente Island is to provide infrastructure to support the current and future testing of new passive acoustic surveillance technologies and unmanned systems. The Proposed Action consists of the installation and operation of the MSS-TB in two phases: Phase I, consisting of the installation of a submarine cable system; and Phase II, consisting of the construction and operation of an upland shore processing facility at NALF San Clemente Island. The Proposed Action also includes MSS-TB support ship transit, pre-deployment equipment<br>calibration, and berthing at Naval Base Ventura County Port Hueneme, California (under Phase I). | Present and Future |
| Final EA and FONSI for the Relocation of the Aerial Target Launch Site and NALF San Clemente Island | Construction | The purpose of the Navy's Proposed Action is to support Fleet readiness requirements by providing continued Navy missile exercise training capabilities within the SOCAL Range Complex. The Proposed Action consists of relocating the existing aerial target launch site from the Red Label Area at NALF San Clemente Island, including: construction of two concrete pads; creation and maintenance of a fuel break; improvements to an existing road; installation of a vehicle gate and warning signs; and future repairs and upgrades. | Present |
| HSTT EIS/OEIS | Training | The Navy's EIS/OEIS assess the potential environmental impacts associated with two categories of military readiness activities: training and testing. The Study Area is made up of air and sea space off Southern California, around the Hawaiian Islands, and the transit corridor connecting them. | Present |
| Establishment of a Temporary MOA at Playas, New Mexico | Airspace | The USMC proposed action to provide an integrated, properly configured, realistic military training airspace with adequate dimension and size to support combat search and rescue training for U.S. and allied air-combat aircrews, para-rescue teams, survival specialists, intelligence personnel, air battle managers and Joint Personnel Recovery Center Personnel. The Playas Temporary MOA is located over the New Mexico Training and Research Center, Playas, New Mexico. | Present |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| EA for Training Programs at the Playas Training Center, New Mexico | Training | Energetic Materials Research and Testing Center, New Mexico Tech and the Department of Homeland Security are proposing to utilize the facilities resident at the Playas Training Center in Playas, New Mexico, to conduct training and research related to emergency response and homeland security. | Present |
| **Non-Military (Federal) Actions** | | | |
| Interstate 11 Corridor Tier 1 EIS, Nogales to Wickenburg | Management Plan | The Arizona Department of Transportation (ADOT) and Federal Highway Administration Draft Tier 1 EIS evaluates alternatives for the Interstate 11 (I-11) Corridor in Santa Cruz, Pima, Pinal, Maricopa, and Yavapai counties, Arizona. | Present and Future |
| Border Wall | Construction | U.S. Customs and Border Protection construction of a border wall along the Arizona-Mexico border. | Future |
| Arizona National Scenic Trail Comprehensive Plan | Management | The Comprehensive Plan, developed by the USFS, will develop administrative and management goals, objectives and practices for the Arizona National Scenic Trail and management corridor, which stretches 800 miles across Arizona from Mexico to the Utah border. | Present |
| Rancho Grande Water Association Water System Addition | Construction | The Gila National Forest proposed to add a second buried water pipeline from private property to an existing freshwater storage tank. The pipeline is approximately 615 linear feet in length. | Past |
| South Fork Negrito Campground Relocation | Construction | The Gila National Forest proposes to decommission flood damaged South Fork Negrito Camp Ground located near Reserve, New Mexico, and relocate it outside of an existing floodplain. | Future |
| Rucker Road Low Water Crossing Replacement | Construction | The Coronado National Forest proposes to demolish existing low water crossing on FSR 74E at Rucker Canyon Creek and replace with a structure that is on grade with the stream, allowing a natural flow regime within the creek and creating connectivity between the two sides of the crossing. | Present and Future |
| Bighorn Sheep Population Management Project | Management | The Tonto National Forest requests to land helicopters in five wilderness areas on the forest to survey and monitor bighorn sheep populations and respond promptly to indications that a disease event is threatening bighorn sheep herd viability. | Present and Future |
| **Non-Military (Private Actions)** | | | |
| Southline Transmission Project | Construction | New electric transmission line to be built in two sections by Southline Transmission, L.L.C. The New Build Section is construction of approximately 240 miles of new 345-kilovolt double-circuit lines in New Mexico and Arizona. The Upgrade Section would convert approximately 120 miles of existing single-circuit 115-kilovolt transmission lines, currently owned by the Western Area Power Administration, to double-circuit 230-kilovolt lines between the existing Apache Substation and the existing Saguaro Substation northwest of Tucson, Arizona. | Present |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| Pinal Air Park | Construction | Private organization is looking to improve the Pinal Air Park in Pinal County, Arizona, and its capabilities. Potentially investing in runway repairs/mods, construction of support facilities, and infrastructure. | Future |
| SunZia Southwest Transmission Project | Construction | SunZia Transmission, LLC, proposes the SunZia Project, which consists of two bi-directional extra-high voltage electric transmission lines and substations that will transport energy from Arizona and New Mexico to customers and markets across the Desert Southwest. | Present and Future |
| **State and Local** | | | |
| Sheeps Crossing Flagstaff Urban Trail System | Improvement | City of Flagstaff is proposing to obtain a permit to construct a portion of the Flagstaff Urban Trail System 10-foot wide aggregate trail with 2-foot native shoulders to complete a section of the trail system. The location is within Coconino National Forest, from JW Powell to a culvert that crosses under I-17 toward Fort Tuthill outside of Flagstaff. This project would also involve drainage work on Highway Stock tank. | Future |
| TIA Part 150 Program Update | Noise Update | In 2012, the Tucson Airport Authority initiated a Part 150 Noise Program Update. On 9 September 2013, the FAA approved the Noise Compatibility Program for Tucson International Airport. | Present |
| TIA/162 ANG | Construction | The Tucson Airport Authority is proposing construction of a new parallel runway at Tucson International Airport. | Future |
| Tucson Downtown Links Project | Construction | The Tucson Department of Transportation improvement project, Downtown Links, is now on the third and final phase of this project and will take drivers from Barraza-Aviation Parkway to Interstate 10 on a new four-lane road that bypasses the frequently congested downtown area in Tucson, Arizona. | Present and Future |
| Sahuarita Road Phase II | Construction | The Town of Sahuarita completed improvements to Sahuarita Road, including bicycle lanes, concrete curbs, sidewalks, drainage improvements, riverbed, and landscaping. | Past |
| Patagonia Lake State Park Cabins | Construction | Arizona State Parks added four cabins at the southeast end of Patagonia Lake State Park. | Past |
| Terminal 3 Modernization - Phoenix Sky Harbor IAP | Construction | The City of Phoenix, Arizona, is modernizing the Phoenix Sky Harbor IAP. The Terminal 3 Modernization will include a consolidated security checkpoint, additional ticket counters, additional baggage processing capacity and claim carousels, new and expanded food concessions and retail, additional gates as needed, expanded curb for drop-off and pickup. | Present |
| Eighth Concourse at Terminal 4 - Phoenix Sky Harbor IAP | Construction | The City of Phoenix, Arizona, is modifying the Phoenix Sky Harbor IAP. The City is adding a new eight-gate concourse to the southwest corner of Terminal 4 to be occupied by Southwest Airlines. | Present |

| Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action | | | |
|---|---|---|---|
| **Action** | **Action Type** | **Brief Description** | **Status and Schedule** |
| Deep Well Ranch Master Plan | Management Plan | Deep Well Ranch property includes approximately 1,800 acres of land generally located at the northwest corner of the Highways 89 and 89A interchange, near Prescott, Arizona. This Master Plan, developed by Deep Well Ranch, establishes an overall vision for the property and sets forth a logical planning process that identifies the parameters for the various phases of development. Section 3.11.3(A) of the City of Prescott's Land Development Code requires the concurrent approval of a site-specific Master Plan with the approval of a rezoning of property to the Specially Planned Community District. | Present |
| Deep Well Ranch Annexations | Management | A City of Prescott is initiating the annexation of two large areas of approximately 1,304 acres and 321 acres, respectively, located west of the Prescott Municipal Airport and north of Pioneer Parkway in Prescott, Arizona. | Present and Future |
| Prescott Regional Airport New Terminal Project | Construction | This City of Prescott project, at the City of Prescott Airport, generally consists of design for a new 18,000 SF Terminal Building, New Terminal Apron Site, New Access Roadway System Site (including parking at the north end), Existing T-Shade/Hangar area, and the access Taxilanes to those Shades/Hangars, Existing Parking Site (which will require improvements) and New Taxilane Access Site to Existing Hangars. | Present and Future |
| Prescott Municipal Airport Master Plan | Management Plan | This City of Prescott developed an airport master plan which provides a guidebook for future development of the Prescott Municipal Airport. | Present and Future |
| Bellmont Area Development Plan | Development Plan | The Bellemont Area Plan (Area Plan) is an amendment to the Coconino County, Arizona, Comprehensive Plan, and provides specific policy guidance for future development within this unincorporated community. Bellemont has experienced significant growth since the original Area Plan was adopted in 1985, and this Area Plan is a substantial update to and supersedes that plan. | Present |
| State Route 89 to Deep Well Range Road Widening Project | Construction | ADOT, in conjunction with the Federal Highway Administration, is planning to widen the current two-lane roadway, State Route 89 in Prescott, Yavapai County, to a four-lane divided highway with a raised center median. | Future |
| Sonoran Corridor Tier 1 EIS | Management Plan | ADOT and Federal Highway Administration's Tier 1 EIS Sonoran Corridor Selection Report evaluates a multimodal high -capacity facility that would connect Interstate 10 and Interstate 19 within the State of Arizona. The study covers an area bounded by Interstate 10 and Interstate19 and the southern boundary of the Town of Sahuarita. | Present and Future |
| Grand Canyon National Park Airport Master Plan Study | Management Plan | ADOT's Master Plan for Grand Canyon National Park Airport located within the jurisdictional boundaries of the Town of Tusayan in Coconino County, Arizona, has been undertaken to provide systematic guidelines for the airport's overall development, maintenance, and operation for the next 20 years. | Present and Future |

**Table 4.1-1. Summary of Past, Present, and Future Military and Non-Military Actions with Potential to Interact with Proposed Action**

| Action | Action Type | Brief Description | Status and Schedule |
|---|---|---|---|
| North-South Corridor Study Tier 1 Draft EIS | Management Plan | ADOT and Federal Highway Administration are considering the construction and operation of a north-to-south transportation corridor in Pinal County, Arizona. If an action alternative is selected and constructed, the facility would improve connectivity and accessibility and introduce additional roadway capacity to support projected population and employment growth in Pinal County and across the larger region. | Present and Future |

ADOT – Arizona Department of Transportation
AFI – Air Force Instruction
AFPD – Air Force Policy Directive
AFRC – Air Force Reserve Command
AGL – above ground level
AMARG – Aerospace Maintenance and Regeneration Group
ANGB – Air National Guard Base
ATCAA – Air Traffic Control Assigned Airspace
BAI – Backup Aircraft Inventory
BMGR – Barry M. Goldwater Range
DoD – U.S. Department of Defense
DZ – Drop Zone
EA – Environmental Assessment
EIS – Environmental Impact Statement
FAA – Federal Aviation Administration
FONSI – Finding of No Significant Impact
LEIS – Legislative Environmental Impact Statement
LZ – Landing Zone
MILCON – Military Construction
MOA – Military Operations Area
MSL – mean sea level
MSS-TB – Maritime Surveillance System Test Bed
NALF – Naval Auxiliary Landing Field
NAS – National Airspace System
NASA – National Aeronautics and Space Administration
NOTAM – Notice to Airmen
NTTR – Nevada Test and Training Range
RDT&E – Research, Development, Test & Evaluation
SOCAL – Southern California
SPS – solar power system
SUA – Special Use Airspace
TIA – Tucson International Airport
USAF – U.S. Air Force
USFWS – U.S. Fish and Wildlife Service
USMC – U. S. Marine Corps
WSMR – White Sands Missile Range

Sources: Arizona State Parks 2019a; ADOT n.d., 2018a, 2018b, 2019a, 2019b; AFRC 2019; ASLD 2019e; Borderland Construction 2014; City of Flagstaff 2019; City of Prescott 2018a, 2018b; Coconino County 2019a; ESPIRITU Loci Incorporated 2017; FAA 2019b; U.S. Marine Corps Special Forces Operations Command (MARSOC) 2018; MCB Camp Pendleton 2018; NASA 2018; Navy 2018a, 2018b, 2018c; New Mexico Tech and U.S. Department of Homeland Security 2006; personal communication with 355 CES/CEIE 2019; personal communication with AETC 56 RMO/ESM 2019; Phoenix Sky Harbor IAP 2019; Sentinel Landscapes Partnership 2019; Southline Transmission, L.L.C. n.d.; Tucson Airport Authority 2019; Tucson Department of Transportation 2019; U.S. Army Environmental Command 2014; U.S. Army Garrison White Sands 2018; USAF 2009, 2015d, 2017e, 2017f, 2017g, 2017h, 2018c, 2018e, 2018g, 2018h, 2018i, 2018j; USFS 2017a, 2018a, 2019j, 2019k, 2019m; USFWS 2017; USMC and Navy 2019.

### 4.1.2 Airspace

Ongoing and reasonably foreseeable future actions within the region that could intersect with implementation of the Proposed Action are listed in Table 4.1-1. These cumulative actions would have a long-term, less than significant impact to airspace management. As discussed in Section 3.1 the three scale categories that constitute the preferred alternative have a range of anticipated flying days and total sorties based on airspace and aircraft availability. This section of the EA also describes how the total number of sorties required for proposed PR training events are not entirely additive to the current military flying in the region, which helps mitigate the overall impacts to airspace management. Cumulative impacts would be realized primarily on DoD property, SUA, and in the Class C airspace overlying Davis-Monthan AFB and TIA. Limited and inconsequential impacts could be created in airspace overlying USFS or other federal land, other land (municipal, city, county, state, or tribal), and private property.

Davis-Monthan AFB is a reasonable alternative being analyzed for the AFRC F-35A Operational Beddown EIS. Naval Air Station Fort Worth Joint Reserve Base, Texas, is the preferred alternative for this basing action. If Davis-Monthan AFB is selected in a ROD, these F-35A aircraft and their training requirements would be entirely additive to the military flying in the region. These additional aircraft would schedule airspace that currently supports existing F-35A and F-16 training.

The growth of F-35A training at Luke AFB in Phoenix, Arizona, is necessitating the relocation of Taiwan Air Force (TAF) F-16 training to another location. TIA is an alternative for this basing action. If the TAF were to fly their sorties from TIA, they would use most of the same airspace they use today, the exception being an increase in departures and arrivals in airspace overlying Tucson and Davis-Monthan AFB.

Pinal Air Park is a proposed PR training site on county land owned by Pinal County. There are proposed airfield and infrastructure improvements at the airfield that are intended to support an increase in civil flight operations. This increase in civil air traffic coupled with the airfield's use as a PR training site would result in an overall cumulative impact to airspace management at this airfield and in the adjacent airspace.

In summary, considering all of the proposed and foreseeable actions within the region, the greatest impacts would be associated with the AFRC F-35A beddown. This action would increase scheduling pressure within the BMGR which could require non-F-35A range users to schedule training elsewhere. Planning for PR training, particularly Large Force training, relies heavily on access to BMGR. Scheduling requests for BMGR access would also gradually increase as F-35A aircraft continue to be delivered to Luke AFB which is scheduled to receive 144 total aircraft based on a 2013 ROD. This would be a less than significant long-term impact because potential adverse effects would be minimized and managed through existing scheduling channels and through mission prioritization.

### 4.1.3 Air Quality

The present and future projects with the potential to contribute to a cumulative impact to air quality as a result of aircraft beddown or training improvement on or off base are identified in Table 4.1-1. Anticipated impacts to air quality from the Proposed Action, although considered less than significant, would have an adverse cumulative impact when combined with the past, present, and reasonably foreseeable actions on or off Davis-Monthan AFB.

However, the PR training activities, particularly those similar to Medium and Small Force training, have been routinely conducted in the region initiated at Davis-Monthan AFB and other airfields to a lesser extent. For Large Force training, the aircraft training would occur within the Playas Temporary MOA or BMGR where no sensitive receptors are present and impacted. Therefore, given the limited increase in the proposed PR training activities around airfields or training sites, the cumulative air quality impact in terms of aircraft or vehicle emissions within the affected counties or states would be minor. The degree of additive impact resulting from the Proposed Action is considered minor and would not appreciably impact the trend in the air quality around affected airfields and proposed PR training sites over time. Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions as shown in Table 4-1, would result in a less than significant cumulative impact to air quality.

### 4.1.4 Biological Resources

Cumulative effects result from the incremental effect of the Proposed Action when added to other past, present and reasonably foreseeable future actions regardless of the agency that undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Because the potential adverse impacts of the Proposed Action would be localized and result in less than significant effects, the only project that has potential to contribute to an incremental effect along with the Proposed Action is the Red Flag-Rescue (Angel Thunder) project. The remaining cumulative actions listed above that involve some type of construction/expansion activity would undergo review by the applicable lead agency for compliance with regulatory requirements/permits, identification of minimization measures, and NPDES permits for construction activities and project operations, minimizing potential impacts to biological resources.

The Red Flag-Rescue (Angel Thunder) project would occur for brief periods (21 days) biannually at some of the same rural training sites proposed under the Proposed Action. Short-term, negligible to minor, adverse cumulative impacts on biological resources at these rural training sites would be expected. Trampling of vegetation by personnel could occur as a result of the Proposed Action and the Red Flag-Rescue project; however, because many of the proposed PR training sites were previously disturbed, significant impacts are not anticipated. Because both the Proposed Action and this future project are short-term in nature and sporadic over time, these PR training sites are expected to return to pre-activity conditions once training has concluded. Therefore, cumulative impacts would be short-term, negligible to minor. If future training events at a proposed PR training site take place, a short-term increase in cumulative impacts related to nesting birds and special-status species could occur. At locations where special-status species could occur, it is recommended to avoid use of these proposed PR training sites during spring training events, as detailed in Section 3.3.3 of this EA, to avoid disturbances to special-status species during their reproductive periods.

Similar impacts, however slightly less, as described for rural sites above would be expected for other non-rural proposed PR training sites. Impacts at the non-rural proposed PR training sites would be less because due to their non-rural, developed nature, they support a reduced number of biological resources and less suitable habitat for many plant and wildlife species, including special-status species. No significant disturbances are anticipated at these non-rural sites from PR training activities under the Proposed Action and the Red Flag-Rescue project. Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in less than significant cumulative impacts to biological resources.

### 4.1.5 Cultural Resources

Cumulative impacts on cultural resources would consist of the effects of the PR training program in combination with other projects, actions, and processes that would result in potential impacts on cultural, archaeological, historic, and Native American cultural sites. Projects listed in Table 4.1-1 that are ground-disturbing or that alter, repair, or improve historic buildings, structures, or objects have the potential for cumulative effects. The effects of several of the projects in Table 4.1-1 cannot be quantified because the projects have not been sufficiently defined or designed, cultural resource surveys have not yet been conducted, changes may be probable or in process, or assessment of effects could change during State or Federal Section 106 review. Implementation

of the Proposed Action could also potentially contribute to cumulative impacts to cultural resources as a result of ongoing effects from training activities.

Similar to the PR training program, the cumulative actions would also be subject to all cultural federal, state and local regulations—as appropriate—mandating the consideration of cultural resources during project planning. Impacts would be minimized through avoidance or data recovery. Therefore, the incremental effects from implementation of the Proposed Action, when combined with other actions, would result in a less than significant cumulative impact to cultural resources.

### 4.1.6 Land Use and Aesthetics

The Proposed Action, in conjunction with the cumulative actions listed in Table 4.1-1, would result in a minimal cumulative impact related to land use and aesthetics. The proposed PR training activities would be located on sites that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action. While some of the proposed PR training activities would be within 0.5 mile of recreational uses/areas, these activities would not restrict the ability of individuals to use or access recreational areas. The proposed PR training activities would also not result in any physical disturbance of recreational areas. In addition, the proponent would obtain the necessary Special Use permits from USFS and NPS, obtain the necessary right-of-entry and Special Use permits required from municipal, city, county, and state controlling agencies, as well as comply with the respective jurisdictions' land use plans, policies, and regulations in which the proposed PR training sites are located within; the proponent would also comply with the terms and agreements prepared between the USAF and the property land owners. No PR training activity would occur unless the appropriate permits, terms, and agreements are obtained. Thus, the Proposed Action would be consistent and comply with existing federal, state, regional, or local land use plans, programs, or policies, and would be compatible with adjacent land uses. Regarding designated visual resources, as discussed in Section 3.5 the Proposed Action does not include vegetation removal, grading, demolition, building construction, or renovation activities; thus, the Proposed Action would not alter the visual landscape within the proposed PR training sites. Given this, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in a less than significant cumulative impact related to land use and aesthetics.

### 4.1.7 Hazardous Materials and Hazardous Waste Management

The Proposed Action, in conjunction with the cumulative actions listed in Table 4.1-1, would result in a minimal cumulative impact related to hazardous materials and hazardous waste management. As discussed in Section 3.6.3, during implementation of the Proposed Action, no hazardous materials or waste would be stored or used at the proposed PR training sites. Furthermore, the Proposed Action would not result in an increase in hazardous materials or waste in quantities beyond the capability of current management procedures. While the Proposed Action could cause minor quantities of fuel or oils to be released to the environment during a vehicle or aircraft breakdown or refueling, any spills or leaks would be handled in compliance with Davis-Monthan AFB's SPCCP, Pollution Prevention Plan, and HWMP, the respective military installation's regulations, policies, programs, and procedures, as well as all federal, state, and local regulations. In addition, refueling of event aircraft and vehicles would occur at established refueling locations (e.g., gasoline stations and airports), which would have

adequate spill containment materials for accidental release during fueling. Also, while hazardous materials sites with open cases and active hazardous waste generators (RCRA) sites are within 0.5 mile of the proposed PR training sites, the proposed PR training activities would not occur on any of these sites. Furthermore, the contaminants at these sites are site-specific (i.e., within a contained area of soil or groundwater, or stored within sealed containers); thus, despite their proximity to the proposed PR training sites, personnel would not be exposed to hazardous materials or wastes from these sites. Additionally, for the cumulative actions listed above that would occur on DoD property, they would be required to comply with DoD's and the respective military department's hazardous materials and hazardous waste management policies, programs, and regulations. The cumulative actions occurring in other land and private property would also be required to comply with all federal, state, and local hazardous materials and hazardous waste management regulations. Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in a less than significant cumulative impact related to hazardous materials and hazardous waste management.

### 4.1.8 Noise

The present and future projects with the potential to contribute to a cumulative impact to noise as a result of aircraft beddown or training improvement on or off base are identified in Table 4.1-1. Anticipated impacts to noise from the Proposed Action, although considered less than significant, would have an incremental cumulative impact when combined with the past, present, and reasonably foreseeable actions on or off Davis-Monthan AFB.

All the cumulative actions, short or long term, would generate some level of noise. The actions would be distributed across four states and both existing and different sensitive receptors with potential to be impacted by the actions. There would be some overlapping actions geographically particularly around the airfields, such as F-35A beddown if Davis-Monthan AFB is selected. However, given the small percent increase in the proposed PR training activities as compared to the overall flight operations around each airfield, the cumulative noise impacts from the Proposed Action would be minor. At off-base PR training sites, the past, present, and future actions would essentially occur in different geographic space or locations particularly relevant to concerned low altitude flights around HLZs where some sensitive receptors are in close proximity. Thus, the degree of an incremental noise impact resulting from the Proposed Action is considered minor and would not appreciably impact the DNL levels on affected airfields and proposed PR training sites over time. Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in a less than significant cumulative impact related to noise.

### 4.1.9 Safety

The Proposed Action, in conjunction with the cumulative actions listed in Table 4.1-1, would have the potential to result in an incremental increase in safety risks to USAF personnel and the general public where proposed PR training activities would occur in the same areas as these actions, such as actions implemented under the Davis-Monthan AFB Installation Development Plan. These PR training activities would be conducted by different units at different sites; however, each of these units have their own safety measures in place. Also, operators would follow specific safety guidance for each PR training site/PR training activity as with other standard operating procedures, which would minimize safety risks resulting from implementation of the Proposed Action. In addition, the Proposed Action would minimize

increased safety risks with implementation of AFIs 91-301, 91-202, 91-203 and, 13-217 (USAF 1996, 2014a, 2018b, 2018e) and compliance with all rules and regulations provided in any required Special Use permits along with compliance with applicable federal, state, and local safety regulations. Also, for the cumulative actions listed above that would occur on DoD property, they would be required to comply with DoD's and the respective military department's health and safety policies, programs, and regulations and land use controls. Cumulative actions on other land and private property would also comply with all federal, state, and local health and safety regulations. Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in a less than significant cumulative impact related to safety.

### 4.1.10 Socioeconomics

Many of the cumulative actions listed in Table 4.1-1 would occur at military facilities or on other DoD property where no public recreation use is assumed. Any development associated with the non-DOD cumulative actions, such as the Deep Well Ranch Master Plan or the Bellmont Area Development Plan would be subject to any impact development fees imposed by the local jurisdictions to pay for the cost of providing public services to new development. Arizona State Parks recently added four cabins at the southeast end of Patagonia Lake, which is identified as a training site in this EA. However, the training activities would occur at the opposite end of the lake from the cabins, and potential impacts to recreation are anticipated to be minor. Other cumulative actions occur along transit corridors, at existing airports, or along utility lines and would not impact fee-based recreation. Further, while the number of employees may increase at Davis-Monthan AFB due to some cumulative actions, this increase would not be expected to result in a substantial increase in recreation use or fee revenue at any recreation site as discussed in Section 3.9.3. Thus, implementation of the cumulative actions would not be expected to result in changes in recreation use that would result in an unanticipated significant loss of fees at fee-based recreation sites or an unanticipated significant loss of income from income-generating recreation uses. Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in a less than significant cumulative impact related to socioeconomics.

### 4.1.11 Water Resources

Potential cumulative effects of the Proposed Action would occur from combined training activities from other actions. However, the proposed PR training activities would be located on proposed PR training sites that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action. While some of the proposed PR training activities would be within or near waterbodies that are impaired, proposed PR training activities would be temporary in nature and are not expected to contribute pollutants that would adversely affect the water quality indicators. While the Proposed Action has the potential to release fuel from watercrafts to surface waters, this cumulative impact would be minimized to a negligible level by complying with standard operating procedures for watercraft maintenance and spill prevention. In addition, refueling of watercrafts would be conducted at facilities designed for such activities and in strict accordance with USAF standard operating procedures. Furthermore, most of the cumulative actions listed above involve some type of construction activity that must undergo review by the applicable lead agency for compliance with NPDES permits for construction activities and project operations, as well as

compliance with local urban runoff ordinances. Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in a less than significant cumulative impact related to water resources.

## 4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA CEQ regulations require environmental analyses to identify "…any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented" (40 CFR 1502.16). Primary irreversible effects result from permanent use of nonrenewable resources (e.g., minerals or energy). Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., disturbance of a cultural site) or consumption of renewable resources that are not permanently lost (e.g., old growth forests). Secondary impacts could result from environmental accidents, such as explosive fires. Natural resources include minerals, energy, land, water, forestry, and biota. Nonrenewable resources are those resources that cannot be replenished by natural means, including oil, natural gas, and iron ore. Renewable natural resources are those resources that can be replenished by natural means, including water, lumber, and soil.

No irretrievable commitment of natural or cultural resources would be expected as a result of the implementation of the Proposed Action. The proposed PR training activities would involve consuming nonrenewable resources such as gasoline used in vehicles and jet fuel used in aircraft. However, these activities would not be expected to significantly reduce the availability of minerals or petroleum resources. Use of vehicles during proposed PR training activities would consume fuel, oil, and lubricants. The amount of these materials used would increase; however, this additional use is not expected to significantly affect the availability of the resources.

Secondary impacts on natural resources could occur in the unlikely event of an accidental fire, such as one caused by an aircraft mishap. However, while any fire can affect agricultural resources, wildlife, and habitat, the increased risk of fire hazard due to operations under the Proposed Action would be negligible. For all activities designated as fire hazards, the USAF is required to coordinate training at approved locations with available response vehicles to comply with appropriate Crash Recovery Program instructions.

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# Appendix A

# Specific Training Sites/ Site-Specific Map Book

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| ***PR Training Sites on Department of Defense Property*** | | | | | |
| Aux 6 | Barry M. Goldwater Range (BMGR) (Arizona) | Luke Air Force Base (AFB) | G2, G3, G7, G8<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR218 | 36 |
| Aux 6 Circular | BMGR (Arizona) | Luke AFB | G2, G3, G7, G8<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR218 | 36 |
| Aux 6 Rectangular | BMGR (Arizona) | Luke AFB | G2, G3, G7, G8<br>F1, F3, F4, F5, F6 F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR-218 | 36 |
| Camp Navajo Army Base | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F4, F5, F7, F9<br>W1, W2 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Camp Pendleton Cartwright Water | Marine Corps Base (MCB) Camp Pendleton (California) | MCB Camp Pendleton | F4, F7, F9<br>W1, W2 | MOAs: N/A<br>Restricted Areas: near R-2503B/C, R-2503A/D,<br>Warning Areas: W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Helicopter Outlying Landing Field | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7, F9 | MOAs: N/A<br>Restricted Areas: within R-2503B/C, near R-2503A/D<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton NFG | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F6, F7, F9 | MOAs: N/A<br>Restricted Areas: within R-2503A/D, near R-2503B/C<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Off-Road Trail | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7 | MOAs: N/A<br>Restricted Areas: within R-2503B/C, near R-2503A/D<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Piedra de Lumbre (PDL) | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7, F9 | MOAs: N/A<br>Restricted Areas: within R-2503B/C, near R-2503A/D<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Red Beach | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7<br>W1, W2 | MOAs: N/A<br>Restricted Areas: within R-2503A/D, near R-2503B/C<br>MTRs: N/A | 28 |
| Davis-Monthan AFB | Davis-Monthan AFB (Arizona) | Davis-Monthan AFB | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: near Outlaw, Jackal, Jackal Low, Sells 1, Sells Low, Ruby 1, Fuzzy, Tombstone C<br>Restricted Areas: near R-2303A/B/C, R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| Davis-Monthan AFB Combat Arms Training and Maintenance | Davis-Monthan AFB (Arizona) | Davis-Monthan AFB | G7, G8 | MOAs: near Outlaw, Jackal, Jackal Low, Sells 1, Sells Low, Ruby 1, Fuzzy, Tombstone C<br>Restricted Areas: near R-2303A/B/C, R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| El Centro | El Centro (California) | Naval Air Facility El Centro | G1, G2, G3, G5, G6, G7<br>F1, F4, F5, F6, F7, F8, F9 | MOAs: near Kane West, Kane East, Kane South, Abel Bravo, Abel East, Abel North<br>Restricted Areas: near R-2512, R-2510A, R-2510A/B, R-2507S, R-2507E<br>MTRs: VR-1266, IR-217 | 33 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Florence Military Reservation | Florence (Arizona) | Arizona Army National Guard | G1, G2, G3, G5, G6, G7, G8<br>F1, F3, F4, F5, F6, F7, F9 | MOAs: near Outlaw (excludes airspace within R-2310A, B, C; when active)<br>Restricted Areas: near R-2310A, B, C<br>MTRs: VR-267C, D | 37 |
| Florence Range Helicopter Landing Zone (HLZ) | Florence (Arizona) | Arizona Army National Guard | G1, G2, G3, G5, G7, G8<br>F1, F3, F4, F5, F7 | MOAs: near Outlaw (excludes airspace within R-2310A, B, C; when active)<br>Restricted Areas: within R-2310A, near R-2310A, B; R-2310S, A, C<br>MTRs: VR-267C, D | 37 |
| Fort Tuthill | Flagstaff (Arizona) | Luke AFB | G1, G2, G3, G6 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Gila Bend Air Force Auxiliary Base | Gila Bend (Arizona) | Luke AFB | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR-218 | 36 |
| Hubbard | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| Hubbard (Tombstone) | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| Humor | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F7, F9 | MOAs: near Tombstone A, B, C; Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| L Tank | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: R-2302<br>MTRs: IR-112 | 9 |
| Leon (Beiringer Drop Zone [DZ]) | San Diego (California) | Naval Air Station (NAS) North Island | F9<br>W1, W2 | MOAs: N/A<br>Restricted Areas: N/A<br>Warning Areas: near W-291<br>MTRs: N/A | 32 |
| Libby Army Airfield | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| March Air Reserve Base (ARB) | March ARB (California) | March ARB | G1, G2, G3<br>F6, F7, F8 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 18 |
| Melrose Air Force Range | Clovis (New Mexico) | Cannon AFB | F1, F4 | MOAs: near Taiban, Pecos North High, Pecos North Low, Pecos South<br>Restricted Areas: within R-5104A, B; near R-5105<br>MTRs: VR-100, IR-107, VR-108, IR-109, IR-111, IR-113, VR-114, VR-125, VR-1107, VR-1195 | 26 |
| Metz Tank | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| NATO Hill (WPT 74) | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2304, near, R-2305<br>MTRs: VR-223-239-259 | 36 |
| Navajo East | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Navajo Railroad | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Navajo West | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Neill Flat | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Nellis AFB | Nellis AFB (Nevada) | Nellis AFB | G2, G3<br>F1, F6, F7, F8 | MOAs: near Desert<br>Restricted Areas: near R-4806E, W; R-4808N, S;<br>MTRs: IR-286, VR-222 | 3 |
| OP Charlie | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2304, near R-2305<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 1 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 2 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 3 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 4 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 5 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 6 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – Tower Helipad | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Rogers Lake (Logger Camp) | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9<br>W1, W2 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Rogers Napier | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Rogers Wren | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| San Clemente Island Naval Auxiliary Landing Field | San Clemente Island (California) | Naval Base Coronado | G2, G3<br>F4, F6, F7, F8 | MOAs: N/A<br>Restricted Areas: N/A<br>Warning Areas: within W-291, near W-292E, W-292W<br>MTRs: N/A | 27 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| San Clemente Island Surrounding Off-Shore Areas | San Clemente Island (California) | Naval Base Coronado | F4, F9<br>W1, W2 | MOAs: N/A<br>Restricted Areas: N/A<br>Warning Areas: within W-291, near W-292E, W-292W<br>MTRs: N/A | 27 |
| South Tactical Range | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: within R-2301E, near R-2301W, R-2305<br>MTRs: VR-231, VR-243, VR-244, VR-245 | 35 |
| Target 333 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2304, near R-2305<br>MTRs: VR-223-239-259 | 36 |
| Titan Missile Museum* | Pima County, Near Town of Sahuarita (Arizona) | USAF (leased to Pima County) | G6 | MOAs: N/A<br>Restricted Areas: near R-2303A, B;<br>MTRs: N/A | 43 |
| Tombstone Circular | Fort Huachuca (Arizona) | Fort Huachuca | G2, G3, G6<br>F1, F3, F4, F5, F6, F7, F9, F10 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| Tombstone Rectangular | Fort Huachuca (Arizona) | Fort Huachuca | G2, G3, G6<br>F1, F3, F4, F5, F6, F7, F9, F10 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| White Sands Missile Range (WSMR) Otero Maneuver Area | Otero County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Sierra Maneuver Area | Sierra County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Small Arms Range | Socorro County (New Mexico) | White Sands Army Garrison | G8<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Stallion Army Airfield | Socorro County (New Mexico) | White Sands Army Garrison | F4, F8 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Thurgood West Maneuver Area | Sierra County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| ***PR Training Sites on U.S. Forest Service (USFS) or Other Federal Land*** | | | | | |
| Black Mesa - USFS Helitack Base | Apache-Sitgreaves National Forest (NF) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 15 |
| Charouleau Gap* | Coronado NF (Arizona) | Coronado NF | G2, G3 | MOAs: near Jackal, Jackal Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268-269, VR-1233 | 38 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Comanche | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9, 13 |
| Delamar Dry Lake | Lincoln County, Near Alamo (Nevada) | Bureau of Land Management (BLM) | F1, F8 | MOAs: within Desert<br>Restricted Areas: near R-4806E, W; R-4808N<br>MTRs: VR-209, VR-1253 | 1 |
| Devon | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F10 | MOAs: within Ruby 1, Fuzzy; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 44 |
| Flagstaff Hotshot – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: R-2302<br>MTRs: IR-112 | 9 |
| Glenwood Ranger Station | Gila NF (New Mexico) | Gila NF | G1, G2, G6<br>F1, F3, F5, F7 | MOAs: within Reserve; near Morenci, Cato, Smitty, Jackal, Jackel Low<br>Restricted Areas: N/A<br>MTRs: VR-176 | 30 |
| Grapevine HLZ/DZ | Tonto NF (Arizona) | Tonto NF | G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: near Outlaw, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-239, VR-241, VR-244 | 21 |
| Hannagan Meadow – USFS Helitack Base | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176 | 24 |
| Helibase Circular | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: IR-112 | 24 |
| Kinder HLZ/DZ | Cochise County (Arizona) | BLM | G6<br>F1, F3, F5, F7 | MOAs: near Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263 | 41 |
| KP Circular | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: IR-112 | 24 |
| KP Tank | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: IR-112 | 24 |
| Lees Ferry | Marble Canyon (Arizona) | National Park Service | G1, G2, G3, G4, G6<br>F7, F9 | MOAs: N/A<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 2 |
| Longview – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 14 |
| Mesa | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: near Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268- 269, VR-1233 | 41 |
| Mogollon Rim (General Crook) | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F3, F7 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 14 |
| Mohawk | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6<br>F1, F7 | MOAs: near Sunny<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 4 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Mormon Lake – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6 F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 9, 13 |
| Mount Lemmon (Windy Point) | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6 F1, F3, F5, F7 | MOAs: near Jackal, Jackal Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268-269, VR-1233 | 38, 40 |
| Negrito Airstrip | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F8, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Negrito Center | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Negrito Helibase | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Negrito North | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Negrito South | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Overgaard – USFS Helitack Base | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6 F3, F5, F7, F9 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: IR-320 | 16 |
| Pittman Valley | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6 F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: N/A | 8 |
| Portal Cabin and Civilian Conservation Corps (CCC) Bunkhouse* | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G4 | MOAs: near Tombstone A/C<br>Restricted Areas: N/A<br>MTRs: N/A | 47 |
| Portal HLZ* | Coronado NF (Arizona) | Coronado NF | G2, G3, G6 F1, F3, F5, F7, F10 | MOAs: near Tombstone A/C<br>Restricted Areas: N/A<br>MTRs: N/A | 47 |
| Rainy Mesa | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Ranger | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6 F1, F3, F4, F5, F7, F9 F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| Redington Pass* | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G4, G6, G7 | MOAs: near Jackal, Jackal Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268-269, VR-1233 | 38, 40 |
| Reserve Airport | Gila NF (New Mexico) | Gila NF | G1, G2, G6 F1, F3, F5, F7, F8, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Reserve Ranger Station | Gila NF (New Mexico) | Gila NF | G1, G2, G6 F1, F3, F5, F7 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Roosevelt Lake | Tonto NF (Arizona) | Tonto NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10<br>W1, W2 | MOAs: near Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-239, VR-241, VR-244 | 21 |
| Rough Rider | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 13 |
| Rucker HLZ* | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G5, G6<br>F1, F3, F4, F5, F7, F10 | MOAs: within Tombstone A/C, near Tombstone b<br>Restricted Areas: near R-2303C<br>MTRs: VR-259, VR-263 | 47 |
| Saddle Mountain East | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303A, B; near R-2303C, R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Saddle Mountain South | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303B, near R-2303A,C; R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Saddle Mountain West | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303A, B; near R-2303C, R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Saguaro Lake Ranch | Tonto NF (Arizona) | Tonto NF | W1, W2 | MOAs: near Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-244 | 20 |
| Spring Valley Cabin* | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4<br>F1, F3, F4 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: N/A | 8 |
| Tribeland | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6<br>F1, F7, F9 | MOAs: near Sunny<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 4 |
| Verde River | Tonto NF (Arizona) | Tonto NF | W1, W2 | MOAs: near Outlaw<br>Restricted Areas: near R-2310A-C<br>MTRs: VR-244 | 20 |
| ***PR Training Sites on Other Land (Municipal, City, County, State, or Tribal)*** | | | | | |
| Babbitt Ranch 1 | Coconino County, North of City Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Babbitt Ranch 3 | Coconino County, North of City of Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Bisbee Douglas International Airport (IAP)<br>(Chang Noi DZ) | Cochise County, North of Douglas (Arizona) | Cochise County | G1, G2, G3, G6<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: within Tombstone C, near Tombstone A/B<br>Restricted Areas: near R-2303A, B; R-2303C, R-2312<br>MTRs: VR-259, VR-263 | 47 |
| Blackhills HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F4, F5, F7 | MOAs: near Ruby 1, Fuzzy, Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Black Mountain Reservoir* | Pima County, Northwest of Town of Sahuarita (Arizona) | Town of Sahuarita | W2 | MOAs: near Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B<br>MTRs: N/A | 43 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Brooke HLZ/DZ | Pinal County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Jackal, near Outlaw, Jackal Low<br>Restricted Areas: N/A<br>MTRs: N/A | 38 |
| Caldwell Meadows | Apache County (Arizona) | Arizona Game and Fish Department | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176 | 24 |
| Caliente HLZ/DZ | Santa Cruz County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-260 | 43, 44 |
| Catron County Fairgrounds | Catron County (New Mexico) | Catron County | G1, G2, G6<br>F1, F3, F5, F7, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| City of Flagstaff* | Northern Arizona University (Arizona) | Arizona Board of Regents (Northern Arizona University) | G5<br>F1, F3 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| City of Winslow* | City of Winslow (Arizona) | City of Winslow | G5<br>F1, F3 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 10 |
| Colorado River | Bullhead City (Nevada) | Nevada Division of State Parks | W1, W2 | MOAs: near Turtle<br>Restricted Areas: N/A<br>MTRs: IR-213, IR-213-217, VR-1265 | 6 |
| Coolidge Airport | Pinal County, Southeast of City of Coolidge (Arizona) | City of Coolidge | G1, G3, G6<br>F1, F3, F4, F5, F7, F8, F9 | MOAs: near Outlaw<br>Restricted Areas: near R-2310A-C<br>MTRs: VR-241, VR-241-244, VR-239-244, VR-267-268-269 | 37 |
| Flagstaff Pulliam Airport | Coconino County, South of City of Flagstaff (Arizona) | City of Flagstaff | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F8 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Froelich HLZ/DZ | Graham County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: N/A | 41 |
| Gila County Sheriff Roosevelt Substation | Gila County, North of Roosevelt (Arizona) | Gila County Sheriff | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: near Outlaw, Jackal<br>Restricted Areas: R-2310A-C<br>MTRs: VR-239, VR-241, VR-244 | 21 |
| Grand Canyon National Park Airport | Coconino County, South of Tusayan (Arizona) | State of Arizona | G1, G2, G3, G6<br>F1, F7, F8 | MOAs: near Sunny<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 4 |
| H. A. Clark Memorial Field | Coconino County, North of City of Williams (Arizona) | City of Williams | G1, G2, G3, G6<br>F1, F3, F4, F7, F8, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: N/A | 8 |
| Highway 80 Paladins (TW 2 Paladins) | Cochise County, (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: within Tombstone B/C, near Tombstone A, Playas Temporary<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| Jeep HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263 | 41 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Jenna HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263 | 41 |
| Kingman Airport | Mohave County, Northeast of the City of Kingman (Arizona) | City of Kingman | G1, G2, G3, G6<br>F1, F3, F5, F7, F8, F9 | MOAs: near Turtle, Bagdad 1<br>Restricted Areas: SFAR 50-2<br>MTRs: VR-243, VR-1268, IR-213, IR-214 | 7 |
| Lake Havasu Airport* | Mohave County, North of Lake Havasu City (Arizona) | Lake Havasu City | F1, F3, F8 | MOAs: within Turtle, near Bagdad 1, Quail, Gladden 1<br>Restricted Areas: N/A<br>MTRs: VR-299 | 11 |
| Lake Patagonia* | Santa Cruz County (Arizona) | Arizona State Parks | G6<br>F1, F3, F7<br>W1, W2 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-259, VR-260, VR-263 | 44, 45 |
| Lake Pleasant* | Maricopa County (Arizona) | Maricopa Water District | W2 | MOAs: near Gladden 1<br>Restricted Areas: near A-231<br>MTRs: VF-239, VR-241-244 | 19 |
| Lost Acre HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Marana Regional Airport* | Pima County, South of Town of Marana (Arizona) | Town of Marana | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Penitas HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7 | MOAs: within Ruby 1, near Fuzzy, Sells 1, Sells Low<br>Restricted Areas: 2303A, B;<br>MTRs: VR-259, VR-260, VR-263 | 42, 43, 44 |
| Phoenix Sky Harbor IAP | Maricopa County, City of Phoenix (Arizona) | City of Phoenix | F1, F3, F4, F5, F8 | MOAs: near Gladden 1, Outlaw, Sells Low, Sells 1<br>Restricted Areas: near R-2310A-C, R 2304, R-2305<br>MTRs: VR-223, VR-231, VR-239, VR-241, VR-242, VR-243, VR-244, VR-245 | 29 |
| Pima County Emergency Operations Center | City of Tucson (Arizona) | Pima County Sheriff | G2, G3 | MOAs: near Outlaw, Jackal Low, Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| Pima County Regional Training Center | City of Tucson (Arizona) | Pima County Sheriff | G2, G3, G8 | MOAs: near Outlaw, Jackal Low, Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| Pinal Air Park* | Pinal County, Northwest of Town of Marana (Arizona) | Pinal County | G2, G3, G6<br>F1, F3, F7, F8, F9 | MOAs: near Sells 1, Sells Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Pinnacle HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-259, VR-260, VR-263 | 41 |
| Playas Training and Research Center | Hidalgo County, Playas (New Mexico) | New Mexico Institute of Mining and Technology | G1, G2, G3, G5, G6, G7, G8<br>F1, F2, F3, F4, F5, F6, F7, F8, F9, F10 | MOAs: within Playas Temporary MOA, near Tombstone A/B/C<br>Restricted Areas: near R-5115<br>MTRs: VR-263 | 48 |
| Pond HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Ruby 1, Fuzz; Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Powerline | Coconino County, Northwest of City of Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Prescott Airport* | Yavapai County, North of City of Prescott (Arizona) | City of Prescott | F1, F3, F8 | MOAs: near Bagdad 1, Gladden 1<br>Restricted Areas: N/A<br>MTRs: VR-242 | 12 |
| Prieto HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Ruby 1, Fuzz; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Rancho Seco HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Ruby 1, Fuzzy; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Ruby Fuzzy Paladins | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G4, G5, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: within Ruby 1, Fuzzy; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Sahuarita Lake* | Town of Sahuarita (Arizona) | Town of Sahuarita | W2 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 43 |
| Salt River High | White River (Arizona) | White Mountain Apache | G2, G3, G6<br>F1, F3, F5, F7, F10<br>W2 | MOAs: near Outlaw, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-239 | 22 |
| Salt River Low | San Carlos (Arizona) | White Mountain Apache | G2, G3, G6<br>F1, F3, F5, F7, F10<br>W1, W2 | MOAs: near Outlaw, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-239 | 22 |
| Sierrita HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Ruby 1, Fuzz, Sells 1, Sells Low<br>Restricted Areas: R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Silvermine HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Sell 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Springerville Airport | Apache County, West of Town of Springerville (Arizona) | Town of Springerville | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F8, F9 | MOAs: near Jackal, Reserve, Cato, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176, IR-320 | 23 |
| St. Johns Industrial Air Park | Apache County, North of City of St. Johns (Arizona) | City of St. Johns | G1, G2, G3, G4, G6<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: near Jackal, Reserve, Cato, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176, IR-112, IR-320 | 17 |
| Tombstone 8 HLZ* | Hidalgo County (New Mexico) | State of New Mexico (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone B/C, near Tombstone A/C, Playas Temporary<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 48 |
| Tombstone 15 HLZ* | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: near R-2303C<br>MTRs: VR-259, VR-263 | 47 |
| Tombstone 18 HLZ* | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: R-2303C<br>MTRs: VR-259, VR-263 | 47 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Tombstone 19 HLZ* | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone B/C, near Tombstone A<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| Tombstone Paladins | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F7, F9, F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| University of Arizona Dive Pool* | City of Tucson (Arizona) | Arizona Board of Regents (University of Arizona) | W2 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 40 |
| University of Arizona Medical Center | City of Tucson (Arizona) | Arizona Board of Regents (University of Arizona) | F7 | MOAs: near Outlaw, Jackal, Jackal Low, Sells 1, Sells Low, Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| Waterman HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F7 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Winslow-Lindbergh Regional Airport (Wiseman Aviation) | Navajo County, West of City of Winslow (Arizona) | City of Winslow | G1, G2, G3, G4, G6<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 10 |
| Yuma Airport* | Yuma County, South of City of Yuma (Arizona) | City of Yuma | F1, F3, F8 | MOAs: within Dome, near Able East<br>Restricted Areas: near R-2301W, R-2306A-F, R-2307, R-2311, R-2309<br>MTRs: IR-218 | 34 |
| ***PR Training Sites on Private Property*** | | | | | |
| Bone Crusher | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: R-2302, SFAR 50-2<br>MTRs: IR-112 | 4 |
| Cattle | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Cattle LTFW | Coconino County, North of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 5 |
| Elk | Coconino County, South of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: R-2302<br>MTRs: IR-112 | 9 |
| Eloy North | Pinal County, North of City of Eloy (Arizona) | Skydive Arizona | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Outlaw, Sells 1, Sells Low<br>Restricted Areas: near R-2310A, R-2310A, B; R-2310A, C<br>MTRs: VR-241, VR-239-244 | 37 |
| Eloy South | Pinal County, North of City of Eloy (Arizona) | Skydive Arizona | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Outlaw, Sells 1, Sells Low<br>Restricted Areas: near R-2310A, R-2310A, B; R-2310A, C<br>MTRs: VR241, VR239-244 | 37 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| FR 320/311 | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3<br>F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 4 |
| Gerbil | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Grand Canyon Valle Airport | Coconino County, East of Valle (Arizona) | Grand Canyon Valle Corp | G1, G2, G3, G6<br>F1, F3, F7, F8, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: N/A | 4 |
| HLZ 5 | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| HLZ 6 | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Ott Family YMCA of Tucson Pool* | City of Tucson (Arizona) | YMCA of Tucson | W2 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 40 |
| Little Outfit | Santa Cruz County, Southwest of Canelo (Arizona) | Pete Robbins | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303A, B; near R-2303C, R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Panda | Coconino County, North of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 5 |
| Scottsdale Osborn | City of Scottsdale (Arizona) | HonorHealth | F7 | MOAs: near Gladden 1, Outlaw, Sells Low, Sells 1<br>Restricted Areas: near R-2310A-C,<br>MTRs: VR-223, VR-231, VR-239, VR-241, VR-242, VR-243, VR-244, VR-245 | 29 |
| Sinkhole | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 5 |
| Sprucedale Guest Ranch | Greenlee County, Southwest of Alpine (Arizona) | Whitney Wiltbank | G1 | MOAs: within Reserve, near Jackal, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176 | 24 |
| Squirrel | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G6<br>F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Three Points Public Shooting Range | Pima County, West of Three Points (Arizona) | Tucson Rifle Club, Inc. | G8 | MOAs: near Sells Low, Sells 1, Ruby 1, Fuzzy<br>Restricted Areas: N/A<br>MTRs: VR-223, VR-239-244, VR-259, VR-260 | 42 |

| Appendix A - Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |

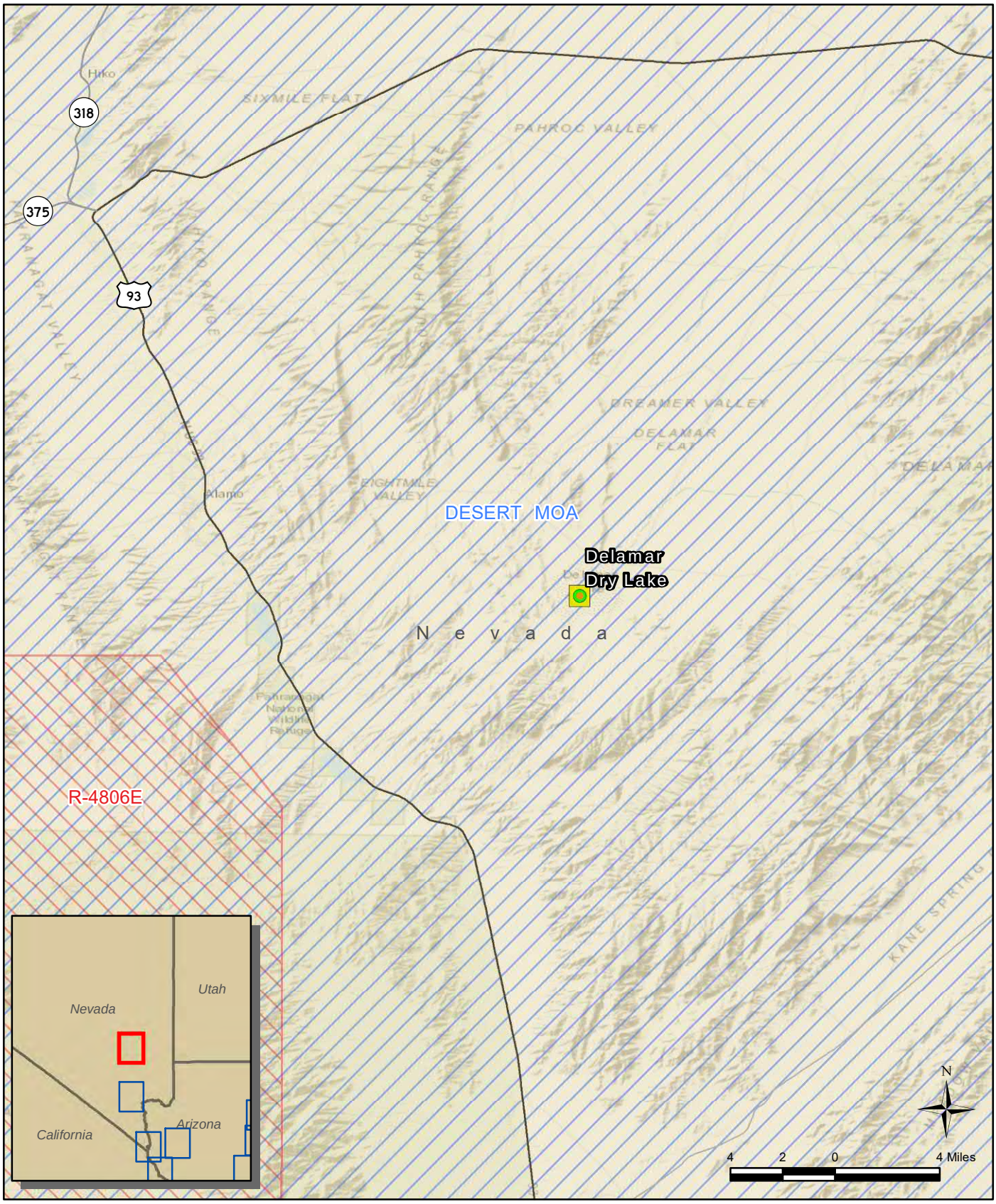
Training Activity Key:
G1 = Ground Ops – Camping, Bivouacking, and Assembly Area Use
G2 = Ground Ops – Cross-Country Dismounted (Non-Vehicle) Movements
G3 = Ground Ops – Mounted (Vehicle) Movement/Blackout Driving
G4 = Ground Ops – Survival Training/Natural Resource Consumption
G5 = Ground Ops – Military Operations in Urban Terrain/Urban Evasion
G6 = Ground Ops – Technical Rope Work
G7 = Ground Ops – Pyrotechnic Use
G8 = Ground Ops – Shooting / Firing Range

F1 = Flight Ops – Established MOAs
F2 = Flight Ops – Temporary MOAs
F3 = Flight Ops – LATN Areas
F4 = Flight Ops – Restricted Areas
F5 = Flight Ops – Other Airspace (e.g., MTRs)
F6 = Flight Ops – FARP Operations
F7 = Flight Ops – HLZs
F8 = Flight Ops – Fixed-Wing LZs
F9 = Flight Ops – Parachute Operation/DZs
F10 = Flight Ops - Close Air Support

W1 = Water Ops – HLZs/DZs/Overwater Hoist Operations
W2 = Water Ops – Amphibious Ops

Note that those PR training sites denoted with an asterisk (*) are new PR training sites.

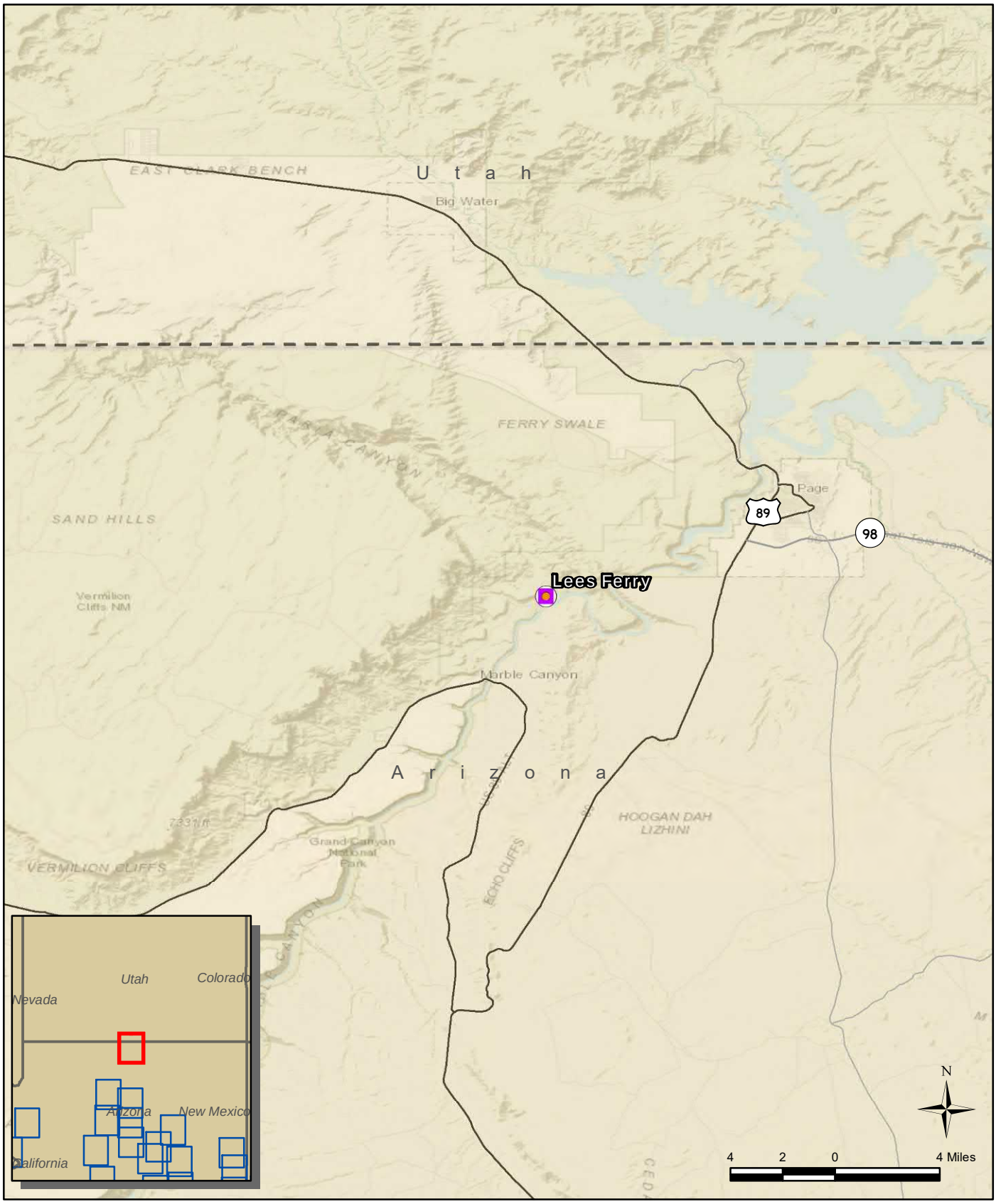
Acronyms, Abbreviations and Symbols:
AFB = Air Force Base
ARB = Air Reserve Base
BLM = Bureau of Land Management
BMGR = Barry M. Goldwater Range
DZ = Drop Zone
HLZ = Helicopter Landing Zone
IAP = International Airport
IR = Instrument Route
MCB = Marine Corps Base
MOA = Military Operations Area
MTR = Military Training Route
N/A = not applicable
NAS = Naval Air Station
NF = National Forest
PDL = Piedra de Lumbre
R = Restricted
SFAR = Special Federal Aviation Regulation
USAF = United States Air Force
USFS = United States Forest Service
VR = Visual Route
W = Warning Area




**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area

**1 of 48**




**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- US Highway
- State Highway and Route
- Other Roads

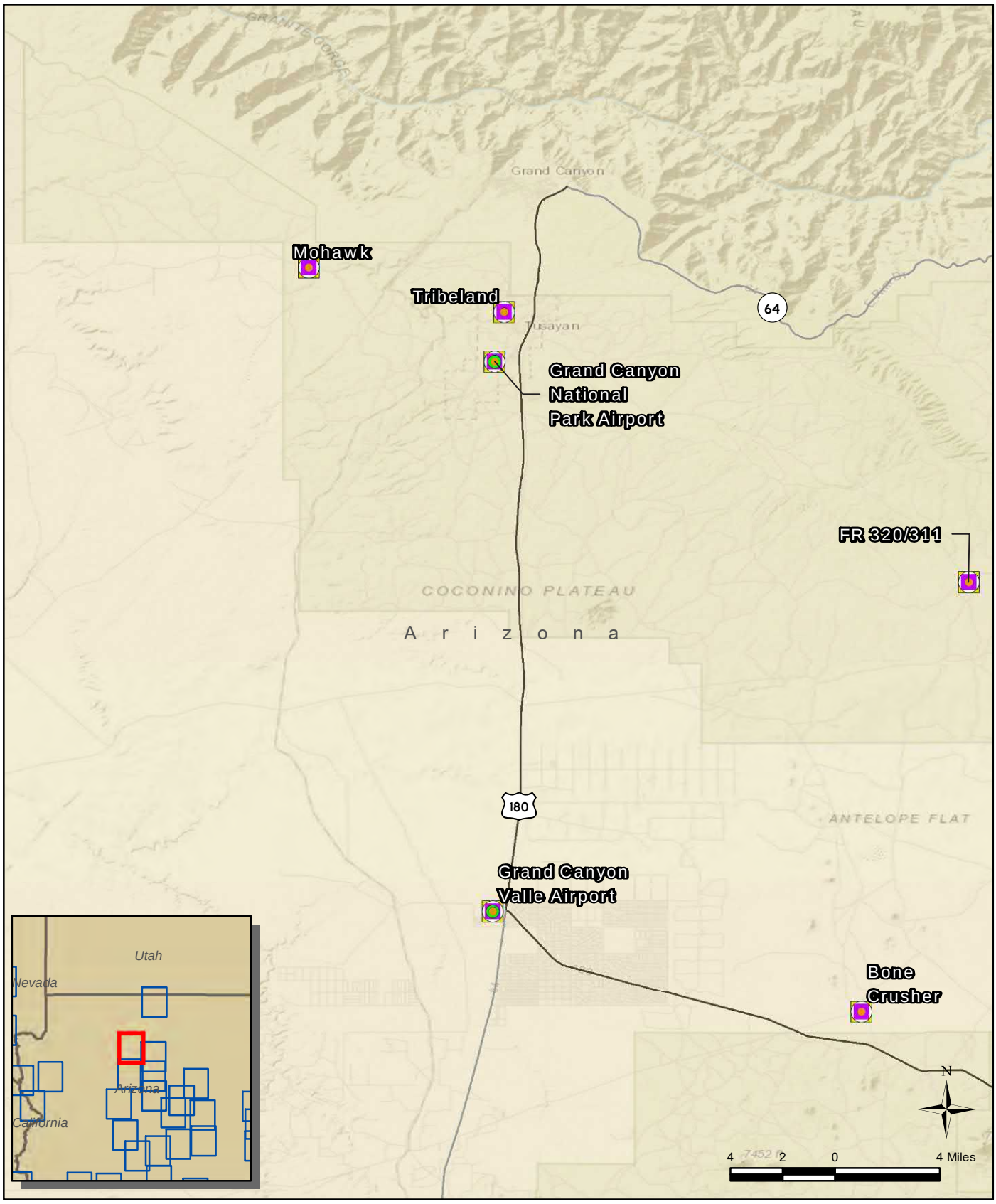
**2 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

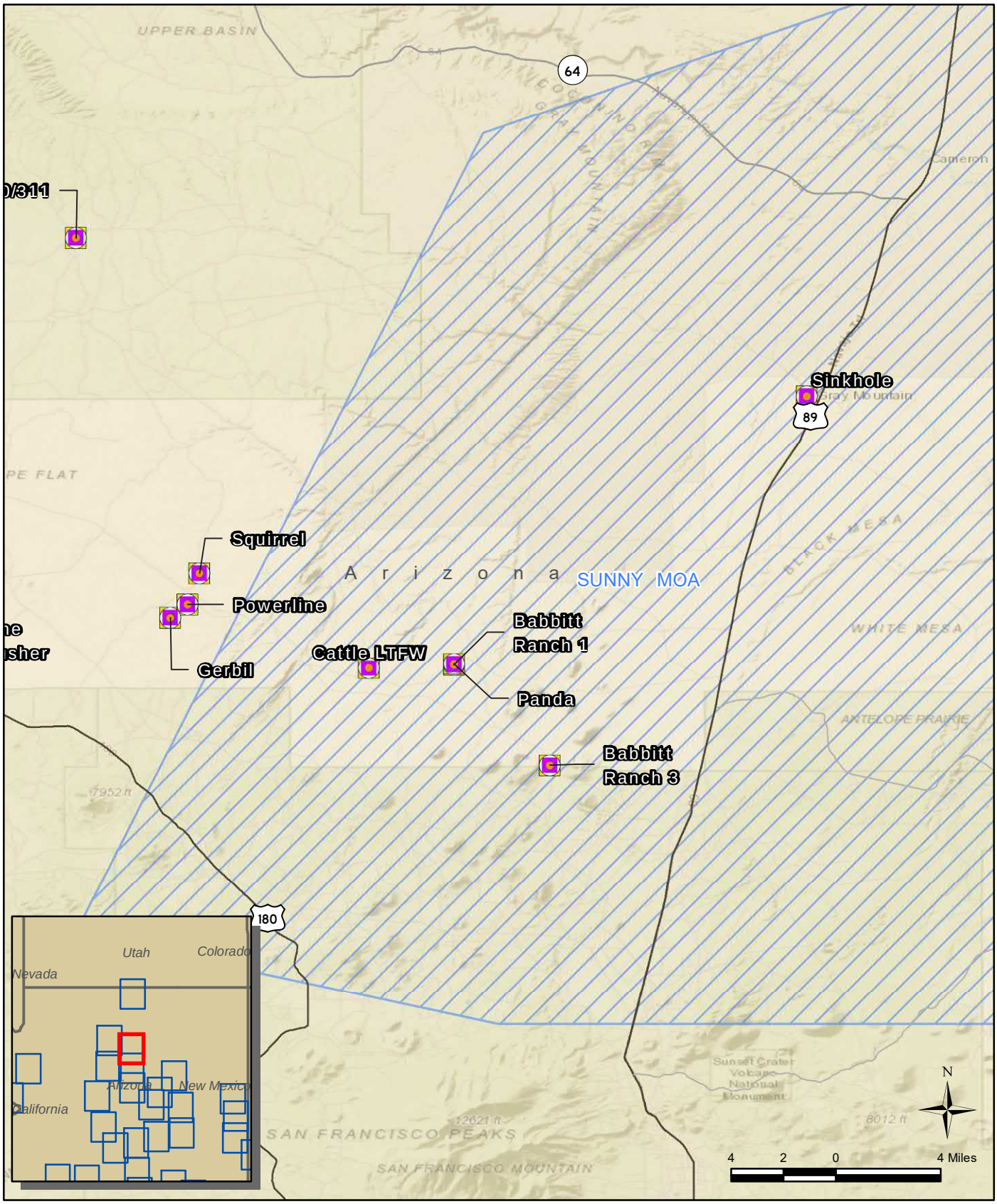
**3 of 48**




**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads

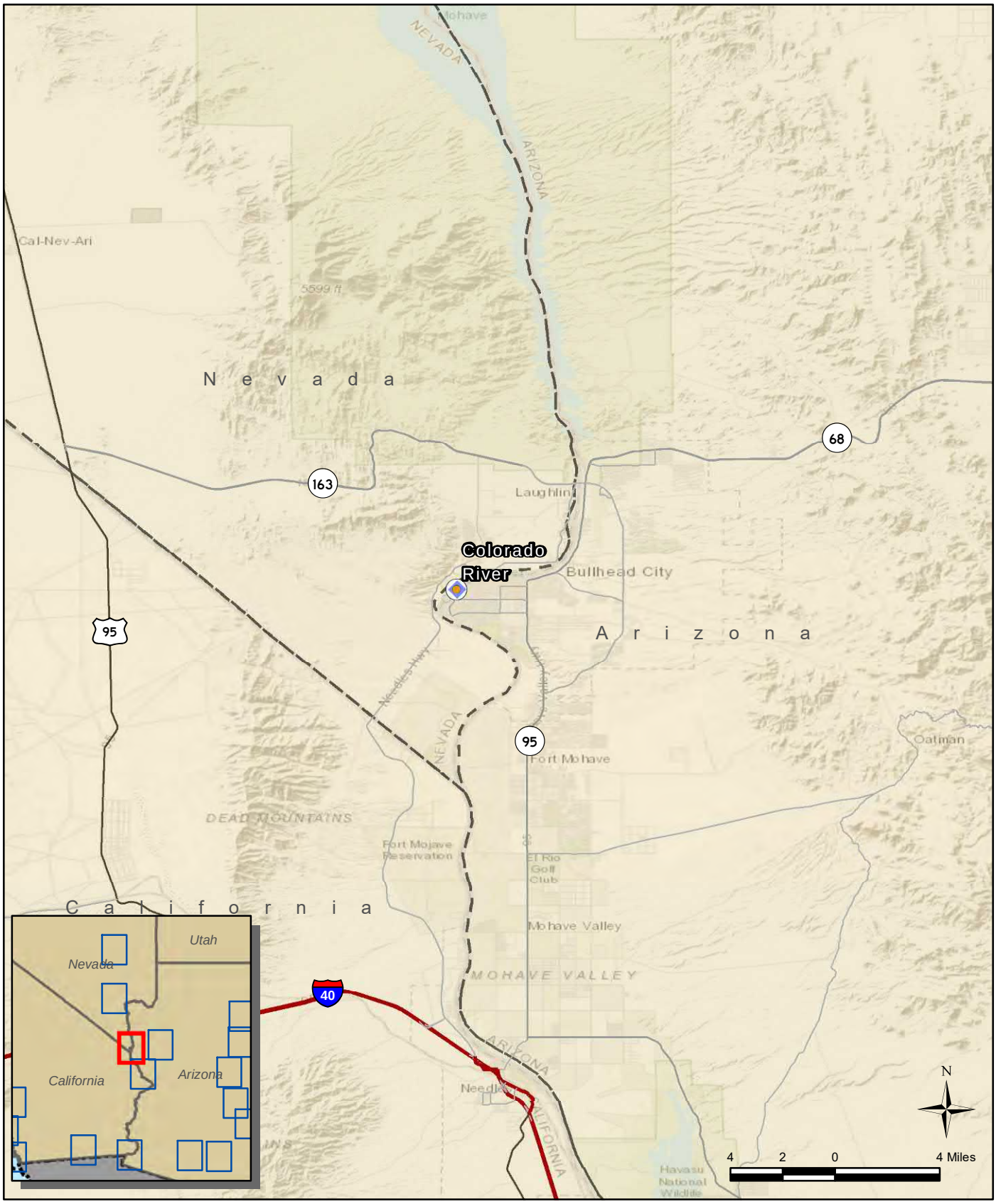
**4 of 48**




**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

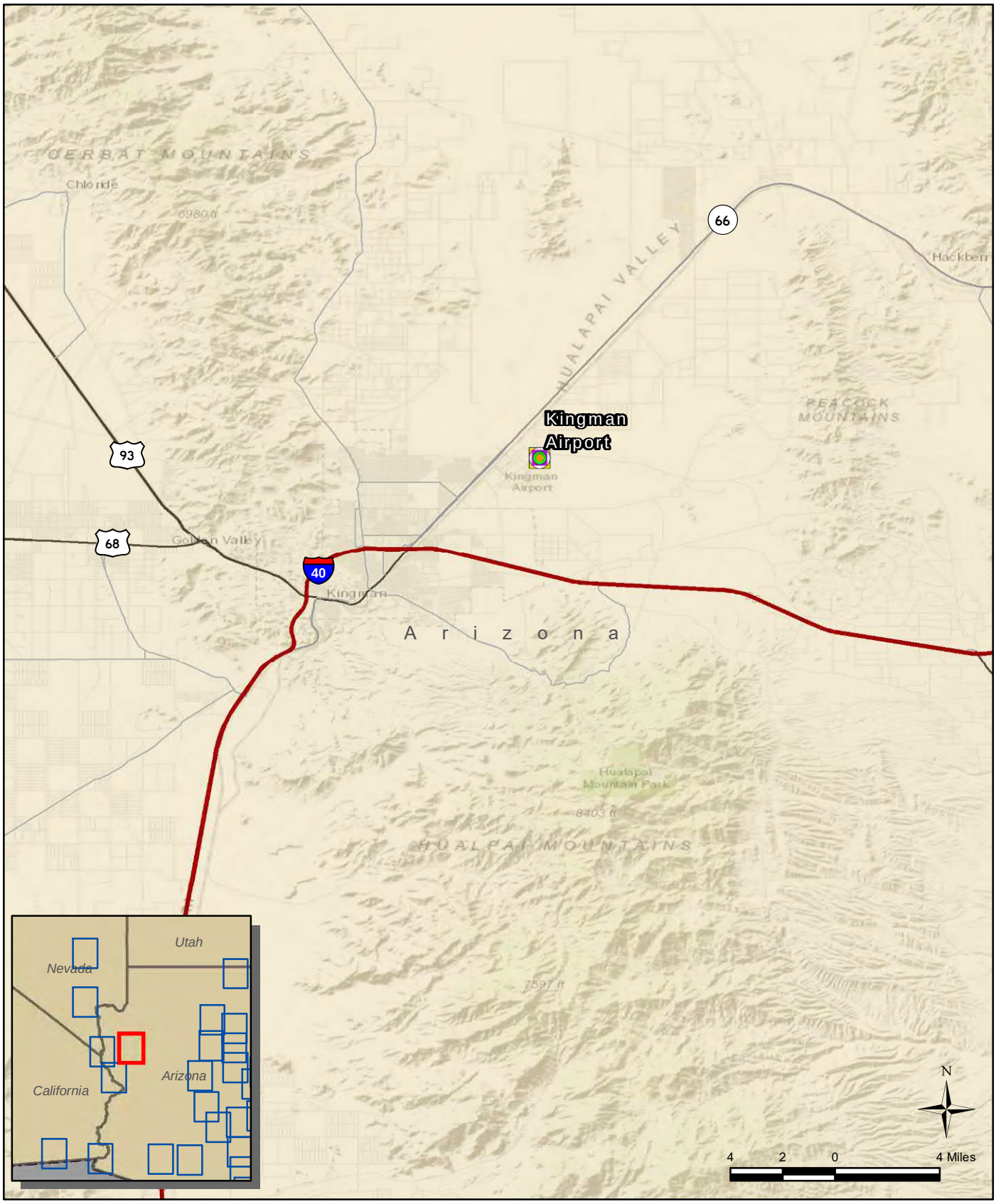
**5 of 48**




**Legend**

- Drop Zone
- Water Training
- Helicopter Landing Zone
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads

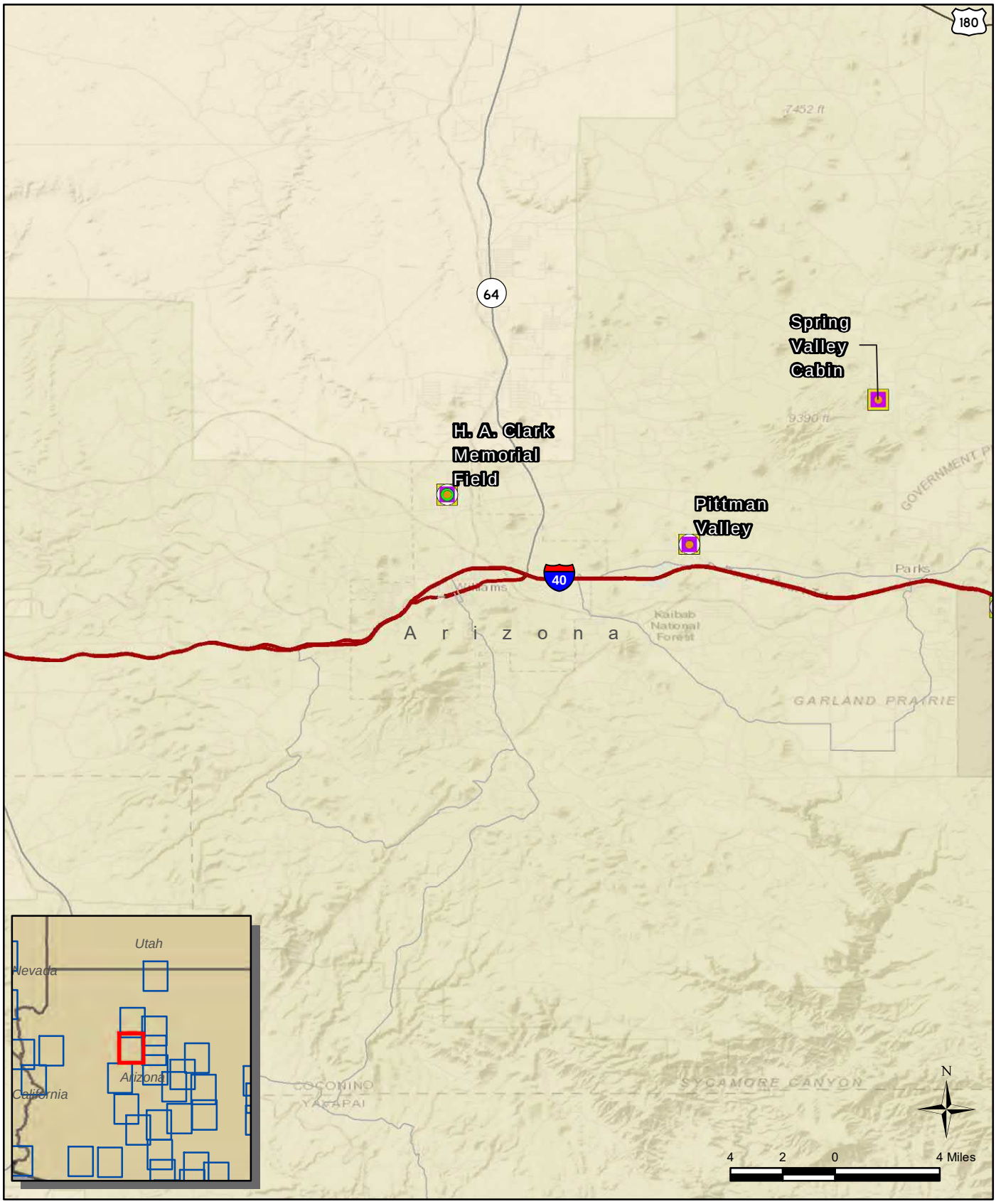
**6 of 48**




**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads

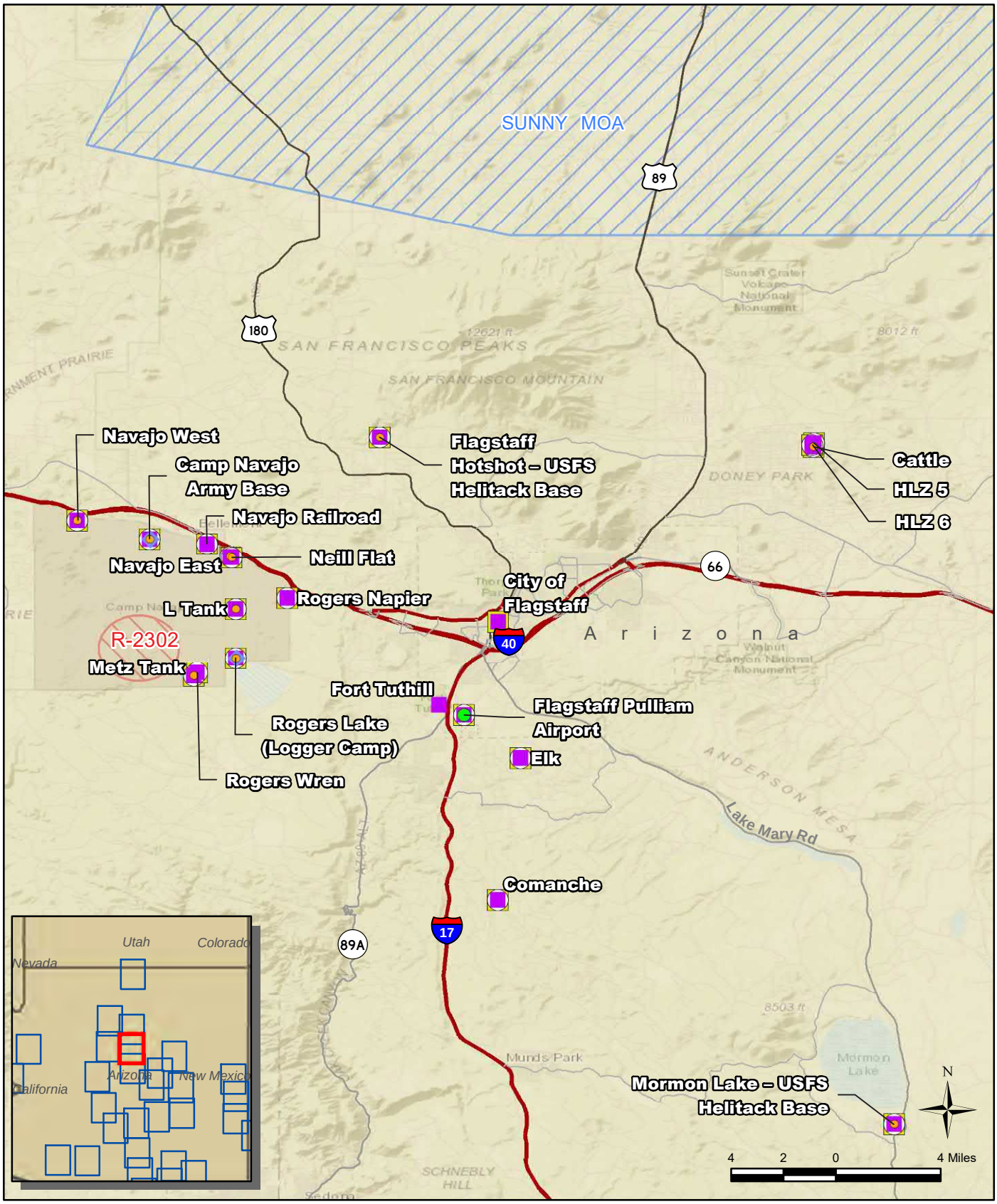
**7 of 48**




**Legend**

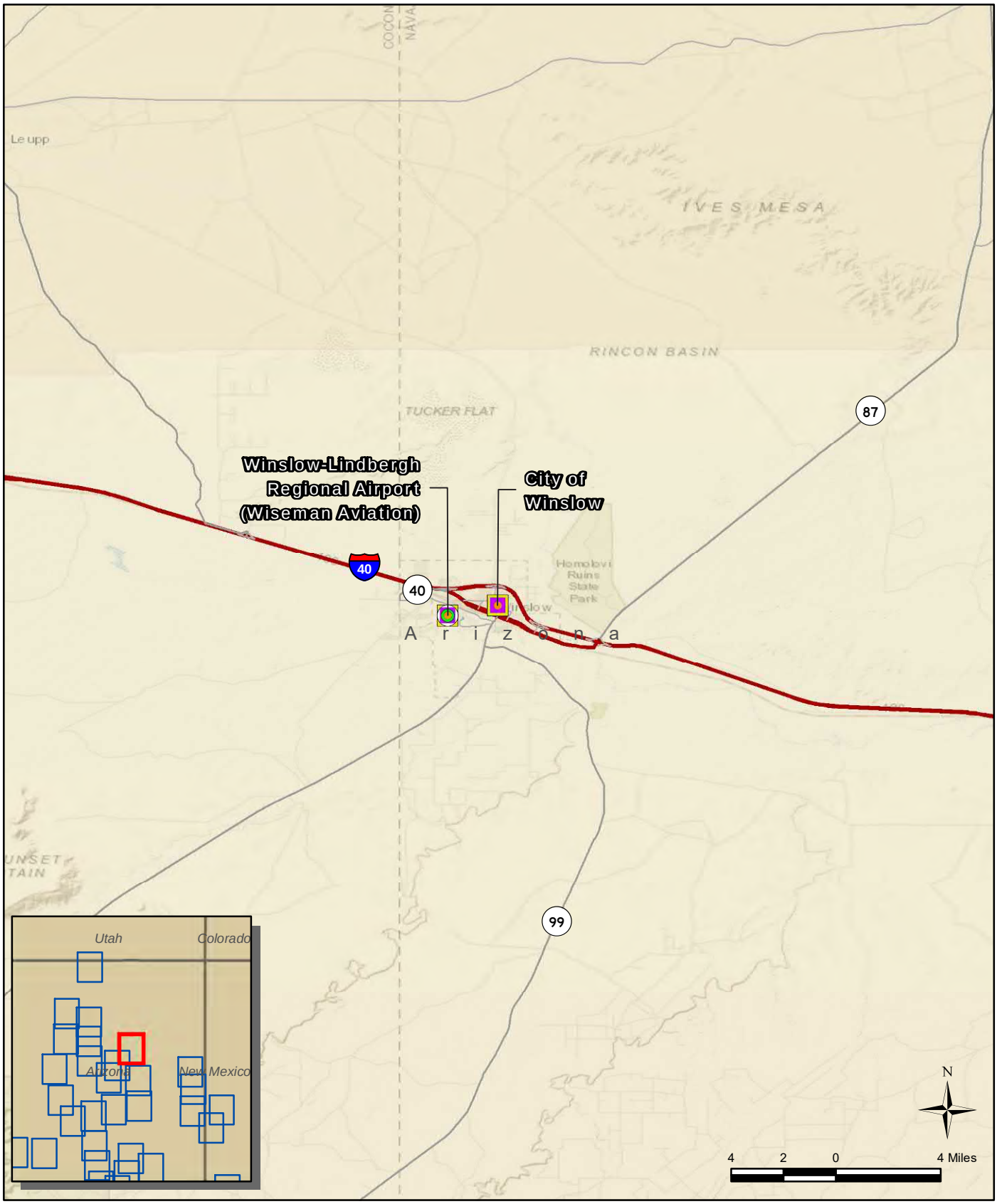
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads

**8 of 48**




**Legend**

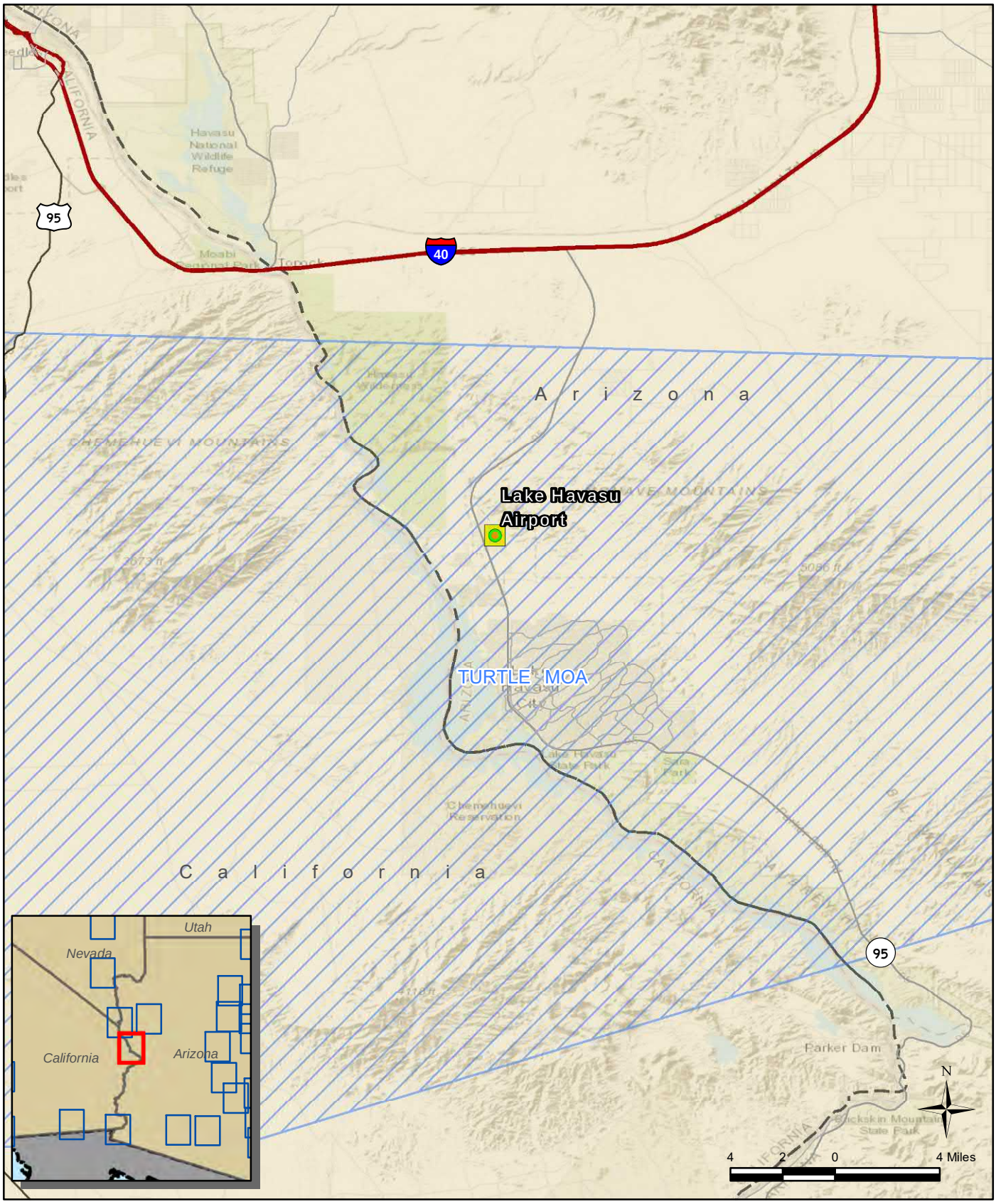
- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads

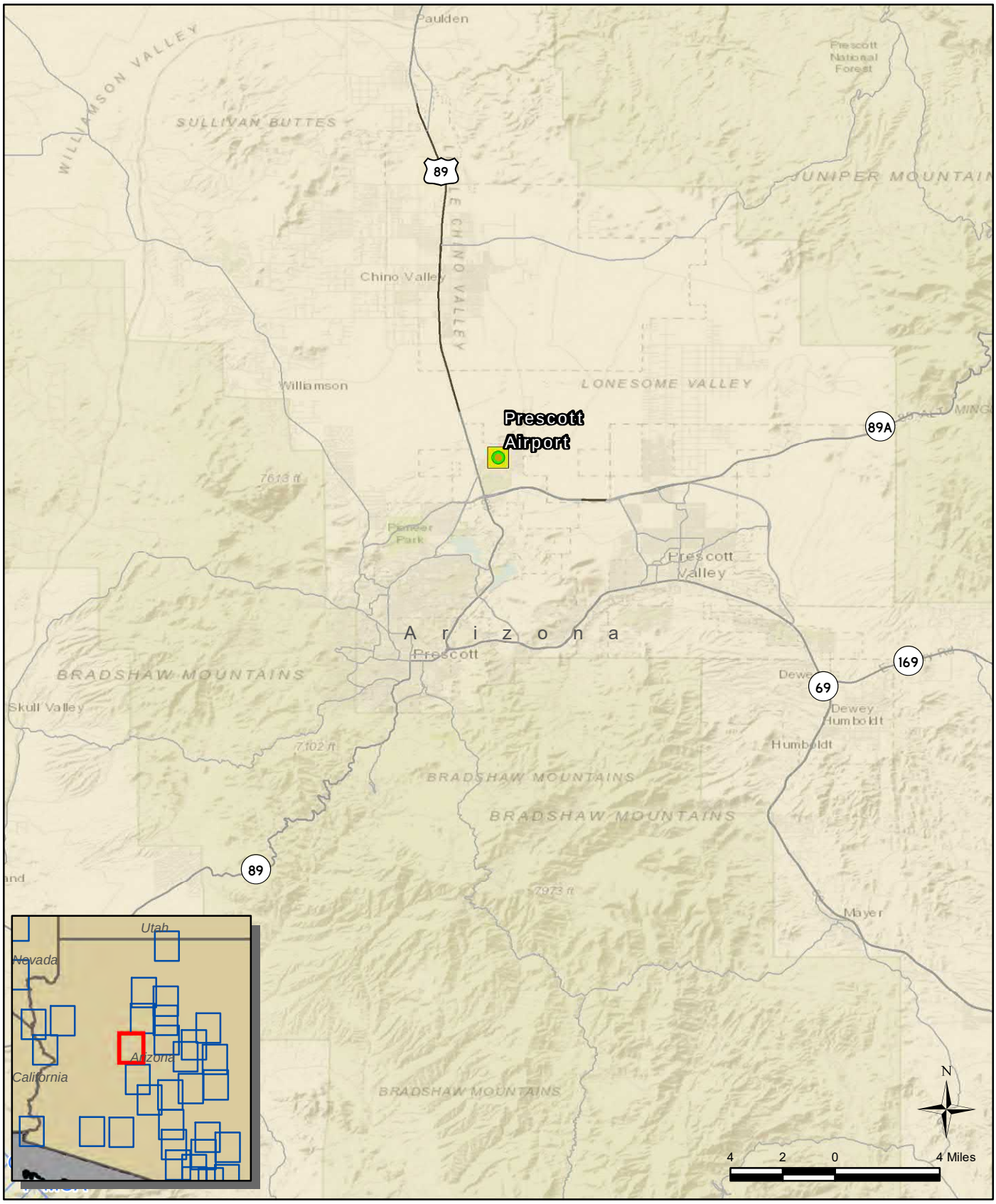
**10 of 48**




**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

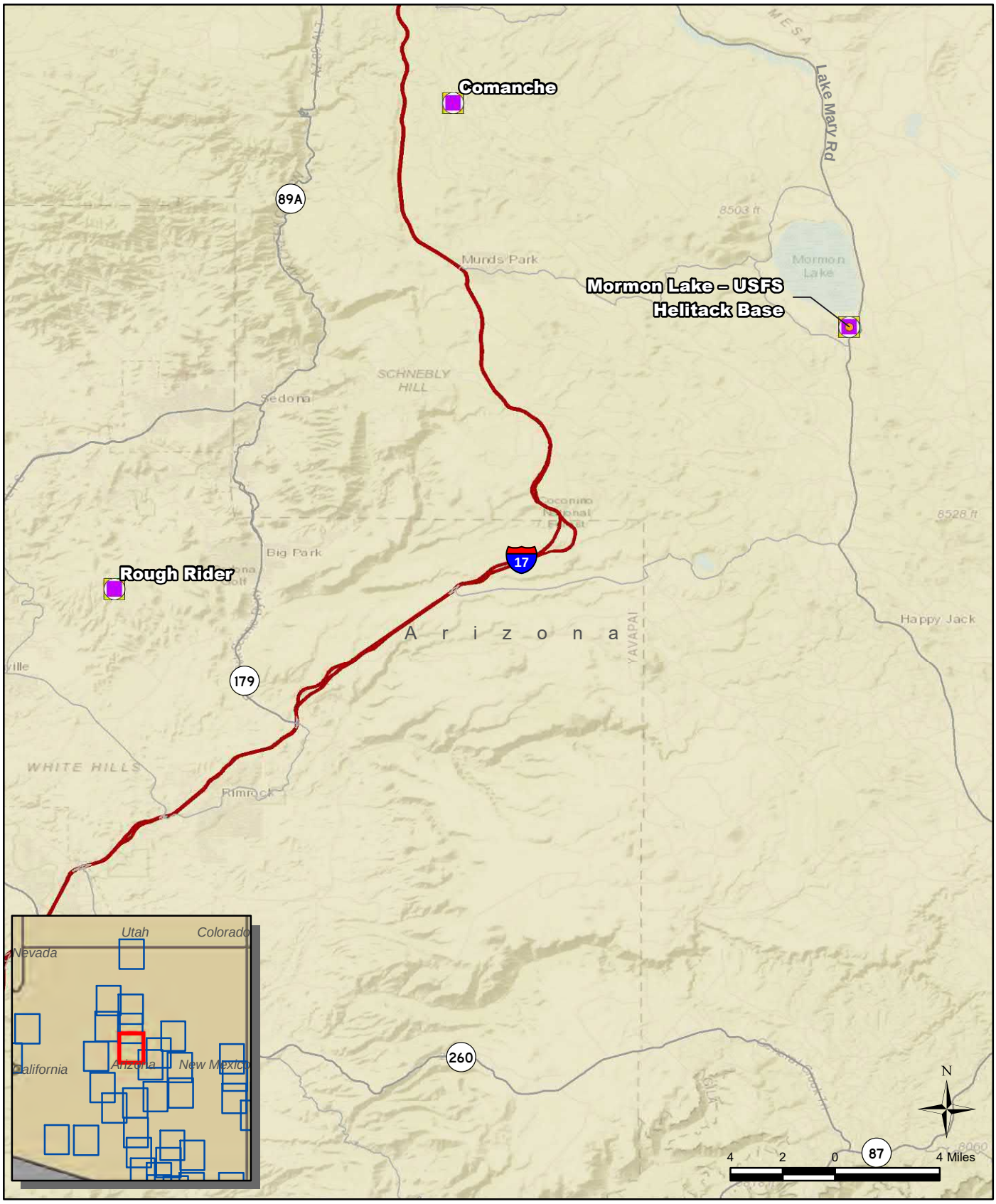
**11 of 48**




**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

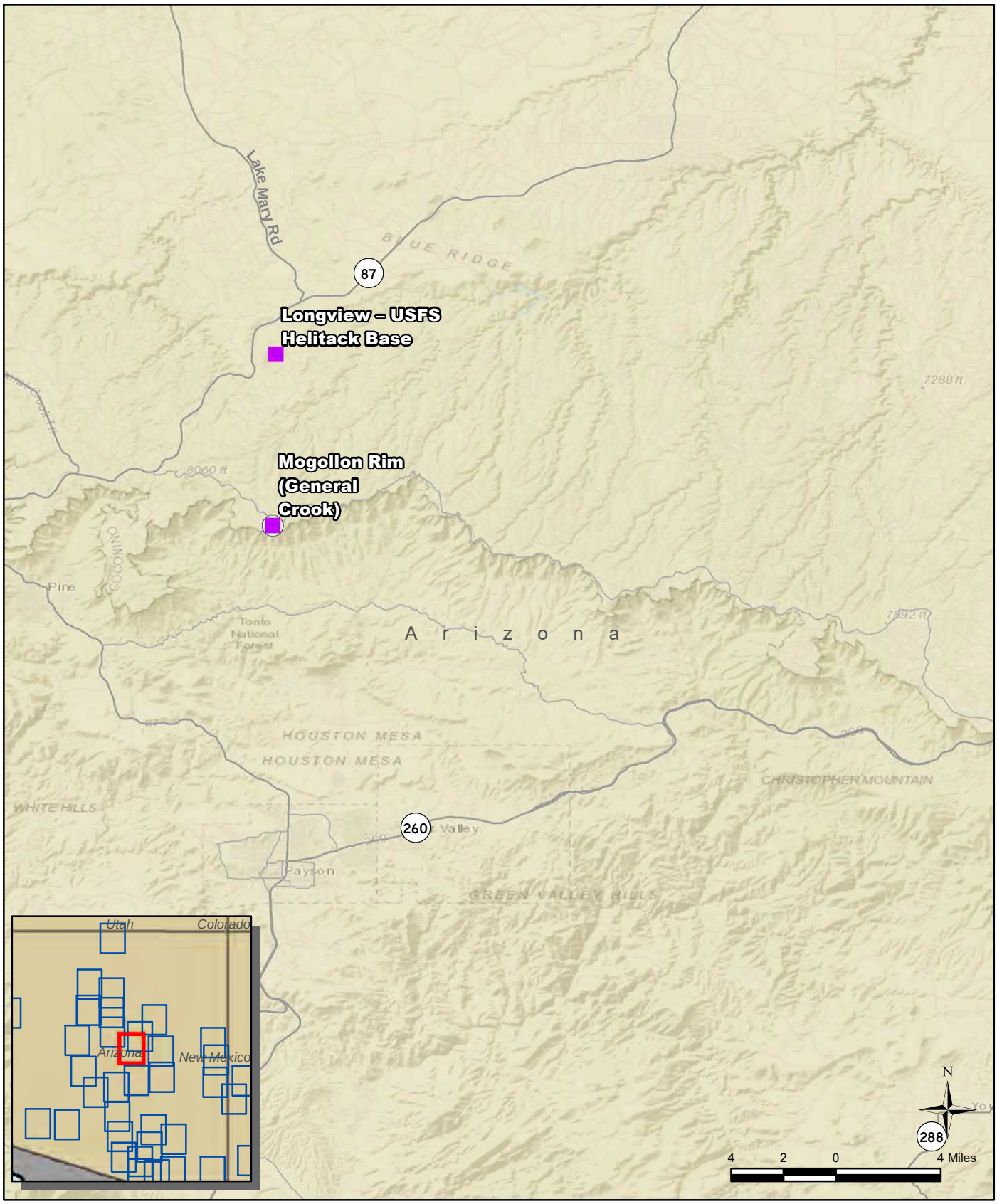
**12 of 48**




**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads

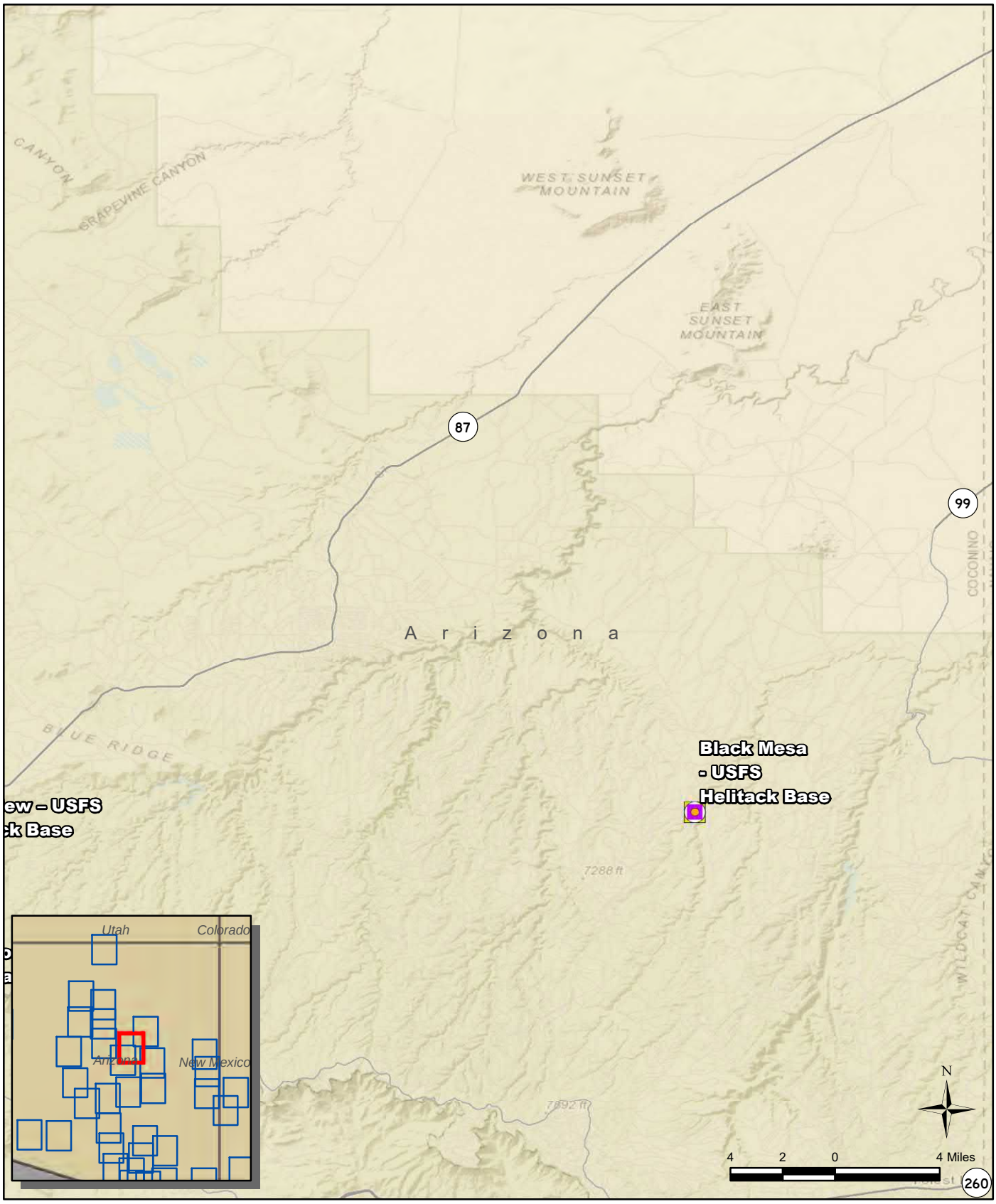
**13 of 48**




**Legend**

- Ground Training
- Helicopter Landing Zone
- State Highway and Route
- Other Roads

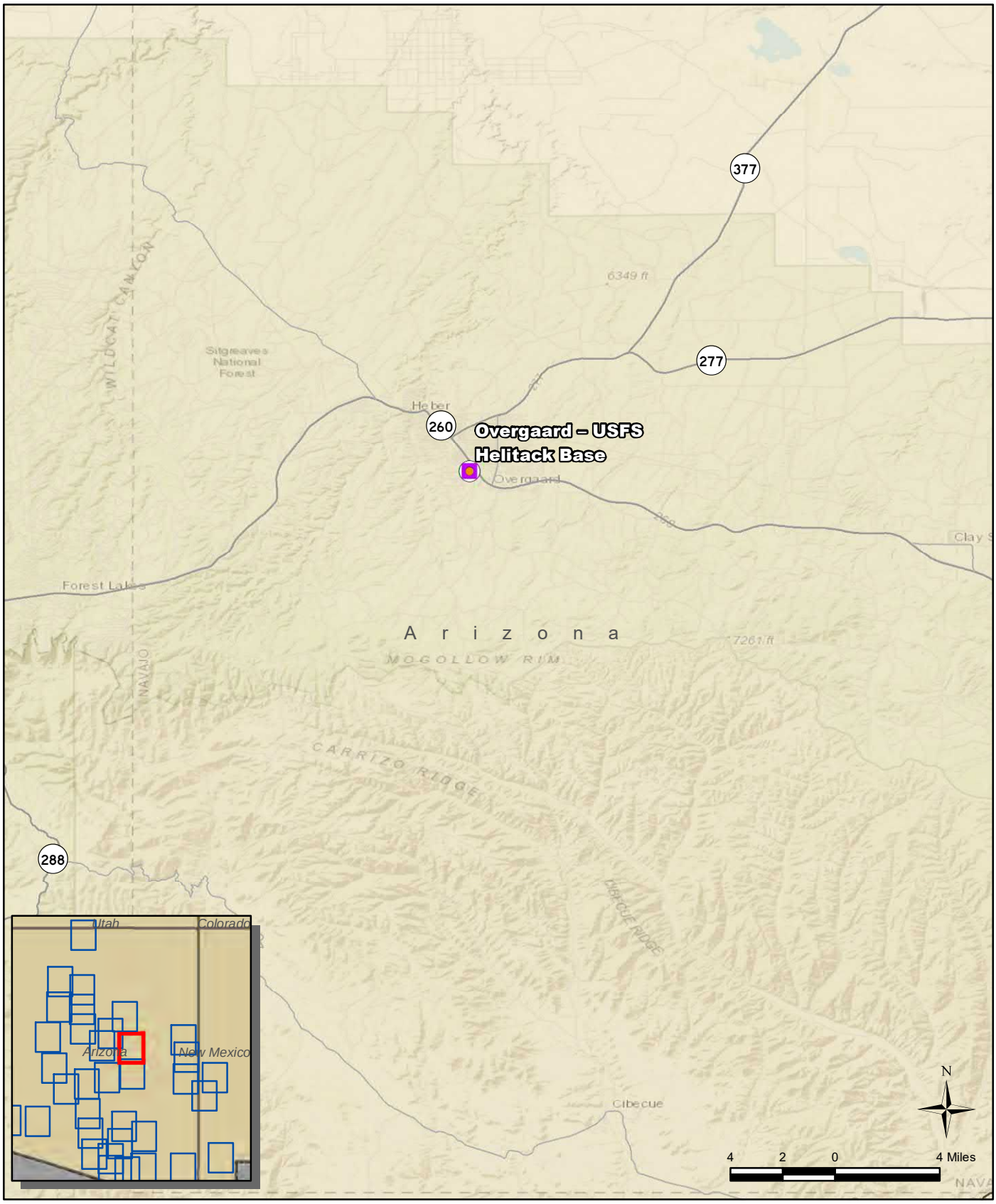
**14 of 48**




**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads

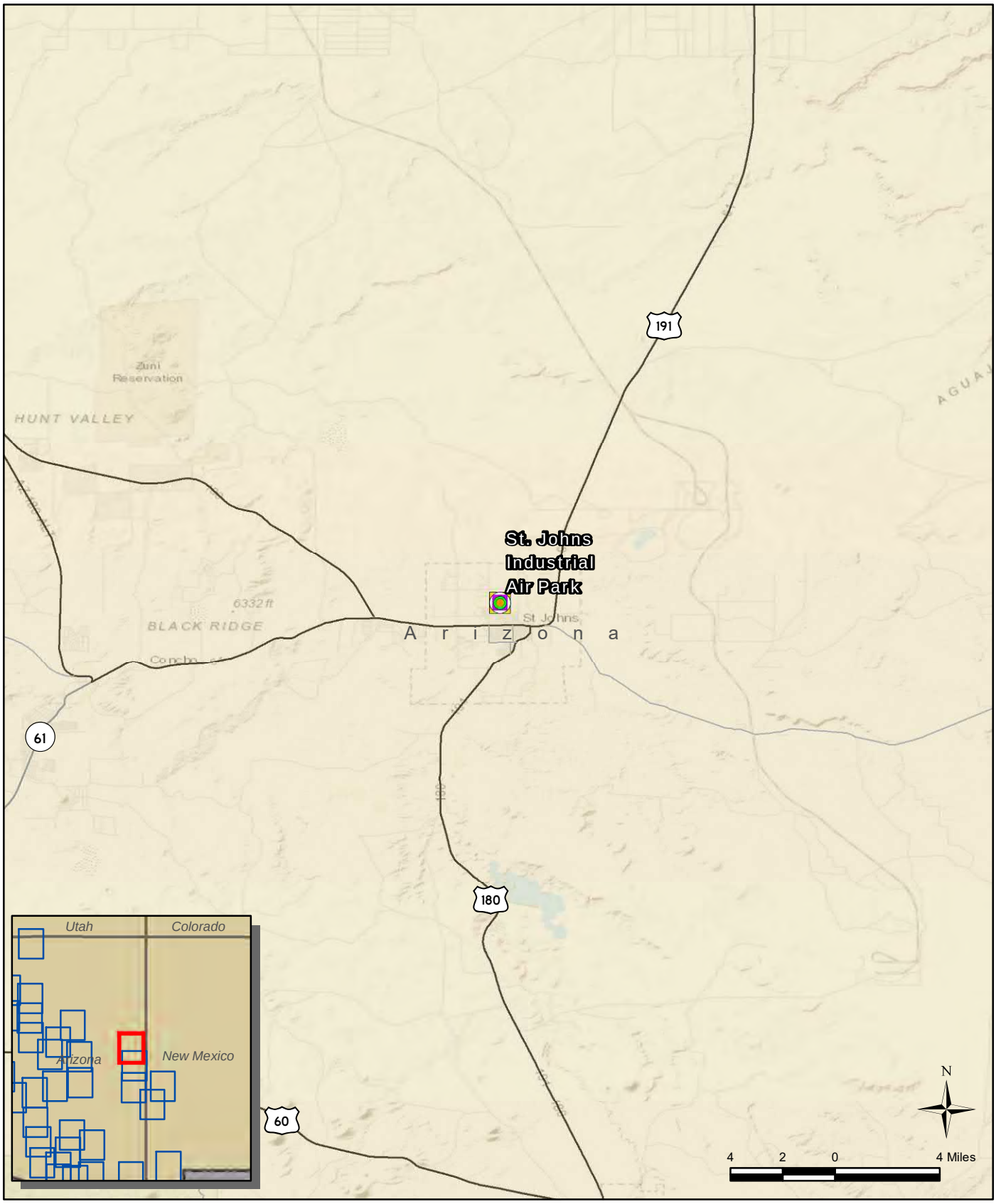
**15 of 48**




**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- US Highway
- State Highway and Route
- Other Roads

**16 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads

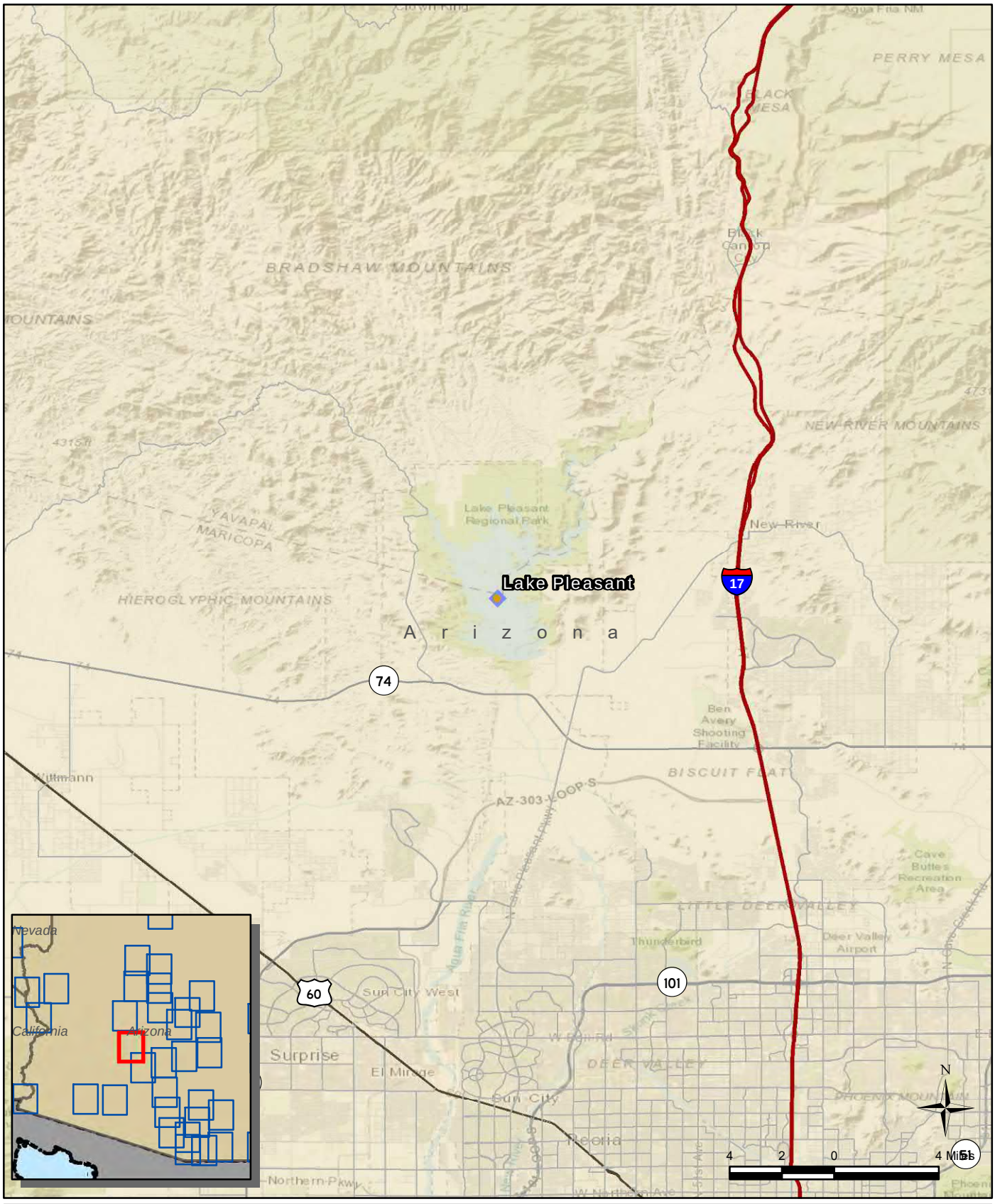
**17 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Interstate Highway
- State Highway and Route
- Other Roads

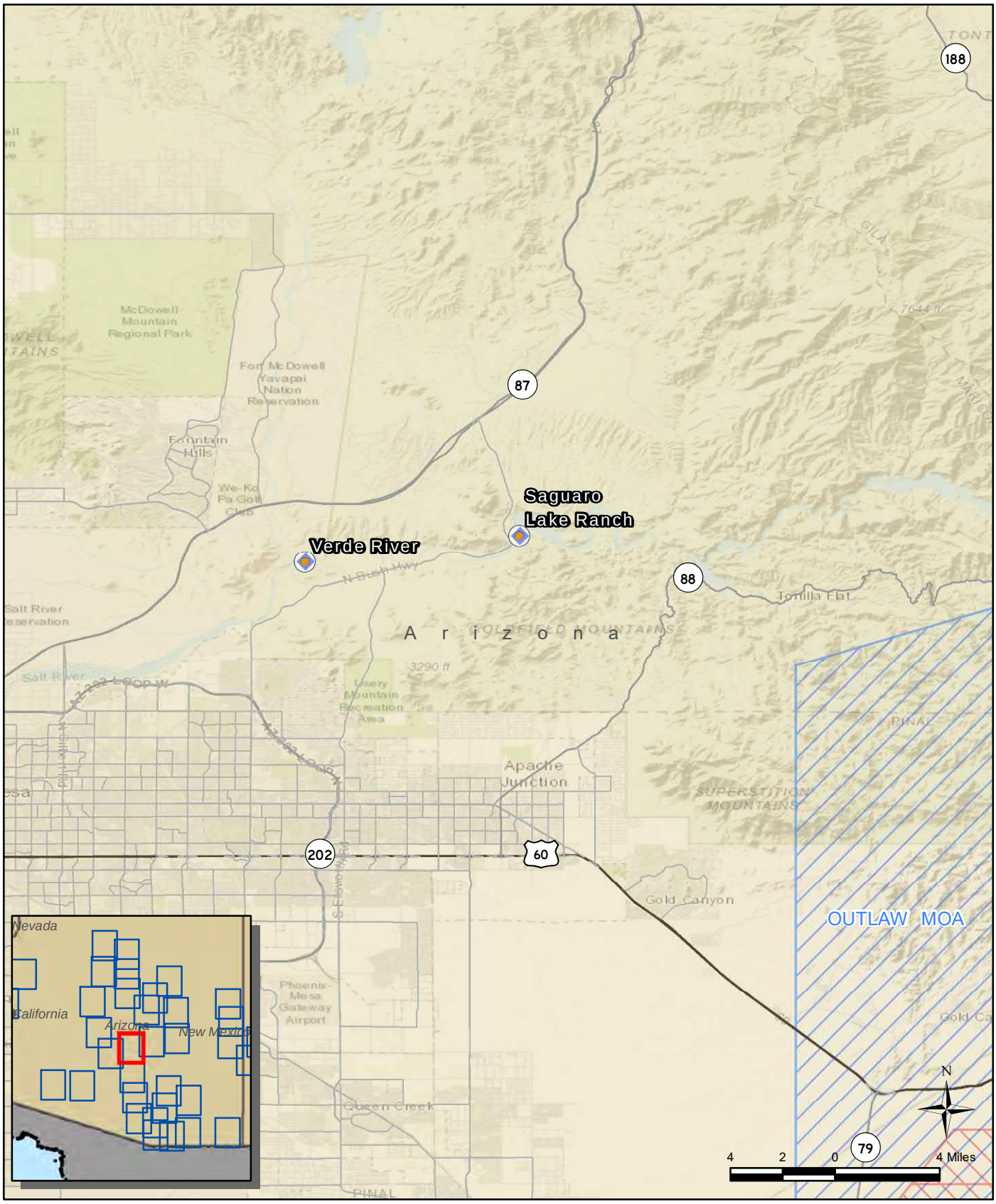
**18 of 48**




**Legend**

- Water Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads

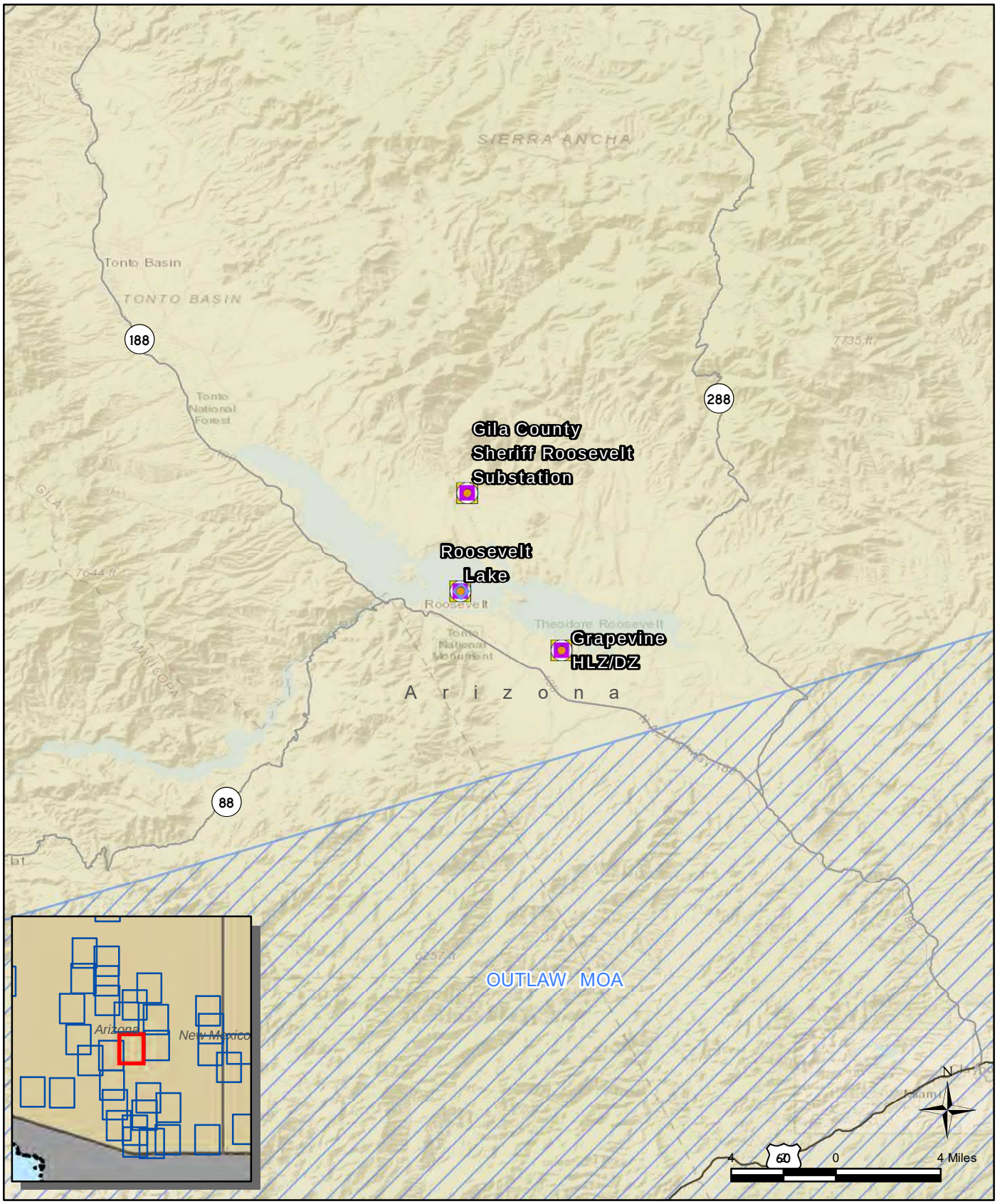
**19 of 48**




**Legend**

- Drop Zone
- Water Training
- Helicopter Landing Zone
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area

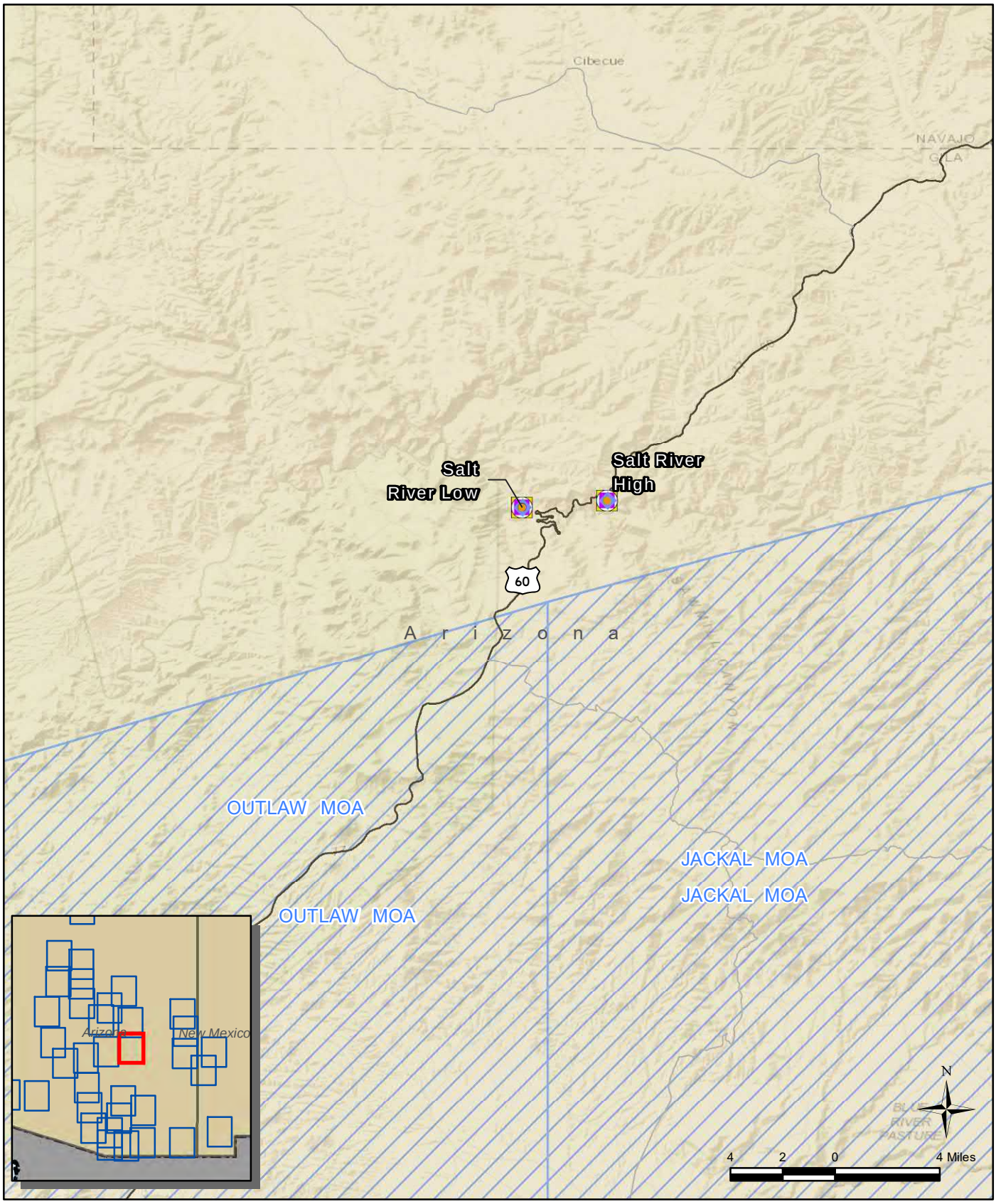
**20 of 48**




**Legend**

- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

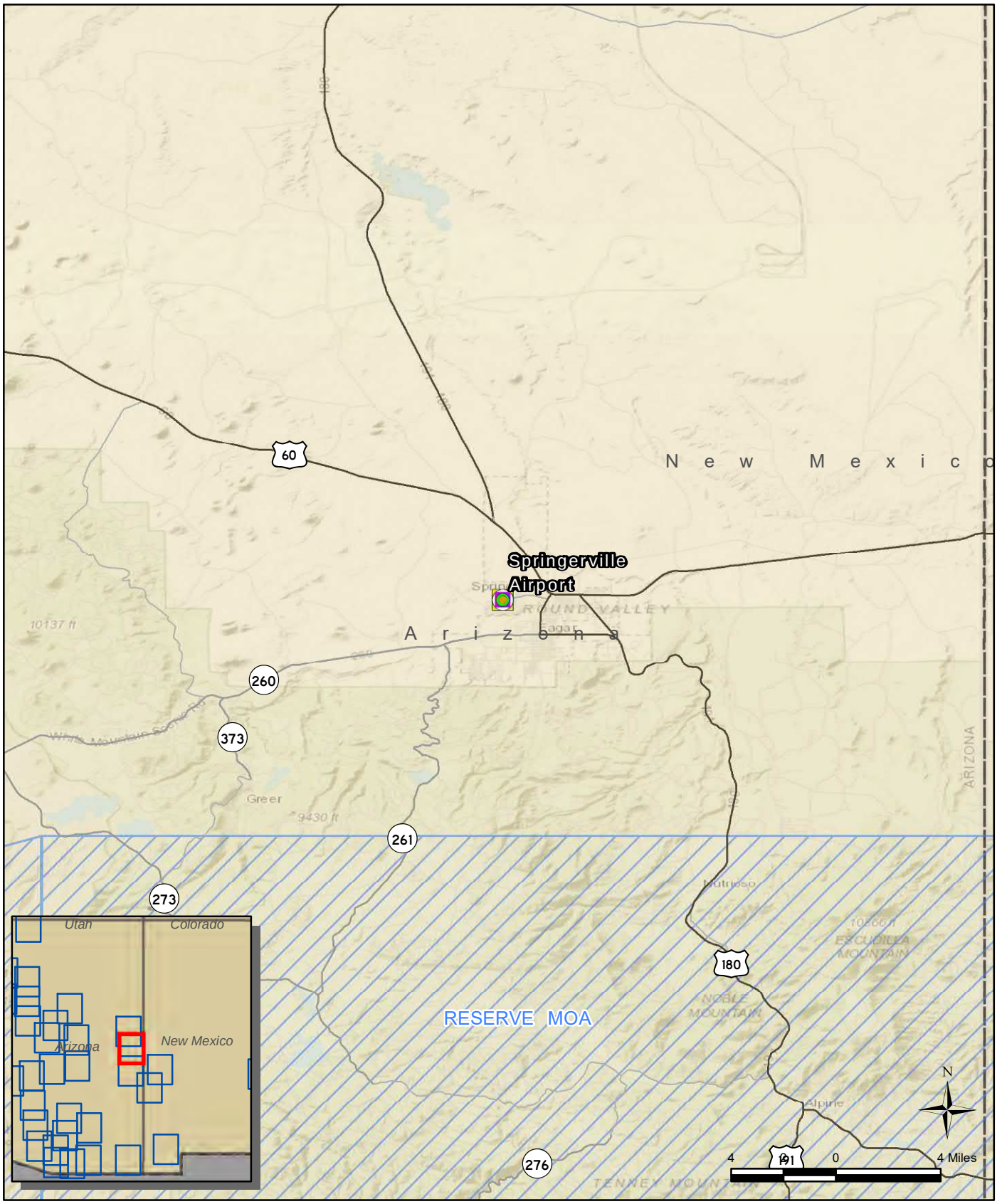
**21 of 48**




**Legend**

- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

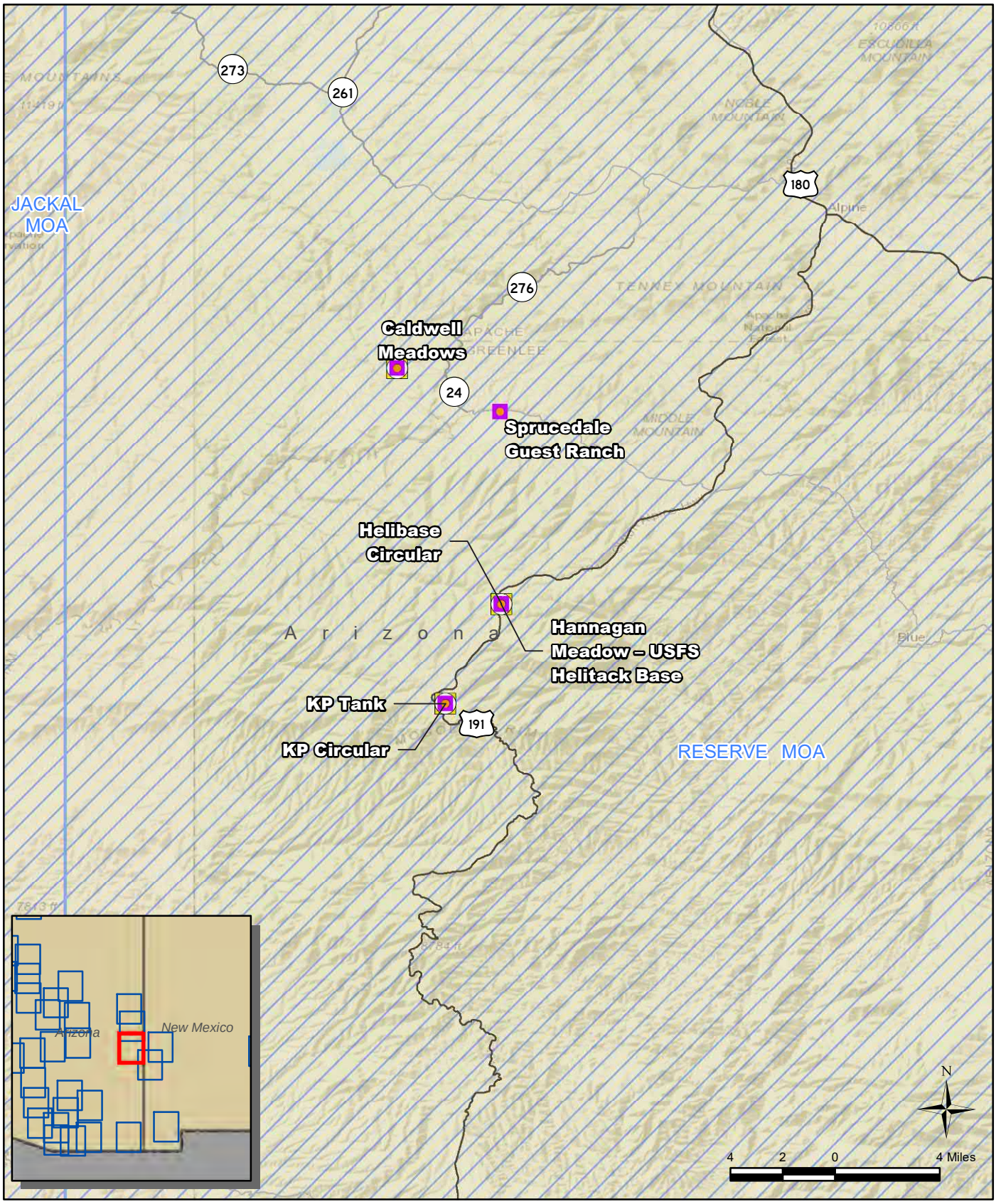
**22 of 48**




**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

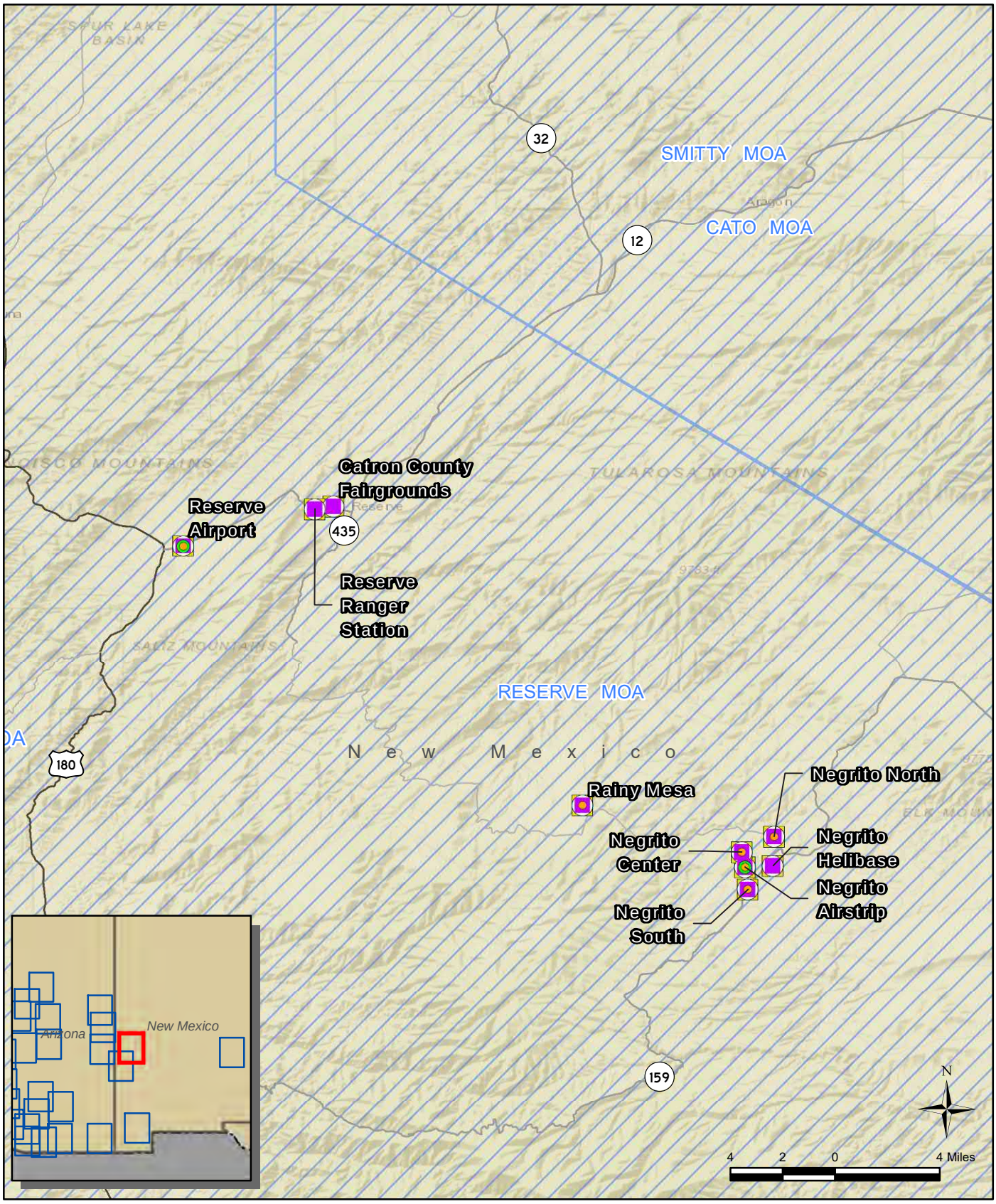
**23 of 48**




**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

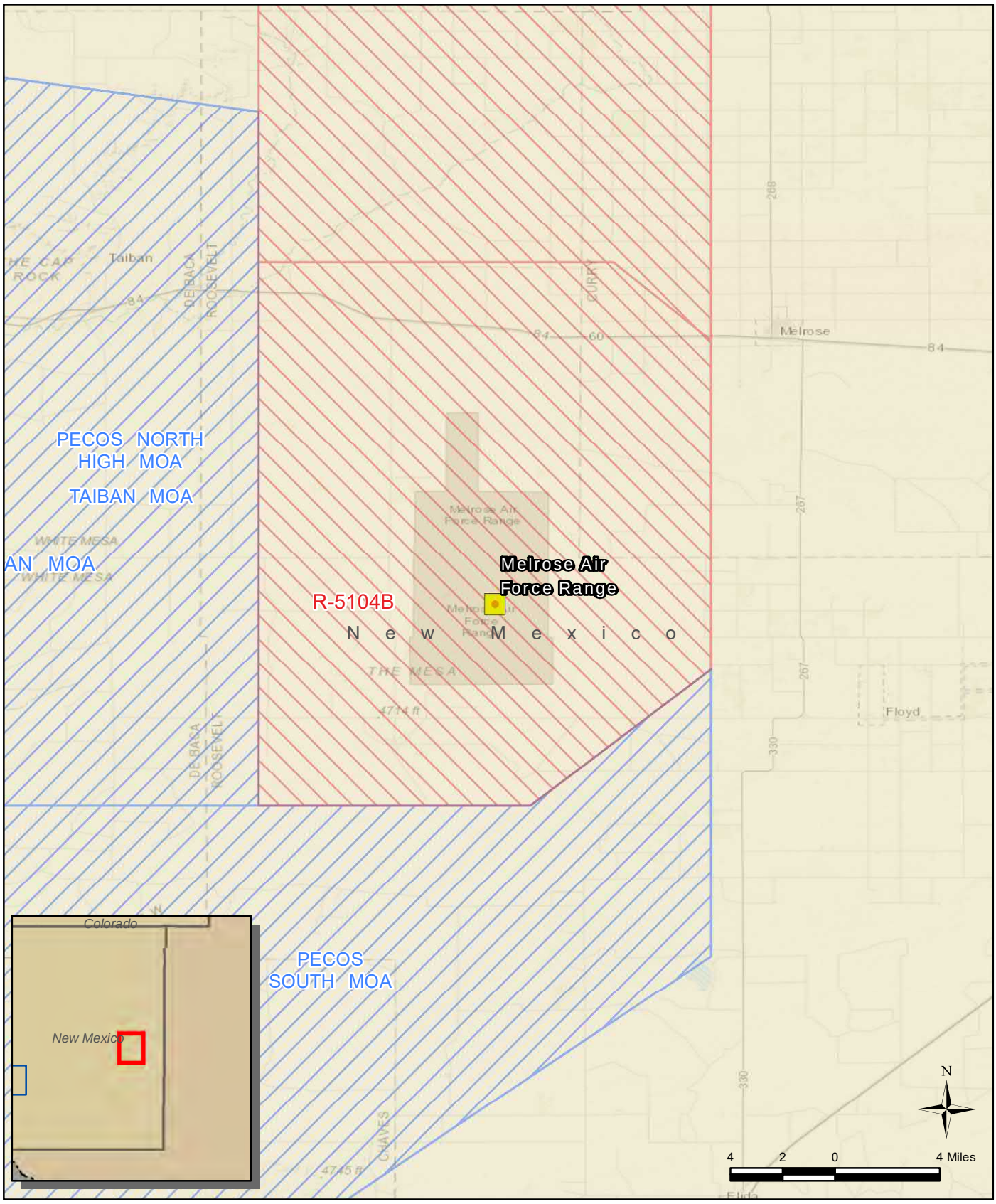
**24 of 48**




**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

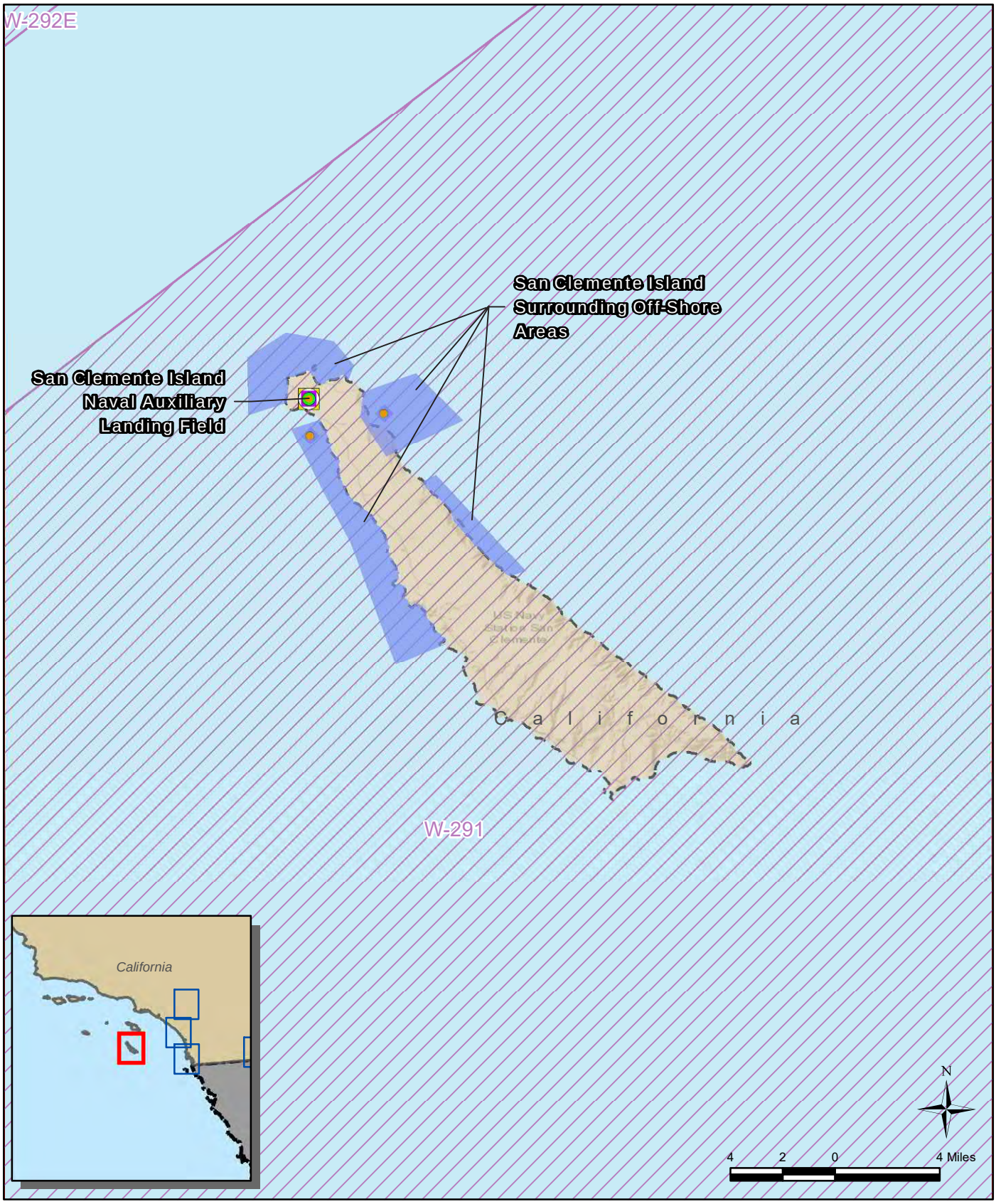
**25 of 48**




**Legend**

- Flight Training
- Restricted Area
- Military Operations Area

**26 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- San Clemente Island Surrounding Off-Shore Areas (include Drop Zones and Water Training)
- Warning Area




**Legend**

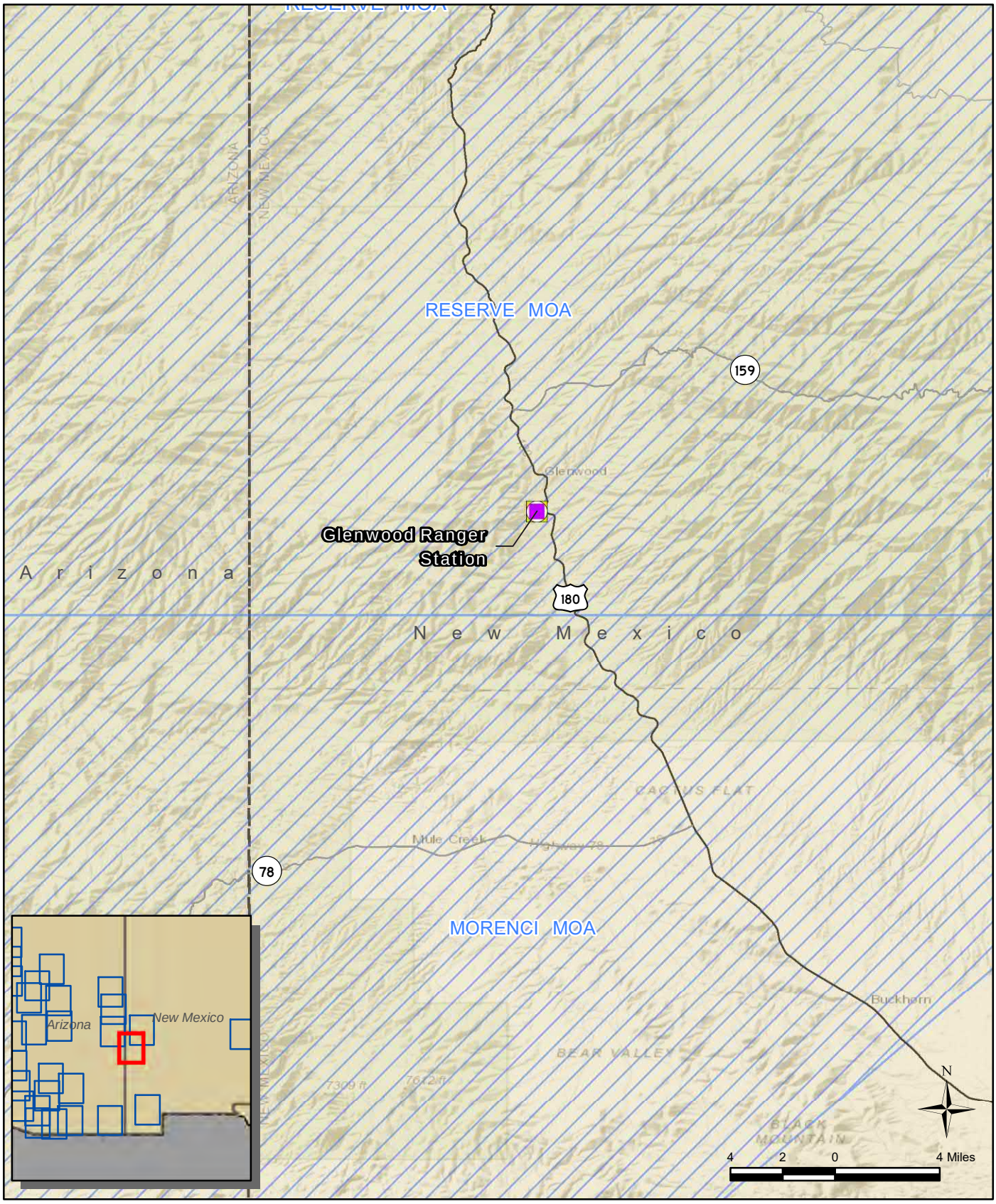
- Forward Aircraft Refueling Point
- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area




**Legend**

- Fixed-Wing Landing Zone
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads

**29 of 48**




**Legend**

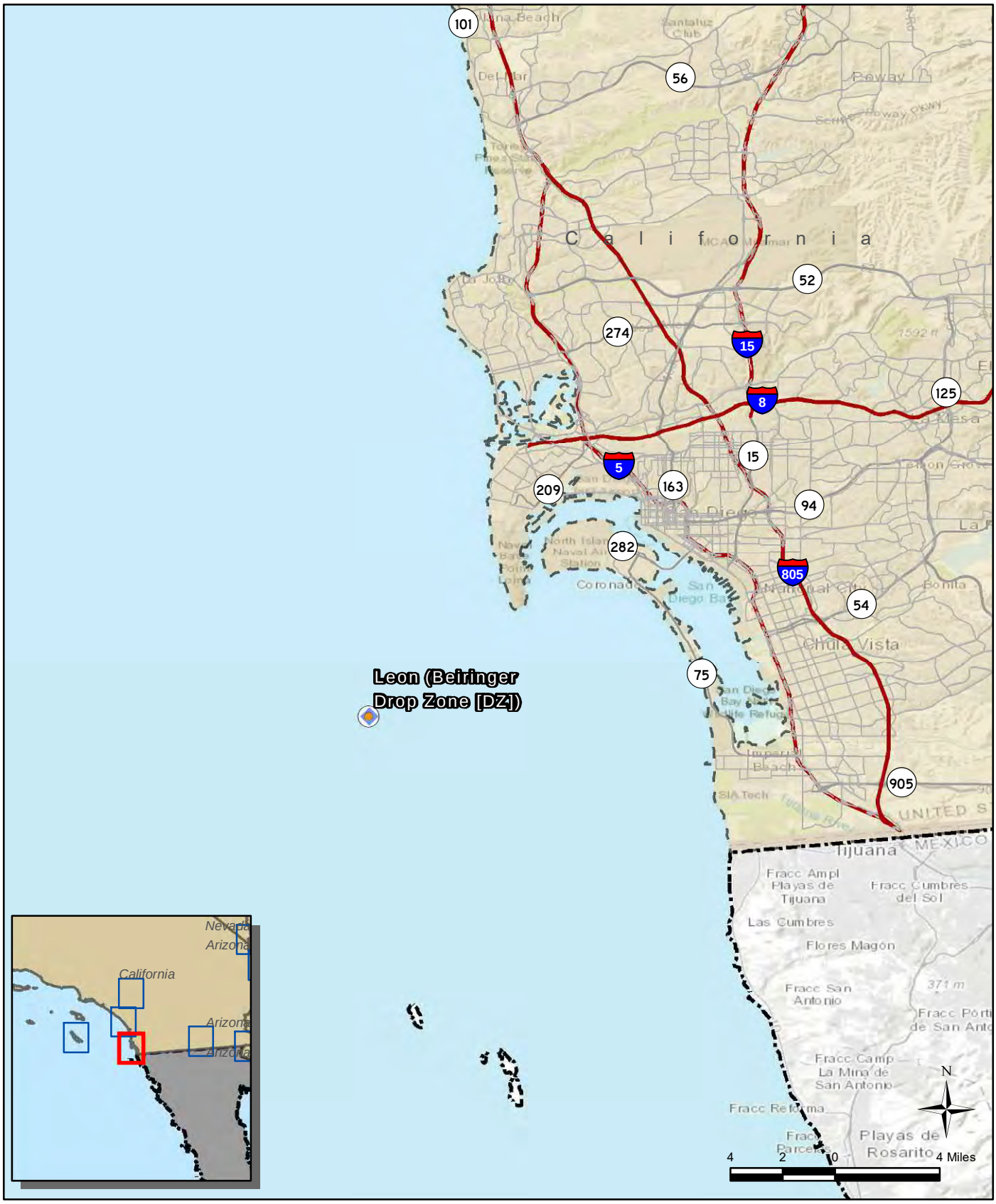
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

**30 of 48**




**Legend**

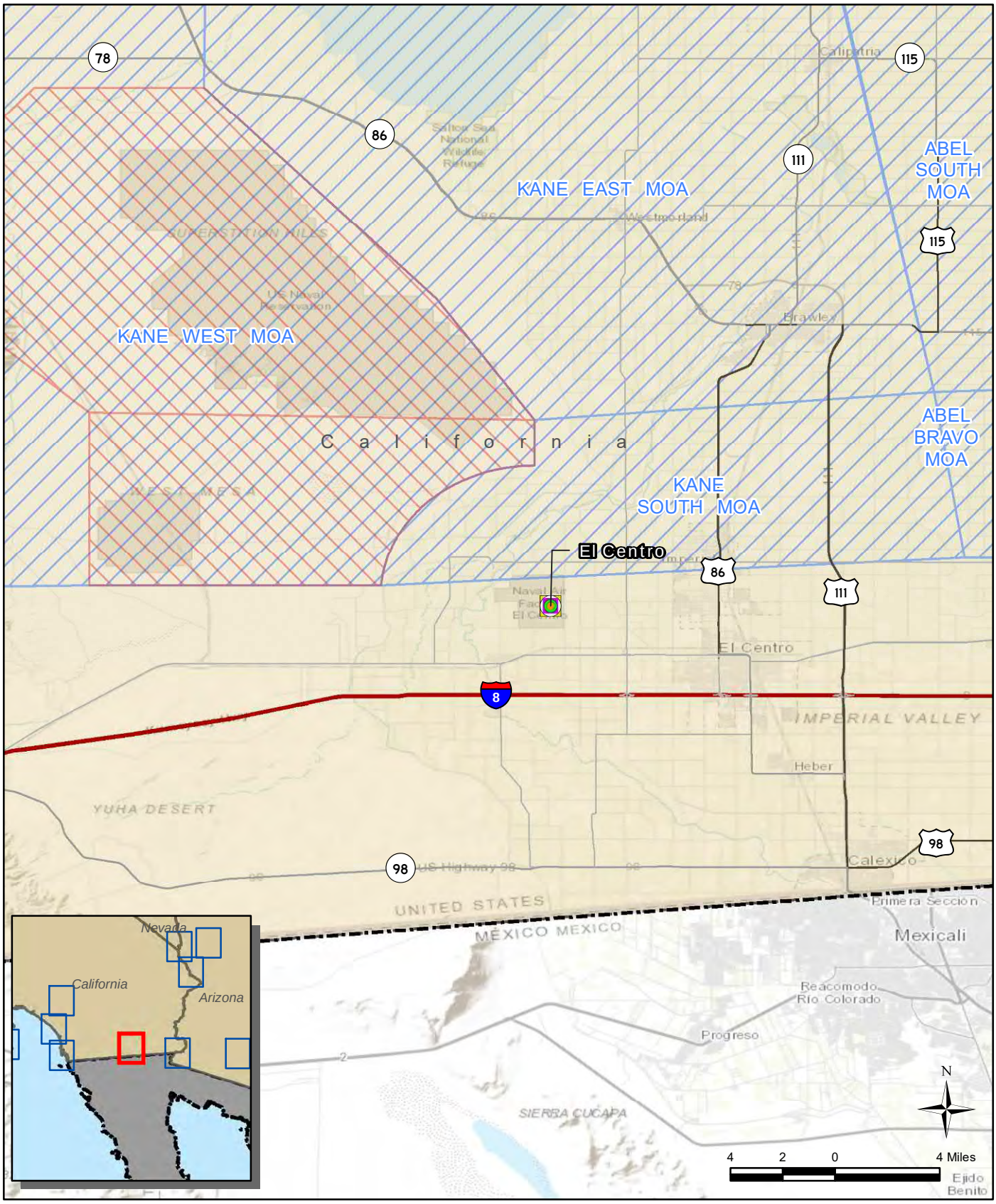
- Ground Training
- Flight Training
- US Highway
- Other Roads
- Restricted Area




**Legend**

- Drop Zone
- Water Training
- Helicopter Landing Zone
- Interstate Highway
- State Highway and Route
- Other Roads

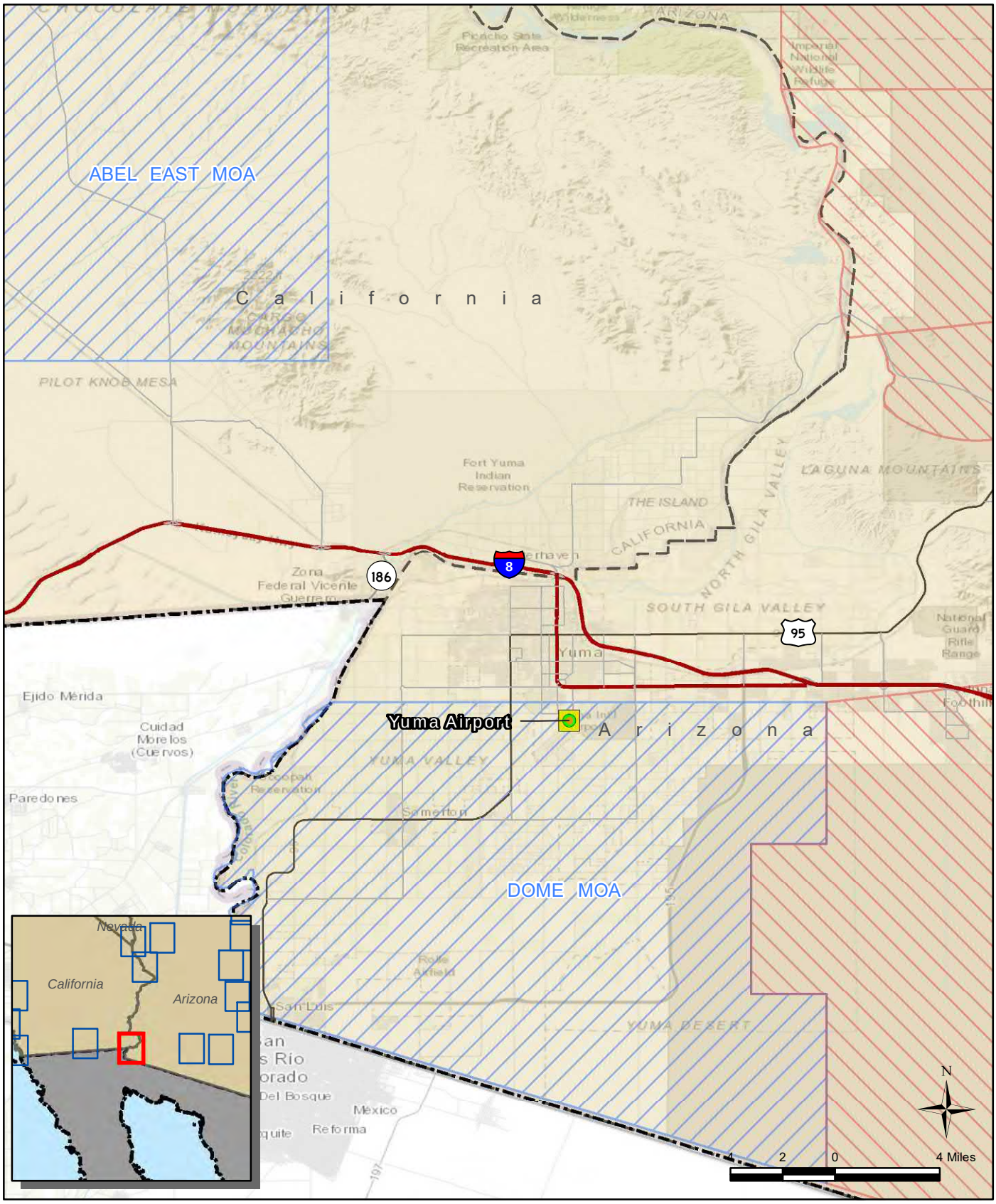
**32 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area

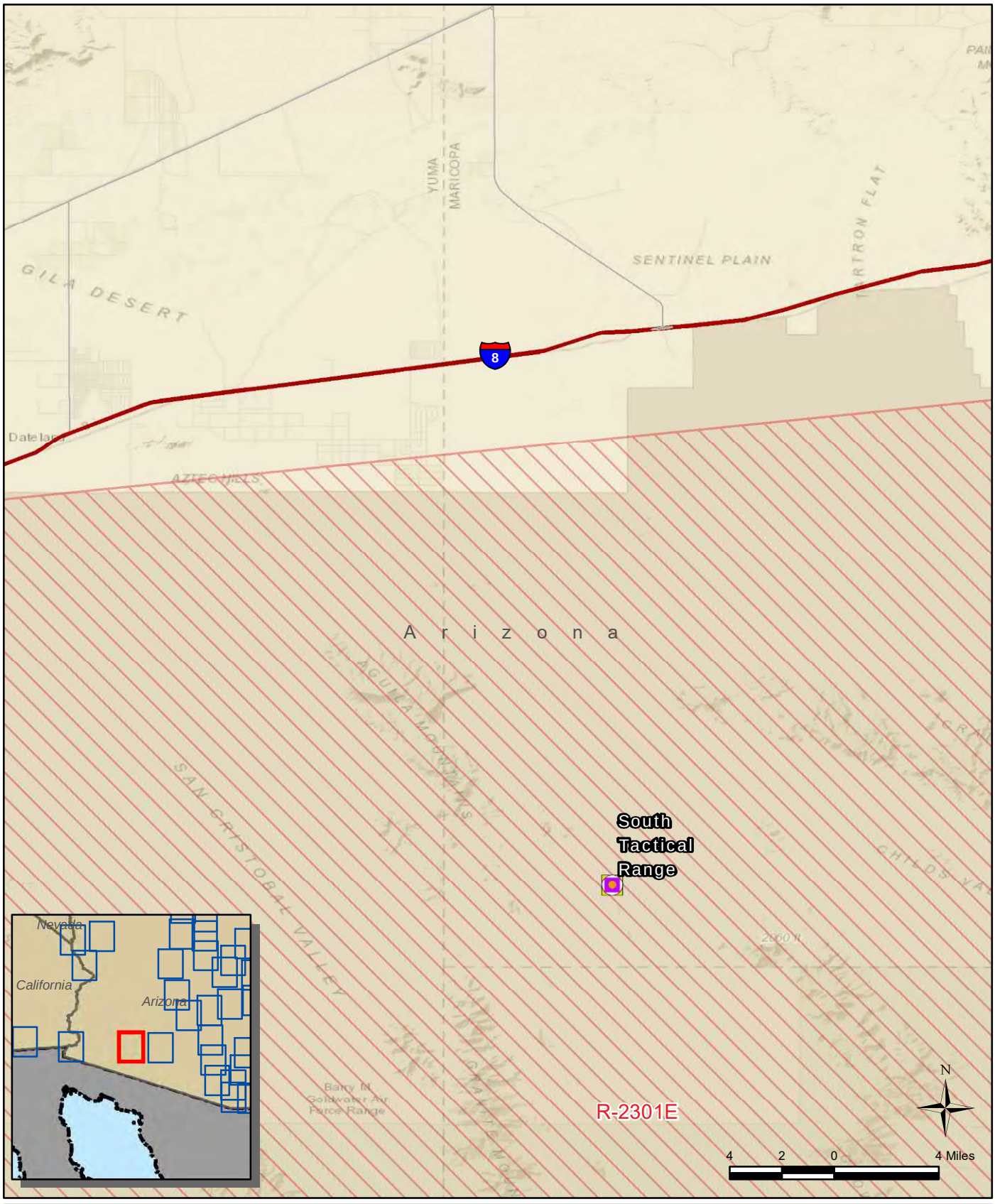
**33 of 48**




**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area

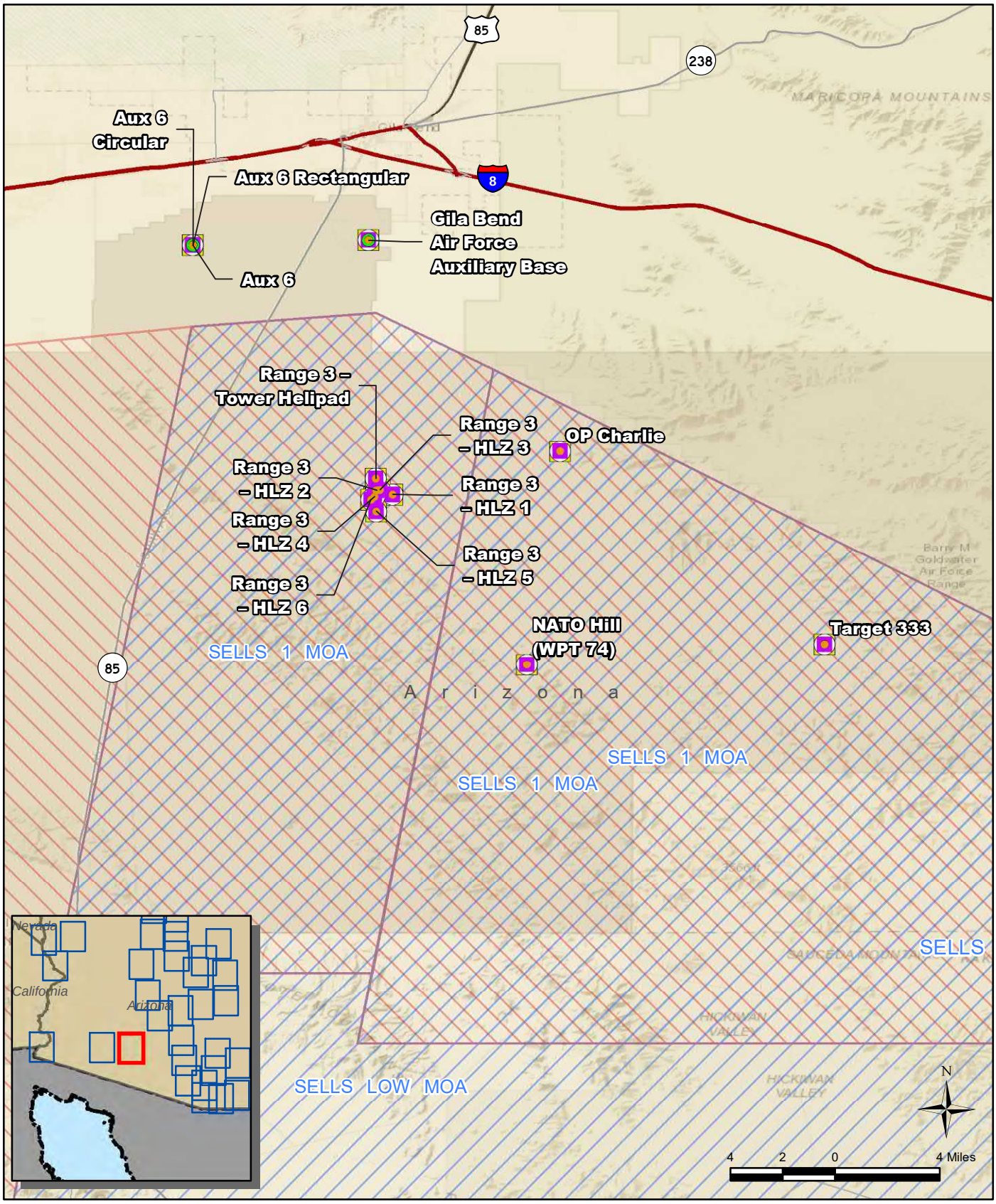
**34 of 48**




**Legend**

- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- Other Roads
- Restricted Area

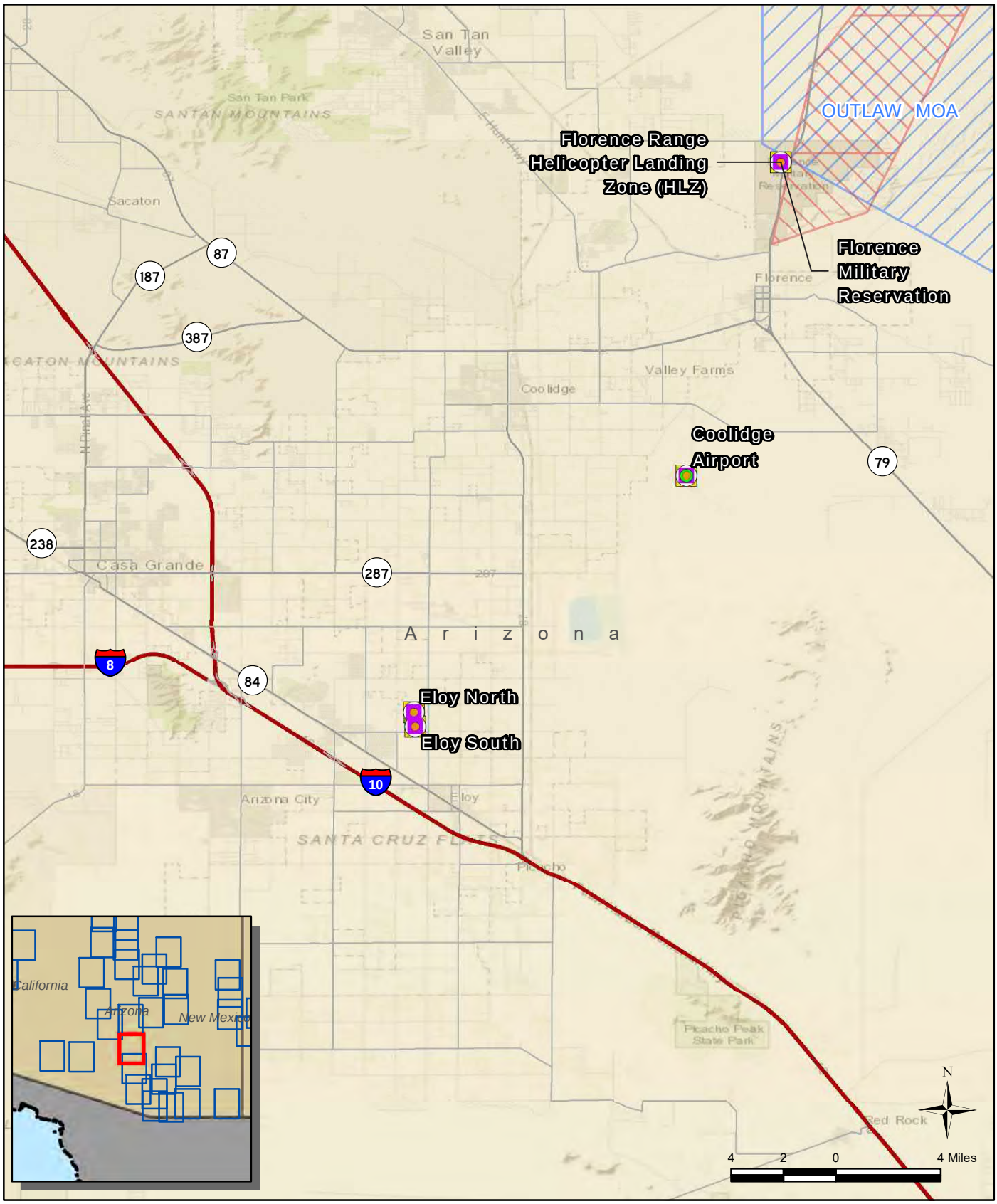
**35 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area

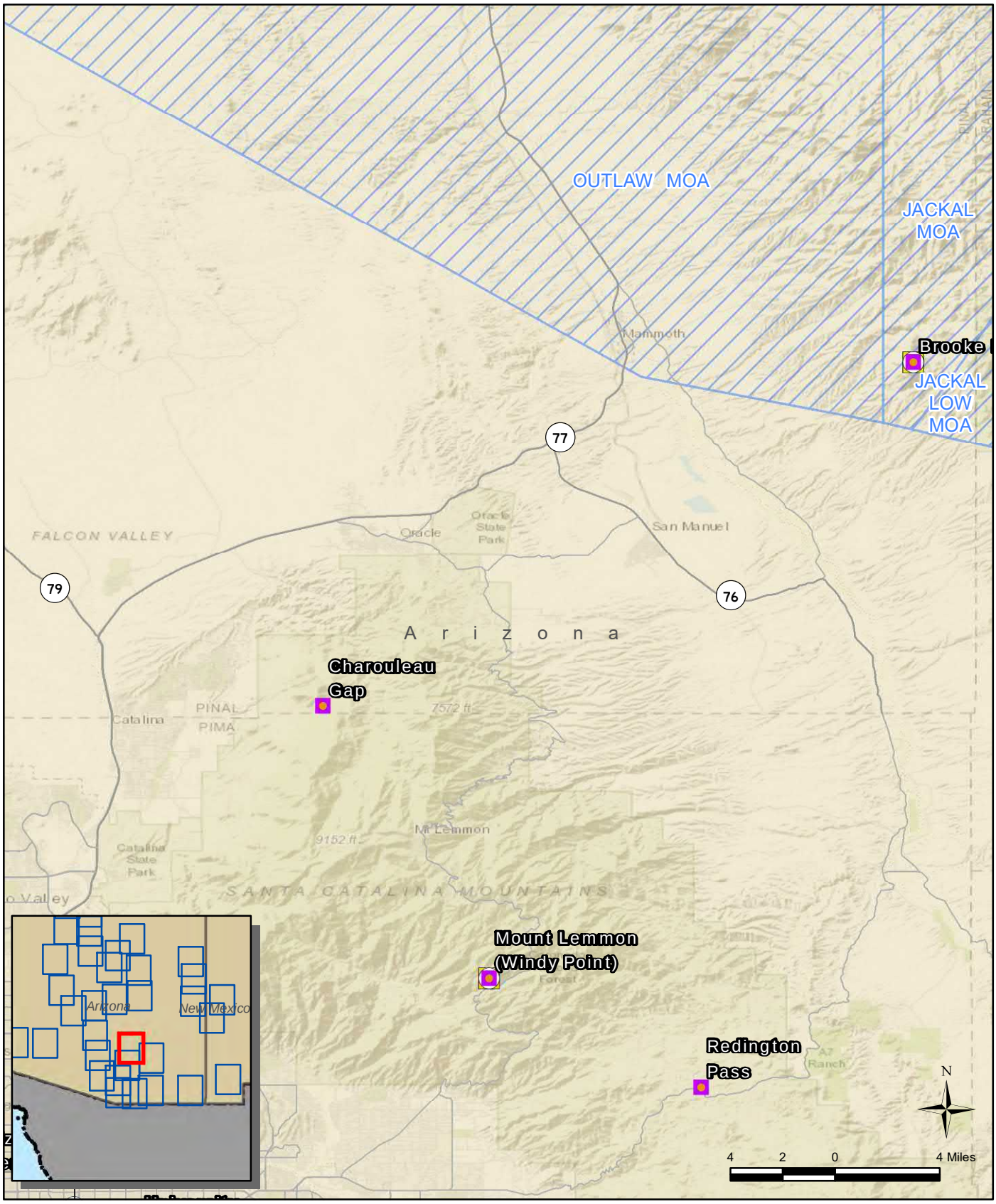
**36 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area

**37 of 48**




**Legend**

- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads
- Military Operations Area

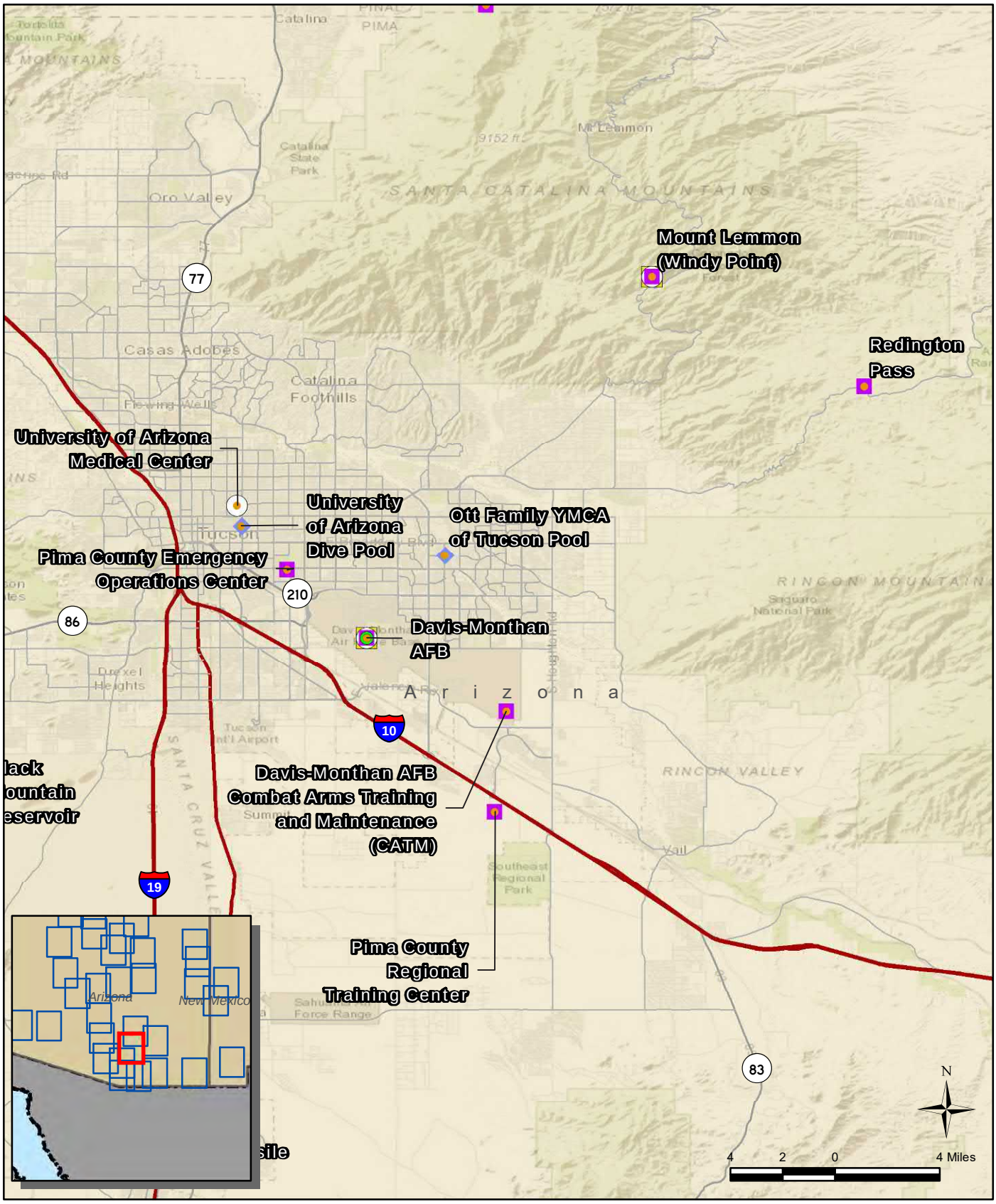
**38 of 48**




**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Military Operations Area

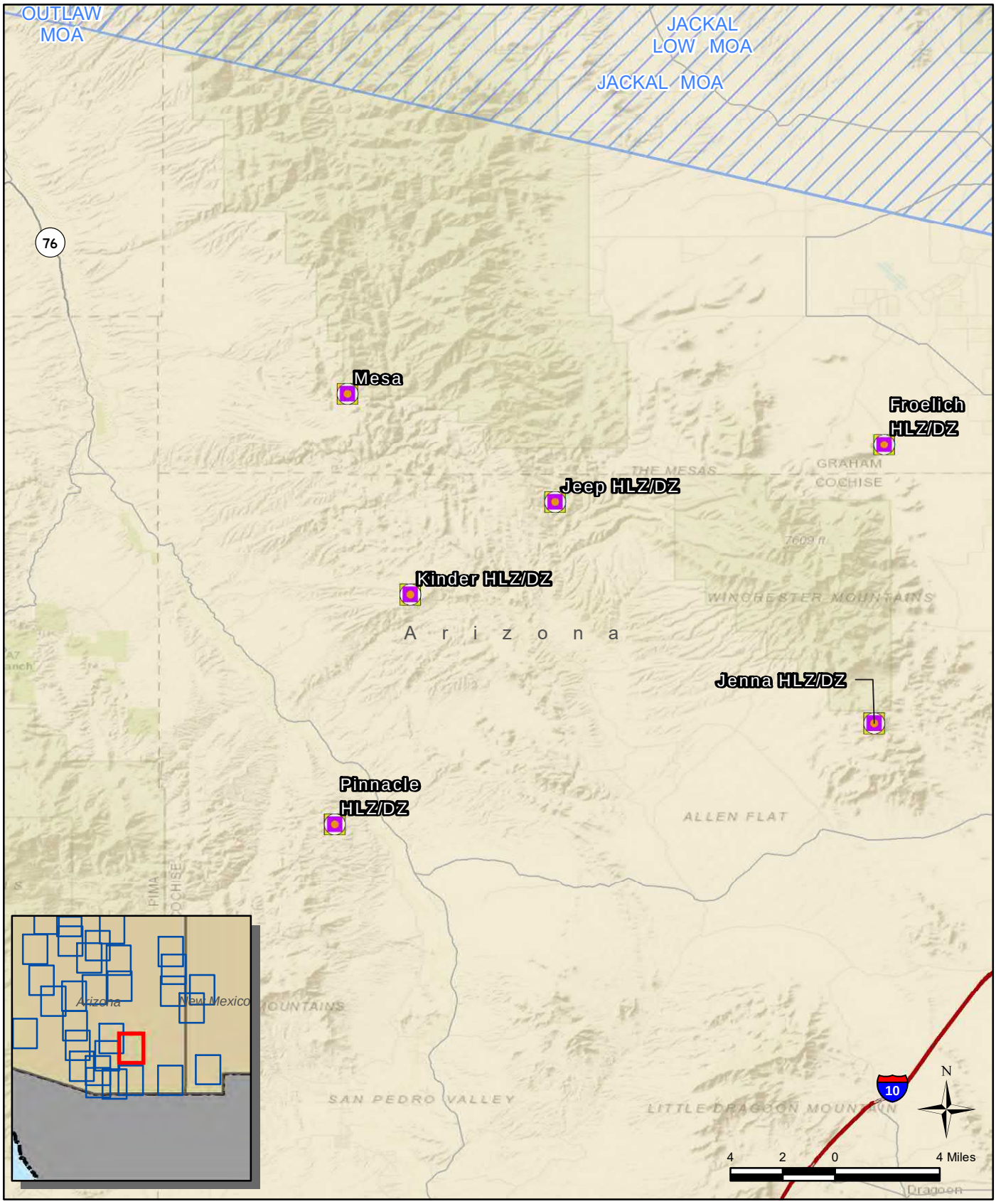
**39 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads

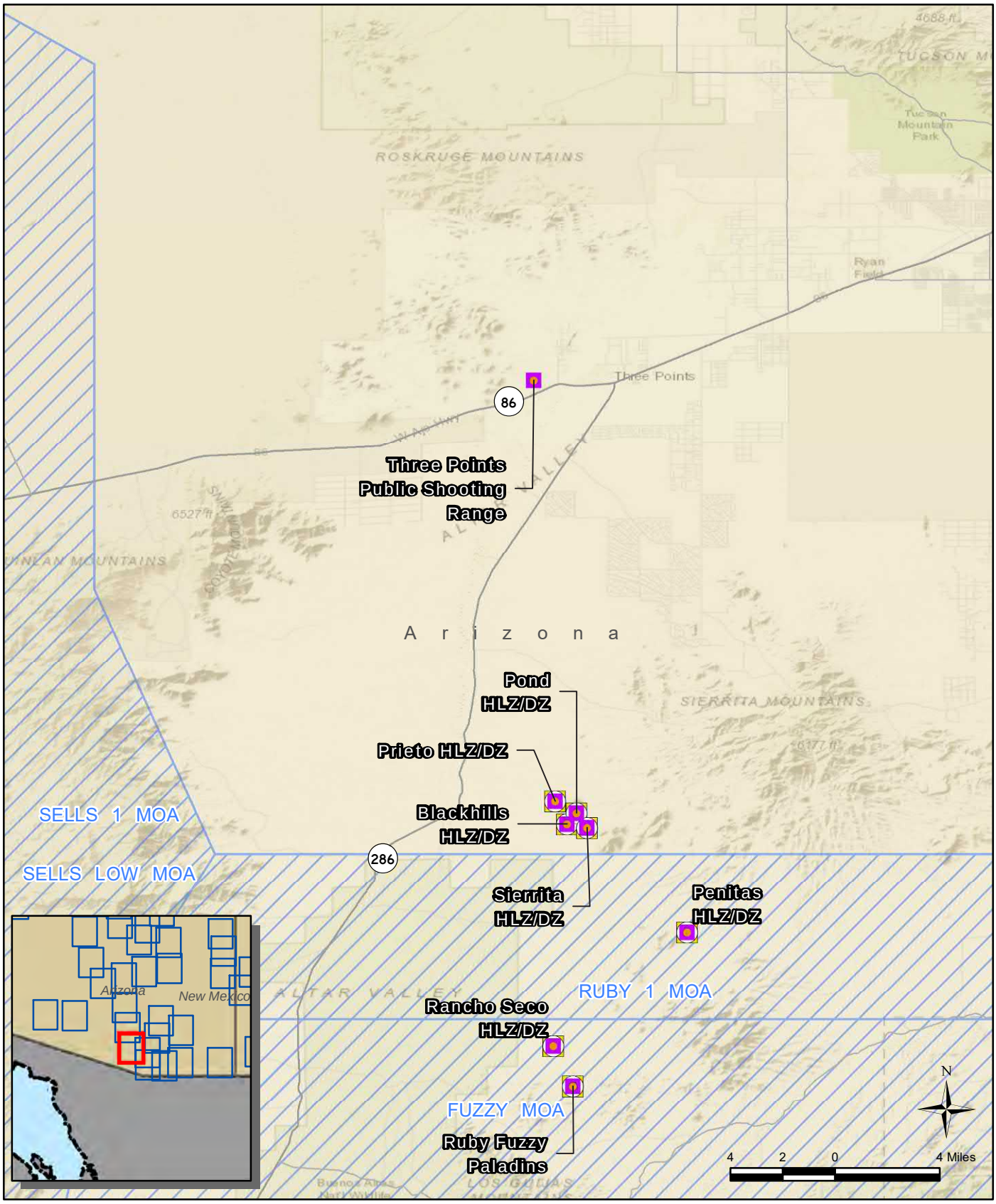
**40 of 48**




**Legend**

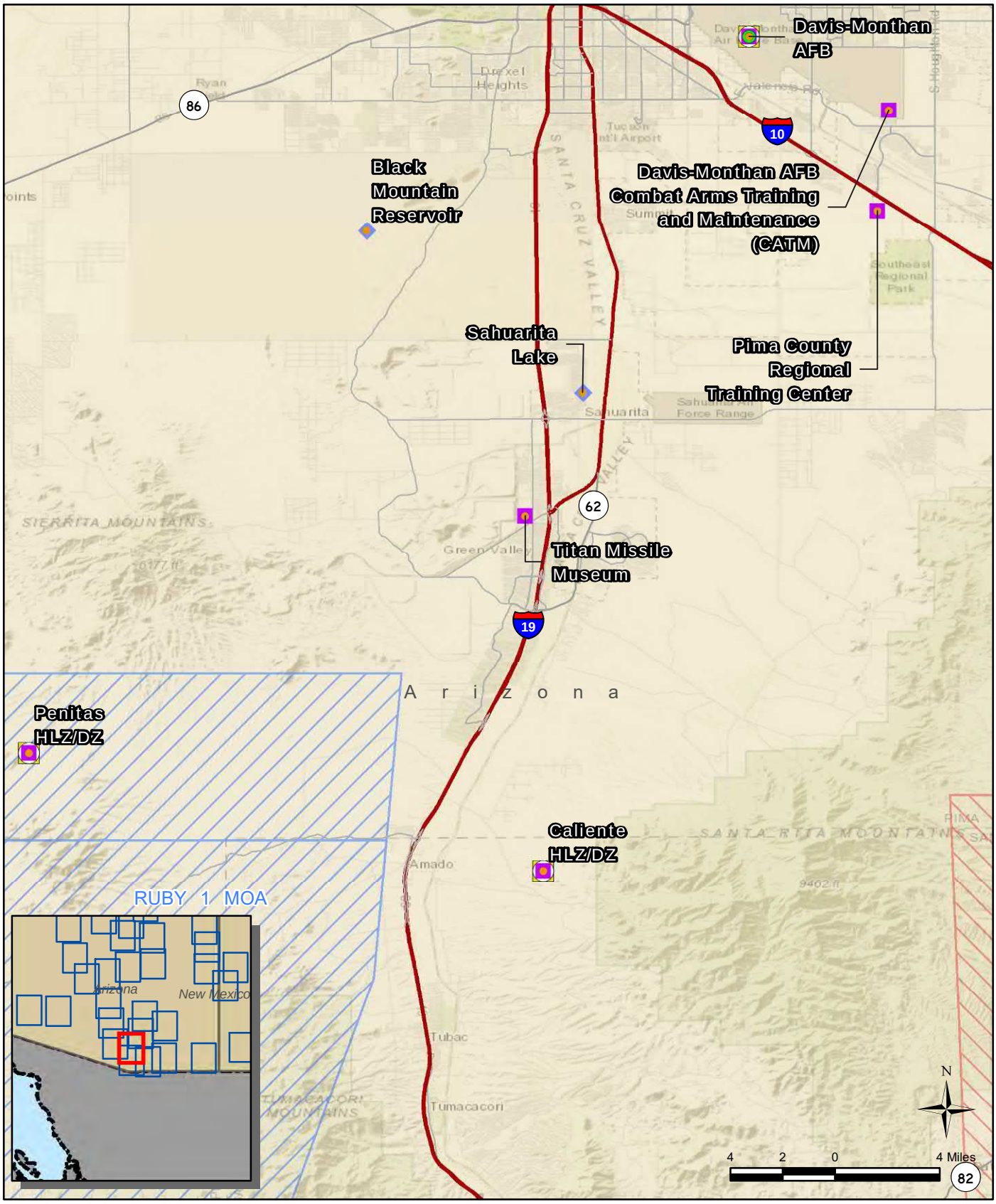
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Military Operations Area

**41 of 48**




**Legend**

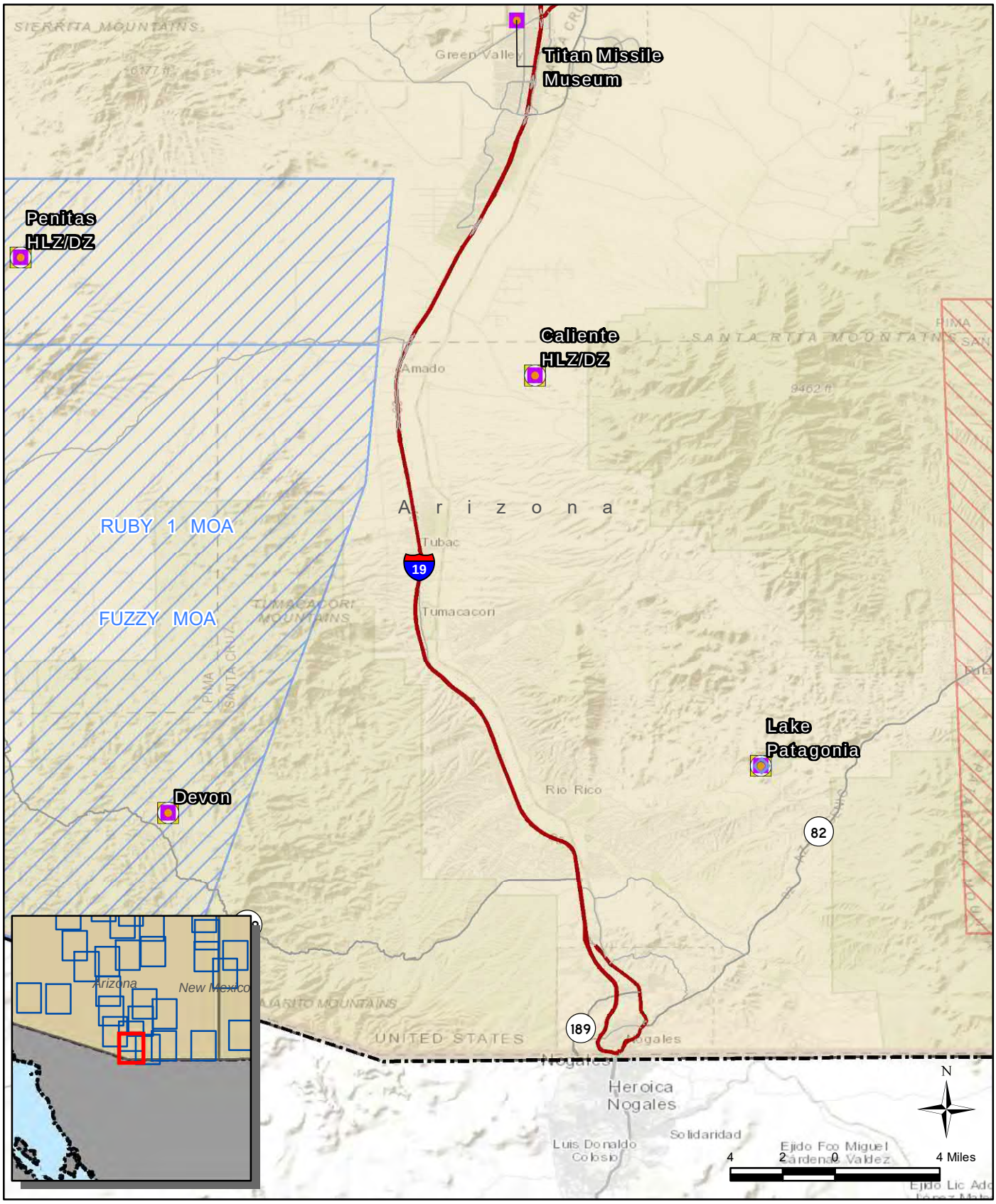
- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads
- Military Operations Area




**Legend**

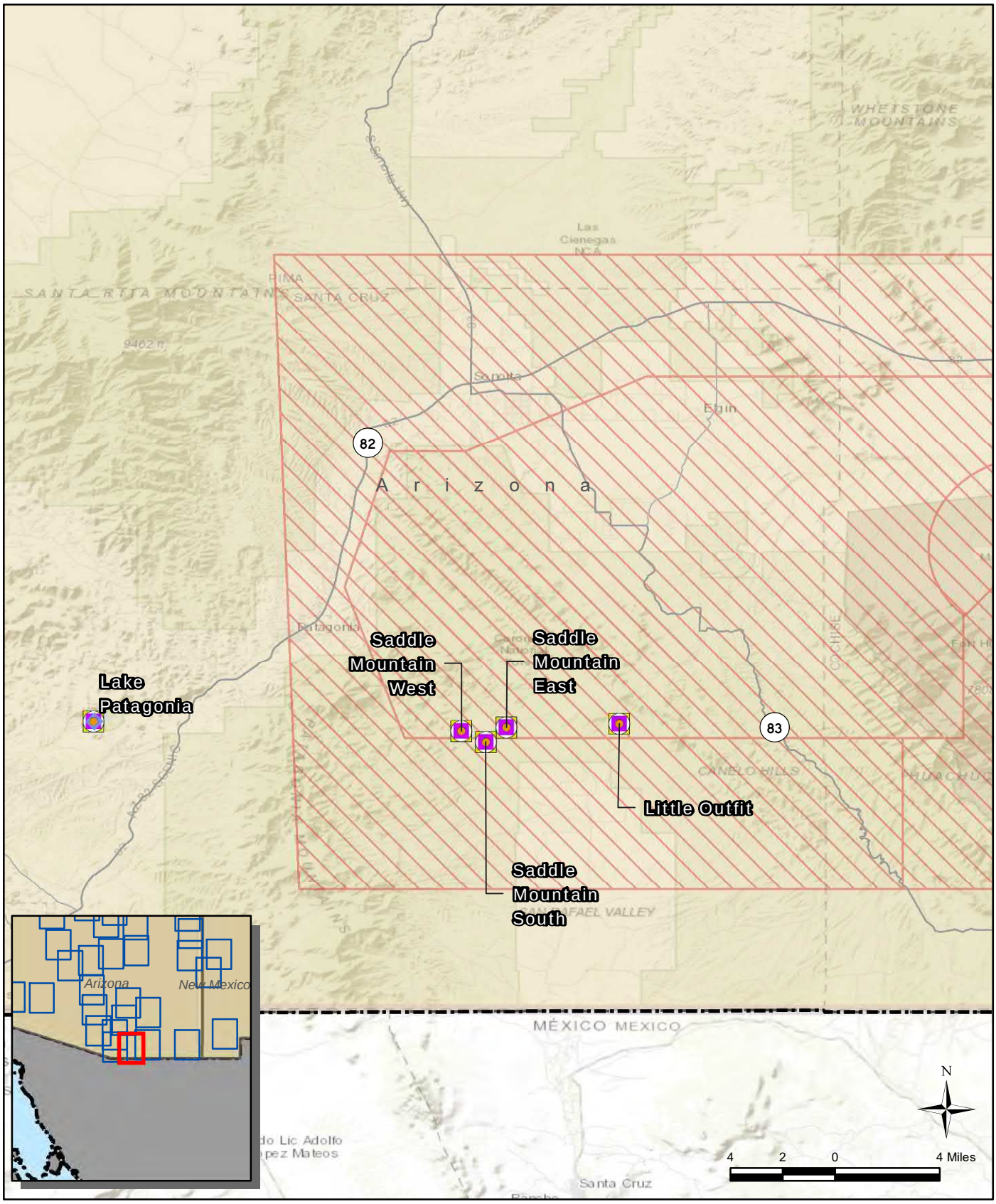
- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area

**43 of 48**




**Legend**

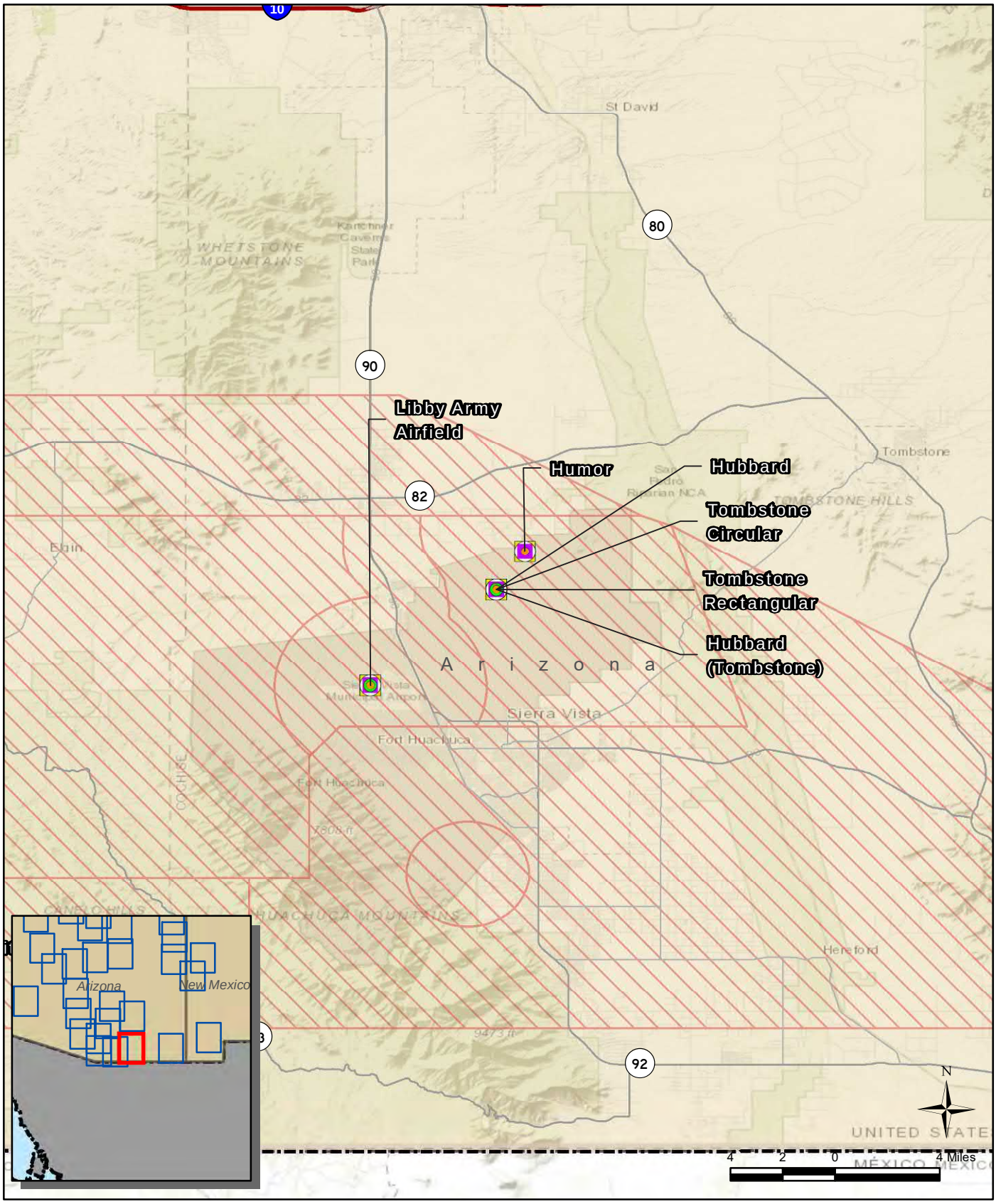
- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area




**Legend**

- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads
- Restricted Area

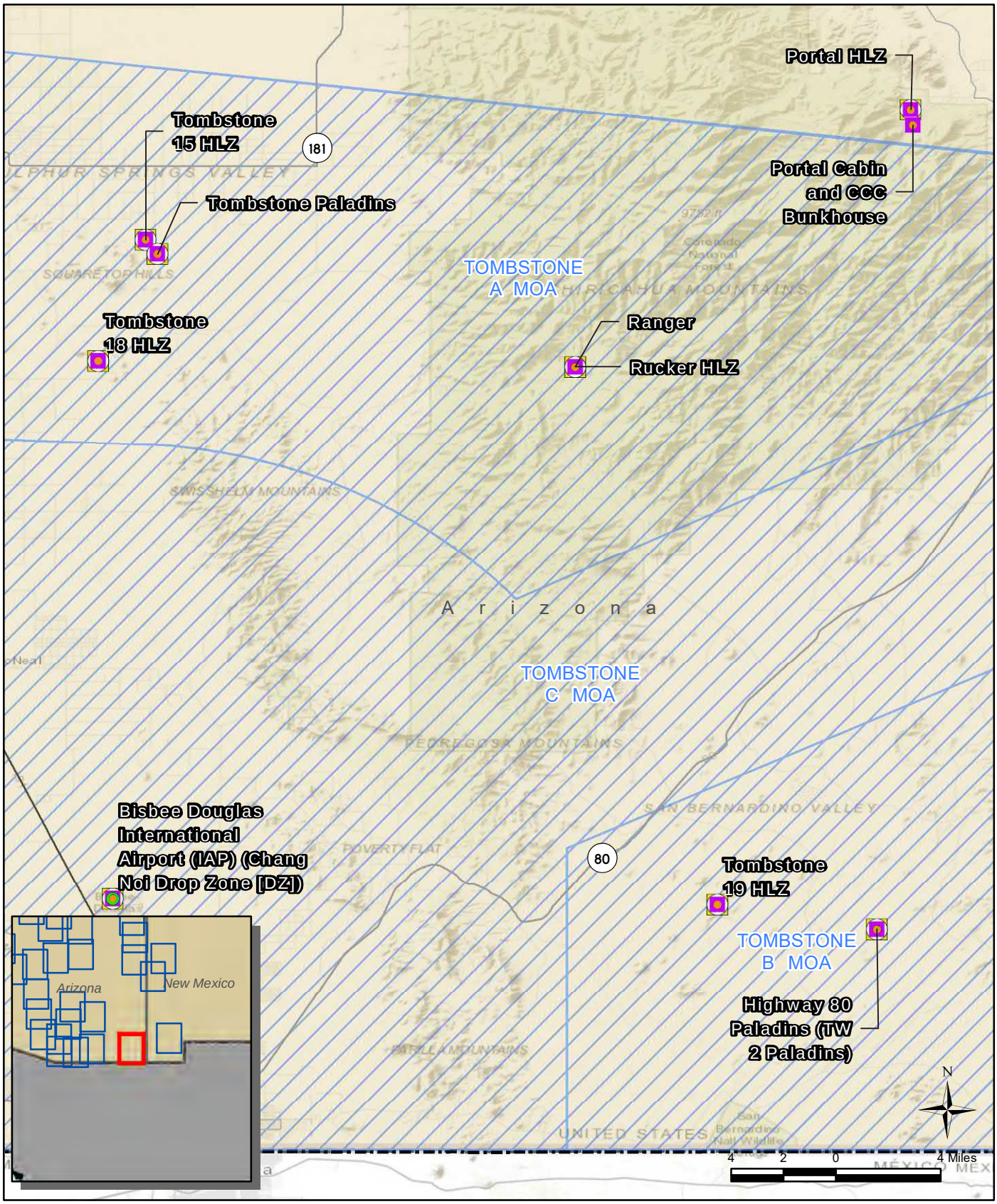
**45 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area

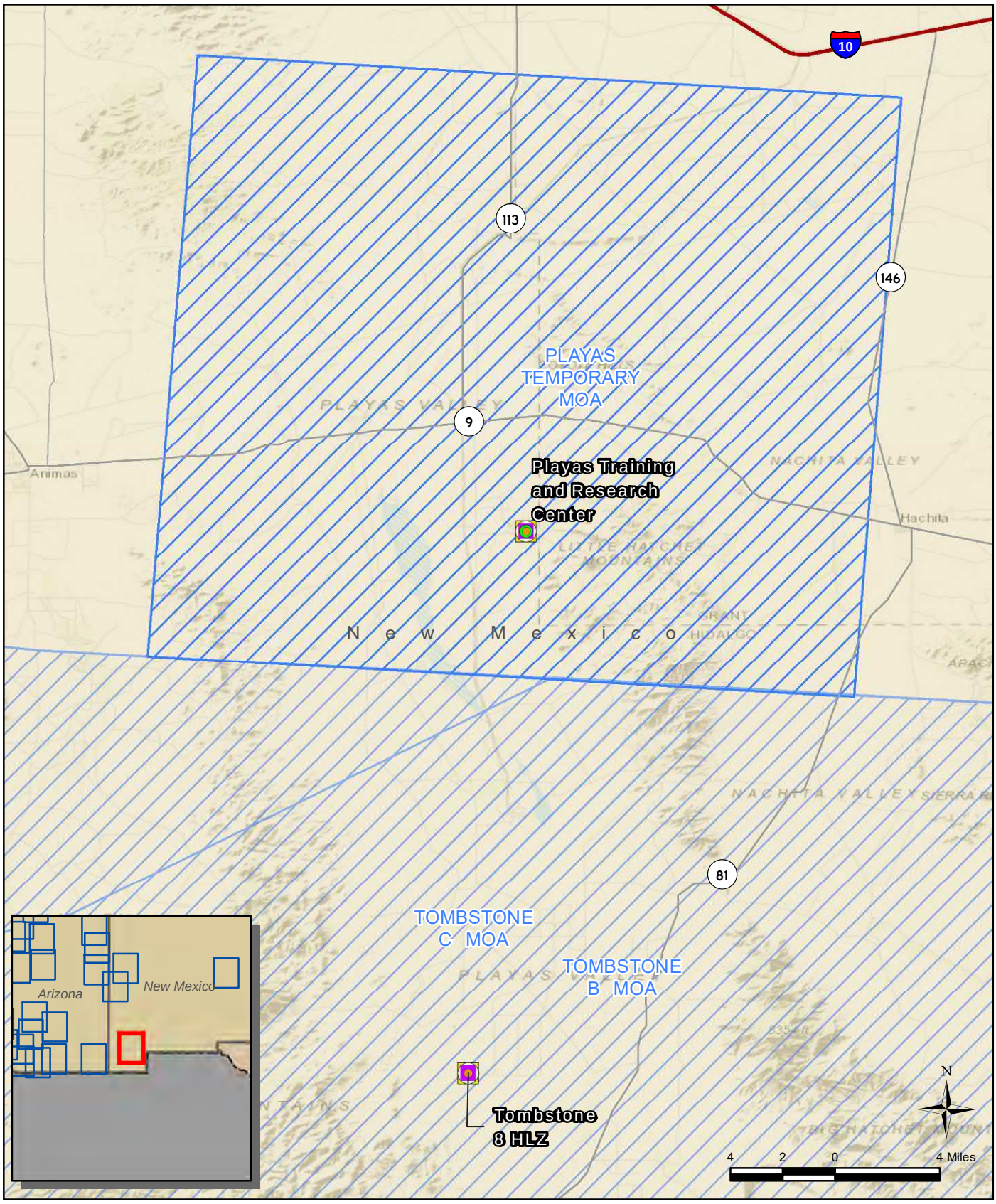
**46 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area

**47 of 48**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Military Operations Area

**48 of 48**

# Appendix B

# Agencies Consulted

# Agencies Consulted

The Federal, state, and local agencies, DoD units, and other agencies/organizations/individuals contacted during the preparation of this EA are listed below.

## Federal

Advisory Council on Historic Preservation
Bureau of Land Management
Federal Aviation Administration
National Oceanic and Atmospheric Administration Fisheries
National Park Service
U.S. Bureau of Reclamation
U.S. Department of Agriculture
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Forest Service

## State

Arizona
Arizona Department of Agriculture
Arizona Department of Environmental Quality
Arizona Department of Transportation
Arizona Department of Water Resources
Arizona Game and Fish Department
Arizona State Historic Preservation Officer
Arizona State Land Department
Arizona State Parks
State of Arizona - Office of the Arizona Governor
State of Arizona - Office of the Attorney General
University of Arizona

California
California Coastal Commission
California Department of Fish and Wildlife
California Office of Historic Preservation
Native American Heritage Commission
State of California - Department of Toxic Substances Control
State of California - Governor's Office of Planning and Research
State of California - Office of the Attorney General
State of California - State Water Resources Control Board

Nevada
Nevada Department of Wildlife
Nevada Division of Environmental Protection

Nevada Division of State Parks
Nevada State Clearinghouse
Nevada State Historic Preservation Office
State of Nevada - Office of the Governor
State of Nevada - Office of the Attorney General

New Mexico
New Mexico Department of Agriculture
New Mexico Department of Game and Fish
New Mexico Environment Department
New Mexico Historic Preservation Division
New Mexico State Land Office
State of New Mexico - Office of the Governor
State of New Mexico - Office of the Attorney General
University of New Mexico

## Local

Arizona
City of Coolidge Municipal Airport
City of Flagstaff Planning and Development Services Section
City of Flagstaff Pulliam Airport
City of Kingman Historical Preservation Commissions
City of Kingman Planning & Economic Development Department
City of Mesa Development Services - Planning
City of Mesa Historic Preservation
City of Phoenix Historic Preservation Office
City of Phoenix Planning & Development Department
City of Prescott Historic Preservation
City of Prescott Community Development Department
City of Scottsdale Historic Preservation Office
City of Scottsdale Planning and Development Services
City of South Tucson Development Services Division
City of St. Johns
City of Tucson Historic Preservation Officer
City of Tucson Planning & Development Services Department
City of Williams Community Development Department
City of Winslow Historic Preservation Commission
City of Winslow Community Development Department
City of Yuma Community Planning Division
Cochise County Development Services Department
Gila County Sheriff's Office
Lake Havasu City Planning & Zoning Division
Maricopa County Planning & Development Department
Maricopa Water District
Pima Association of Governments

Pima County Department of Environmental Quality
Pima County Development Services – Planning Department
Pima County Sheriff's Department
Santa Cruz County Planning & Zoning Department
Town of Marana Planning Department
Town Sahuarita Planning & Zoning Division
Town of Springerville Municipal Airport

New Mexico
Catron County Managers Office
Hidalgo County Manager
New Mexico Tech, Playas Training and Research Center

## Department of Defense

ACC/A3O
ACC/A3AA
ACC A3/A3J
ACC A3/A307
ACC/JA AFLOA/JACE
ACC 414 CTS Det 1/DO
ACC 414 CTS Det 1/DS
ACC 414 CTS Det 1/Air Cell
ACC 414 CTS Det 1/Logistics Cell
ACC 414 CTS Det 1/OPFOR
ACC 563 OSS/CC
AFRC 943 MSF/CC
AFCEC/CZN
AFCEC/CZTQ
AFCEC/CPPR
AFCEC/CP
AFCEC/CZPW
AFCEC/CZOW
AFIMSC Det 8
AFLOA/JACE-FSC
AFRC A3J
AFRC 306 RQS/DOJ
AFSOC 27 AOS/RMO
AFSOC 27 SOCES/CEIE
ANG 162 LRS/LGRD
Arizona Army National Guard
March Air Reserve Base
Marine Corps Air Station Yuma
Marine Corps Base Camp Pendleton
Marine Corps Installations – West (MCIWEST)
NAVAIR Range Sustainability Office

Naval Air Facility El Centro
Naval Air Station North Island
Naval Base Coronado
Naval Facilities Engineering Command Southwest
Navy Region Southwest
NTTR
U.S. Army Garrison
U.S. Army Corps of Engineers
USMC
U.S. THIRD Fleet
355 CES/CEIE
355 OSS/OSOA
355 OSS/OSA
355 WG/JA
355 WG/XP
56 RMO/ESMP
56 RMO/ARO
56 RMO/ASM
White Sands Army Garrison

## Other

Affiliated tribes for Arizona, California, Nevada, and New Mexico.

# Interagency and Intergovernmental Coordination Letter and Responses

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

JUN 1 9 2019

FROM: 355 Civil Engineer Squadron
3775 S. Fifth Street
Davis Monthan AFB, AZ 85707

SUBJECT: Interagency Notification of the Preparation of an Environmental Assessment for the Davis-Monthan Air Force Base Personnel Recovery Training Program

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts of proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training.

The purpose of the Proposed Action is to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations. The USAF is proposing to improve PR training and exercises conducted throughout the southwestern U.S., including routine and specialized formal training for PR forces as a well as large-force joint/multi-national exercises. Improvements would involve increasing suitable PR training site access and expanding PR training activities at some sites. The proposed PR activities would be centered out of Davis-Monthan AFB and hosted by various organizations depending on the PR training event. Comprehensive PR training would involve ground, water, and flight/airspace activities. The proposed PR training would utilize unique training environments across four states: Arizona, California, Nevada, and New Mexico. The proposed PR training sites would be located on federal, state, municipal, or private property, on sites that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action. No new military construction and no significant ground disturbance would occur. Overall, there are 181 proposed PR training sites that may be utilized during PR training. Maps showing the specific locations for these proposed PR training sites (as well as a vicinity map of Davis-Monthan AFB) are provided in Attachment 1. Please note that some of the PR training sites included on this map may change based on ongoing coordination with the controlling agencies.

The EA will be prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.), the Council of Environmental Quality NEPA Regulations, 40 Code of Federal Regulations (CFR) Parts 1500-1508, and the USAF's Environmental Impact Analysis Process, 32 CFR 989.

If you have any advance concerns or comments regarding this proposal or would like to be notified when the Draft EA is published, please contact Mr. Kevin Wakefield, 355 CES/CEIE, 3775 South 5th Street, Davis-Monthan AFB, AZ 85707-4927, by email to kevin.wakefield.1@us.af.mil, or by phone at (520) 228-4035.

VINCENT A. REA, Lt Col, USAF
Commander

Attachment:

1. Davis-Monthan AFB Vicinity and Proposed PR Training Sites Maps

**From:** Driscoll, Zachary <zdriscoll@blm.gov>
**Sent:** Tuesday, June 25, 2019 10:17 AM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] GIS Data - Davis-Monthan Air Force Base Personnel Recovery Training Program EA

Hello Mr. Wakefield,

The BLM Tucson Field Office (TFO) recently received notification of the proposed Davis-Monthan Air Force Base Personnel Recovery Training Environmental Assessment. Included in the notification was a map depicting Proposed PR Training Sites. To facilitate BLM-TFO's comments on the proposed EA, I would like to request a copy of the GIS data depicted on the map. The specific GIS layers are:

- Training Sites - point data

- Military Operations Areas (MOA) - polygon data
- Restricted Airspace - polygon data
- Warning Area - polygon data

Please let me know if I can provide any additional information.

Thank you,
Zach

--
**Zach Driscoll**
*GIS Specialist*
Bureau of Land Management | Tucson Field Office
3201 E. Universal Way
Tucson, AZ 85756
Office: (520) 258-7206

**From:** Estes, Bob, DCA <Bob.Estes@state.nm.us>
**Sent:** Wednesday, June 26, 2019 8:43 AM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] DMAFB PR TRAINING

OFFICIAL RESPONSE OF THE NEW MEXICO STATE HISTORIC PRESERVATION OFFICER (SHPO)

Mornin' Kevin,

On behalf of the SHPO, I want to thank you for providing the information on the EA for the Personnel Recovery Training.

I did a brief review of the information, and the training sites appear to be the same locations discussed for the Angel Thunder Exercise. If you have more precise locational information, or the locations change, please send that information as soon as possible for SHPO review.

We recommend that DMAFB coordinate Section 106 consultation with the land managing agencies, and primarily with the Gila National Forest, where many of the training sites are located, and with the DOD facilities that may host the exercises. Please provide for our records any Section 106 consultation you have from the land managers.

Please note that Section 106 consultation needs to be complete before the FONSI is signed.

If you any questions or comments, please feel free to call me directly t 505-827-4225 or email me.

Sincerely,

Bob Estes Ph.D.
NM HPD Staff archaeologist
407 Galisteo St., Suite 236
Santa Fe, NM 87501
505-827-4225

**From:** Long, Kristen <kmlong@blm.gov>
**Sent:** Monday, July 1, 2019 1:06 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] Davis - Monthan Air Force Base PR Training EA

Mr. Wakefield,

I received your letter in regards to the preparation of the EA for the Davis-Monthan Air Force Base Personnel Recovery Training Program. From your map it is hard to tell if any of the site locations are on BLM SFO. If you could send me shapefiles of proposed locations that would be helpful.

Thanks,

Kristen

--
Kristen Long
Planning and Environmental Coordinator
BLM Socorro Field Office
(575)-838-1263

USDA United States Department of Agriculture | Forest Service | Gila National Forest Supervisor's Office

3005 East Camino Del Bosque
Silver City, NM 88061
575-388-8201
TDD: 575-388-8489
Fax: 575-388-8204

**File Code:** 1950
**Date:** June 27, 2019

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4987

Subject: Interagency Notification of the Preparation of an Environmental Assessment for the Davis-Monthan Air Force Base Personnel Recovery Training Program.

Dear Mr. Wakefield:

Thank you for the notification of the preparation of an Environmental Assessment for the Personnel Recovery Training Program which includes proposed sites on the Reserve and Glenwood Ranger Districts on the Gila National Forest. I would like to be notified when the Draft EA is published. Please send to:

Adam Mendonca
Forest Supervisor
Gila National Forest
ATTN: Environmental Coordinator
3005 E. Camino del Bosque
Silver City, NM 88061

We will be looking at the Draft EA to ensure the description and effects of use on forest sites are adequately addressed in order that a special use permit may be issued to Davis-Monthan Air Force Base for the use of sites on the Gila National Forest for training purposes.

I request that Catron County be notified of this project, if not already on the contact list. Catron County manages the Reserve Fairgrounds and administers the Reserve Airport shown on the map as proposed sites for trainings. Although the Reserve Airport is on Forest lands, it is under special use permit to Catron County for its maintenance and administration, so the County should be contacted regarding use of the facility.

If you have any questions, please contact Lisa Mizuno, Environmental Coordinator, by email at lisa.mizuno@usda.gov or by phone at 575-388-8267.

Sincerely,

Adam Mendonca

ADAM MENDONCA
Forest Supervisor

USDA United States Department of Agriculture
Forest Service
Coconino National Forest
Supervisor's Office
1824 South Thompson Street
Flagstaff, AZ 86001
928-527-3600
Fax: 928-527-3620

**File Code:** 1950
**Date:** July 2, 2019

Mr. Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4987

Dear Mr. Wakefield,

Thank you for the notification of the preparation of an Environmental Assessment for the Personnel Recovery Training Program which includes proposed sites on the Coconino National Forest. I would like to be notified when the Draft EA is published. Please send to:

Laura Jo West
Forest Supervisor
Coconino National Forest
ATTN: Environmental Coordinator
1824 S Thompson St.
Flagstaff, AZ 86001

We are interested in getting more detailed information about the proposed ground-based activities, number of personnel participating in these activities, frequency of activities, and any ground disturbance expected from the proposal on the Coconino National Forest. We will be looking at the Draft EA to ensure the description and effects of use on forest sites is adequately addressed in order that a special use permit may be issued to Davis-Monthan Air Force Base for the use of sites on the Coconino National Forest for training purposes.

In previous years we have had concerns about activities at the General Crook and Jacks Canyon locations where there are sensitive wildlife nearby with timing restrictions during the breeding season. We would like to work with you by providing data, direct communications or other methods to make sure sensitive habitat is avoided during the breeding season to avoid potential impacts.

I would also request that local municipalities and any large inholdings near proposed activities are notified of this project, if not already on the contact list. Many adjacent landowners include permits on national forest system lands and can be affected by activities on the Forest.

If you have any questions or would like data for the upcoming analysis, please contact Mike Dechter, Environmental Coordinator, by email at mike.dechter@usda.gov or by phone at 928-527-3416.

Sincerely,

FOR LAURA JO WEST
Forest Supervisor

cc: Bridget Roth, Leslie Yen, Irina Ford, Brian Poturalski, Matt McGrath, Nicole Branton

**NEW MEXICO**
**ENVIRONMENT DEPARTMENT**

Harold Runnels Building
1190 Saint Francis Drive, PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-2855
www.env.nm.gov

***Michelle Lujan Grisham***
Governor

***Howie C. Morales***
Lt. Governor

***James C. Kenney***
Cabinet Secretary

***Jennifer J. Pruett***
Deputy Secretary

July 5, 2019

Mr. Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927
Via email: kevin.wakefield.1@us.af.mil

Dear Mr. Wakefield,

The New Mexico Environment Department (NMED) has reviewed the scoping letter for the proposed Davis-Monthan AFB Personnel Recovery Training Project and offers the following comments:

**NMED Air Quality Bureau Comments**

The Air Quality Bureau has evaluated the information submitted with respect to the proposed action in the subject above. The NMED Air Quality Bureau regulation for permitted operations has an exemption for military activities as proposed in the Environmental Assessment preparation announcement. This exemption may be found in 20.2.72.202.A(5) NMAC. The exemption states:
**(5)** Government military activities such as field exercises, explosions, weapons testing and demolition to the extent that such activities:
**(a)** Do not result in visible emissions entering publicly accessible areas; and
**(b)** Are not subject to a NSPS or NESHAP;

Potential exists for temporary increases in dust in publicly accessible areas from any ground disturbance that may occur as stated in the letter received. Dust control measures should be taken to minimize the release of particulates due to vehicular traffic and other activities. Areas disturbed by the activities, within and adjacent to the project area should be reclaimed to avoid long-term problems with erosion and fugitive dust. All applicable local or county regulations requiring noise and/or dust control must be followed.

**NMED Drinking Water Bureau Comments**

**NMED Ground Water Quality Bureau Comments**

The proposed project is not expected to have any adverse impacts on ground water quality in the area of the project. However, implementation of the project may involve the use of heavy equipment, thereby leading to a possibility of contaminant releases (e.g., fuel, hydraulic fluid, etc.) associated with equipment malfunctions. The GWQB advises all parties involved in the project to be aware of notification requirements for accidental discharges contained in 20.6.2.1203 NMAC. Compliance with the notification and response requirements will further ensure the protection of ground water quality in the vicinity of the project.

A copy of the Ground and Surface Water Protection Regulations, 20.6.2 NMAC, is available at http://164.64.110.239/nmac/parts/title20/20.006.0002.pdf.

**NMED Petroleum Storage Tank Bureau Comments**

**There are PSTB facilities and release sites located within and near the project area.**

**Facilities:**

The map provided lacks sufficient detail to determine which facilities would be within the training areas. A list of facilities (139) determined to be in or very near the training area is below.

| FID | Facility | Street | City | County | Zip | AST | UST |
|---|---|---|---|---|---|---|---|
| 859 | ALLSUPS 203 | 1910 W MAIN | ARTESIA | EDDY | 88210 | 0 | 3 |
| 860 | ALLSUPS 202 | 800 S FIRST | ARTESIA | EDDY | 88210 | 0 | 3 |
| 861 | ALLSUPS 211 | 1303 HERMOSA DR | ARTESIA | EDDY | 88210 | 0 | 3 |
| 865 | ALLSUPS - NO223 | 1603 N FIRST ST | ARTESIA | EDDY | 88210 | 0 | 3 |
| 923 | ARTESIA BULK PLANT | 2903 W MAIN | ARTESIA | EDDY | 88210 | 6 | 3 |
| 1402 | HERMOSA CARD SYSTEM | 1212 S 1ST ST | ARTESIA | EDDY | 88210 | 0 | 4 |
| 1477 | HERMOSA CHEVRON | 1304 S 1ST ST | ARTESIA | EDDY | 88210 | 0 | 4 |
| 1655 | TATE BRANCH DODGE/RENTALS | 901 S FIRST | ARTESIA | EDDY | 88210 | 0 | 1 |
| 1698 | WESTERN PETROLEUM #8850 | 606 W RICHEY | ARTESIA | EDDY | 88210 | 0 | 3 |
| 1948 | STRIPES 186 | 102 N 1ST ST | ARTESIA | EDDY | 88210 | 0 | 4 |
| 2009 | WESTERN WAY SHELL | 101 N FIRST | ARTESIA | EDDY | 88210 | 0 | 2 |
| 3253 | ARTESIA GENERAL HOSPITAL | 702 N 13TH ST | ARTESIA | EDDY | 88210 | 2 | 0 |
| 26659 | ARTESIA MUNICIPAL AIRPORT | 702 AIRPORT RD | ARTESIA | EDDY | 88210 | 2 | 0 |
| 26778 | ATOKA GROCERY | 6475 SEVEN RIVERS HIGHWAY | ARTESIA | EDDY | 88210 | 1 | 0 |
| 26835 | WAKEFIELD OIL - ARTESIA | 401 N FIRST ST | ARTESIA | EDDY | 88210 | 0 | 3 |
| 27857 | EDDY COUNTY RD FACILITY 2 | 2611 S THIRTEENTH ST | ARTESIA | EDDY | 88210 | 2 | 0 |
| 29088 | ROENDYKE TRANSPORT ARTESIA TERMINA | 2401 N FREEMAN ST | ARTESIA | EDDY | 88210 | 1 | 0 |
| 29642 | NMDOT ARTESIA PATROL YARD 42 61 | 3101 W MAIN ST | ARTESIA | EDDY | 88210 | 2 | 0 |
| 30526 | WESTERN PETROLEUM #8601 | 210 E MAIN | ARTESIA | EDDY | 88210 | 0 | 3 |
| 48276 | FENNS COUNTRY MARKET | 2001 W MAIN | ARTESIA | EDDY | 88210 | 0 | 3 |
| 52719 | RAY BELL OIL CO STATION 30 | 301 MAIN | ARTESIA | EDDY | 88210 | 2 | 4 |
| 53365 | MGG FUEL STOP | 11354 LOVINGTON HWY | ARTESIA | EDDY | 88201 | 0 | 2 |
| 53862 | ED LAW ENFORCEMENT TRNG CTR RANGI | 91 GUNPOWDER RD | ARTESIA | EDDY | 88210 | 4 | 0 |
| 54248 | HOLLYFRONTIER ASPHALT COMPANT LLC | 2411 N FREEMAN | ARTESIA | EDDY | 88210 | 2 | 0 |
| 54482 | WESTERN PETROLEUM #8603 | 102 MILL RD | ARTESIA | EDDY | 88210 | 3 | 0 |
| 54525 | WAL MART SUPERCENTER NO3427 | 604 N 26TH ST | ARTESIA | EDDY | 88210 | 0 | 2 |
| 54556 | 26TH STREET CARD SYSTEM | 2514 WEST MAIN | ARTESIA | EDDY | 88210 | 0 | 1 |
| 54891 | RTESIA WASTE WATER TREATMENT PLAN | 1702 N HALDEMAN RD | ARTESIA | EDDY | 88211 | 1 | 0 |
| 27454 | OKER KENNETH L DBA EAGLE GUEST RANC | 7740 HWY 60 | DATIL | CATRON | 87821 | 0 | 1 |
| 29633 | NMDOT DATIL PATROL YARD 46 51 | 7799 US 60 | DATIL | CATRON | 87821 | 1 | 0 |
| 54531 | EL MITOTE | MM 46 HWY 12 | DATIL | CATRON | 87821 | 1 | 0 |
| 1271 | ALLSUPS 258 | 322 SUMNER AVE | FORT SUMNER | DE BACA | 88119 | 0 | 3 |
| 26946 | FAST STOP - NO20 | 510 E SUMNER AVE | FORT SUMNER | DE BACA | 88119 | 0 | 3 |
| 29653 | MDOT FORT SUMNER PATROL YARD 42 4 | 26820 E. HWY 60/84 | FORT SUMNER | DE BACA | 88119 | 2 | 0 |
| 54657 | DE BACA COUNTY ROAD DEPT | 1235 N 7TH HI | FORT SUMNER | DE BACA | 88119 | 1 | 0 |
| 26543 | ALMA STORE AND GRILL LLC | 4592 HWY 180 | GLENWOOD | CATRON | 88039 | 0 | 3 |
| 28343 | THE TRADING POST | 5077 US HWY 180 | GLENWOOD | CATRON | 88039 | 0 | 3 |
| 31328 | US AIR FORCE 828 2 | BLD 828 | )LLOMAN AIR FORCE BA | OTERO | 8.83E+08 | 1 | 0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 31336 | US AIR FORCE BLDG 1166 | BLDG 1166 | )LLOMAN AIR FORCE BA | OTERO | 8.83E+08 | 1 | 0 |
| 31359 | US AIR FORCE BLDG 702 | BLDG 702 | )LLOMAN AIR FORCE BA | OTERO | 8.83E+08 | 4 | 0 |
| 31362 | US AIR FORCE BLDG 828 1 | BLDG 828 1 | )LLOMAN AIR FORCE BA | OTERO | 8.83E+08 | 1 | 0 |
| 31363 | US AIR FORCE BLDG 828 3 | BLDG 828 3 | )LLOMAN AIR FORCE BA | OTERO | 8.83E+08 | 1 | 0 |
| 51873 | US AIR FORCE BLDG 33 | BLDG 33 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 3 | 0 |
| 51874 | US AIR FORCE BLDG 136 | BLDG 136 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 2 | 0 |
| 51876 | US AIR FORCE BLDG 639 | BLDG 639 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 1 | 0 |
| 51886 | US AIR FORCE BLDG 11646 | BLDG 11646 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 2 | 0 |
| 53081 | OSCURA | OSCURA | )LLOMAN AIR FORCE BA | OTERO | 88330 | 1 | 0 |
| 54624 | US AIR FORCE BLDG 283 1 | BLDG 283 1 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 1 | 0 |
| 54625 | US AIR FORCE BLDG 572 | BLDG 572 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 3 | 0 |
| 54626 | US AIR FORCE BLDG 740 1 | BLDG 740 1 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 1 | 0 |
| 54627 | US AIR FORCE BLDG 906 4 | BLDG 906 4 | )LLOMAN AIR FORCE BA | OTERO | 88330 | 1 | 0 |
| 27369 | CIRCLE H STORE A | 200 DUNCAN HWY | LORDSBURG | HIDALGO | 88045 | 0 | 3 |
| 27617 | CORNER STORE NO 1293 | 1316 S MAIN ST | LORDSBURG | HIDALGO | 88045 | 0 | 3 |
| 29139 | LORDSBURG (CITY OF) - AIRPORT | 1000 E AIRPORT RD | LORDSBURG | HIDALGO | 88045 | 2 | 0 |
| 29165 | LOVES COUNTRY STORE 276 | 900 W MOTEL DR | LORDSBURG | HIDALGO | 88045 | 0 | 5 |
| 29664 | LORDSBURG PATROL YARD | 229 OLD HWY 70 | LORDSBURG | HIDALGO | 88045 | 1 | 0 |
| 29970 | PILOT TRAVEL CENTERS LLC 163 | 1050 E MOTEL DR | LORDSBURG | HIDALGO | 88045 | 0 | 5 |
| 30813 | SUNMART 678 | 1421 S MAIN ST | LORDSBURG | HIDALGO | 88045 | 0 | 3 |
| 51738 | SHORT COMPANY LLC | 617 PENN ST | LORDSBURG | HIDALGO | 88045 | 2 | 0 |
| 54415 | TRAIL TOWN CHEVRON | 1882 STAGE COACH | LORDSBURG | HIDALGO | 88045 | 0 | 2 |
| 54588 | FLYING J TRAVEL PLAZA #690 | 11 OLD HIGHWAY 70 | LORDSBURG | HIDALGO | 88045 | 0 | 5 |
| 54762 | USBP LORDSBURG STATION | 26 PIPELINE ROAD | LORDSBURG | HIDALGO | 88045 | 3 | 0 |
| 51570 | LUNA SERVICE STATION | 720 HWY 180 | LUNA | CATRON | 87824 | 2 | 0 |
| 28167 | QUEMADO FAMILY GARAGE | 3473 HWY 60 | QUEMADO | CATRON | 87829 | 2 | 0 |
| 29671 | NMDOT QUEMADO PATROL YARD 46 52 | US 60 MM 32 | QUEMADO | CATRON | 87829 | 2 | 0 |
| 30657 | SNUFFY'S TACKLE SHOP | #1 STATE RD 103 | QUEMADO | CATRON | 87829 | 1 | 0 |
| 51712 | J AND Y AUTO SERVICE | HWY 60 WEST | QUEMADO | CATRON | 87829 | 2 | 0 |
| 54696 | RITO QUEMADO 24/7 | 3524 CALIFORNIA ST | QUEMADO | CATRON | 87829 | 2 | 0 |
| 26960 | BLACK GOLD STATION B | 98 MAIN STREET | RESERVE | CATRON | 87830 | 0 | 1 |
| 29275 | MICHELLES STORE LLC | 109 MAIN ST | RESERVE | CATRON | 87830 | 0 | 2 |
| 30199 | RESERVE PATROL 4657 | HCR 62 BOX 209 | RESERVE | CATRON | 87830 | 1 | 0 |
| 54859 | CATRON COUNTY MAINTENANCE YARD | CATRON COUNTY MAINTENANCE YARD | RESERVE | CATRON | 87830 | 1 | 0 |
| 845 | ALLSUPS - NO120 | 1618 S UNION | ROSWELL | CHAVES | 88201 | 0 | 2 |
| 846 | ALLSUPS - NO121 | 1618 SE MAIN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 851 | ALLSUPS - NO160 | 2515 W 2ND | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 874 | ALLSUPS 286 | 501 W MCGAFFEY | ROSWELL | CHAVES | 88201 | 0 | 2 |
| 876 | ALLSUPS 335 | 2501 N MAIN ST | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 960 | BELL GAS 248 | 610 W 2ND | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1038 | CHAVES COUNTY ROAD DEPARTMENT | 1505 E BRASHER RD | ROSWELL | CHAVES | 88203 | 2 | 0 |
| 1184 | ALLSUP'S 25 | 1500 N GARDEN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1251 | FINA 60 | 1815 SE MAIN | ROSWELL | CHAVES | 88201 | 0 | 4 |
| 1278 | ALLSUPS - NO268 | 520 E SECOND | ROSWELL | CHAVES | 88201 | 0 | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1438 | VALERO ROADRUNNER EXPRESS | 3300 N MAIN ST | ROSWELL | CHAVES | 88201 | 0 | 2 |
| 1466 | ALLSUPS NO -289 | 411 W 2ND | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1525 | ALLSUPS 136 | 2200 S SUNSET | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1559 | ONDA OIL DIAMOND SHAMROCK 102 | 811 W SECOND | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1750 | ROSWELL CHEVRON | 917 N MAIN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1752 | NORTH MAIN SHELL | 3001 N MAIN | ROSWELL | CHAVES | 88201 | 0 | 2 |
| 1816 | SOUTH MAIN SHAMROCK | 225 S MAIN | ROSWELL | CHAVES | 88202 | 0 | 4 |
| 1935 | STRIPES 138 | 3801 S MAIN | ROSWELL | CHAVES | 88201 | 0 | 4 |
| 1937 | STRIPES 140 | 1219 E SECOND | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1938 | STRIPES 141 | 2010 SE MAIN | ROSWELL | CHAVES | 88201 | 0 | 4 |
| 1940 | STRIPES 170 | 600 W COLLEGE | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1941 | STRIPES 171 | 2500 N MAIN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1942 | STRIPES 172 | 611 S MAIN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 1944 | STRIPES 182 | 2600 W SECOND | ROSWELL | CHAVES | 88201 | 0 | 4 |
| 27833 | ROSWELL HOSPITAL CORPORATION | 405 W COUNTRY CLUB RD | ROSWELL | CHAVES | 88201 | 3 | 0 |
| 28621 | S MAIN DISCOUNT GAS | 2012 S MAIN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 29672 | NMDOT ROSWELL PATROL YARD 42 65 | 4505 WEST SECOND STREET | ROSWELL | CHAVES | 88201 | 3 | 0 |
| 29673 | NMDOT D 2 SERVICE CENTER | 4505 W SECOND STREET | ROSWELL | CHAVES | 88201 | 2 | 0 |
| 29895 | PECOS TRAILS TRANSIT | 515 N MAIN ST | ROSWELL | CHAVES | 88201 | 0 | 1 |
| 30052 | YESWAY 1164 | 5500 N MAIN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 30316 | ROSWELL CORRECTIONAL CENTER B | 23 MILES S OF ROSWELL | ROSWELL | CHAVES | 88201 | 2 | 0 |
| 30324 | ROSWELL READY MIX COMPANY | 4100 S LEA ST | ROSWELL | CHAVES | 88202 | 1 | 0 |
| 31282 | UNION PLAZA CONOCO | 920 W 2ND ST | ROSWELL | CHAVES | 88202 | 0 | 1 |
| 32180 | AVFLIGHT ROSWELL CORPORATION | 100 SW WAY | ROSWELL | CHAVES | 88202 | 1 | 0 |
| 47623 | UNITED EXPRESS #690 | 1140 S MAIN ST | ROSWELL | CHAVES | 88203 | 0 | 2 |
| 51244 | WAKEFIELD OIL CO | 311 S VIRGINIA | ROSWELL | CHAVES | 88202 | 0 | 2 |
| 51719 | NMDOT TRAINING ACADEMY | 132 EARL CUMMINGS LOOP | ROSWELL | CHAVES | 88201 | 3 | 0 |
| 51734 | ROSWELL LANDFILL | 3006 W BRASHER RD | ROSWELL | CHAVES | 88201 | 1 | 0 |
| 52552 | BELL GAS INC 3318 | 4405 SE MAIN | ROSWELL | CHAVES | 88201 | 6 | 3 |
| 52577 | ABC PROPANE NO3 | 813 N VIRGINIA | ROSWELL | CHAVES | 88201 | 0 | 1 |
| 53337 | NM ARMY NATIONAL GUARD-FMS #1 | 1 EARL CUMMINGS LOOP RD | ROSWELL | CHAVES | 88203 | 1 | 0 |
| 54527 | BITTER LAKE NATIONAL WILDLIFE REFUGE | 4200 E PINE LODGE RD | ROSWELL | CHAVES | 88201 | 1 | 0 |
| 54557 | SAMS CLUB 4961 | 4400 NORTH MAIN | ROSWELL | CHAVES | 88201 | 0 | 3 |
| 54687 | RUAN TRANSPORTATION T-401 | 6217 OMAHA RD | ROSWELL | CHAVES | 88203 | 1 | 0 |
| 54717 | MURPHY EXPRESS 8608 | 3624 NORTH MAIN ST | ROSWELL | CHAVES | 88201 | 0 | 2 |
| 54786 | ALLSUPS #233 | 6000 SOUTH MAIN | ROSWELL | CHAVES | 88203 | 0 | 3 |
| 54796 | ROSWELL ASR-9 | #1 RADAR ROAD | ROSWELL | CHAVES | 88203 | 1 | 0 |
| 54797 | ROSWELL ATCT | W CHALLENGER INDUSTRIAL AIR CENT | ROSWELL | CHAVES | 88203 | 1 | 0 |
| 54801 | NEW MEXIO REHABILITATION CENTER | 72 GAIL HARRIS AVENUE | ROSWELL | CHAVES | 88203 | 1 | 0 |
| 878 | ALLSUPS - NO341 | 311 SUDDERTH | RUIDOSO | LINCOLN | 88345 | 0 | 3 |
| 879 | ALLSUPS - NO339 | 2820 SUDDERTH | RUIDOSO | LINCOLN | 88345 | 0 | 3 |
| 880 | ALLSUPS 340 | 723 MECHEM | RUIDOSO | LINCOLN | 88345 | 0 | 3 |
| 1156 | CONOCO 65 | 400 SUDDERTH | RUIDOSO | LINCOLN | 88345 | 0 | 3 |
| 1311 | GATEWAY SHELL | 416 SUDDERTH DR | RUIDOSO | LINCOLN | 88345 | 0 | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1758 | RUIDOSO SHAMROCK | 1901 SUDDERTH | RUIDOSO | LINCOLN | 88345 | 0 | 2 |
| 27403 | CITY STREET DEPARTMENT | 200 CLOSE DR | RUIDOSO | LINCOLN | 88345 | 0 | 1 |
| 27445 | CLUB GAS | 1137 MECHEM DR | RUIDOSO | LINCOLN | 88345 | 0 | 2 |
| 28642 | POWER PLUS CAR WASH | 1001 SUDDERTH DR | RUIDOSO | LINCOLN | 88345 | 0 | 3 |
| 51423 | RUIDOSO PLANT | 112 CLOSE DR | RUIDOSO | LINCOLN | 88345 | 2 | 0 |
| 877 | ALLSUPS -NO343 | 127 HWY 70 E88346 | RUIDOSO DOWNS | LINCOLN | 88345 | 0 | 3 |
| 1061 | CIRCLE K 1341 | 601 E HWY 70 | RUIDOSO DOWNS | LINCOLN | 88346 | 0 | 3 |
| 1794 | SHAMROCK 8008 | 2099 HWY 70 E | RUIDOSO DOWNS | LINCOLN | 88346 | 0 | 3 |
| 26889 | BELL GAS 8002 BULK PLANT | 100 MIRIAM | RUIDOSO DOWNS | LINCOLN | 88346 | 1 | 2 |
| 28268 | USA GASOLINE 64022 | 209 HIGHWAY 70 | RUIDOSO DOWNS | LINCOLN | 88346 | 0 | 2 |
| 28982 | KOUNTRY KWIK CONVENIENCE STORE | 26577 US HWY 70 | RUIDOSO DOWNS | LINCOLN | 88346 | 0 | 3 |
| 31746 | ZIA NATURAL GAS | 100 SHORT DR | RUIDOSO DOWNS | LINCOLN | 88346 | 0 | 1 |
| 54425 | LINCOLN TRANSPORTATION | 26560 HWY 70 E | RUIDOSO DOWNS | LINCOLN | 88346 | 1 | 0 |

**Release Sites:**

GoNM – OpenEnviroMap: https://gis.web.env.nm.gov/oem/?map=gonm
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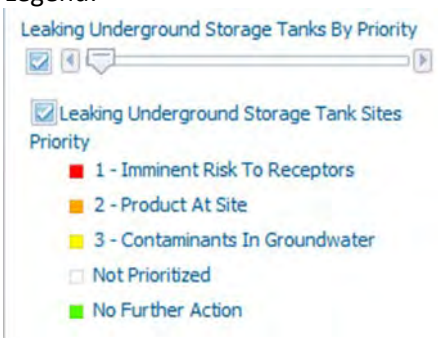

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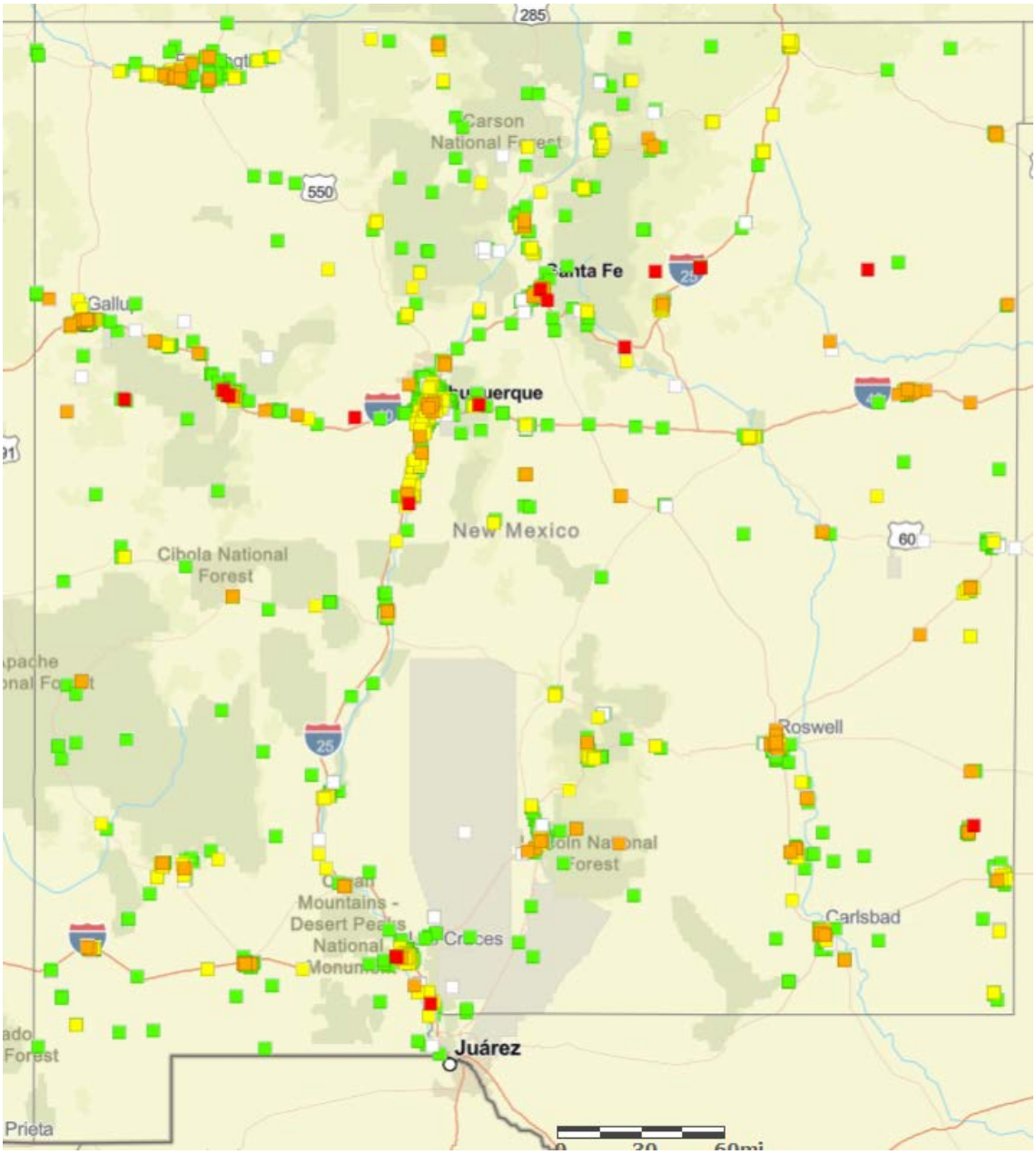
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Santa Fe
Gallup
Albuquerque
New Mexico
Cibola National
Forest
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Roswell
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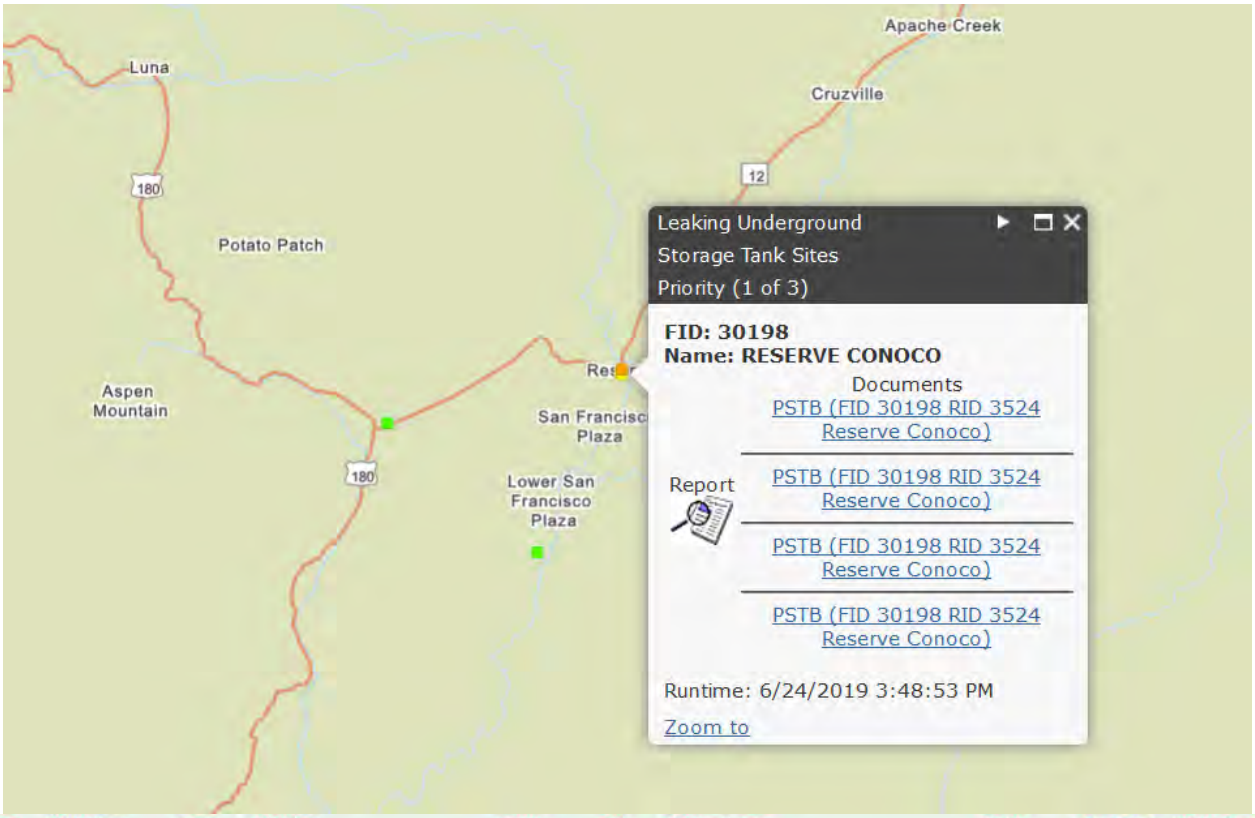
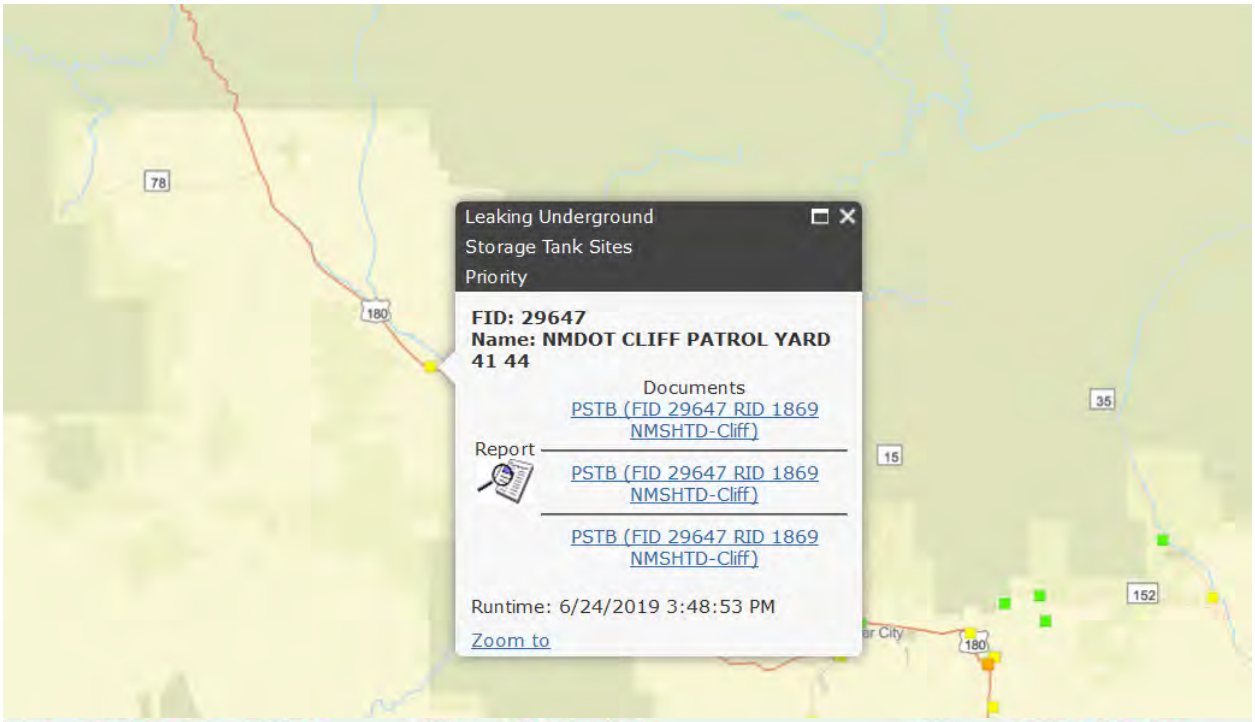
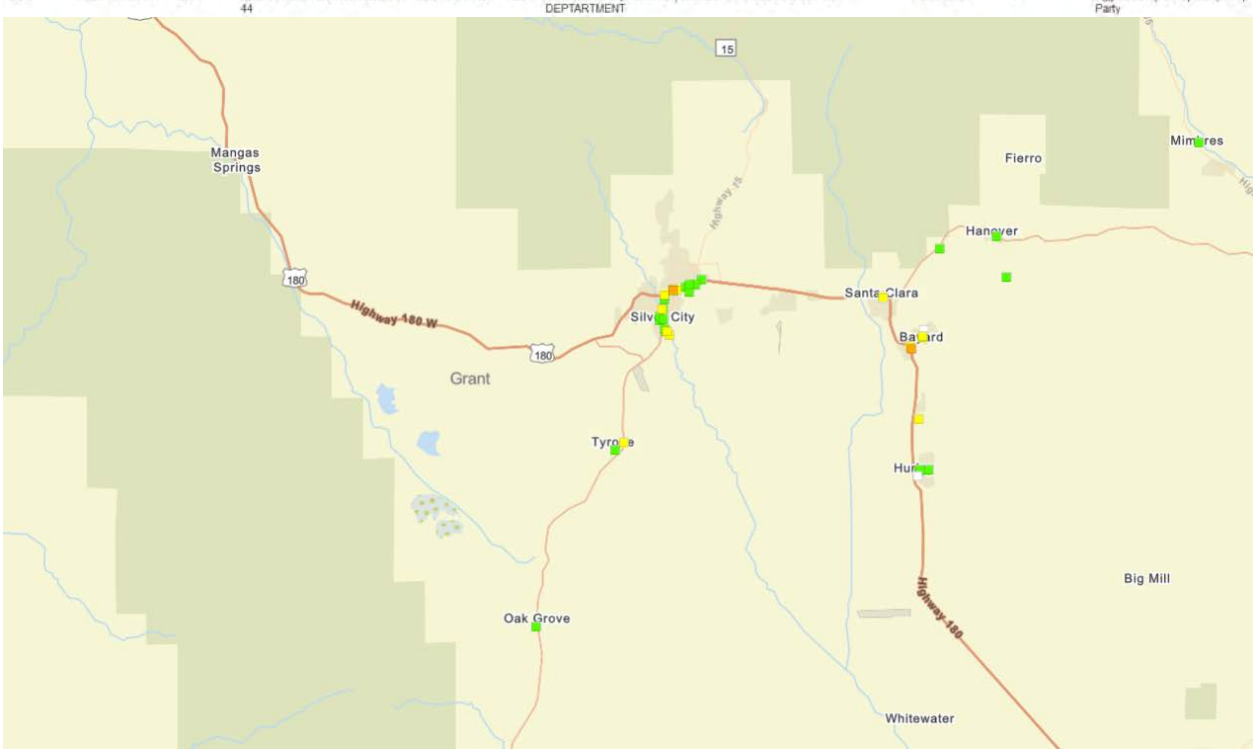
Lincoln National
Forest
Mountains -
Desert Peaks
National
Monument
Las Cruces
Carlsbad
Juárez
Prieta



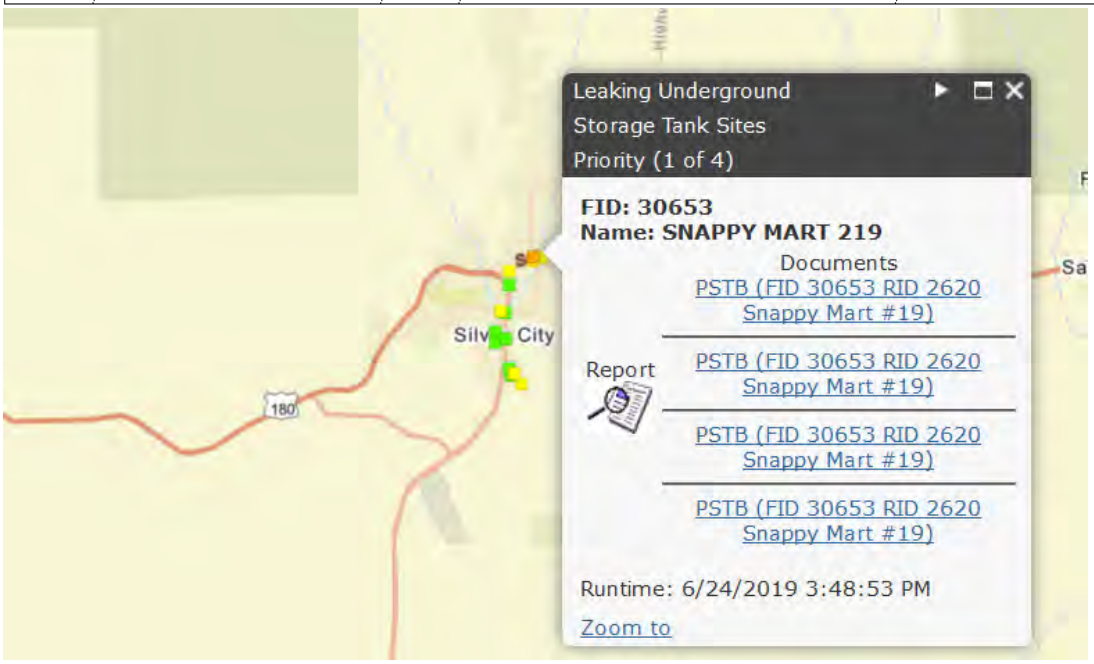

| Release ID | Release Name | Facility ID | Facility Name | Address | City | Responsible Party | Project Manager | Compliance? | Release Status |
|---|---|---|---|---|---|---|---|---|---|
| 974 | NMSHTD RESERVE | 30199 | RESERVE PATROL 4657 | HCR 62 BOX 209 | RESERVE | NEW MEXICO (STATE OF) HIGHWAY & TRANSPORTATION DEPTARTMENT | UNKNOWN | | No Further Action, Confirmed Release |
| 2676 | BLACK GOLD SERVICE STA | 26960 | BLACK GOLD STATION B | 98 MAIN STREET | RESERVE | KATHY SANTOS | ALLISON URBON | Y | Aggr Cleanup Completed, Resp Party |
| 2688 | DIPNG VAT-SNOW LAKE | 30656 | SNOW LAKE RECREATION | RESERVATION SITE | RESERVE | US FOREST SERVICE - ESPANOLA RANGER DISTRICT | UNKNOWN | | No Further Action, Confirmed Release |
| 2739 | MARTINEZ 66 | 29275 | MICHELLES STORE LLC | 109 MAIN ST | RESERVE | HENRY MARTINEZ | TIM NOGER | Y | Cleanup, Responsible Party |
| 3118 | NATIONAL TRUCKSTOP 305 | 30198 | RESERVE CONOCO | SR 435 | RESERVE | LATASA MARIANO JR,SOUTHWEST ENERGY DISTRIBUTORS INC | TIM NOGER | | No Further Action, Confirmed Release |
| 3392 | FRYER LOGGING CO | 31206 | TROUT CREEK ENTERPRISES AKA FRYAR LOGGING CO | STATE RD 435 S | RESERVE | FLYER LOGGING C | BRIAN SALEM | | No Further Action, Confirmed Release |
| 3524 | RESERVE CONOCO | 30198 | RESERVE CONOCO | SR 435 | RESERVE | LATASA MARIANO JR,SOUTHWEST ENERGY DISTRIBUTORS INC | TIM NOGER | Y | Investigation, Responsible Party |

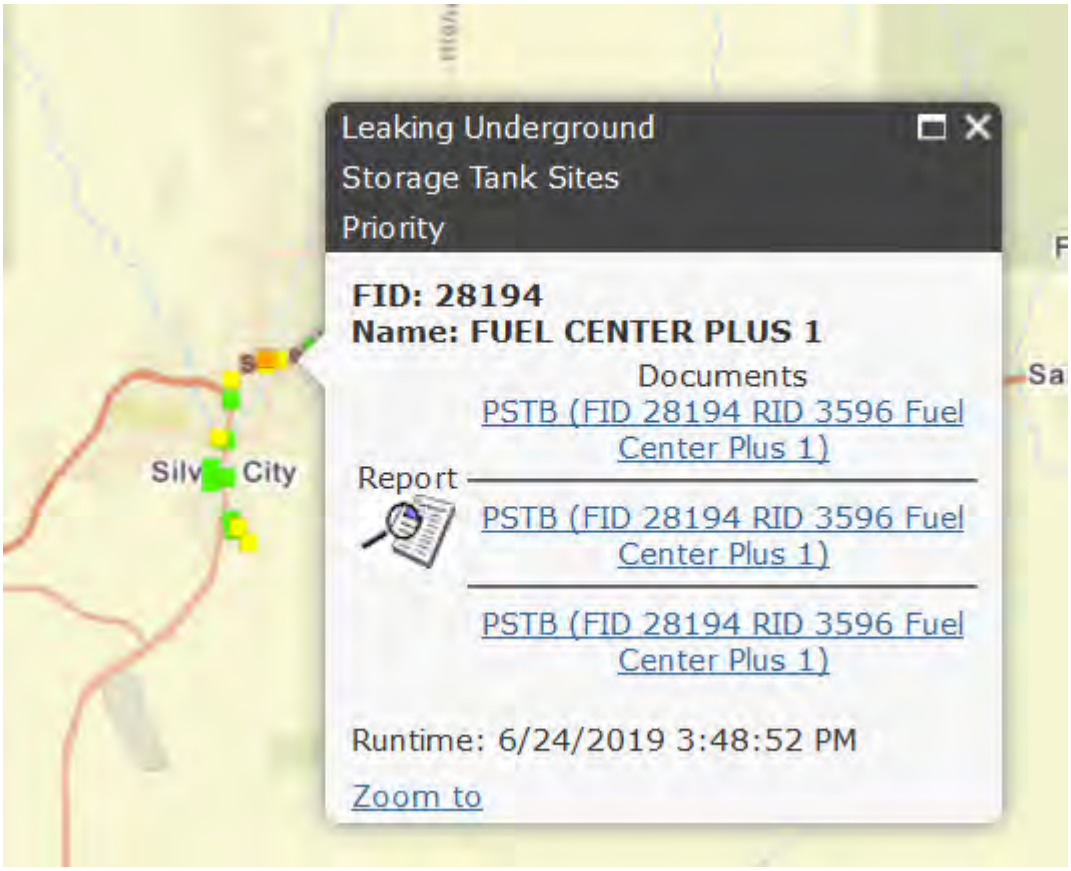



| Release ID | Release Name | Facility ID | Facility Name | Address | City | Responsible Party | Project Manager | Compliance? | Release Status |
|---|---|---|---|---|---|---|---|---|---|
| 1113 | CHUCKS FOLLIES | 27422 | CHUCK'S FOLLY LLC | 8436 HWY 180 W | CLIFF | HAROLD DINWIDDIE | UNKNOWN | | No Further Action, Confirmed Release |
| 1869 | NMSHTD-CLIFF | 29647 | NMDOT CLIFF PATROL YARD 41 44 | 8157 HWY 180 | CLIFF | NEW MEXICO (STATE OF) HIGHWAY & TRANSPORTATION DEPTARTMENT | TIM NOGER | Y | Aggr Cleanup Completed, Resp Party |



| Release ID | Release Name | Facility ID | Facility Name | Address | City |
|---|---|---|---|---|---|
| 205 | A&R GARAGE | 26319 | A AND R GARAGE | 101 W COLLEGE | SILVER CITY |
| 237 | SMITH REALESTATE | 30645 | SMITH REAL ESTATE SMITH BECKY | CORNER OF TEXAS AND MARKET | SILVER CITY |
| 344 | FORD/LNCLN MERC | 30613 | SILVER CITY FORD L AND M INC | HWY 180 E | SILVER CITY |
| 363 | PORTER OIL | 28617 | SNAPPY MART CHEVRON STATION 205 | 809 N HUDSON | SILVER CITY |
| 501 | NMSHTD PATROL YD | 29675 | NMSHD SILVER CITY | US 180 | SILVER CITY |
| 1167 | SILVERCREST TEX | 28772 | JOES SILVER CREST TEXACO | 1510 SILVER HEIGHTS BLVD | SILVER CITY |
| 1594 | MIKES SILVER 66 | 29358 | MELENDREZ DANIEL MIKE AND LIONILA | 615 SILVER HEIGHTS BLVD | SILVER CITY |
| 1729 | BROWNS SELF SERVE | 27060 | BROWNS SELF SERVE | 1305 N HUDSON | SILVER CITY |
| 2037 | THE PRICE COMPANY | 31084 | THE PRICE COMPANY | 803 S BARD | SILVER CITY |
| 2051 | SCHOOL DIST. WHSE. | 30511 | SCHOOL DISTRICT WAREHOUSE | 107 N BULLARD | SILVER CITY |
| 2585 | BELL GAS #191 | 958 | BELL GAS 191 | 1505 HWY 180 E | SILVER CITY |
| 2620 | SNAPPY MART #19 | 30653 | SNAPPY MART 219 | 1810 N SWAN ST | SILVER CITY |
| 2626 | SNAPPY MART #4 | 30652 | SNAPPY MART 204 | 206 N HUDSON ST | SILVER CITY |
| 3158 | VICTORY SELFSERVICE MINIMART | 31495 | VICTORY SELF SERVICE MINI MART AKA SILVER HEIGHTS | 602 SILVER HEIGHTS BLVD | SILVER CITY |
| 3404 | SILVER CITY RMLR | 30617 | SILVER CITY NM RMLR | ONE HALF MILE S OF US | SILVER CITY |
| 3526 | SNAPPY MART 256 | 1804 | SNAPPY MART 256 | 1750 HWY 180 | SILVER CITY |
| 3596 | FUEL CENTER PLUS 1 | 28194 | FUEL CENTER PLUS 1 | 855 E SILVER HEIGHTS BLVD | SILVER CITY |
| 3743 | FUEL CENTER PLUS 1 | 28194 | FUEL CENTER PLUS 1 | 855 E SILVER HEIGHTS BLVD | SILVER CITY |
| 4093 | HOUSLEY DISTRIBUTING INC | 28609 | HOUSLEY DISTRIBUTING INC | 785 S MILL RD | SILVER CITY |
| 4470 | SILVER CITY SHELL | 46504 | SHELL STAR MART | 2045 HWY 180 E | SILVER CITY |
| 4489 | FUEL CENTER PLUS BULK PLANT | 28195 | FUEL CENTER PLUS BULK PLANT | 605 S MILL ST | SILVER CITY |
| 4561 | SW CONCRETE & PAVING MAIN YARD | 52515 | SWCP MAIN YARD | 1955 HILLTOP RD | SILVER CITY |
| 4653 | BNSF MILL STREET | 54742 | BNSF MILL STREET | 784 SOUTH MILL STREET | SILVER CITY |

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Storage Tank Sites
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PSTB (FID 28194 RID 3596 Fuel Center Plus 1)
Report
PSTB (FID 28194 RID 3596 Fuel Center Plus 1)
PSTB (FID 28194 RID 3596 Fuel Center Plus 1)
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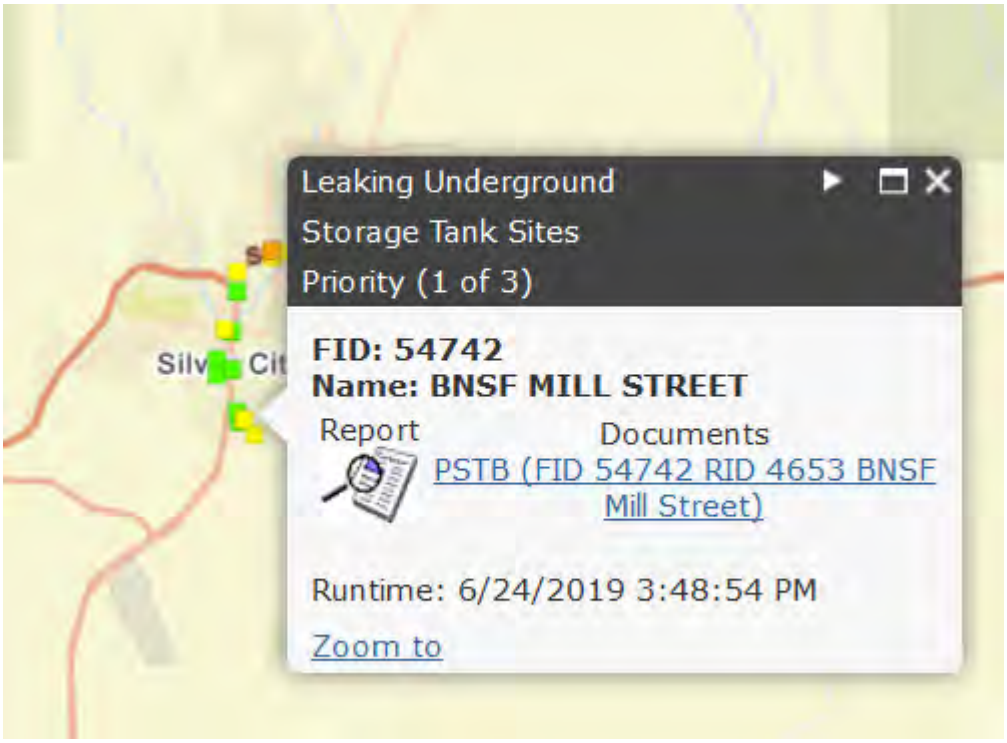
Silv
City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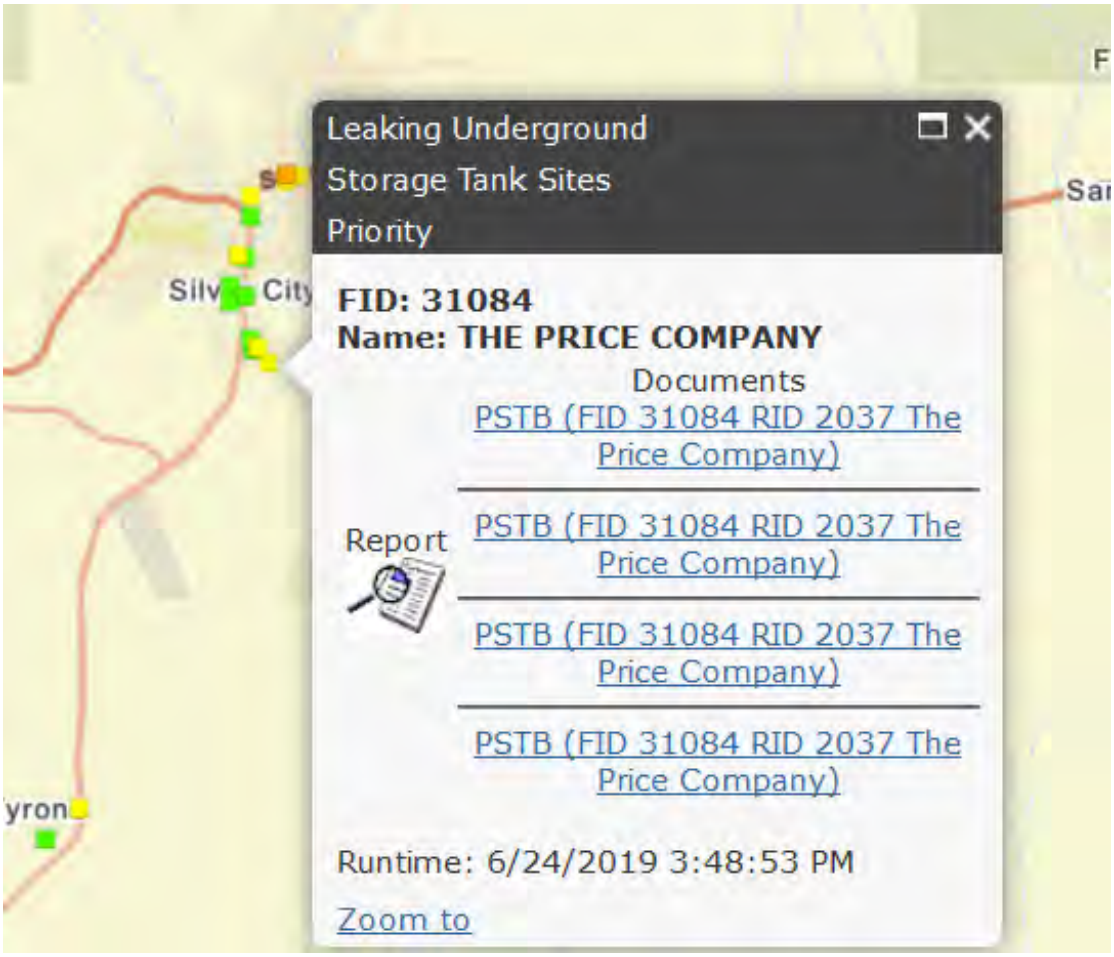
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Report
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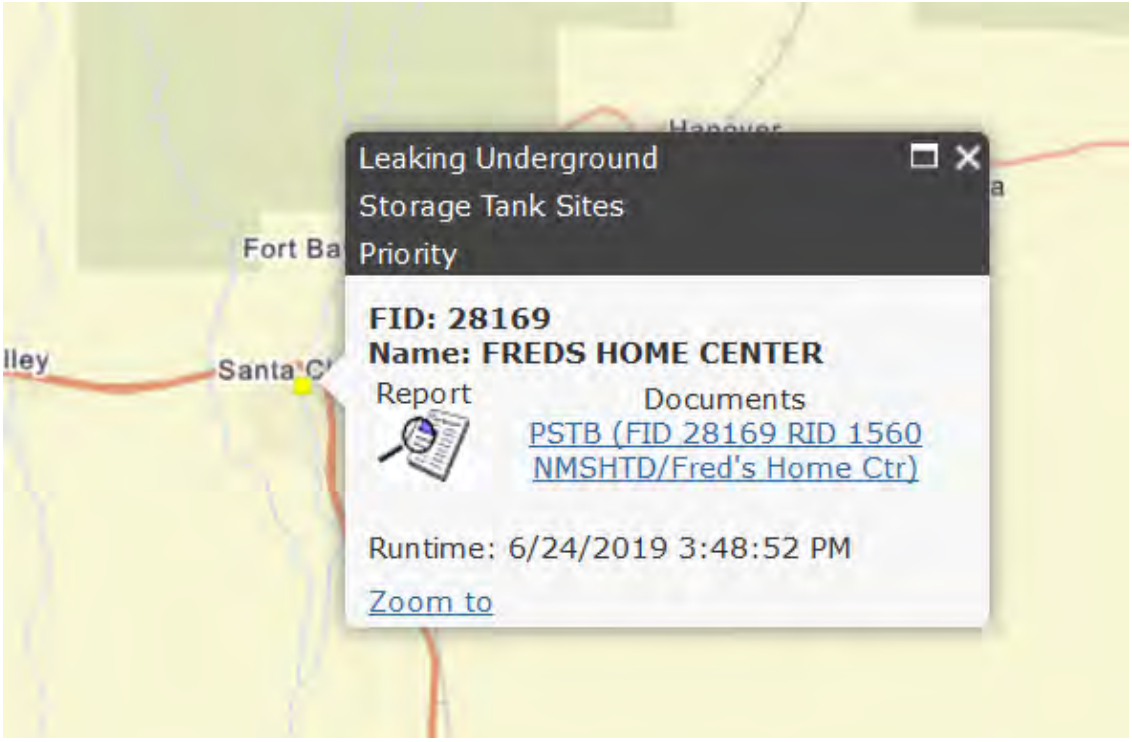
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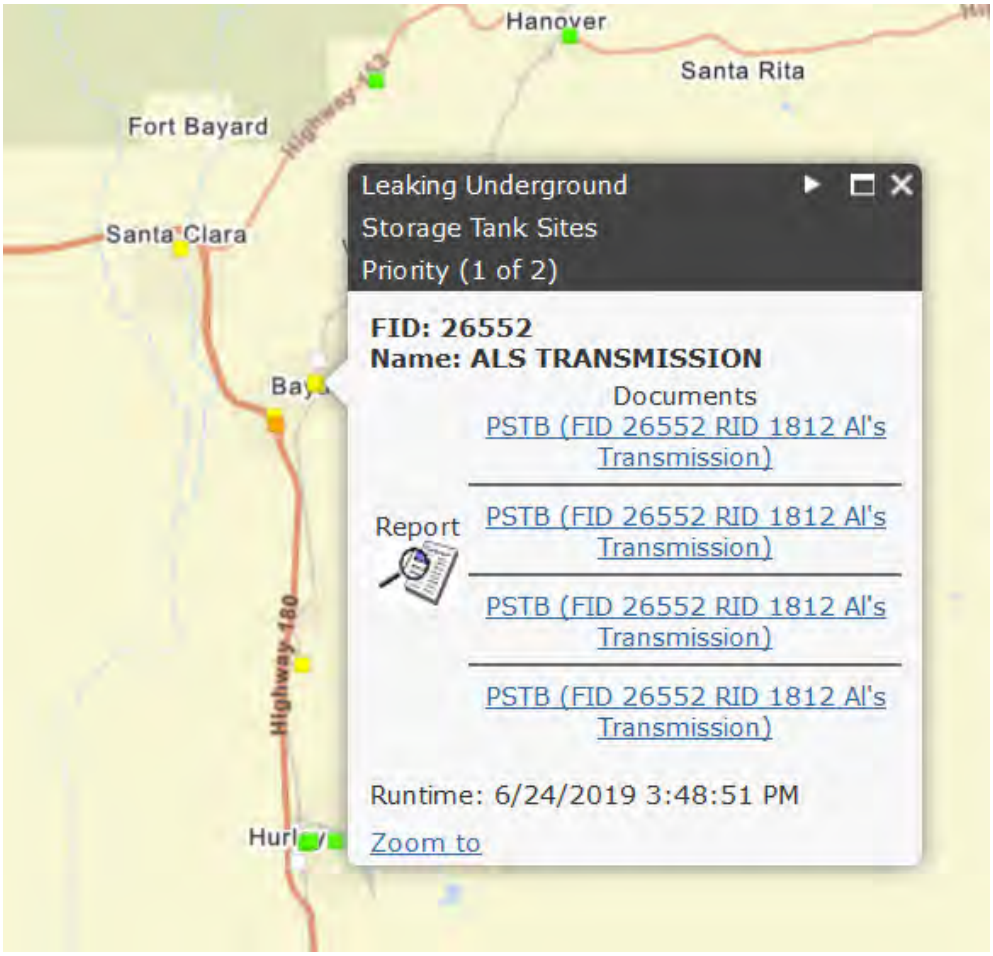
Zoom to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Santa Rita
Fort Bayard
Highway 403
Santa Clara
Leaking Underground
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Report
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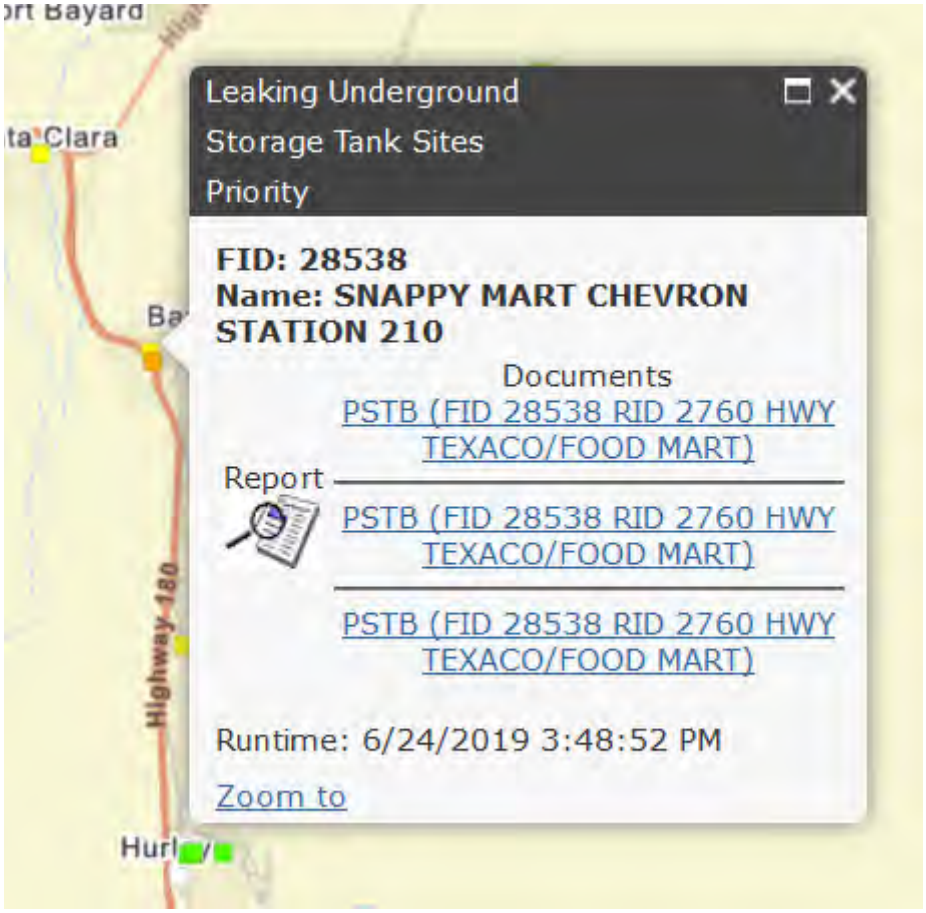
Highway 180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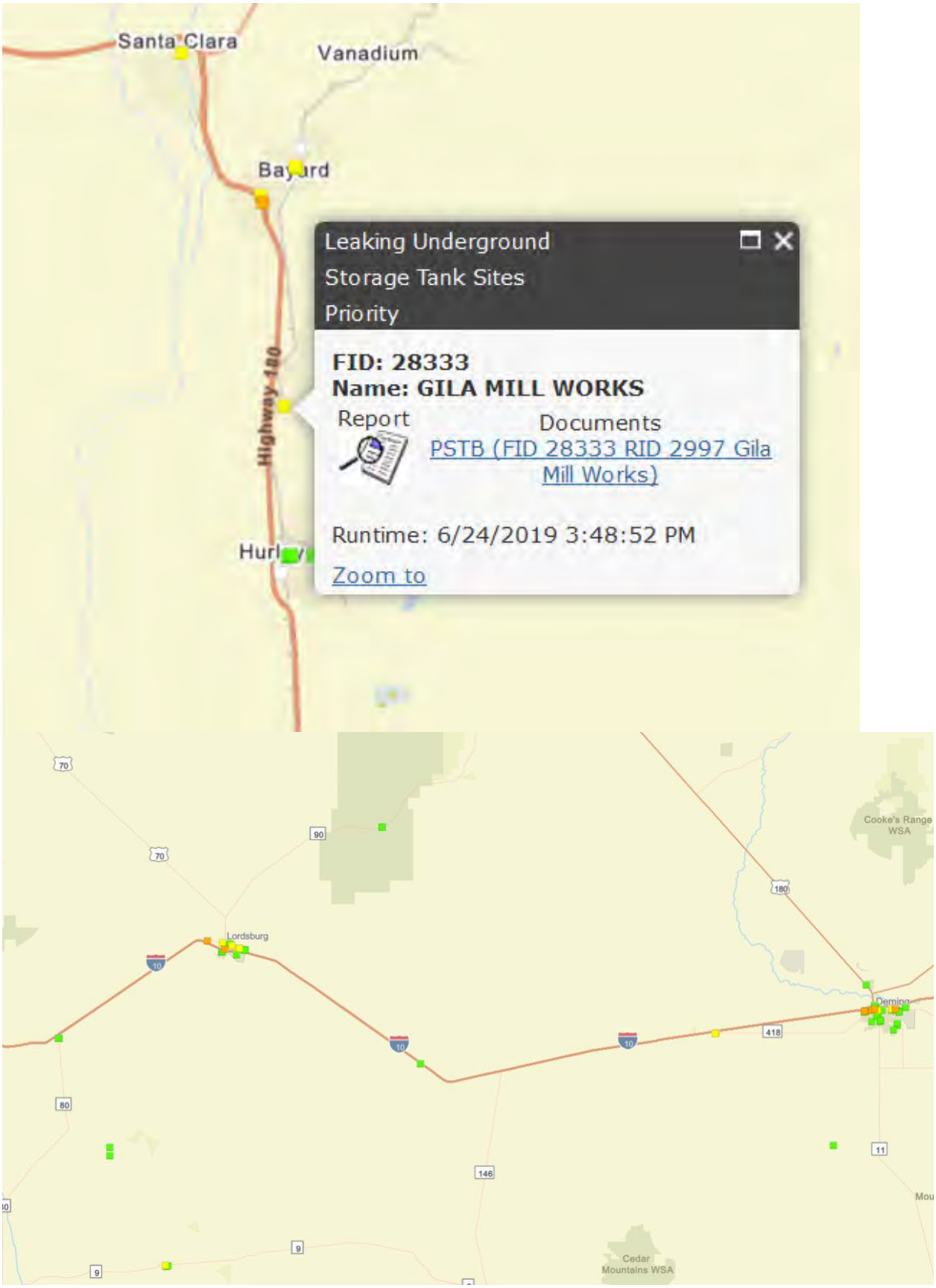
Highway 180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Vanadium
Bayard
Highway 180
Hurley
Leaking Underground
Storage Tank Sites
Priority
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Report
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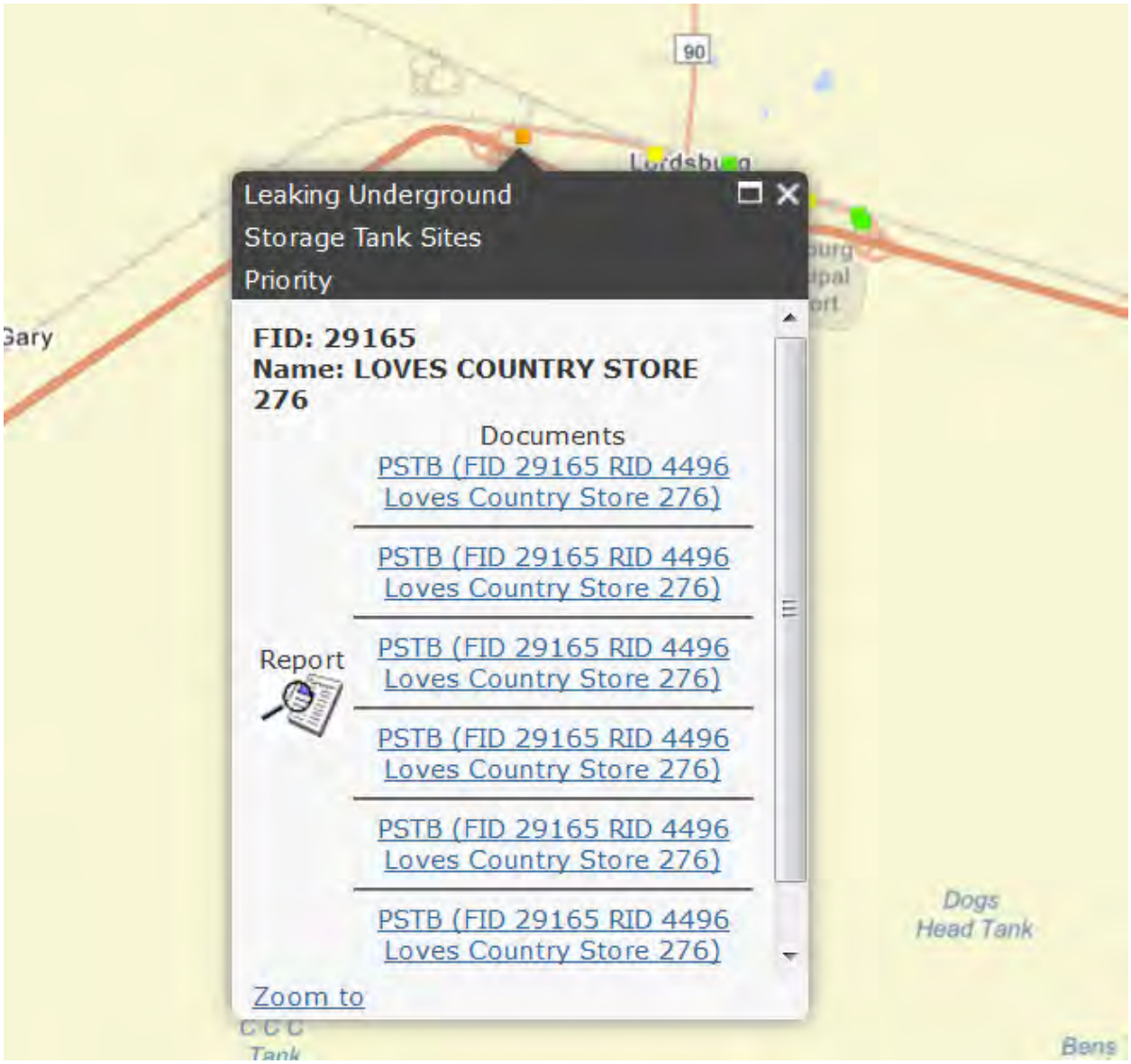
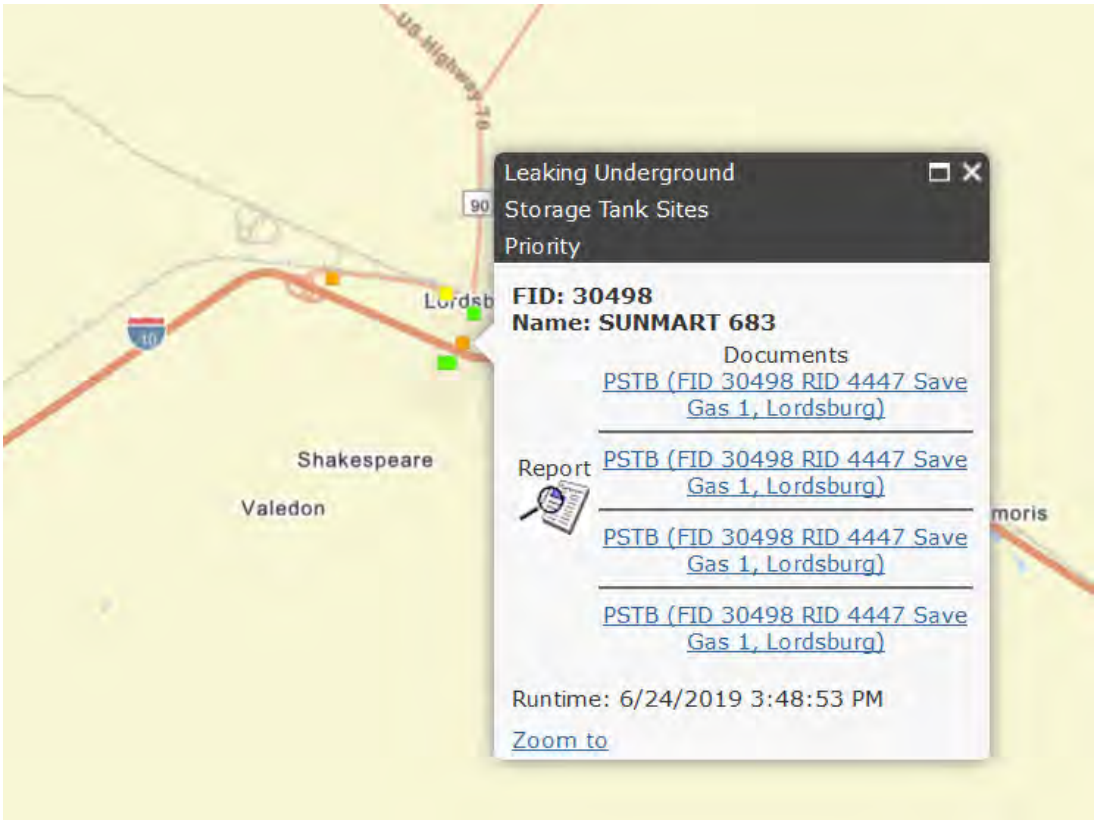
Zoom to
Lordsburg
Deming
Cooke's Range WSA
Cedar Mountains WSA

| Release ID | Release Name | Facility ID | Facility Name | Address | City |
|---|---|---|---|---|---|
| 937 | WESTSIDE TEXACO | 28307 | GEORGE B S WESTSIDE | 400 W MOTEL DR | LORDSBURG |
| 1727 | AT&T-WHITE SIGNAL | 2017 | WHITE SIGNAL | LAT 32 29 37 LONG 108 29 21 | LORDSBURG |
| 1934 | BAR F 29 | 27617 | CORNER STORE NO 1293 | 1316 S MAIN ST | LORDSBURG |
| 2430 | BORDER COWBOY T-STOP | 27014 | BORDER COWBOY TRUCK STOPS 2 | 992 E RAILROAD | LORDSBURG |
| 2433 | BORDER COWBOY RESTRT | 27013 | BORDER COWBOY TRUCK STOPS | 984 E RAILROAD | LORDSBURG |
| 2480 | AT&T COMM SITE | 928 | AT AND T COMMUNICATIONS INC | 104 E 4TH ST | LORDSBURG |
| 2645 | SNAPPY MART | 30654 | SNAPPY MART 1197 | 313 S MAIN | LORDSBURG |
| 3159 | SUN TEXACO PRONTO | 30813 | SUNMART 678 | 1421 S MAIN ST | LORDSBURG |
| 3182 | STAR TEXACO | 30755 | CHEVRON EAST | 1030 E MOTEL DR | LORDSBURG |
| 3345 | SO PACIFIC LDSBG BUNKER C | 27159 | BUNKER C TANK | MP 1148 4 | LORDSBURG |
| 3407 | QUICK SHOP/CALICO GRAPHICS | 30096 | QUIK SHOP AKA CALICO GRAPHICS STUDIO | 628 E MOTEL DR | LORDSBURG |
| 3420 | FREEWAY CHEVRON | 28172 | FREEWAY CHEVRON | 1150 E MOTEL DR | LORDSBURG |
| 4029 | LOVES COUNTRY STORE 276 | 29165 | LOVES COUNTRY STORE 276 | 900 W MOTEL DR | LORDSBURG |
| 4033 | PILOT TRAVEL CENTER 163 | 29970 | PILOT TRAVEL CENTERS LLC 163 | 1050 E MOTEL DR | LORDSBURG |
| 4345 | LOVES COUNTRY STORE 276 | 29165 | LOVES COUNTRY STORE 276 | 900 W MOTEL DR | LORDSBURG |
| 4380 | PRONTO SAVE GAS | 30813 | SUNMART 678 | 1421 S MAIN ST | LORDSBURG |
| 4447 | SAVE GAS 1, LORDSBURG | 30498 | SUNMART 683 | 1001 S MAIN ST | LORDSBURG |
| 4449 | LORDSBURG (CITY OF) - AIRPORT | 29139 | LORDSBURG (CITY OF) - AIRPORT | 1000 E AIRPORT RD | LORDSBURG |
| 4496 | LOVES COUNTRY STORE 276 | 29165 | LOVES COUNTRY STORE 276 | 900 W MOTEL DR | LORDSBURG |




Leaking Underground
Storage Tank Sites
Priority
FID: 30498
Name: SUNMART 683
Documents
PSTB (FID 30498 RID 4447 Save Gas 1, Lordsburg)
Report
PSTB (FID 30498 RID 4447 Save Gas 1, Lordsburg)
PSTB (FID 30498 RID 4447 Save Gas 1, Lordsburg)
PSTB (FID 30498 RID 4447 Save Gas 1, Lordsburg)
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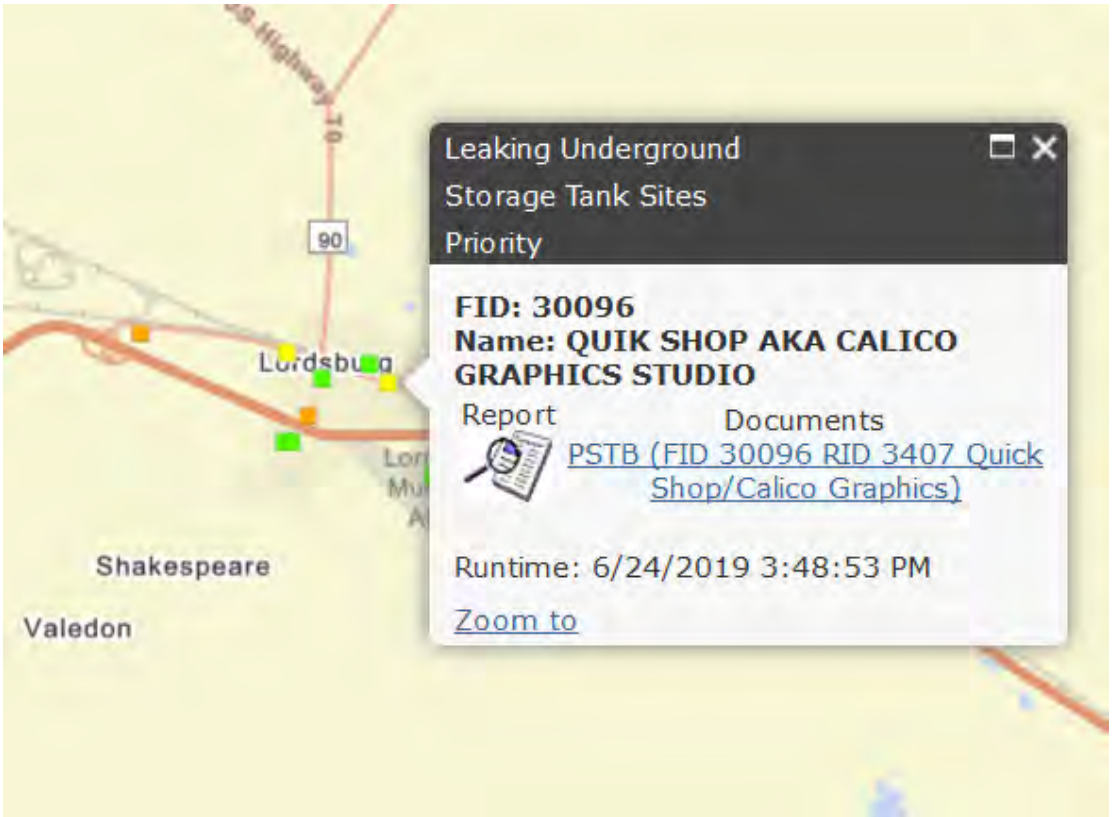
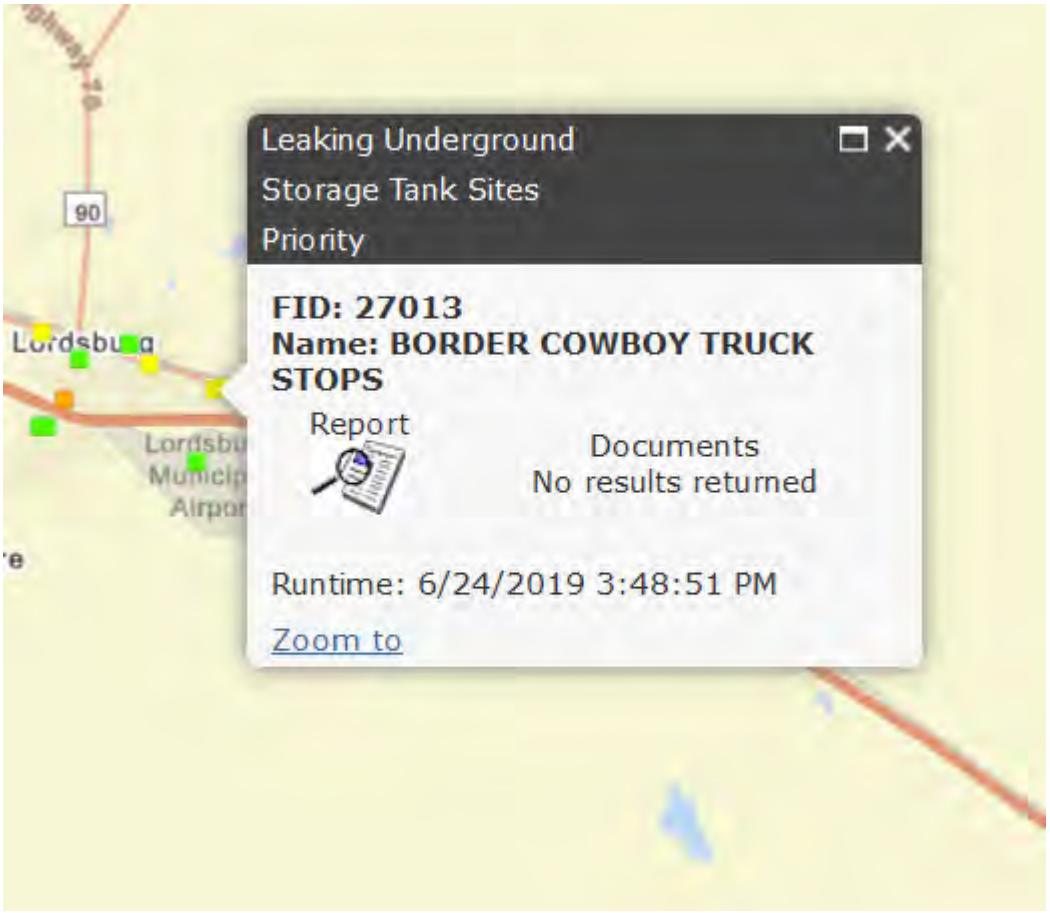
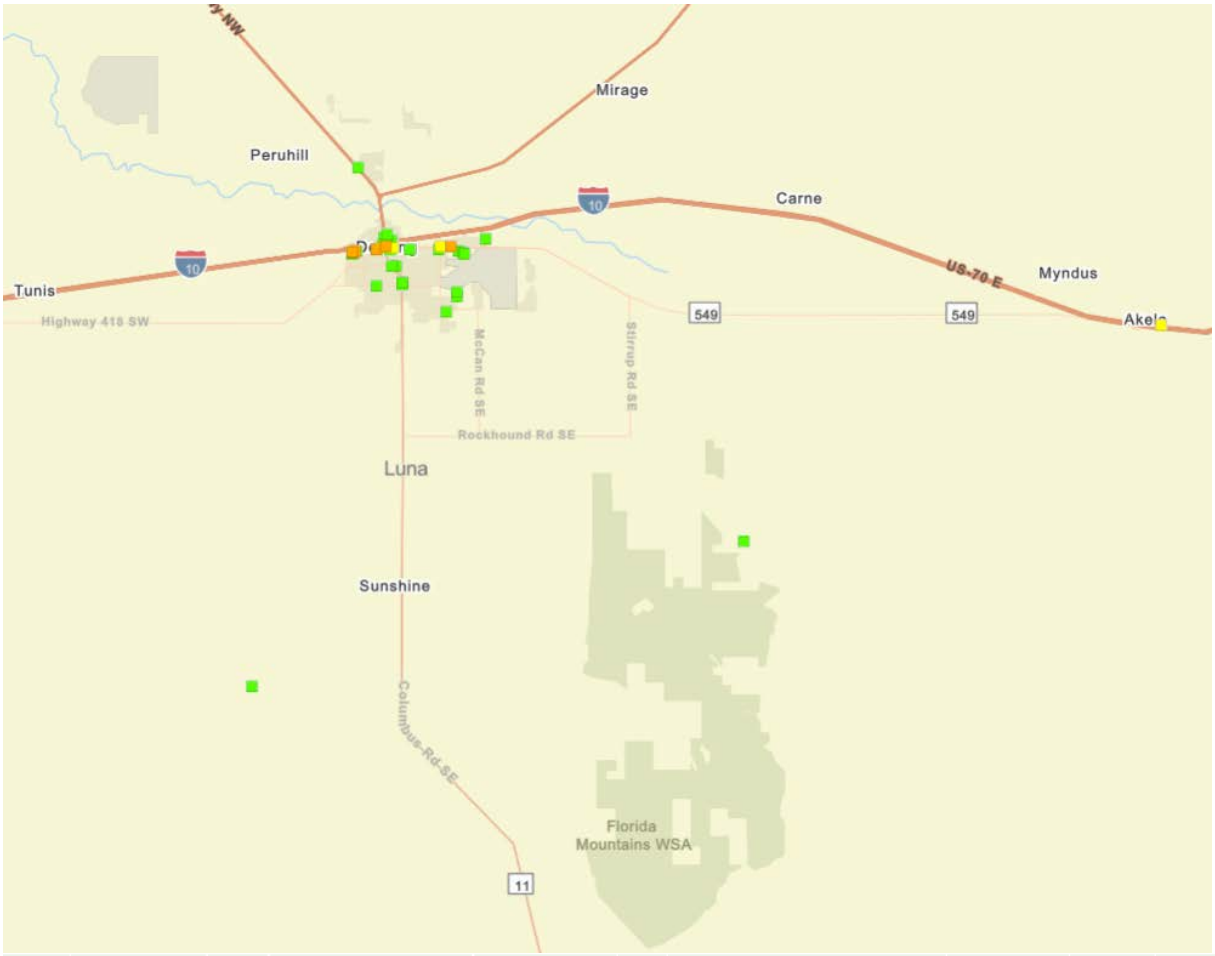
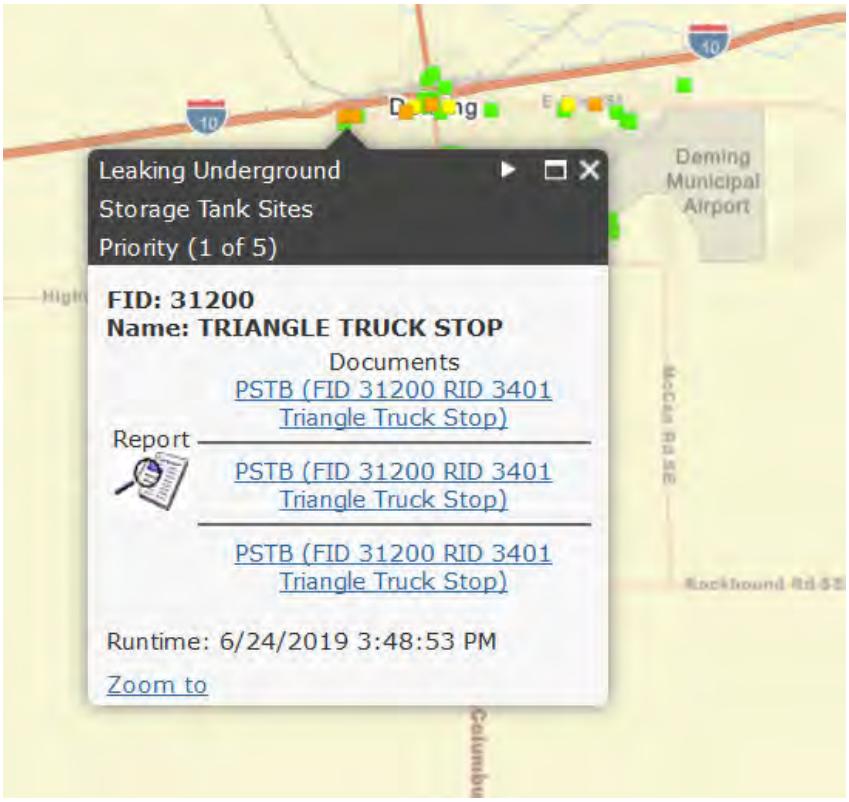
Zoom to
Shakespeare
Valedon
90

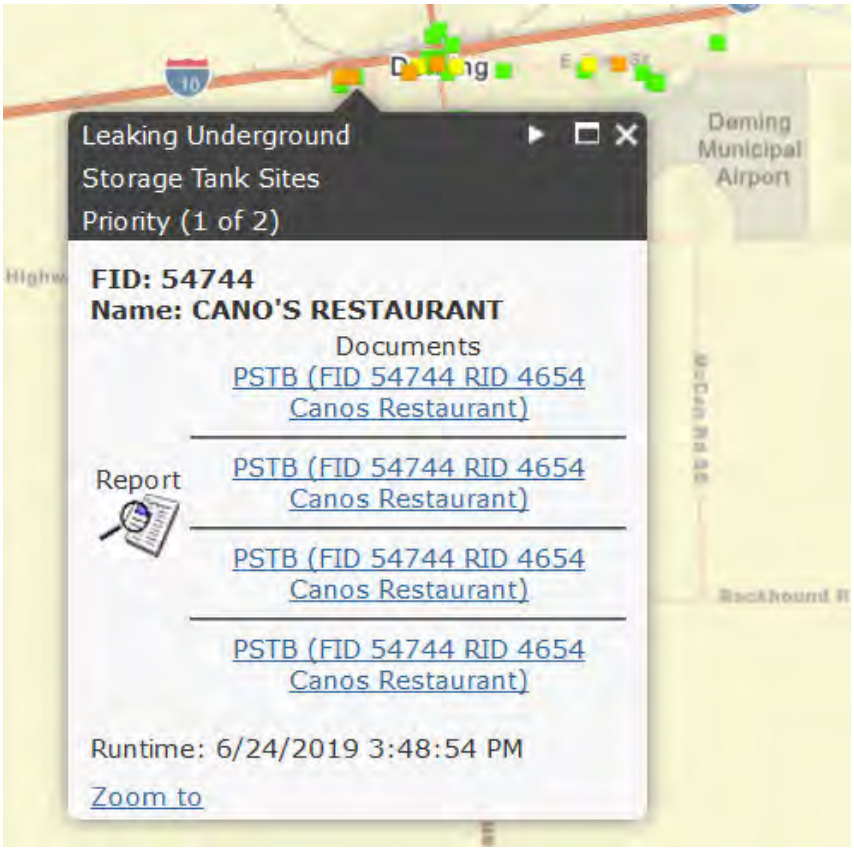

Leaking Underground
Storage Tank Sites
Priority
FID: 30096
Name: QUIK SHOP AKA CALICO GRAPHICS STUDIO
Report
Documents
PSTB (FID 30096 RID 3407 Quick Shop/Calico Graphics)
Runtime: 6/24/2019 3:48:53 PM
Zoom to
Shakespeare
Valedon
90

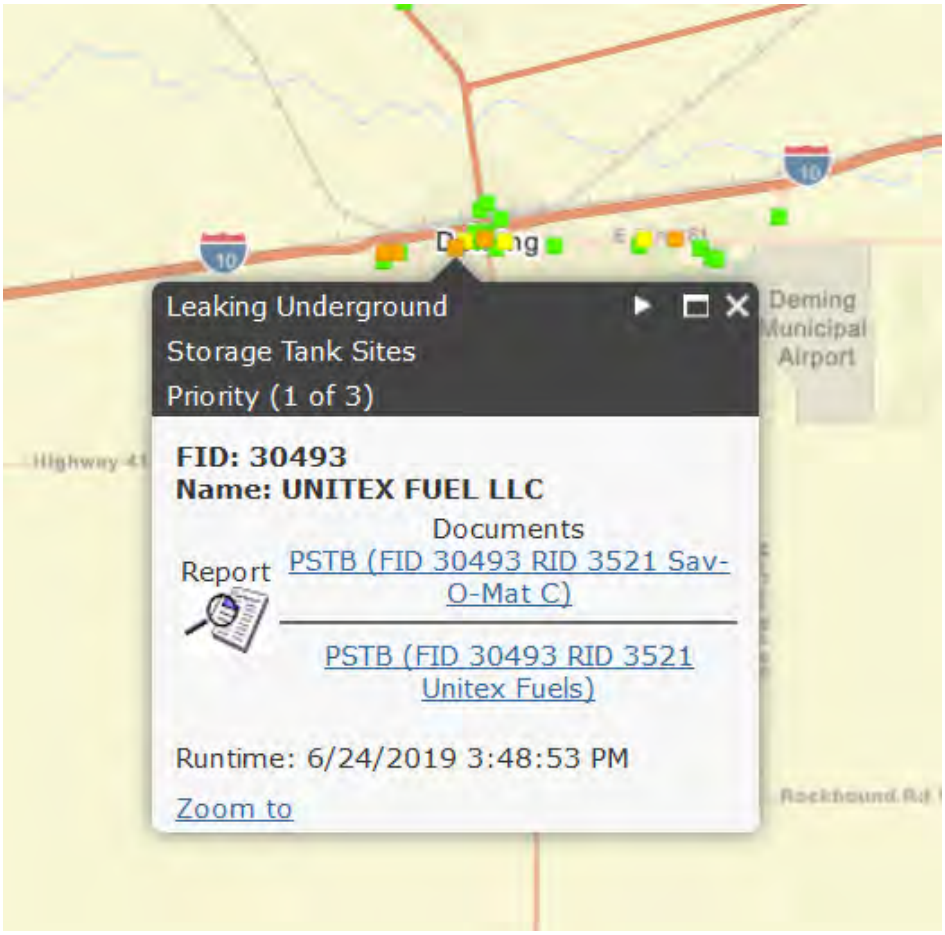

Leaking Underground
Storage Tank Sites
Priority
FID: 27013
Name: BORDER COWBOY TRUCK STOPS
Report
Documents
No results returned
Runtime: 6/24/2019 3:48:51 PM
Zoom to
90

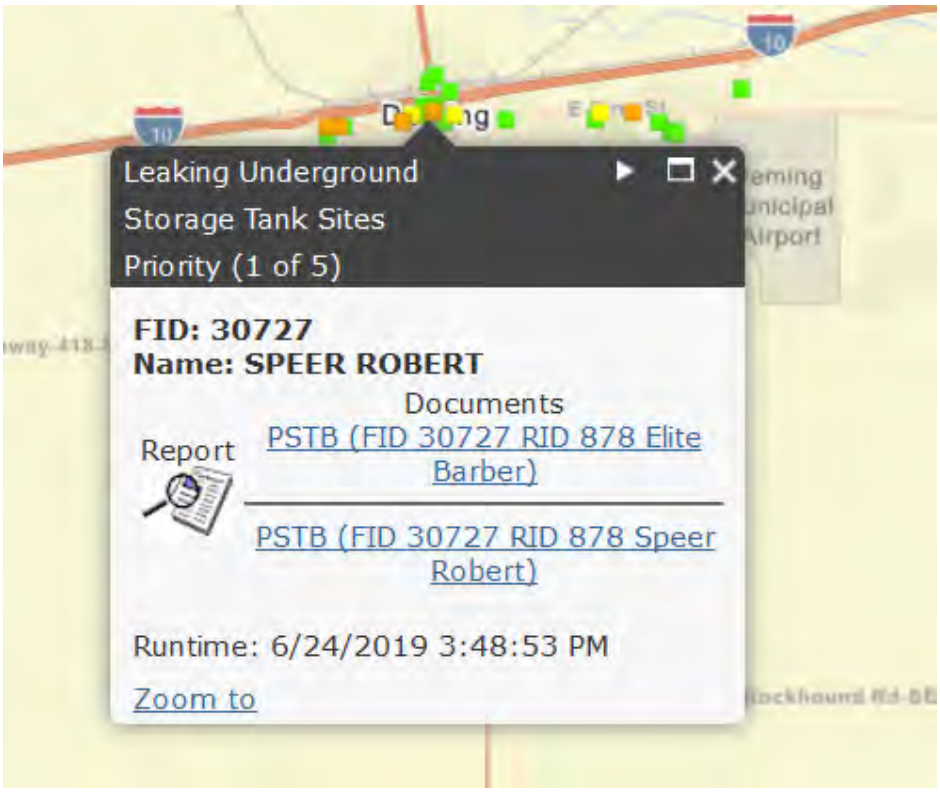


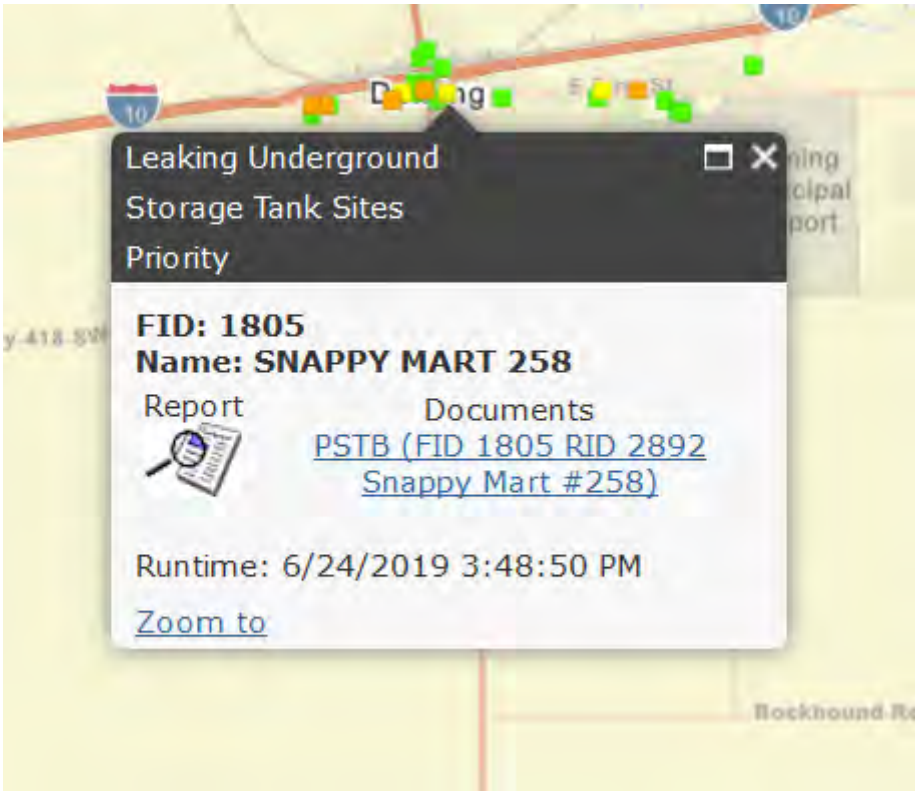

| Release ID | Release Name | Facility ID | Facility Name | Address | City | Responsible Party | Project Manager | Compliance? | Release Status |
|---|---|---|---|---|---|---|---|---|---|
| 2014 | GONZALES SELF SERVE | 31464 | VICTORY SELF SERVE | 422 W PINE | DEMING | BRUCE JACKSON | CHRISTOPHER HAMILTON | Y | Cleanup, Responsible Party |
| 2882 | SNAPPY-MART #258 | 1805 | SNAPPY MART 258 | 306 E PINE | DEMING | BELL GAS INC | MICHAEL BOULAY | Y | Investigation, Responsible Party |
| 2966 | STUCKEYS DEMING | 1843 | STUCKEYS DEMING | 15 MILES W OF DEMING ON I | DEMING | BOWLIN TRAVEL CENTERS, INC. | CHRISTOPHER HAMILTON | Y | Cleanup, Responsible Party |
| 3042 | ON SALE TIRE CO | 27082 | BUDGET TIRE STORE | 101 W PINE ST | DEMING | ANTHONY PERRAULT | JIM GIBB | Y | Cleanup, Responsible Party |
| 3060 | SAVOY TRUCK STOP | 9762 | PETRO STOPPING CENTER #385 | 14150 HIGHWAY 418 SW | DEMING | ORBY BLUMFIELD | CHRISTOPHER HOLMES | Y | Cleanup, Responsible Party |
| 3401 | TRIANGLE TRUCK STOP | 31200 | TRIANGLE TRUCK STOP | 1300 W PINE | DEMING | BARKER OIL CO INC | TIM NOGER | Y | Cleanup, Responsible Party |
| 3482 | POPLAR FINA | 30031 | PLATINUM AVENUE SERVICE STATION | 755 S PLATINUM | DEMING | UNKNOWN | DELBERT UTZ | Y | No Further Action, Confirmed Release |
| 3521 | SAV-O-MAT C | 30493 | UNITEX FUEL LLC | 321 W PINE ST | DEMING | SAV-O-MAT INC | ALLISON URBON | Y | Cleanup, Responsible Party |
| 4073 | SAVOY TRUCK STOP | 9762 | PETRO STOPPING CENTER #385 | 14150 HIGHWAY 418 SW | DEMING | EXTRA TANK LINE INC | CHRISTOPHER HOLMES | | Investigation, Responsible Party |
| 4089 | SAVE GAS - NO3 | 27658 | SUNMART 679 | 1312 W PINE | DEMING | EJ SHORT OIL CO | TIM NOGER | Y | Cleanup, Responsible Party |
| 4306 | ROCKY MOUNTAIN TRANSPORTERS | 54399 | ROCKY MOUNTAIN TRANSPORTERS | 3105 SILVER CITY HWY 180 NW | DEMING | UNKNOWN | DELBERT UTZ | | No Further Action, Suspected Release |
| 4443 | COUNTRY CLUB FOOD MART | 51556 | SUNMART 681 | 2319 E MOTEL DR | DEMING | PETROLEUM WHOLESALE LP | TIM NOGER | | No Further Action, Suspected Release |
| 4553 | PORTER DEMING GOLD CHEVRON | 27989 | SNAPPY MART 211 | 501 N GOLD ST | DEMING | GW FUELS DEPOT INC,PORTER OIL INC | DELBERT UTZ | | No Further Action, Confirmed Release |
| 4559 | DEMING BULK PLANT | 30038 | DEMING BULK PLANT | 2701 E PINE | DEMING | PORTER OIL INC | CHRISTOPHER HOLMES | N | Cleanup, Responsible Party |
| 4600 | SUN MART 681 | 51556 | SUNMART 681 | 2319 E MOTEL DR | DEMING | PETROLEUM WHOLESALE LP | TIM NOGER | N | Investigation, Responsible Party |
| 4654 | CANO'S RESTAURANT | 54744 | CANO'S RESTAURANT | 1200 W PINE | DEMING | SJ REAL ESTATE LLC | TIM NOGER | Y | Cleanup, Responsible Party |
| 4671 | DESERT FUEL & TOWING | 27784 | DESERT FUEL & TOWING | 120 N GOLD ST | DEMING | DEMING (CITY OF) | JOHN KOVACS | | No Further Action, Confirmed Release |
| 4707 | SANDIS SAVE GAS | 30835 | SANDIS SAVE GAS | 4301 EAST PINE STREET | DEMING | SANDRA SPEER | TIM NOGER | | No Further Action, Confirmed Release |
| 4781 | BOWLINS AKELA FLATS | 984 | BOWLINS AKELA FLATS STORE | 20 MILES E OF DEMING ON I | DEMING | BOWLIN TRAVEL CENTERS, INC. | CHRISTOPHER HOLMES | | Pre-Investigation, Confirmed Release |


Leaking Underground
Storage Tank Sites
Priority (1 of 5)
FID: 31200
Name: TRIANGLE TRUCK STOP
Documents
PSTB (FID 31200 RID 3401 Triangle Truck Stop)
Report
PSTB (FID 31200 RID 3401 Triangle Truck Stop)
PSTB (FID 31200 RID 3401 Triangle Truck Stop)
Runtime: 6/24/2019 3:48:53 PM
Zoom to
Deming Municipal Airport


Leaking Underground
Storage Tank Sites
Priority (1 of 2)
FID: 54744
Name: CANO'S RESTAURANT
Documents
PSTB (FID 54744 RID 4654 Canos Restaurant)
Report
PSTB (FID 54744 RID 4654 Canos Restaurant)
PSTB (FID 54744 RID 4654 Canos Restaurant)
PSTB (FID 54744 RID 4654 Canos Restaurant)
Runtime: 6/24/2019 3:48:54 PM
Zoom to
Deming Municipal Airport


Leaking Underground
Storage Tank Sites
Priority (1 of 3)
FID: 30493
Name: UNITEX FUEL LLC
Documents
Report
PSTB (FID 30493 RID 3521 Sav-O-Mat C)
PSTB (FID 30493 RID 3521 Unitex Fuels)
Runtime: 6/24/2019 3:48:53 PM
Zoom to
Deming Municipal Airport


Leaking Underground
Storage Tank Sites
Priority (1 of 5)
FID: 30727
Name: SPEER ROBERT
Documents
Report
PSTB (FID 30727 RID 878 Elite Barber)
PSTB (FID 30727 RID 878 Speer Robert)
Runtime: 6/24/2019 3:48:53 PM
Zoom to


Leaking Underground
Storage Tank Sites
Priority
FID: 1805
Name: SNAPPY MART 258
Report
Documents
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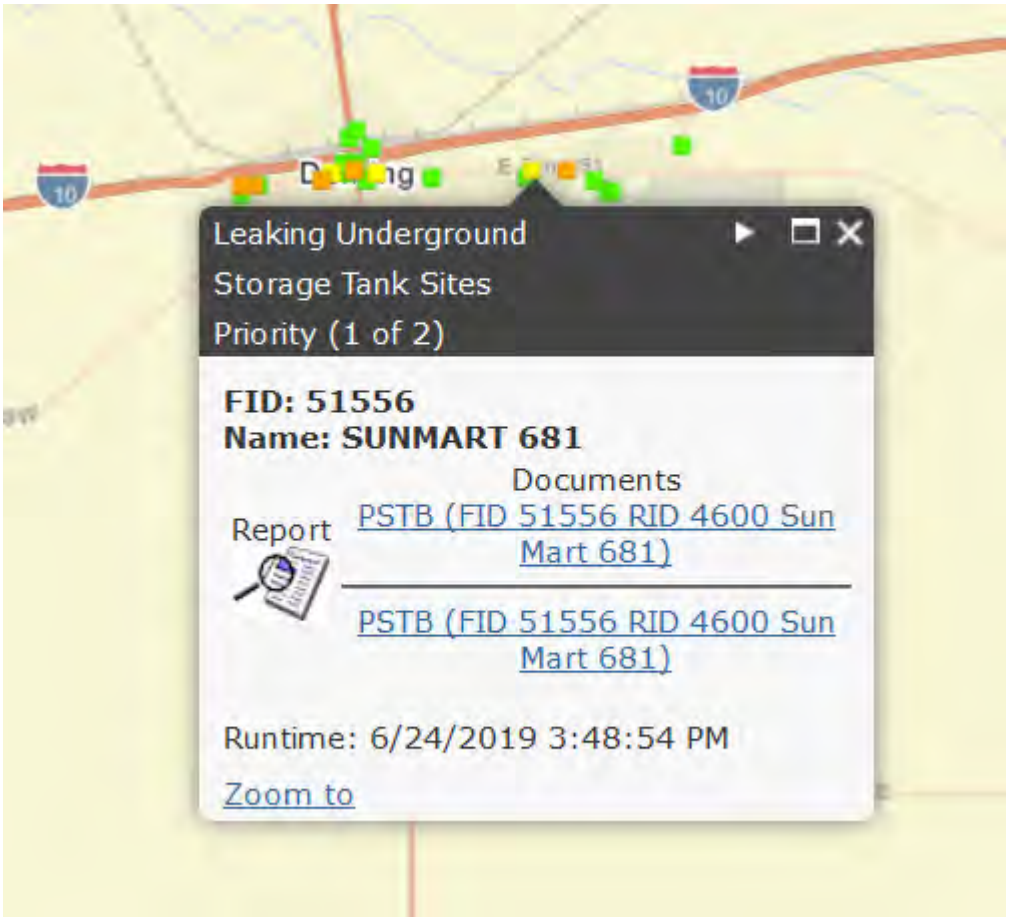
Runtime: 6/24/2019 3:48:50 PM
Zoom to


Leaking Underground
Storage Tank Sites
Priority (1 of 2)
FID: 51556
Name: SUNMART 681
Documents
Report
PSTB (FID 51556 RID 4600 Sun Mart 681)
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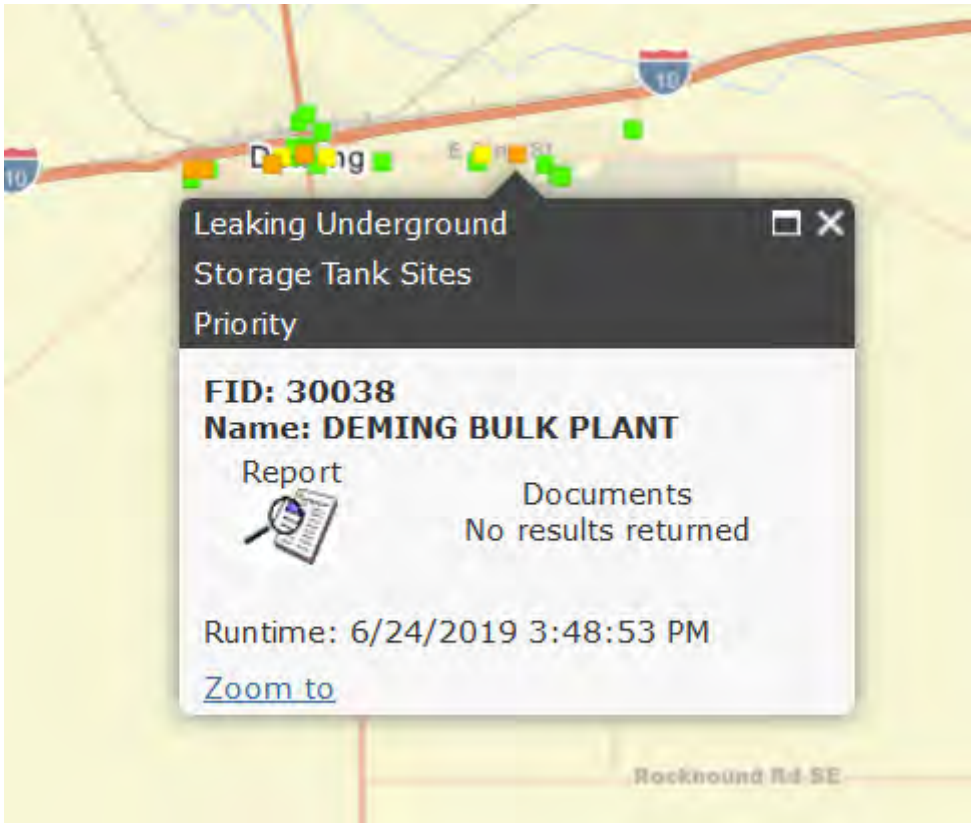
Zoom to


Leaking Underground
Storage Tank Sites
Priority
FID: 30038
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Report
Documents
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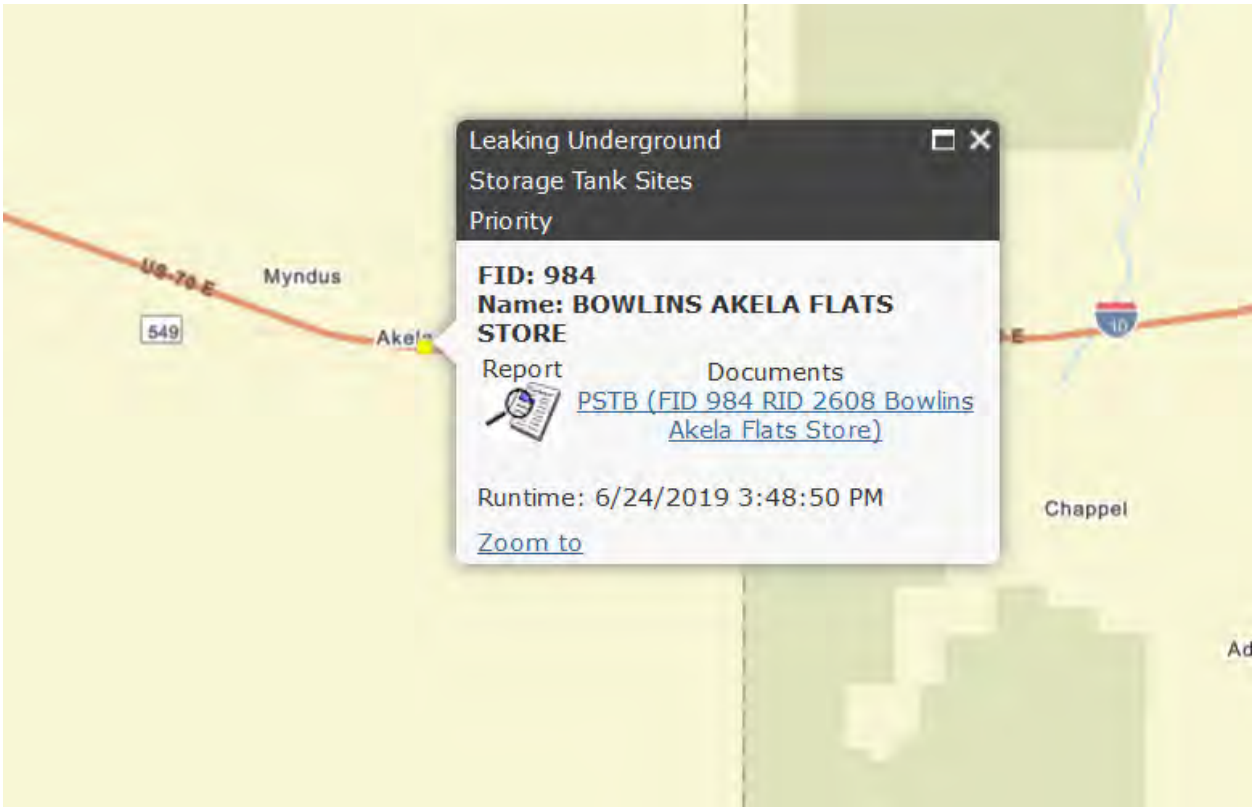
Runtime: 6/24/2019 3:48:53 PM
Zoom to
Rockhound Rd SE


Leaking Underground
Storage Tank Sites
Priority
FID: 984
Name: BOWLINS AKELA FLATS STORE
Report
Documents
PSTB (FID 984 RID 2608 Bowlins Akela Flats Store)
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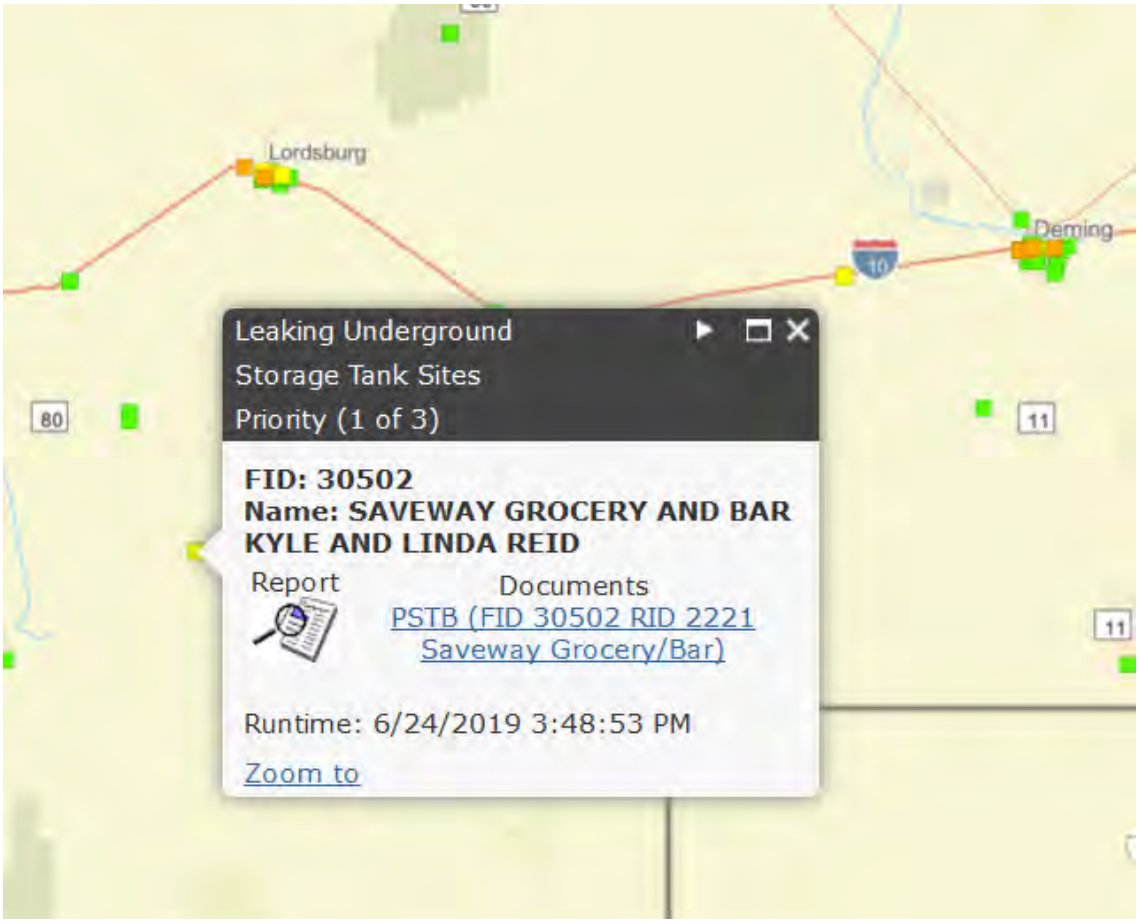
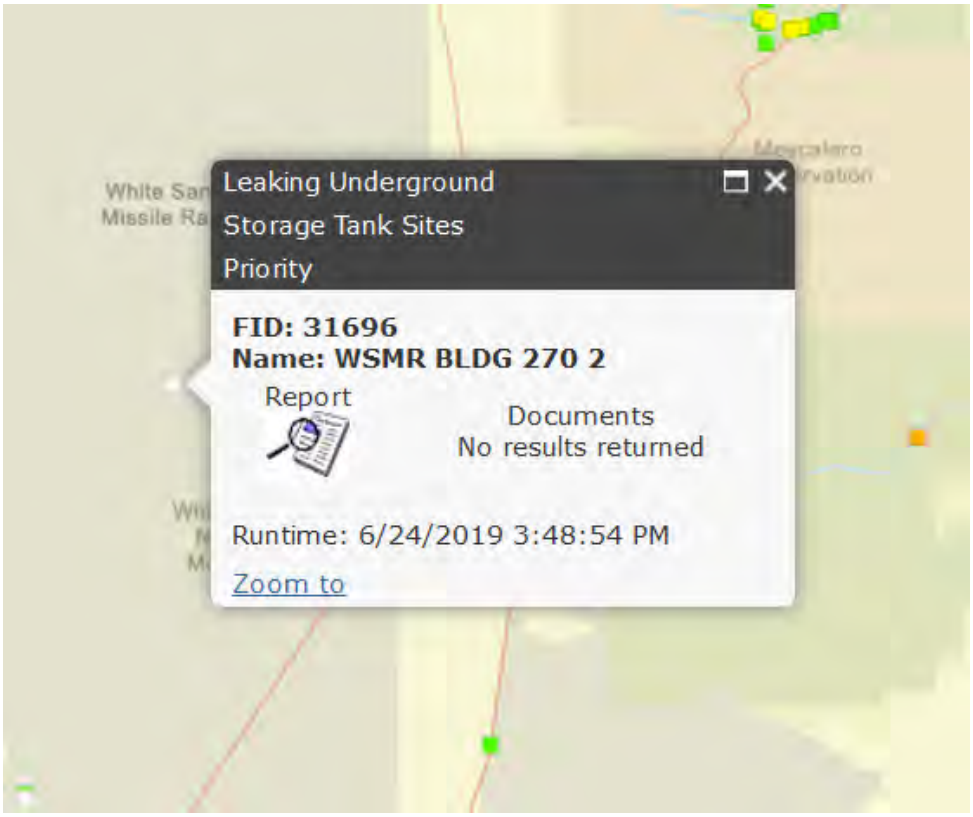
US-70 E
Myndus
549
Chappel


Lordsburg
Deming
10
80
11
11
Leaking Underground
Storage Tank Sites
Priority (1 of 3)
FID: 30502
Name: SAVEWAY GROCERY AND BAR
KYLE AND LINDA REID
Report
Documents
PSTB (FID 30502 RID 2221
Saveway Grocery/Bar)
Runtime: 6/24/2019 3:48:53 PM
Zoom to


Leaking Underground
Storage Tank Sites
Priority
FID: 31696
Name: WSMR BLDG 270 2
Report
Documents
No results returned
Runtime: 6/24/2019 3:48:54 PM
Zoom to

| Release ID | Release Name | Facility ID | Facility Name | Address | City | Responsible Party | Project Manager | Compliance? | Release Status |
|---|---|---|---|---|---|---|---|---|---|
| 904 | HELSTF | 28500 | HELSTF WSMR | ENVIRONMENTAL OFFICE B 26145 | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | Referred to Hazardous Waste Bureau |
| 1726 | LC-38/WSMR/ BLD#23626 | 29695 | NORTH OSCURA PEAK | 33124-1 AND 33124-2 | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY | UNKNOWN | | No Further Action, Confirmed Release |
| 1995 | AFCSF 1 | 31713 | WSMR BLDG AFCSF 1 | UNKNOWN | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | No Further Action, Confirmed Release |
| 2622 | HAWK FACILITY | 31379 | US ARMY LC 32 BUILDING 20548 | R5ET 225 511 QSE BLACK HAWK | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY | CHRISTOPHER HOLMES | | No Further Action, Confirmed Release |
| 2624 | TIMING STATION | 31380 | US ARMY LC 32 BUILDING 20710 | R5ET 225 511 QSE | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY | SARAH MCGRATH | | Investigation Federal Facility |
| 2684 | NASA RADAR SITE | 31715 | WSMR BLDG RCRC I | UNKNOWN | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | Referred to Hazardous Waste Bureau |
| 2888 | PX GAS STATION | 31688 | WSMR BLDG 21235 | UNKNOWN | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | No Further Action, Confirmed Release |
| 3096 | AFCSF-1 | 31713 | WSMR BLDG AFCSF 1 | UNKNOWN | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | No Further Action, Confirmed Release |
| 3528 | WSMR BLDG 30725 2 | 31704 | WSMR BLDG 30725 2 | UNKNOWN | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | No Further Action, Confirmed Release |
| 3545 | WSMR BLDG 30725 1 | 31703 | WSMR BLDG 30725 1 | UNKNOWN | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | No Further Action, Confirmed Release |
| 3684 | WSMR BLDG 270 2 | 31696 | WSMR BLDG 270 2 | STEWS EL N | WHITE SANDS MISSILE RANGE | DEPT OF THE ARMY,NASA | SARAH MCGRATH | | Investigation Federal Facility |




Facilities for which PSTB records show there are no longer petroleum storage tanks that we regulate and there has not been a release are not included in these comments. There are a number of reasons that there could be tanks present or a release, but the Petroleum Storage Tank Bureau does not have a record of it in our database. For further information, please consult our online resources. Many of the records requested from the Petroleum Storage Tank Bureau are available online, and you can access them quickly yourself by following the directions below.

If you'd like a further response from this bureau, please reply with the information you find (say no information if none; say whether you found info on leaks or not; and if possible, say whether there are tanks and whether they are underground or aboveground). In addition, please use any FID's (facility identification numbers) or RID's (release identification numbers) you've found in these searches for the facilities or releases you are seeking

information on, and please state specifically which records you're looking for. If you want to see all records for a facility, you're welcome to arrange a time with us to come look at the files. If you need any help using the online resources, please let me know.

Please review the lists on the webpage, https://www.env.nm.gov/ust/lists.html. Click on the Active Leaking and NFA Sites link. The first document lists NFA sites (sites for which no further action is currently required) by county and city. The third document lists active sites alphabetically by priority (the second and fourth documents are pdfs). Click on the document you need, then click Download for the option you choose in the window that opens. You can search the Active Leaking or NFA Sites spreadsheets (or any other spreadsheet) by holding down the ctrl key on your keyboard and then hitting the F key, or by going to Find & Select (all the way to the right) on the Home tab of the spreadsheet, selecting Find, and entering an address or part of an address, a name, or any information you'd like to search on and then clicking on Find Next repeatedly to find all records that fit your search. You can download the No Further Action letter for many of these records by clicking the link in the last column of the NFA spreadsheet. If the No Further Action letter is not online and you need it or any other information, let us know.

If you are looking for information about the presence of underground or aboveground storage tanks at an address, please download the All Storage Tank list, also at https://www.env.nm.gov/ust/lists.html. This lists all storage tanks in the state that fall or fell under our regulations and have been registered with us, whether they are still present or not. This spreadsheet can be searched the same way as the above ones. If you only need to know about tanks that are currently in use or temporarily out of use, download the Active Storage Tank list.

The GoNM map link also enables you to locate quite a bit of information that will facilitate your search, including NFA letters. Not all information about each site has been uploaded there, but ***recently many site documents have been added***. Instructions for Go NM: Go to https://www.env.nm.gov/ust/lists.html. Click on the GoNM link at the bottom left of the page. Documents may download more easily if you use Internet Explorer. When you are in the GoNM Mapper, you can use the zoom slider at the upper left of the map to zoom in. Colored and white shapes represent facilities that have or had tanks and/or have been involved in a release. To find out more about a facility, click on the white i inside the blue circle at top of the screen and then click on the shape that represents that facility. When the dialog box pops up, you can click on either the Report or any link under Documents If it is a leaking site, there will usually be a link under Documents. Many No Further Action letters and other documents are accessible and downloadable this way. If you click on the icon under Report at the left of the dialogue box, there is also quite a bit of information there. If there is a triangle (like a "play" symbol on a media player) at the top right of the dialog box, click on it, and a second page of information will open.

If you have questions or need further information, please call the Petroleum Storage Tank Bureau at 505-476-4397.

**NMED Surface Water Quality Bureau Comments**

The Bureau has no comments at this time. General information on state and federal regulations and permitting programs to protect surface water quality is provided below.

**Waters of the State:**

- Surface Water Protection regulations in 20.6.2.1201 New Mexico Administrative Code (NMAC) at http://164.64.110.134/parts/title20/20.006.0002.html include requirements for any person intending to make a new water contaminant discharge or to alter the character or location of an existing water contaminant discharge to file a Notice of Intent to discharge. The notice shall be filed with the NMED Ground Water Quality Bureau (GWQB) for discharges that may affect ground water, and/or the Surface Water Quality Bureau (SWQB) for discharges that may affect surface water.

Requirements for notification and corrective action for discharge of oil or other water contaminant (e.g., spills and unauthorized releases) in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property are in 20.6.2.1203 NMAC.

Disposal of refuse in a natural watercourse is prohibited (20.6.2.2201 NMAC). "Refuse" includes food, swill, carrion, slops and all substances from the preparation, cooking and consumption of food and from the handling, storage and sale of food products, the carcasses of animals, junked parts of automobiles and other machinery, paper, paper cartons, tree branches, yard trimmings, discarded furniture, cans, oil, ashes, bottles, and all unwholesome material.

- New Mexico Surface Water Quality Standards (NMWQS) codified in 20.6.4 NMAC are at http://164.64.110.134/parts/title20/20.006.0004.html. NMWQS define water quality goals by designating uses for rivers, streams, lakes and other surface waters, setting narrative and numeric criteria, and establishing antidegradation policy to preserve surface water quality. As an example, limited-duration turbidity increases caused by dredging, construction or other similar activities may be allowed provided all practicable turbidity control techniques have been applied and all appropriate permits, certifications and approvals have been obtained (20.6.4.13.J NMAC). SWQB's mapper is available at https://gis.web.env.nm.gov/oem/?map=swqb.

**Waters of the United States (WOTUS):**

- For more information on the status of waters of the U.S. federal rulemaking, see https://www.epa.gov/wotus-rule.

**USEPA NPDES Permits**

U.S. Environmental Protection Agency (USEPA) regulates the discharge of pollutants to waters of the U.S under Section 402 of the federal Clean Water Act (CWA) in the State of New Mexico. Information on all USEPA National Pollutant Discharge Elimination (NPDES) program areas is available at https://www.epa.gov/npdes/all-npdes-program-areas. More information on federal NPDES programs in the State of New Mexico is available at https://www.env.nm.gov/surface-water-quality/point-source-regulation-section/.

NPDES stormwater program requires permits for discharges to waters of the U.S. from construction activities that disturb one or more acres, and discharges from smaller sites that are part of a larger common plan of development or sale. For more information on the federal NPDES Construction General Permit (CGP), see https://www.epa.gov/npdes/stormwater-discharges-construction-activities. USEPA's CGP includes permit conditions applicable to the State of New Mexico in Part 9 of the 2017 permit, as amended.

For questions related to pollutant discharges to surface water during construction or operations, or state regulations, and federal NPDES permits in the State of New Mexico, contact Sarah Holcomb, Program Manager, Point Source Regulation Section, NMED SWQB at 505-827-2798.

**USACE Dredge and Fill Permits**

U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, under Section 404 of the federal Clean Water Act (CWA). The USACE issues or authorizes Standard Individual Permits (IPs), Nationwide Permits (NWPs), and the Emergency Regional General Permit (RGP) for activities such as earth-moving work within wetlands, lakes, and streams (including ephemeral streams or arroyos) that are waters of the U.S.

For questions about activities within watercourses or wetlands that may require coverage under a CWA Section 404 permit, more information is available on-line from the USACE, Albuquerque District, Regulatory Division at http://www.spa.usace.army.mil/Missions/Regulatory-Program-and-Permits/. For more information on USACE jurisdictional determinations, see https://www.spa.usace.army.mil/Missions/Regulatory-Program-and-Permits/Jurisdiction/.

A water quality certification is required under Section 401 of the federal CWA for activities regulated under Section 404. More information on the permitting and certification requirements is available on-line from NMED at https://www.env.nm.gov/surface-water-quality/dredgeandfillactivities/.

For questions related to dredge and fill activities and certifications in the State of New Mexico, contact Abe Franklin, Program Manager, Watershed Protection Section, NMED SWQB at 505-827-2793.

Thank you for providing NMED with the opportunity to review and comment on this proposed project. Going forward please email requests for review to me at the below email address.

Sincerely,

Michaelene Kyrala
Director of Policy
New Mexico Environment Department
Office: 505.827.2892
E-mail: michaelene.kyrala@state.nm.us

**From:** Eysenbach, Derek <deysenbach@blm.gov>
**Sent:** Friday, July 12, 2019 2:54 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Scott Cooke <scooke@blm.gov>
**Subject:** [Non-DoD Source] Interagency notice on D-M AFB Personnel Recovery EA

Hello Kevin,

This is Derek Eysenbach at BLM's Safford Field Office. I wanted to add our office to agencies being noticed of the DRAFT and FINAL EA for the D-M Personnel Recovery Training Program.

Please alert our office by emailing notice to the following individuals:

Scott Cooke, Field Manager: scooke@blm.gov
Derek Eysenbach, Planning and Environmental Specialist: deysenbach@blm.gov

Of course, if your office needs any data, access, or other assistance as you prepare your analysis, please feel free to reach out to one of us to coordinate.

Thank you,

Derek Eysenbach
--
**Derek Eysenbach, AICP**

*Planning and Environmental Specialist*
BLM - Safford Field Office
711 S 14th Ave
Safford AZ 85546
office: 928-348-4461

**From:** Hatcher, Orry - FS <orry.hatcher@usda.gov>
**Sent:** Wednesday, July 17, 2019 3:58 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Gilloon, Timothy - FS <timothy.gilloon@usda.gov>; Madril, Richard - FS <richard.madril@usda.gov>
**Subject:** [Non-DoD Source] RE: Interagency Notification of the Preparation of an Environmental Assessment for the Davis-Monthan Air Force Base Personnel Recovery Training Program

Hello,

I am writing to let you know that the USFS Black Mesa Ranger District received a copy of your scoping letter dated Jun 19, 2019, and it would be ideal if myself and the individuals cc'd on this email could receive future correspondence on the NEPA process. The contact information is spelled out below:

- Tim Gilloon (USFS Apache-Sitgreaves NEPA Program Manager)
  - Email: timothy.gilloon@usda.gov
  - Mailing Address:
    Apache-Sitgreaves National Forests Supervisor's Office
    30 South Chiricahua Drive, Springerville, AZ 85938
- Richard Madril (USFS Black Mesa District Ranger)
  - Email: richard.madril@usda.gov
  - Mailing Address:
    Black Mesa Ranger District
    2748 Hwy 260
    Overgaard, AZ 85933

With two HB locations on the Black Mesa RD identified on your map in the scoping letter dated Jun 19, 2019, we may have some input and any documentation that you provide will be shared with our resource specialists here on the Black Mesa RD.

Thank you,

**Orry Hatcher**
**Acting Recreation and Lands Staff**
**Forest Service**
**Sitgreaves National Forest**
**p: 928-368-2106**
**orry.hatcher@usda.gov**
2022 West White Mountain Boulevard
Lakeside, AZ 85929
www.fs.fed.us

**Caring for the land and serving people**

**From:** Timothy Begay <tbegay@navajo-nsn.gov>
**Sent:** Monday, July 22, 2019 2:05 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] NOTIFICATION OF ENVIRONMENTAL ASSESSMENT FOR THE DAVIS-MONTHAN AIR FORCE BASE PERSONNEL TRAINING PROGRAM

Dear Mr. Wakefield:

The Navajo Nation Heritage and Historic Preservation Department (NNHHPD) is in receipt of your letter dated June 19, 2019. The letter informs the Navajo Nation of the United States Air Force is Preparing an Environmental Assessment to evaluate the potential environmental of the Davis-Monthan Air Force Base Personnel Recovery Training program.

After reviewing and cross referencing our Traditional Cultural Properties (TCP's) database, NNHHPD-TCP has determined that there are No Navajo TCP's in the area, and No additional consultation is need for this project.

NNHHPD-TCP thanks your office for including the Navajo Nation in your Section 106 consultation process. Should you have any questions or concerns, contact our office at (928) 871-7198. Thank you.

Sincerely,

Timothy C. Begay, Navajo Cultural Specialist
Navajo Nation Heritage and Historic Preservation Department
P.O. Box 4950
Window Rock, AZ 86515
tbegay@navajo-nsn.gov

USDA United States Department of Agriculture | Forest Service | Coronado National Forest Supervisor's Office

300 West Congress St.
Tucson, AZ 85701
520-388-8300
Fax: 520-388-8305

**File Code:** 1950
**Date:** July 17, 2019

Mr. Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4987

Dear Mr. Wakefield:

Thank you for the notification of the preparation of an Environmental Assessment for the Personnel Recovery Training Program which includes proposed sites on the Coronado National Forest. I would like to be notified when the Draft EA is published. Please send to:

Kerwin S. Dewberry, Forest Supervisor
Coronado National Forest
ATTN: Environmental Coordinator
300 West Congress Street, 6th Floor
Tucson, AZ 85701

We are interested in getting more detailed information about the proposed ground-based activities, number of personnel participating in these activities, frequency of activities, and any ground disturbance expected from the proposal on the Coronado National Forest. We will be looking at the Draft EA to ensure the description and effects of use on forest sites is adequately addressed in order that a special use permit may be issued to Davis-Monthan Air Force Base for the use of sites on the Coronado National Forest for training purposes.

If there are any questions regarding this request, please contact Mindi Lehew, Environmental Coordinator, by email at mindi.lehew@usda.gov or by phone at 520-388-8352.

Sincerely,

KERWIN S. DEWBERRY
Forest Supervisor

cc: Eric Oswald, Denise Kusnir

-----Original Message-----
From: Phillips, Betty M CIV USARMY ID-TRAINING (USA)
<betty.m.phillips11.civ@mail.mil>
Sent: Tuesday, July 23, 2019 4:47 PM
To: WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE
<kevin.wakefield.1@us.af.mil>
Subject: EA for DMAFB Personnel Recovery Training Program (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Hello Mr. Wakefield,

I received the letter regarding the preparation of an EA for the DMAFB Personnel Recovery Training Program. Fort Huachuca doesn't have any advanced concerns or comments but is interested in receiving a copy of the draft EA prior to it going out for public review. Please let me know if Fort Huachuca can be of any assistance in this project. Thank you for your time.

Betty Phillips
NEPA Coordinator/Hunting Program Manager Environmental and Natural Resources Division USAG Fort Huachuca, Arizona
520-533-8763
Betty.m.phillips11.civ@mail.mil

CLASSIFICATION: UNCLASSIFIED

**From:** Vanessa Nosie <vnosie11@gmail.com>
**Sent:** Tuesday, July 23, 2019 2:10 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Vern Grant <apachevern@yahoo.com>
**Subject:** [Non-DoD Source] Interagency Notification of the Preparation of an Environmental Assessment for the Davis-Monthan Air Force Base Personnel Recovery Training Program

Mr. Wakefield,

The attached is a signed Tribal Consultation Response Letter. Please review, if you have any question contact Vernelda Grant, Director/THPO at 928-475-5797 or e-mail apachevern@yahoo.com

Thank You,

Vanessa Nosie, Archaeology-Aide
San Carlos Apache Tribe
Archaeology/THPO Department

Received from Tribal Admin 07/23/19

E-mailed 07/23/19 (Initial & date)

Scanned 07/23/19 (Initial & date)

SAN CARLOS APACHE TRIBE
Historic Preservation & Archaeology Department
P.O. Box 0
San Carlos Arizona 85550
Tel. (928) 475-5797, apachevern@yahoo.com

# Tribal Consultation Response Letter

**Date:** June 26, 2019

**Contact Name:** Mr. Kevin Wakefield (520) 228-4035/kevin.wakefield.1@us.af.mil

**Company:** Department of the Air Force

**Address:** 355 CES/CEIE, 3775 S. 5th St., Davis-Monthan AFB, AZ 85707-4927

**Project Name/#:** Interagency Notification of the Preparation of an Environmental Assessment for the Davis-Monthan Air Force Base Personnel Recovery Training Program

**Dear Sir or Madam:**

Under Section 106 and 110 of the National Historic Preservation Act, we are replying to the above referenced project. Please see the appropriate marked circle, including the signatures of Vernelda Grant, Tribal Historic Preservation Officer (THPO), and the concurrence of the Chairman of the San Carlos Apache Tribe:

- [X] **NO INTEREST/NO FURTHER CONSULTATION/NO FUTURE UPDATES**
  We defer to the Tribe located nearest to the project area.
- [X] **CONCURRENCE WITH REPORT FINDINGS & THANK YOU** !
- [X] **REQUEST ADDITIONAL INFORMATION**
  I require additional information in order to provide a finding of effect for this proposed undertaking, i.e. Project description ___ Map ___ Photos X Other We defer to the Tohono O'odham Nation.
- [X] **NO EFFECT**
  I have determined that there are no properties of religious and cultural significance to the San Carlos Apache Tribe that are listed on the National Register within the area of potential effect or that the proposed project will have no effect on any such properties that may be present.
- [ ] **NO ADVERSE EFFECT**
  Properties of cultural and religious significance within the area of effect have been identified that are eligible for listing in the National Register for which there would be no adverse effect as a result of the proposed project.
- [ ] **ADVERSE EFFECT**
  I have identified properties of cultural and religious significance within the area of potential effect that are eligible for listing in the National Register. I believe the proposed project would cause an adverse effect on these properties. Please contact the THPO for further discussion.

We were taught traditionally not to disturb the natural world in a significant way, and that to do so may cause harm to oneself or one's family. Apache resources can be best protected by managing the land to be as natural as it was in pre-1870s settlement times. Please contact the THPO, if there is a change in any portion of the project, especially if Apache cultural resources are found at any phase of planning and construction. Thank you for contacting the San Carlos Apache Tribe, your time and effort is greatly appreciated.

**DIRECTOR/THPO:** Vernelda J. Grant 07/08/19
Vernelda J. Grant, Tribal Historic Preservation Officer — Date

**CONCURRENCE:** Acting Chairman 7/19/19
Terry Rambler, Tribal Chairman — Date

**From:** Vitulano, Karen <Vitulano.Karen@epa.gov>
**Sent:** Wednesday, July 24, 2019 11:24 AM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] Scoping for the Davis-Monthan Air Force Base Personnel Recovery Training Program

Dear Mr. Wakefield – I didn't have time to review this scoping notice but would be interested in seeing the Draft EA when it is available. I prefer an electronic format to a hard copy, so perhaps just a link to the document. Thank you for the opportunity to review this scoping notice and EA.

Sincerely -

*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*~*

Karen Vitulano
U.S. Environmental Protection Agency, Region 9
Environmental Review Branch
Tribal, Intergovernmental and Policy Division
75 Hawthorne St. TIP-2
San Francisco, CA 94105
PHONE 415-947-4178
FAX 415-947-8026

**From:** Delaplaine, Mark@Coastal <Mark.Delaplaine@coastal.ca.gov>
**Sent:** Thursday, July 25, 2019 1:34 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Weber, John@Coastal <john.weber@coastal.ca.gov>; Simon, Larry@Coastal <Larry.Simon@coastal.ca.gov>; Vaughn, Shannon@Coastal <Shannon.Vaughn@coastal.ca.gov>
**Subject:** [Non-DoD Source] Notice of Prep of EA for Davis-Monthan AFB PR Training

Kevin – our Long Beach office got a notice for this.
Our federal responsibilities are conducted out of our SF HQ office.
Given that your map -Page 2 – PR Training Sites Map depicts CA coastal areas possibly involved, we'd recommend you copy Larry Simon, Federal Consistency Coordinator for the CCC, on any Draft EA prepared.

Mark Delaplaine
Manager, Energy, Ocean Resources
and Federal Consistency Division
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219
Mark.Delaplaine@coastal.ca.gov
(415) 904-5289

# RE: Nevada State Clearinghouse Notice E2019-130 (E2019-130 EA Preparation - USAF Davis-Monthan Air Force Base Personnel Recovery Training Program)

Jim R. Balderson

Thu 7/18/2019 10:47 AM

To: NevadaClearinghouse <NevadaClearinghouse@lands.nv.gov>;

**From:** NevadaClearinghouse@lands.nv.gov <NevadaClearinghouse@lands.nv.gov>
**Sent:** Wednesday, July 3, 2019 3:03 PM
**To:** Alan Jenne <ajenne@ndow.org>; clytle@lincolnnv.com; Brad Hardenbrook <bhrdnbrk@ndow.org>; James Morefield <jdmore@heritage.nv.gov>; Mark Freese <markfreese@ndow.org>; mstewart@lcb.state.nv.us; sscholley@lcb.state.nv.us; Tod.oppenborn@nellis.af.mil; zip.upham@navy.mil; Shimi.Mathew@nellis.af.mil; craig.mor more@wildnevada.org; Jennifer Crandell <jcrandell@crc.nv.gov>; 99abw.ccy@nellis.af.mil; whenderson@nvleague.org; alisah@unr.edu; Karen Beckley <KBeckley@health.nv.gov>; Rebecca Palmer <rlpalmer@shpo.nv.gov>; dmouat@dri.edu; Alisanne Maffei <awmaffei@admin.nv.gov>; mison@dot.state.nv.us; Warren Turke. <wturkett@crc.nv.gov>; Michael Visher <mvisher@minerals.nv.gov>; Jim R. Balderson <JBALDERSON@ndep.nv.gov>; Lindsey Lesmeister <llesmeister@ndow.org>; Richard M. Perry <rmperry@minerals.nv.gov>; jered.mcdonald@lcb.state.nv.us; Moira Kolada <mkolada@ndow.org>; rwarnold@hotmail.com; bob@intermountainrange.com; JEnglish@washoecounty.us; Valerie King <vking@ndep.nv.gov>; robert.turner.3@us.af.mil; Robert.rule@navy.mil; Alysa.Keller@lcb.state.nv.us; Cayenne Engel <cengel@forestry.nv.gov>; larry.m.cruz.civ@mail.mil; ekingsland@lands.nv.gov; charles.r.king104.civ@mail.mil; Matt Maples <mmaples@ndow.org>; Tracy Kipke <tkipke@ndow.org>; Jennifer Newmark <jnewmark@ndow.org>; Kris n Szabo <kszabo@heritage.nv.gov>; Paul.Ryan@nv.usda.gov; Shirley DeCrona <sdecrona@parks.nv.gov>; Lori Story <lstory@ag.nv.gov>; Anna Higgins <ahiggins@forestry.nv.gov>; Gary Reese <greese@forestry.nv.gov>; Ian Kono <ikono@parks.nv.gov>; Bob J. Halstead <bhalstead@nuc.state.nv.us>; RBonner@dot.state.nv.us; mlanham@landercountynv.org; Meghan Brown <m.brown@agri.nv.gov>; lgroffman@dot.state.nv.us; tmueller@dot.state.nv.us; kverre@dot.state.nv.us; mcosta@dot.state.nv.us; skanderson@gov.nv.gov; Kacey KC <kaceykc@forestry.nv.gov>; conlee@ndow.org; clucido@admin.nv.gov; Birgit Widegren <bwidegren@ndep.nv.gov>; Kim Rigdon <krigdon@ndep.nv.gov>; KHaukohl@dot.state.nv.us; Greg Lovato <glovato@ndep.nv.gov>; Peggy Roefer <proefer@crc.nv.gov>; pwallish@diversifynevada.com; andrea.randall@snwa.com; cerquiaga@trcp.org; eric Miskow <emiskow@heritage.nv.gov>; esmboc@gmail.com; Janice Keillor <jkeillor@parks.nv.gov>; Seth W. Johnson <swjohnson@puc.nv.gov>; Kelly McGowan <kmcgowan@sagebrusheco.nv.gov>; brian.r.hunsaker.mil@mail.mil; Kelli Anderson <kanderson@dps.state.nv.us>; Garrett Wake <gwake@minerals.nv.gov>; Jasmine Kleiber <jkleiber@ndow.org>; m@rubaldandassociates.com; mmiller@fallonnevada.gov; Caleb McAdoo <cmcadoo@ndow.org>; genevieve_skora@fws.gov; aevans@nvnaco.org; Gwen Barrett <gbarrett@dps.state.nv.us>; Bart Chambers <bchambers@dps.state.nv.us>; Wendi Wyatt <wendi.wyatt@dps.state.nv.us>; Chris na Wilson <cswilson@dps.state.nv.us>; e stahler@lands.nv.gov; Greg.e.mckay@gmail.com; tara_vogel@fws.gov; Clifford Banuelos <cbanuelos@ndep.nv.gov>; Mark Enders <menders@ndow.org>; Jenni Jeffers <jjeffers@ndow.org>; Kenny Pirkle <kpirkle@ndow.org>; lee_carranza@fws.gov; chad_mellison@fws.gov; Jason Salisbury <jsalisbury@ndow.org>; ann.bedlion@navy.mil; donna.withers@navy.mil; Kris Urquhart <kurquhart@ndow.org>; susan_e_cooper@fws.gov; Dan Huser <dhuser@sagebrusheco.nv.gov>; Bettina Scherer <bscherer@dcnr.nv.gov>; Sandy Quilici <squilici@dcnr.nv.gov>; Samantha Thompson <SThompson@dcnr.nv.gov>; Catherine Erskine <c.erskine@dcnr.nv.gov>; John Christopherson <jchrist@forestry.nv.gov>; Ryan S. Shane <rshane@forestry.nv.gov>; Chris Thorson <cthorson@water.nv.gov>; EQuaglieri@carson.org; shoover@nvnaco.org; tyler@nevadadc.org; ckincheloe@carson.org; Deann M. McKay <dmckay@lands.nv.gov>; cgiesinger@washoecounty.us; Zach E. Ormsby <zormsby@parks.nv.gov>; Kelly Thomas <kelly.thomas@ndep.nv.gov>; Sarah Hills <shills@ndep.nv.gov>; Stephanie Simpson <s.simpson@ndep.nv.gov>; Micheline Fairbank <mfairbank@water.nv.gov>; Andre Emme <aemme@lands.nv.gov>; Samatha

R. Essig <sessig@parks.nv.gov>; David Bobzien <dbobzien@energy.nv.gov>; ddavis@unr.edu; munteanj@unr.edu; jprice@unr.edu; bthompson@dot.state.nv.us; Lowell Price <lprice@minerals.nv.gov>; Sherry Rupert <srupert@nic.nv.gov>
**Subject:** Nevada State Clearinghouse No ce E2019-130 (E2019-130 EA Prepara on - USAF Davis-Monthan Air Force Base Personnel Recovery Training Program)

**NEVADA STATE CLEARINGHOUSE**
Department of Conservation and Natural Resources, Division of State Lands
901 S. Stewart St., Ste. 5003, Carson City, Nevada 89701-5246
(775) 684-2723 Fax (775) 684-2721

TRANSMISSION DATE: 07/03/2019

U.S. Air Force

**Nevada State Clearinghouse Notice E2019-130**

**Project: E2019-130 EA Preparation - USAF Davis-Monthan Air Force Base Personnel Recovery Training Program**

Follow the link below to find information concerning the above-mentioned project for your review and comment.

E2019-130 - http://clearinghouse.nv.gov/public/Notice/2019/E2019-130.pdf

- **Please evaluate this project's effects on your agency's plans and programs and any other issues that you are aware of that might be pertinent to applicable laws and regulations.**
- **Please reply directly from this e-mail and attach your comments.**
- **Please submit your comments no later than Friday August 2nd, 2019.**

Clearinghouse project archive

Questions? Andre Emme, Program Manager, (775) 684-2733 or nevadaclearinghouse@state.nv.us

___X_No comment on this project ____Proposal supported as written

AGENCY COMMENTS:

Signature: Jim Balderson P.E.



Date: 07/18/2019

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Requested By:

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Distribu on:
- 99ABW Nellis
- Department of Conserva on & Natural Resources
- Division of Emergency Management
- Intermountain Range

Alan Jenne - Department of Wildlife, Elko
Alisa Huckle - UNR Library
Alisanne Maffei - Department of Administra□on
Alysa Keller - Legisla□ve Counsel Bureau
Amanda Evans - NACO
Andre Emme - Nevada Division of State Lands
Andrea Randall - Southern Nevada Water Authority
Ann Bedlion - NAS Fallon
Anna Higgins - Nevada Division of Forestry
Bart Chambers - State Fire Marshall Office
Bettina Scherer - Conserva□on Districts
Bill Thompson - Department of Transporta□on, Avia□on
Birgit Henson - NDEP
Bob Turner - Nellis AFB
Caleb McAdoo - NDOW
Carl Erquiaga - Theodore Roosevelt Conserva□on Partnership
Cathy Erskine - Dept of Conserva□on and Natural Resources
Cayenne Engel - Nevada Division of Forestry
Chad Giesinger - Washoe County
Chad Mellison - U.S. Fish and Wildlife Service
Chelsea Kincheloe - Carson City Parks, Recrea□on and Open Spaces Department
Chris Thorson - Division of Water Resources
Chris□na Wilson - State Fire Marshall Office
Chuck King - Hawthorne Army Depot
Clifford Banuelos - Inter-Tribal Council of Nevada, Inc.
Connie Lee - NDOW
Connie Lucido - Department of Administra□on
Cory Lytle - Lincoln County
Craig Mor□more - Wild Nevada
D. Bradford Hardenbrook - Department of Wildlife, Las Vegas
Dan Huser - Sagebrush Ecosystem Technical Team
David Bobzien - Nevada State Energy Office
David David - UNR Bureau of Mines
David Mouat - Desert Research Ins□tute
Deann McKay - State Land Office
Donna Withers - NAS Fallon
Ed Ryan - Smith and Mason Valleys Conserva□on District
Eddy Quaglieri P.E. - Carson City Public Works Department
Elizabeth A. Harrison - Tahoe Resource Team - Division of State Lands
Ellery Stahler - Nevada Division of State Lands
Eric Miskow - Nevada Natural Heritage Program
Garrett Wake - Nevada Division of Minerals
Gary Reese - Nevada Division of Forestry
Genevieve A. Skora - US Fish and Wildlife Service
Greg Lovato - NDEP
Greg McKay - NV OHV Commission
Gwen Barrett - Fire Marshal Office
Ian Kono - Nevada Division of Water Resources
J Crandell - Colorado River Commission of Nevada
James D. Morefield - Natural Heritage Program
Janice Keillor - Nevada Division of State Parks
Jasmine Kleiber - NDOW
Jason Salisbury - Nevada Department of Wildlife
Jenni Jeffers - Nevada Department of Wildlife

Jennifer Newmark - NDOW - Wildlife Diversity
Jered McDonald - Legisla□ve Counsel Bureau
Jim Balderson - NDEP
Jim English - Washoe County
John Christopherson - Nevada Division of Forestry
John Muntean - UNR Bureau of Mines
Jon Price - UNR Bureau of Mines
Kacey KC - Nevada Division of Forestry
Karen Beckley - State Health Division
Kelli Anderson - Division of Emergency Management
Kelly Eagan - Esmeralda County
Kelly McGowan - Sagebrush Ecosystem Technical Team
Kelly Thomas - NDEP
Kenny Pirkle - Nevada Department of Wildlife
Kevin Verre - NDOT
Kim Borgzinner - NDEP
Kris Urquhart - Nevada Department of Wildlife
Kris□n Szabo - Nevada Natural Heritage Program
Kurt Haukohl - NDOT
Larry Cruz - Hawthorne Army Depot
Lee Ann Carranza - U.S. Fish and Wildlife Service
Lee Bonner - NDOT
Lindsey Lesmeister - NDOW
Lori M. Story - Attorney General
Louis Groffman - Nevada Department of Transporta□on
Lowell Price - Commission on Minerals
Major Brian Hunsaker - Nevada Na□onal Guard
Mark Costa - NDOT
Mark Enders - NDOW
Mark Freese - Department of Wildlife
Matt Maples - NDOW
Meghan Brown - Dept of Agriculture
Michael J. Stewart - Legisla□ve Counsel Bureau
Michael Visher - Division of Minerals
Micheline Fairbank - Nevada Division of Water Water Resources
Mike Miller - City of Fallon Public Works
Mitch Ison - NDOT
Miteshell Lanham - Lander County
Moira Kolada - NDOW
Peggy Roefer - Colorado River Commission
Peter Wallish - Governor's Office on Economic Development
Rebecca Palmer - State Historic Preserva□on Office
Rich Perry - Nevada Division of Minerals
Richard Arnold - Nevada Indian Commission
Robert Halstead - Nevada Agency for Nuclear Project
Robert Rule - NAS Fallon
Ryan Shane - Nevada Division of Forestry
Samantha R. Essig -
Samantha Thompson - Dept of Conserva□on and Natural Resources
Sandy Hoover - Nevada Associa□on of Coun□es
Sandy Quilici - Department of Conserva□on & Natural Resources
Sarah Hills - NDEP
Seth Johnson - Public U□li□ es Commission
Sheila Anderson - Governor's Office

Sherry Rupert - Indian Commission
Shimi Mathew - Nellis AFB
Shirley DeCrona - Nevada Division of State Parks
Stephanie Simpson - NDEP
Susan Cooper - US Fish and Wildlife Service
Susan Scholley - Legisla□ve Counsel Bureau
Tara Vogel - US Fish and Wildlife Service
Tim Mueller - Department of Transporta□on
Tim Rubald -
Tod Oppenborn - Nellis Air Force Base
Tracy Kipke - NDOW
Tyler Klimas - Washington Office
Valerie King - NDEP
Warren Turkett - Colorado River Commission of Nevada
Wendi Wyatt - State Fire Marshall Office
Wes Henderson - Nevada League of Ci□es
Zach Ormsby -
Zip Upham - NAS Fallon

**Consultation Letters and Responses**

**(Section 7 – U.S. Fish and Wildlife; and**

**Section 106 -- State Historic Preservation Office and Tribal)**

**Section 7 – U.S. Fish and Wildlife Consultation Letter and Response**

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

24 September 2019

Mr. Scott Richardson
Arizona Ecological Services Office
US Fish and Wildlife Service
201 N. Bonita Avenue, Suite 141
Tucson, AZ 85745

**Subject:** **Section 7 Informal Consultation for the Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Richardson:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential environmental impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (Proposed Action) in accordance with the National Environmental Policy Act (NEPA). The environmental impact process for this Proposed Action is being conducted by the USAF in accordance with the Council on Environmental Quality regulations pursuant to requirements of NEPA. The USAF is complying with Section 7 of the Endangered Species Act (ESA) and Fish and Wildlife Coordination Act concurrently with development of the EA as recommended by NEPA's implementing regulations Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 50 CFR Section 402.13, this letter initiates Section 7 consultation for this Proposed Action and requests your input on the Proposed Action.

The purpose of the Proposed Action is to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations. PR training participants would include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) Interagencies, and Foreign Partner Nations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense*, defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. The PR training needs to provide the most realistic PR training environment available to USAF PR forces so that it complies with DoD Directive 3002.01E, as well as Air Force Policy Directive 10-30, *Personnel Recovery*. The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites which have the required characteristics for PR training activities. Commanders face challenges in ensuring that routine and formal training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

Under the Proposed Action, the USAF is proposing to improve PR training conducted throughout the southwestern United States (U.S.). This would include routine and specialized formal training for PR forces as well as Large Force joint/multi-national events. The Proposed Action would authorize additional training sites, and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, there would be no change in the organizations at Davis-Monthan AFB that conduct the training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities would be centered out of Davis-Monthan AFB, Arizona and would be conducted in Arizona, California, Nevada, and New Mexico in areas that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action and No-Action Alternative. A total of 181 sites may be utilized during PR

training, 160 of which are already authorized and used for PR training. Under the Proposed Action, 21 additional sites would be authorized for use. Specifically, the Proposed Action would include using DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations. Proposed PR training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan AFB. Given the complexity of the Proposed Action and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three probable PR training and event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies. If changes occur to proposed PR training sites, that information will be provided to you. The Proposed Action is described in further detail in the attached Biological Evaluation (BE).

Please note that the proposed San Clemente Island and Leon PR training sites in California and White Sands Missile Range (WSMR) PR training sites in New Mexico shown in Attachment 1 are not part of this consultation. These proposed PR training activities and sites were previously addressed under separate Proposed Actions where Section 7 consultation was completed (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final Environmental Impact Statement/Overseas Environmental Impact Statement for the San Clemente Island and Leon PR training sites; and WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015-2019 Integrated Natural and Cultural Resources Management Plan and EA for the WSMR PR training sites). In addition, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the Proposed Action and is currently coordinating with the USMC. These proposed MCB Camp Pendleton PR training sites are provided in Attachment 1 for reference purposes only and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they would engage in Section 7 consultation related to proposed activities on their property at that time.

The USAF has determined in the attached BE that this proposal "may affect, but is unlikely to adversely affect" bonytail chub, Gila chub, little Colorado spinedace, spikedace, Gila trout, Gila topminnow, Colorado pikeminnow, loach minnow, razorback sucker, three forks springsnail, Sonoran tiger salamander, arroyo toad, Sonoyta mud turtle, northern Mexican gartersnake, narrow-headed gartersnake, yellow-billed cuckoo, Sonoran pronghorn, Mexican wolf, Stephens' kangaroo rat, Mexican long-nosed bat, or jaguar.

In addition the USAF determined that this proposal "may affect, but is unlikely to adversely affect" the following species for the reasons outlined below:

- For the Chiricahua leopard frog – training activities would be limited to areas where human activity is more prevalent, riparian habitat would be avoided, and training would avoid the breeding season;
- For the Southwestern willow flycatcher – training activities would avoid areas of heavy riparian vegetation;
- For the Northern aplomado falcon – training activities would be scheduled outside of the breeding season;
- For the Yuma clapper rail and Least Bell's vireo – training activities would be scheduled outside of the breeding season and areas of heavy riparian vegetation would be avoided;
- For the Mexican spotted owl – training activities would be scheduled outside the nesting season.
- For the New Mexico meadow jumping mouse – training would be limited to daytime activities during the active season in order to avoid disrupting the mouse's nocturnal activities;
- For the thread-leaved brodiaea, Pima pineapple cactus, Nichol's Turk's head cactus, acuna cactus, and Fickeisen plains cactus – training activities would avoid respective blooming periods.

Effect on Critical Habitats

The USAF has determined that impacts are not expected to occur on designated critical habitats for bonytail chub, Gila chub, little Colorado spinedace, spikedace, Colorado pikeminnow, loach minnow, razorback sucker, three forks springsnail, arroyo toad, Chiricahua leopard frog, northern Mexican gartersnake, narrow-headed gartersnake, southwestern willow flycatcher, Mexican spotted owl, Least Bell's vireo, jaguar, New Mexico meadow jumping mouse, thread-leaved brodiaea, acuna cactus, and Fickeisen plains cactus as a result of the Proposed Action. To avoid impacts on yellow-billed cuckoo proposed critical habitat, personnel involved in the training activities would avoid entering Lake Patagonia in riparian areas with heavy vegetation and unstable shoreline, and the proposed PR training activities would not adversely modify proposed critical habitat.

Please let us know if you concur with our species identification and effect determination. Please provide your written concurrence of the USAF's determination to Mr. Kevin Wakefield, 355 CES/CEIE, by mailing address at 3775 South 5th Street, Davis-Monthan AFB, AZ 85707-4927; by e-mail at kevin.wakefield.1@us.af.mil; or by phone at 520-228-4035.

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

Attachment:

1. Biological Evaluation for the Davis-Monthan Air Force Base Personnel Recovery Training Program

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Monday, December 2, 2019 7:48 AM
**To:** Richardson, Scott
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya
**Subject:** RE: [Non-DoD Source] Re: [EXTERNAL] Section 7 ESA Informal Consultation Follow-up

Hey Scott, yes they are listed in the EA because of NEPA, they only occur on Camp Pendleton and can be removed from the consultation. Camp Pendleton has stated that they will consult separately with the USFWS for those species and will provide us with specific operating procedures for use of those sites.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** Richardson, Scott <scott_richardson@fws.gov>
**Sent:** Monday, November 25, 2019 12:29 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Re: [Non-DoD Source] Re: [EXTERNAL] Section 7 ESA Informal Consultation Follow-up

Hi Kevin,
I am working on this a bit today. I noticed that the request for consultation letter indicated that the stuff on Camp Pendleton is not included in the consultation, but there are a number of species that only occur on Camp Pendleton in the request for consultation. Can I move forward with the understanding that those species are in there because of the NEPA, but should not be included in this consultation? Specifically we are talking about the Arroyo Toad, Least Bell's vireo, Stephan's kangaroo rat, and Thread-leaved brodiaea. Can I delete these from the consultation?

Thanks,
Scott

On Fri, Nov 22, 2019 at 3:02 PM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

> Thanks,

kevin

**From:** Richardson, Scott <scott_richardson@fws.gov>
**Sent:** Friday, November 22, 2019 2:53 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>
**Subject:** Re: [Non-DoD Source] Re: [EXTERNAL] Section 7 ESA Informal Consultation Follow-up

Indeed it would have, but it is what it is. Thanks for the quick response and I hope you all have a great Thanksgiving as well.

Scott

On Fri, Nov 22, 2019 at 2:28 PM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

> Scott, I wish we would have done it that way. Just adding to the existing consultation already completed would have been an easier process.
>
> The 10 Dec 2019 completion date should work for us.
>
> Thank you, and have a Great Thanksgiving!
>
> v/r kevin
>
> Kevin Wakefield, GS-12, DAFC

Base Natural and Cultural Resource Manager

EIAP Program Manager

355 CES/CEIE

3775 South Fifth Street

Davis-Monthan AFB AZ 85707-3012

Email: kevin.wakefield.1@us.af.mi

DSN: 228-4035

Comm: (520) 228-4035

**From:** Richardson, Scott <scott_richardson@fws.gov>
**Sent:** Friday, November 22, 2019 1:15 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Re: [Non-DoD Source] Re: [EXTERNAL] Section 7 ESA Informal Consultation Follow-up

Hi Kevin,

I am going through the request for consultation and associated BE for the Davis-Monthan Air Force Base Personnel Recovery Training Program. I was thinking this consultation would only be for the 21 additional sites being considered for authorization, but as I read through the materials, it looks like you are requesting consultation for the entire program of 181 sites. Am I reading this correctly? If I am, I was probably a little optimistic about getting through this by COB on Monday. I will be out of the office from November 26 through December 2 for the Thanksgiving holiday. I can probably work on this most of the week I get back, but a realistic date for completion is probably closer to December 10 given my other workload. Please let me know how this revised timeline for completion will work with your NEPA requirements. I apologize for not looking at this sooner and not realizing the scope of the request.

Thank you,

Scott

Scott Richardson

U.S. Fish and Wildlife Service

Tucson Suboffice

(520) 670-6150 x 242

On Wed, Nov 20, 2019 at 1:31 PM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

> Thank you sir for the update.
>
> v/r kevin
>
> Kevin Wakefield, GS-12, DAFC
>
> Base Natural and Cultural Resource Manager
>
> EIAP Program Manager
>
> 355 CES/CEIE
>
> 3775 South Fifth Street
>
> Davis-Monthan AFB AZ 85707-3012
>
> Email: kevin.wakefield.1@us.af.mi
>
> DSN: 228-4035
>
> Comm: (520) 228-4035
>
> **From:** Richardson, Scott <scott_richardson@fws.gov>
> **Sent:** Wednesday, November 20, 2019 1:20 PM

**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] Re: [EXTERNAL] Section 7 ESA Informal Consultation Follow-up

Hi Kevin,

Thanks for following up on this project and consultation request. I have the documents, but have not had time to get started on the consultation yet. I intend to get started on it this week and anticipate being able to wrap it up by COB on Monday. You should see our concurrence letter sometime shortly after that. Thanks for you patience.

Scott Richardson

U.S. Fish and Wildlife Service

Tucson Suboffice

(520) 670-6150 x 242

On Tue, Nov 19, 2019 at 10:41 AM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

> Dear Mr. Richardson, writing to request the status of the Section 7 ESA Informal Consultation request submitted to your office on 26 Sep 2019.
>
> Attached is a copy of our letter dated 24 Sep 2019 making the request and a copy of the FedEx Delivery document.
>
> The Air Force and our contractor is working to finish the Final EA, but we need your consultation to complete it.
>
> Thank you,
>
> Kevin Wakefield, GS-12, DAFC
>
> Base Natural and Cultural Resource Manager
>
> EIAP Program Manager

355 CES/CEIE

3775 South Fifth Street

Davis-Monthan AFB AZ 85707-3012

Email: kevin.wakefield.1@us.af.mi

DSN: 228-4035

Comm: (520) 228-4035

# United States Department of the Interior
## Fish and Wildlife Service
**Arizona Ecological Services Office**
9828 North 31st Avenue
Phoenix, Arizona 85051
Telephone: (602) 242-0210 Fax: (602) 242-2513


AESO/SE
02EAAZ00-2020-I-0217

December 17, 2019

Mr. Kevin Wakefield
355 CES/CEIS
3775 South 5th Street
Davis-Monthan Air Force Base
Tucson, Arizona 85707-4927

Dear Mr. Wakefield:

Thank you for your correspondence of September 24, 2019, received on October 1, 2019, which included the "Biological Evaluation (BE) for the Davis-Monthan Air Force Base Personnel Recovery Training Program (proposed action)." This letter documents our review of the proposed action, conducted in Arizona, California, Nevada, and New Mexico, in compliance with section 7 of the Endangered Species Act of 1973 (ESA) as amended (16 U.S.C. 1531 et seq.). You concluded that the proposed project "may affect, but is not likely to adversely affect" the bonytail chub (*Gila elegans*), Gila chub (*Gila intermedia*), little Colorado spinedace (*Lepidomeda vittata),* spikedace (*Meda fulgida*), Gila trout (*Oncorhynchus gilae*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), Colorado pikeminnow (*Ptychocheilus lucius*), loach minnow (*Tiaroga cobitis*), razorback sucker (*Xyrauchen texanus*), three forks springsnail (*Pyrgulopsis* trivialis), Chiricahua leopard frog (*Lithobates chiricahuensis*), Sonoran tiger salamander (*Ambystoma mavortium stebbensi*), Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*), arroyo toad (*Anaxyrus californicus*), northern Mexican gartersnake (*Thamnophis eques megalops*) and its proposed critical habitat, narrow-headed gartersnake (*Thamnophis rufipunctatus*) and its proposed critical habitat, Mexican spotted owl (*Strix occidentalis lucida*), southwestern willow flycatcher (*Empidonax traillii extimus*), yellow-billed cuckoo (*Coccyzus americanus*) and its proposed critical habitat, northern aplomado falcon (*Falco femoralis septentrionalis*), least Bell's vireo (*Vireo bellii* pusillus), Yuma clapper rail (*Rallus longirostris browni*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), Mexican gray wolf (*Canis lupus baileyi*), Stephens' kangaroo rat (*Dipodomys stephensi*), jaguar (*Panthera onca*), New Mexico jumping mouse (*Zapus hudsonius luteus*), Mexican long-nosed bat (*Leptonycteris nivalis*), thread-leaved brodiaea (*Brodiaea filifolia*), Cochise pincushion cactus (*Coryphantha robbinsorum*), Pima pineapple cactus (*Coryphantha scheeri var* robustispina), Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var *nicholii*), acuna catus (*Echinomastus erectocentrus var.* acunensis), and Fickeisen plains cactus (*Pediocactus peeblesianus* var. *fickeisniae*). You determined there would be "no effect" from your proposed

action to proposed or designated critical habitat for these species (as applicable), with the exception of the narrow-headed gartersnake, the northern Mexican gartersnake, the yellow-billed cuckoo, and the Sonoyta mud turtle. Because critical habitat is proposed for these four species, this document represents a conference report related to these proposed critical habitats.

Description of the Proposed Action

The U.S. Air Force (USAF) is proposing to improve Personnel Recovery (PR) training conducted throughout the southwestern United States. This would include routine and specialized formal training of PR forces, as well as Large Force joint/multi-national events. The proposed action authorizes additional training sites and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, there would be no change in the organizations at Davis-Monthan Air Force Base that conduct this training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities would be centered out of Davis-Monthan Air Force Base, Arizona, and would be conducted in Arizona, California, Nevada, and New Mexico. Training would be in areas that are previously disturbed or are currently or previously used for activities similar to those proposed under the Proposed Action.

A total of 181 sites may be utilized during PR training, 160 of which are already authorized and used for PR training. Under the Proposed Action, 21 additional sites would be authorized for use. Specifically, the Proposed Action would include using Department of Defense (DOD) and non-DOD properties for ground, flight (including activation of a Temporary Military Operations Area (MOA) above the Playas Training and Research Center), and water operations. The proposed PR training would involve related DOD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan Air Force Base. Given the complexity of the Proposed Action and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three probable PR training and event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training).

If changes occur to proposed PR training sites, that information will be provided to the U.S. Fish and Wildlife Service (FWS). In addition, the USAF is considering PR training sites at U.S. Marine Corps Base Camp Pendleton as part of the Proposed Action and is currently coordinating with the Marine Corps. These potential sites are not part of this consultation. If a training event is proposed for any of these Camp Pendleton sites, the Marine Corps has indicated that they would engage in Section 7 consultation related to the proposed activities at that time.

A complete description of the proposed action is found in your September 29 Biological Evaluation (BE). This document is included in this consultation by reference. Specifically, Sections 2.1.4.1 through 2.1.4.20 describe each of the proposed training activities. The associated tables, Table 2.1-1 though Table 2.1-26, give specific descriptions of the PR training events within each event scale for the Proposed Action. Table 2.3-1 describes the proposed PR training activities by land management entity. Tables 4-1 through 4-4 categorize the training sites by land management agency. In summary, Attachment 1 of the BE is the proposed PR training summary description by training site and includes information related to location, land

management agency or entity, types of training activities occurring on each site, and MOAs and other airspace requirements. This summary attachment is essentially the specific description of the Proposed Action.

DETERMINATION OF EFFECTS

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the Gila chub, razorback sucker, Chiricahua leopard frog, Sonoran tiger salamander, northern Mexican gartersnake, narrow-headed gartersnake and its proposed critical habitat, Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, Yuma clapper rail, jaguar, New Mexico jumping mouse, lesser long-nosed bat, and Fickeisen plains cactus. Due to the number of different activities associated with this proposed action, the number of different locations where the activities may occur across the State of Arizona, and the number of different listed species potentially affected by these activities, we will use tabular format in providing our rational for concurrence for each species – using concurrence factors provided in Table 3 below. The description of the proposed action (activity codes) and training sites reference the descriptions found in the BE.

Table 3. Concurrence factors.

| Code | Concurrence Factor |
|---|---|
| CF1 | Limited area affected by activity. |
| CF2 | Low likelihood of species presence during project activities. |
| CF3 | Limited duration of activities. |
| CF4 | Project site habitat attributes unfavorable for species presence. |
| CF5 | Project activities occur when species is inactive. |
| CF6 | One or more conservation measures and/or best management practices effectively render effects discountable or insignificant. |
| CF7 | Changes to habitat attributes anticipated to be minimal or will not occur. |
| CF8 | Any habitat attribute(s) that are affected are well-replicated adjacent to project site. |
| CF9 | Project site attributes discourage species presence or minimize species response. |
| CF10 | Project activity spatially removed from most suitable habitat. |
| CF11 | Potential change in human recreation/visitation level as a result of project implementation expected to be insignificant, discountable, or not expected to occur. |
| CF12 | Project activity not anticipated to appreciably alter habitat function. |

## Bonytail Chub

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Colorado River | W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** While the proposed action could result in some short-term, but negligible effects to water quality and aquatic and riparian habitat, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of bonytail chub are extremely unlikely to occur (discountable). | | | |

## Gila Chub

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF4, CF7, CF 9, CF10, CF 11, CF12 | The Little Outfit site is partially within private pasture lands and is within 500 feet of Turkey Creek. Vegetation cover for the site includes 80 percent grasses and 20 percent bare ground. |
| **Concurrence Rationale:** The proposed action will primarily occur outside of occupied habitat with the exception of foot traffic, occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Gila chub are extremely unlikely to occur (discountable). The potential for liberation of sediment into Turkey Creek is the primary concern but, for the reasons described above, is unlikely to adversely affect this species in any meaningful or measurable way. | | | |

## Little Colorado Spinedace

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF6, CF7, CF10, CF11, CF12 | The vegetation at the Jacks Canyon site is sparse with patches of Great Basin Conifer Woodland. An ephemeral stream is located within 500 feet. The stream side vegetation is not dense, but does contain cottonwood and other riparian tree species. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the spinedace and would occur in previously disturbed areas. No traffic would occur within the creek. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of the little Colorado spinedace are extremely unlikely to occur (discountable). | | | |

## Spikedace

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the spikedace and would occur in previously disturbed areas. Some amphibious operations could happen where spikedace occur, but spikedace are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of spikedace are extremely unlikely to occur (discountable). | | | |

**Gila Trout**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Negrito North | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | This site occurs in a montane meadow surrounded by Petran Montane Conifer Forest. An ephemeral stream runs through the site, pooling at the western edge of the meadow. |
| Catron County Fairgrounds | G1, G2, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | The site occurs within a disturbed area of Great Basin Conifer Woodland. An ephemeral stream is south of the site. |
| Sprucedale Guest Ranch | G1 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | This site is in a montane meadow that has been previously developed for residential and ranching purposes. It is surrounded by Petran Montane Conifer Forest. A tributary to the Black River runs approximately 280 feet south of the project. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Gila trout and would occur in previously disturbed areas. It is unlikely that any activities would occur within any of the nearby potential Gila trout habitat. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Gila trout are extremely unlikely to occur (discountable). | | | |

**Gila Topminnow**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Lake Pleasant | W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF4, CF7, CF9, CF10, CF11, CF12 | This site has an unnamed creek is locate east of the Little Outfit site that is potentially Gila Topminnow habitat. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Gila topminnow and would occur in previously disturbed areas. Some amphibious operations could happen where Gila topminnow occur, but Gila topminnow are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering | | | |

| |
|---|
| of Gila topminnow are extremely unlikely to occur (discountable). |

**Colorado Pikeminnow**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF7, CF11, CF12 | This site occurs in a deep canyon in Interior Chaparral. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Riparian, vegetation occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Colorado pikeminnow and would occur in previously disturbed areas. Some amphibious operations could happen where Colorado pikeminnow occur, but Colorado pikeminnow are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Colorado pikeminnow are extremely unlikely to occur (discountable). | | | |

**Loach Minnow**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Catron County Fairgrounds | G1, G2, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | The site occurs within a disturbed area of Great Basin Conifer Woodland. An ephemeral stream is south of the site. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Loach minnow and would occur in previously disturbed areas. It is unlikely that any activities would occur within any of the nearby potential Loach minnow habitat. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Loach minnow are extremely unlikely to occur (discountable). | | | |

**Razorback Sucker**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Riparian, vegetation occurs along the opposite bank line. This site is heavily |

| | | | |
|---|---|---|---|
| | W2 | | disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF7, CF11, CF12 | This site occurs in a deep canyon in Interior Chaparral. |
| Colorado River | W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Razorback Sucker and would occur in previously disturbed areas. Some amphibious operations could happen where Razorback Sucker occur, but Razorback Sucker are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of razorback suckers are extremely unlikely to occur (discountable). | | | |

**Three Forks Springsnail**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF6, CF7, CF11, CF12 | The Caldwell Meadows site occurs in a montane meadow surrounded by Petran Montane Conifer Forest. A small stream, tributary to the Black River, runs through the site. The West Fork of the Black River is approximately 800 feet north of the site. |
| **Concurrence Rationale:** Training activities will avoid the banks of the tributary to the Black River and the Black River itself, reducing the potential for direct impacts and increased sedimentation. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of the Three Forks springsnail are extremely unlikely to occur (discountable). | | | |

**Chiricahua Leopard Frog**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Devon | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Devon site occurs along the USFS Road 4186 and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. The tree cover in the area could provide habitat for transient Chiricahua leopard frogs. |
| Saddle Mountain | G1, G2, G3, G6, F1, F3, F4, | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, | This helicopter landing zone is located in the Great Basin Grassland vegetation community |

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|---|---|---|---|
| East | F5, F7, F9, F10 | CF11, CF12 | with about 97 percent grass cover and 5 percent shrub cover. A spatially intermittent stream (unidentified) runs along the southern edge of the site. About 820 feet downstream from the site, sparse mature cottonwoods occur which might provide nesting habitat for raptors or riparian birds during breeding season. There is also a rock outcrop approximately 656 feet east of the site. Bog Hole Tank in the San Rafael Valley is over 3,280 feet south. A Forest access road routed through the site, low off-highway vehicle activity, and moderate grazing characterize potential disturbances in the area. |
| Saddle Mountain South | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone is within the Great Basin Grassland vegetation community. Bog Hole Tank in the San Rafael Valley occurs approximately 0.75 mile southeast of the site. There is little human activity at the site, consisting of a Forest access road of limited use, and limited livestock grazing. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential riparian habitat occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian |

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|---|---|---|---|
| | | | vegetation may provide habitat for Chiricahua leopard frogs. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF2, CF3, CF4, CF7, CF9, CF10, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F5, F7 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The site occurs less than 500 feet from the East Verde River, within Interior Chaparral vegetation. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Sprucedale Guest Ranch | G1 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This site is within Mohave desertscrub and is 500 feet from an area where water pools. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Chiricahua leopard frogs are extremely unlikely to occur (discountable). The Chiricahua leopard frog is not expected to occur in the vicinity of any of the sites analyzed for impacts. Furthermore, to avoid adverse impacts on the Chiricahua leopard frog, personnel would limit their training activities at these sites to areas where human activity is more prevalent, avoid riparian habitat, as well as avoid this species' breeding season, when possible. | | | |

**Sonoran Tiger Salamander**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Sonoran tiger salamanders are extremely unlikely to occur (discountable). The Sonoran tiger salamander is unlikely to | | | |

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| occur on this site due to the limited aquatic habitat in the area and disturbed condition of terrestrial habitat on site limiting its value to the salamander. Furthermore, to avoid adverse impacts on the Sonora tiger salamander, personnel would avoid aquatic habitat when conducting activities at this site. |

**Sonoyta Mud Turtle and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This site is within Mohave desertscrub and is 500 feet from an area where water pools. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration in an area unlikely to support the Sonoyta mud turtle. Therefore, for the reasons listed above, adverse effects to breeding, feeding, or sheltering of Sonyta mud turtle are extremely unlikely to occur (discountable). The site does not contain any suitable elements of proposed critical habitat. | | | |

**Northern Mexican Gartersnake and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Spring Valley Cabin | G1, G2, G3, G4, F1, F3, F4 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site would be used for bivouacking and assembly. The site is east of FR 76 within Plains and Great Basin Grassland. |
| Mormon Lake – USFS Helitack Base | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site occurs within Montane Meadow surrounded by Petran Montane Forest and Mormon Lake. There are residential and commercial buildings approximately 100 feet to the west. The site contains a concrete helicopter landing pad. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Lake Pleasant | W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Colorado River | W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This site is within Mohave desertscrub and is 500 feet from an area where water pools. |
| Saddle Mountain East | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone is located in the Great Basin Grassland vegetation community with about 97 percent grass cover and 5 percent shrub cover. A spatially intermittent stream (unidentified) runs along the southern edge of the site. About 820 feet downstream |

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|---|---|---|---|
| | | | from the site, sparse mature cottonwoods occur which might provide habitat for northern Mexican gartersnakes. There is also a rock outcrop approximately 656 feet east of the site. Bog Hole Tank in the San Rafael Valley is over 3,280 feet south. A Forest access road routed through the site, low off-highway vehicle activity, and moderate grazing characterize potential disturbances in the area. |
| Saddle Mountain West | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a mix of Interior Chaparral and Madrean Evergreen Woodland with 25 percent tree cover, 20 percent shrub cover, with the remainder grass cover. Rock outcrops southeast of the site on the hill top could provide roosting habitat for bats.<br>Human disturbance in the area is minimal but includes a gravel Forest access road, a potentially inactive mining claim on the hill top to the southeast, and livestock grazing. |
| Saddle Mountain South | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone is within the Great Basin Grassland vegetation community. Bog Hole Tank in the San Rafael Valley occurs approximately 0.75 mile southeast of the site. There is little human activity at the site, consisting of a Forest access road of limited use, and limited livestock grazing. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for the northern Mexican gartersnake occurs in the riparian areas along the opposite bank line. This site is |

| | | | |
|---|---|---|---|
| | | | heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for northern Mexican gartersnakes. |
| Longview – USFS Helitack Base | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Longview site occurs in a montane meadow area within Petran Montane Conifer Forest, east of Highway 87 off of Forest Road 147E. There are residential buildings approximately 430 feet to the west and northwest of this helicopter landing zone. Two stock tanks occur 400 feet to the south. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. Roosevelt Lake occurs within the Arizona Upland subdivision of Sonoran Desertscrub. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Mogollon Rim (General Crook) | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | Within Petran Montane Conifer Forest, this helicopter landing zone occurs along the edge of the Mogollon Rim in a canopy opening along an unnamed dirt track road off of the "Rim Road" (or Forest Road 300). There is a stock tank 100 feet to the northwest of the site. |
| Metz Tank | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is located on Camp Navajo. It is Plains and Great Basin grasslands surrounded by Petran Montane Conifer Forest. |
| Navajo West | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is located on Camp Navajo. It is Plains and Great Basin Grasslands with an area where water pools within 500 feet to the east. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |

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| Sprucedale Guest Ranch | G1 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| Lee's Ferry | G1, G2, G3, G4, G6, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Lee's Ferry site occurs on previously land in Great Basin Desertscrub. This site occurs in a pull-off parking area off of Lees Ferry Road. The site is over 1,500 feet up from the Colorado River on its northern bank. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of northern Mexican gartersnakes are extremely unlikely to occur (discountable). Many training sites are extremely far-removed from any known currently or historically occupied areas. For other sites, the location and site characteristics make the presence of northern Mexican gartersnakes unlikely. Furthermore, to avoid impacts on this species, personnel involved in the training activities would avoid all riparian areas and/or concentrate in areas that already have high traffic use from recreational activities. No elements of proposed critical habitat will be significantly affected. | | | |

**Narrow-headed Gartersnake and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for the narrow-headed gartersnake occurs in the riparian area along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Glenwood Ranger Station | G1, G2, G3, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a |

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| | | | concrete helicopter landing pad. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of narrow-headed gartersnakes are extremely unlikely to occur (discountable). Based on the location and characteristics of the sites where the species could theoretically occur, the presence of narrow-headed gartersnakes is unlikely and potential effects from adverse human-snake interactions are therefore, also unlikely. Furthermore, to avoid impacts on this species, personnel involved in the training activities would avoid all riparian areas and/or concentrate in areas that already have high traffic use from recreational activities. Adverse effects to proposed critical habitat in the East Verde River and Salt River Subunits are also insignificant and discountable because little to no disturbance to habitat is expected. | | | |

## Mexican Spotted Owl

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Devon | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The Devon site occurs along the USFS Road 4186 in Madrean Oak Woodland, and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. The tree cover in the area could provide habitat for the Mexican spotted owl. |
| Mesa | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located on a mesa top in Semidesert Grassland, surrounded by Madrean Evergreen Woodland. The helicopter landing zone is along the western portion of the Galiuro Wilderness Area. The surrounding cliffs may provide roosting and nesting habitat for the Mexican spotted owl. Swam Springs and Redfield Creek are intermittent streams nearby which provide habitat for riparian prey species. This site is within the Galiuro Wilderness Area, where human disturbance is limited. A dirt access road occurs over a mile away with limited use by grazing permittees and recreational users. The only access to the site is by foot. |
| Redington Pass | G1, G2, G3, G4, G6, G7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is a designated off roading area. The site is in Semidesert Grassland. |
| Rucker | G1, G2, G3, G5, G6, F1, F3, F4, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is in Madrean Evergreen Woodland. |
| Charouleau Gap | G2, G3 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is a designated off roading area. The site is in Madrean Evergreen Woodland. |
| Negrito Airstrip | G1, G2, G3, G6, F1, F3, F5, F6, F7, F8, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito Center | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |

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| Negrito North | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest northeast of the Reserve Beaverhead Road. An ephemeral stream runs through the site and pools on the western edge of the meadow. |
| Negrito South | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito Helibase | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Rainy Mesa | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The site occurs at the edge of Petran Montane Forest northwest of the Reserve Beaverhead Road. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF3, CF6, CF7, CF11, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| HLZ 7 | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | The site is northeast of Antelope Lane within Great Basin Conifer Woodland. |
| HLZ 5 | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is east of McGee Road within Plains and Great Basin Grassland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Cattle | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is east of McGee Road within Plains and Great Basin Grassland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Sprucedale Guest Ranch | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| Black Mesa | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The Black Mesa site occurs in a previously disturbed meadow within Petran Montane Conifer Forest and contains cement helipads. There is a possible ephemeral drainage over 900 feet to the east of the site. The site is east |

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| | | | of Wallace Road, along a Forest Road. The vegetation on site is sparse. |
| Comanche | G1, G2, G3, G4, G6, F1, F3, F5, F7, F4 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs in a previously disturbed meadow within Petran Montane Conifer Forest area along Forest Road 700. The vegetation consists of predominately montane grass species with pine along the edges of the meadow. There are no riparian areas or aquatic habitat within 2,000 feet of the site. The closest water body is Ward Camp Tank over 2,000 feet south of the site. |
| Elk | G1, G2, G3, G4, G6, F1, F3, F5, F7, F4 | CF1, CF3, CF6, CF7, CF11, CF12 | The Elk site occurs in a meadow area within Petran Montane Conifer Forest, along an unnamed Forest Road that connects FR 867 and National Forest-3e. There is an unnamed stock pond approximately 450 feet to the west of the site. Vegetation in the area includes various conifer and montane grass species. |
| Flagstaff Hotshot - USFS Helitack Base | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs in a meadow area within Petran Montane Conifer Forest, off of North Snow Bowl Road. There are ranch buildings approximately 400 feet to the west, an unnamed stock pond approximately 780 feet south, and no trees within 400 feet of the site. |
| Hannagan Meadow | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The Hannagan Meadow site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191 in a disturbed meadow. The site contains a concrete helipad and is in close proximity to minor development. |
| Helibase Circular | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within the Hannagan Meadow site and contains a concrete helipad. |
| KP Circular | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The KP Circular site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191, in a disturbed meadow. The site contains a concrete helipad and is in close proximity to some minor development. |
| KP Tank | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The KP Tank is essentially the same as the KP Circular site. |
| L Tank | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is in Petran Montane Forest. |
| Longview – USFS Helitack Base | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The Longview site occurs in a montane meadow area within Petran Montane Conifer Forest, east of Highway 87 off of Forest Road 147E. There are residential buildings |

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| | | | approximately 430 feet to the west and northwest of this helicopter landing zone. Two stock tanks occur 400 feet to the south. |
| Mormon Lake - USFS Helitack Base | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs within Petran Montane Conifer Forest, in a meadow off of Forest Road 725. The site contains a concrete helipad and there are buildings approximately 100 feet to the west. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF3, CF6, CF7, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Spring Valley Cabin | G1, G2, G3, G4, F1, F3, F4 | CF1, CF3, CF6, CF7, CF11, CF12 | This site would be used for bivouacking and assembly. The site is east of FR 76 within Plains and Great Basin Grassland. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for Mexican spotted owls prey species and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for the narrow-headed gartersnake occurs in the riparian area along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Brooke | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is the top of a mesa within Semi-desert Grassland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Jenna | G6, F1, F3, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located on a hilltop within Great Basin Conifer Woodland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Fort Tuthill | G1, G2, G3, G6 | CF1, CF3, CF6, CF7, CF11, CF12 | This area will be used for billeting and as an operations center for training at Fort Tuthill Fairgrounds. It is located within Petran Montane Conifer Forest and is located within 500 feet of potential Mexican spotted owl nesting habitat. |

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| Saddle Mountain West | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This helicopter landing zone occurs in a mix of Interior Chaparral and Madrean Evergreen Woodland with 25 percent tree cover, 20 percent shrub cover, with the remainder grass cover. Human disturbance in the area is minimal but includes a gravel Forest access road, a potentially inactive mining claim on the hill top to the southeast, and livestock grazing. |
| Metz Tank | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located on Camp Navajo. It is Plains and Great Basin grasslands surrounded by Petran Montane Conifer Forest. |
| Navajo East | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Neill Flat | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Rogers Lake | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Rogers Napier | G1, G2, G3, G4, G6, G7, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Rogers Wren | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Mount Lemmon | G1, G2, G3, G6, F1, F3, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is more than 1,000 feet to the west of Catalina Highway along rocky outcrops surrounded by upland Sonoran Desertscrub vegetation, including juniper, manzanita, and low growing pines. The site is subject to high human recreational activity, such as rock climbing and hiking, as well as noise pollution from vehicles along Catalina Highway. |
| Ranger | G1, G2, G3, | CF1, CF3, CF6, CF7, | The Ranger helicopter landing zone site is |

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| | G6, F1, F3, F4, F5, F7, F9, F10 | CF11, CF12 | located within Madrean Evergreen Woodland consisting of 40 percent tree cover, 10 percent shrub cover, and 75 percent grass cover. The helicopter landing zone is 164 feet north of the Rucker USFS Fire Station. Rucker Creek is 0.5 miles southwest of the site and is seasonally intermittent. Human disturbance in the area includes a Forest road along the western edge, the USFS Rucker Fire Station to the south, livestock grazing, and recreational activity. |
| Overgaard | G1, G2, G3, G4, G6, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and contains a concrete helicopter landing pad. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Tribeland | G1, G2, G3, G4, G6, F1, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within Great Basin Desertscrub. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for Mexican spotted owls. |
| Mogollon Rim (General Crook) | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | Within Petran Montane Conifer Forest, this helicopter landing zone occurs along the edge of the Mogollon Rim in a canopy opening along an unnamed dirt track road off of the "Rim Road" (or Forest Road 300). There is a stock tank 100 feet to the northwest of the site. |
| **Concurrence Rationale:** Owls might temporarily flush from their roost, avoid the training area, or otherwise temporarily modify their behavior. However, training activities will avoid the March 1 through August 31 Mexican spotted owl breeding and nesting season. Therefore, we expect these potential responses from owls to be insignificant and discountable because training activities would not disturb breeding owls. Generally, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Mexican spotted owls are extremely unlikely to occur (discountable). With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Helicopter landing zones have been previously disturbed or have a permanent, concrete helipad for helicopter use. Because training areas are already disturbed. We do not anticipate any effects to key habitat components of owl habitat or primary constituent elements of designated critical habitat. | | | |

### Southwestern Willow Flycatcher

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1 | CF1, CF3, CF6, CF7, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for riparian, migratory bird species occurs along the |

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| | | | opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Verde River | W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Verde River water training site actually occurs on the Salt River, immediately upstream from its confluence with the Verde River. The site contains dense riparian vegetation along the banks and may experience regular human visitation due to the presence of a parking lot, a road which provides easy access, and immediate proximity to the Phoenix metropolitan area. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for southwestern willow flycatchers. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for the southwestern willow flycatcher and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Lee's Ferry | G1, G2, G3, G4, G6, F7, F9 | CF1, CF3, CF6, CF7, CF12 | The Lee's Ferry site occurs on previously land in Great Basin Desertscrub. This site occurs in a pull-off parking area off of Lees Ferry Road. The site is over 1,500 feet up from the Colorado River on its northern bank. |
| Glenwood Ranger Station | G1, G2, G3, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a concrete helicopter landing pad. |
| Colorado River | W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of southwestern willow flycatchers are extremely unlikely to occur (discountable). There is potential for disturbance from noise to result in short-term avoidance of the area by flycatchers, and water-based exercises will occur at all sites with the exception of the Jacks Canyon, Glenwood Ranger Station, and Lee's Ferry sites. There might also be minor trampling of riparian vegetation and/or sediment production at these sites however, with the exception of light foot traffic, training activities would be restricted to already-disturbed areas. To avoid impacts on this species, training activities at these sites would avoid areas of heavy riparian vegetation. | | | |

**Yellow-billed Cuckoo and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1 | CF1, CF3, CF6, CF7, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for riparian, migratory bird species occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Saguaro Lake Ranch | W1, W2 | CF1, CF3, CF6, CF7, CF12 | Another water training site, the Saguaro Lake Ranch site occurs approximately 1,300 feet downstream of the Stewart Mountain Dam, below Saguaro Lake. Bankside vegetation is dense. The site is in immediate proximity to human developments associated with dam operations and maintenance; recreational use in the area is high due to the lake's proximity to the Phoenix metropolitan area. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF3, CF6, CF7, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Verde River | W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Verde River water training site actually occurs on the Salt River, immediately upstream from its confluence with the Verde River. The site contains dense riparian vegetation along the banks and may experience regular human visitation due to the presence of a parking lot, a road which provides easy access, and immediate proximity to the Phoenix metropolitan area. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for the yellow-billed cuckoo. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for the yellow-billed cuckoo and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF3, CF6, CF7, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |

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| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF3, CF6, CF7, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Glenwood Ranger Station | G1, G2, G3, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a concrete helicopter landing pad. |
| **Concurrence Rationale:** There is some potential for minor trampling of riparian vegetation and/or sediment production at these sites. In general, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of yellow-billed cuckoos are extremely unlikely to occur (discountable). With the exception of light foot traffic, training activities would be restricted to already-disturbed areas. Foot traffic and training activities would avoid riparian areas. To avoid impacts to proposed critical habitat, personnel involved in training activities would avoid entering Lake Patagonia in riparian areas with heavy vegetation and eroding shorelines. | | | |

**Northern Aplomado Falcon**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Ranger | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF11, CF12 | The Ranger helicopter landing zone site is located within Madrean Evergreen Woodland consisting of 40 percent tree cover, 10 percent shrub cover, and 75 percent grass cover. The helicopter landing zone is 164 feet north of the Rucker USFS Fire Station. Rucker Creek is 0.5 miles southwest of the site and is seasonally intermittent. Human disturbance in the area includes a Forest road along the western edge, the USFS Rucker Fire Station to the south, livestock grazing, and recreational activity. |
| Rucker | G1, G2, G3, G5, G6, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF11, CF12 | This site is in Madrean Evergreen Woodland. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF4, CF6, CF7, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| **Concurrence Rationale:** With the exception of light foot traffic, training activities would be restricted to already disturbed areas. To avoid impacts to this species, training activities at these sites would be scheduled outside of the breeding season (January through June) for this species. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of razorback suckers are extremely unlikely to occur (discountable). | | | |

**Yuma Clapper Rail**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of |

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| | F7, F10, W1 | | vegetation. Potential habitat for riparian, migratory bird species occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Saguaro Lake Ranch | W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | Another water training site, the Saguaro Lake Ranch site occurs approximately 1,300 feet downstream of the Stewart Mountain Dam, below Saguaro Lake. Bankside vegetation is dense. The site is in immediate proximity to human developments associated with dam operations and maintenance; recreational use in the area is high due to the lake's proximity to the Phoenix metropolitan area. |
| Verde River | W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | The Verde River water training site actually occurs on the Salt River, immediately upstream from its confluence with the Verde River. The site contains dense riparian vegetation along the banks and may experience regular human visitation due to the presence of a parking lot, a road which provides easy access, and immediate proximity to the Phoenix metropolitan area. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for the yellow-billed cuckoo and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Colorado River | W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** Water and rotary-wing training would occur at these sites and noise associated with helicopter use could disrupt feeding and other daily activities of the Yuma clapper rail. There is also the potential for trampling of vegetation and erosion of the riverbanks, although activities would likely be restricted to recreational areas and human access areas (previously disturbed areas) as a conservation measure. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Yuma clapper rails are extremely unlikely to occur (discountable) because the sites used already receive much human use which generally precludes use by rails. In addition, to further avoid impacts on rails, training activities at these sites would be scheduled outside of the breeding season (March through September), and personnel would avoid areas of heavy riparian vegetation. | | | |

**Sonoran Pronghorn**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| NATO Hill | G2, G3, G6, | CF1, CF2, CF3, CF7, | This site is a hilltop in Arizona Upland |

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|---|---|---|---|
| | G7, G8, F1, F3, F4, F5, F7, F10 | CF8, CF11, CF12 | Sonoran Desertscrub. |
| Range 3 – HLZ 1 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub. |
| Range 3 – HLZ 2 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 3 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 4 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 5 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 6 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – Tower Helipad | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| South Tactical Range | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Target 333 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| OP Charlie | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub. |
| Ruby Fuzzy Palidans | G2, G3, G4, G5, G6, F1, | CF1, CF2, CF3, CF4, CF7, CF8, CF9, | This site occurs in Semidesert Grassland. |

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| | F3, F4, F5, F7, F9, F10 | CF11, CF12 | |
| Black Hills | G6, F1, F3, F4, F5, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub. |
| Lost Acre | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub. |
| Penitas | G2, G3, G6, F1, F3, F5, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Semidesert Grassland |
| Pond | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is an area where water pools during rain events and is adjacent to a desert wash within Mohave Desertscrub. |
| Prieto | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is in Mohave Desertscrub. |
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is in Mohave Desertscrub, 500 feet from an area where water pools. |
| Sierrita | G6, F1, F3, F5, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is in Mohave Desertscrub |
| Silvermine | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub. |
| Waterman | G2, G3, G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub, 500 feet from an area where water pools. |
| Black Mountain Reservoir | W2 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub, but is a water training site at a man-made reservoir in the Town of Sahuarita. |
| Three Points Shooting Range | G8 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is located north of Tucson Rifle Club Road and is surrounded by Arizona Upland Sonoran Desertscrub. |
| **Concurrence Rationale:** Due to the limited nature of the occurrence of the Sonoran pronghorn, it is unlikely that the species will be present during the proposed action. If they are present, it is expected that the disturbance associated with the proposed action will cause the individuals to leave the area. Habitat impacts are insignificant due to the activities occurring in previously disturbed areas. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Sonoran pronghorn are extremely unlikely to occur (discountable). | | | |

**Mexican Gray Wolf**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Hannigan Meadow | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The Hannagan Meadow site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191 in a disturbed meadow. The site contains a concrete helipad and is in close proximity to minor development. |
| Helibase Circular | Helibase Circular | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within the Hannagan Meadow site and contains a concrete helipad. |
| KP Circular | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The KP Circular site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191, in a disturbed meadow. The site contains a concrete helipad and is in close proximity to some minor development. |
| KP Tank | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The KP Tank is essentially the same as the KP Circular site. |
| Mogollon Rim (General Crook) | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | Within Petran Montane Conifer Forest, this helicopter landing zone occurs along the edge of the Mogollon Rim in a canopy opening along an unnamed dirt track road off of the "Rim Road" (or Forest Road 300). There is a stock tank 100 feet to the northwest of the site. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Negrito Airstrip | G1, G2, G3, G6, F1, F3, F5, F6, F7, F8, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito Center | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito North | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest northeast of the Reserve Beaverhead Road. An ephemeral stream runs through the site and pools on the western edge of the meadow. |
| Rainy Mesa | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs at the edge of Petran Montane Forest northwest of the Reserve Beaverhead Road. |
| Glenwood Ranger Station | F1, F3, F5, F7, F9, G1, G2, G3, G6 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a concrete helicopter landing pad. |
| Negrito Helibase | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |

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| Negrito South | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Overgaard | G1, G2, G3, G4, G6, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is located within Plains and Great Basin Grassland and contains a concrete helicopter landing pad. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Reserve Ranger Station | F1, F3, F5, F7, F10, G1, G2, G6 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site occurs in a grassland area surrounded by Great Basin Conifer Woodland. The site is south of Smokey Bear Circle. |
| Catron County Fairgrounds | G1, G2, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs within a disturbed area of Great Basin Conifer Woodland. An ephemeral stream is south of the site. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Gila County Sheriff Roosevelt Substation | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within Semidesert Grassland. |
| Playas Training and Research Center | F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, G1, G2, G3, G5, G6, G7, G8 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within Semidesert Grassland. |
| Tombstone 8 | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within Semidesert Grassland. |
| Sprucedale Guest Ranch | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This helicopter landing zone occurs in a montane meadow that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| **Concurrence Rationale:** Due to the limited nature of the occurrence of the Mexican Wolf, it is unlikely that the species will be present during the proposed action. If they are present, it is expected that the disturbance associated with the proposed action will cause the individuals to leave the area. Habitat impacts | | | |

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| are insignificant due to the activities occurring in previously disturbed areas. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Mexican wolf are extremely unlikely to occur (discountable). |

**Jaguar**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Devon | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF7, CF12 | The Devon site occurs along the USFS Road 4186 and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. The tree cover in the area could provide habitat for migrating or transient jaguars. |
| Saddle Mountain East | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF12 | This helicopter landing zone is located in the Great Basin Grassland vegetation community with about 97 percent grass cover and 5 percent shrub cover. A spatially intermittent stream (unidentified) runs along the southern edge of the site. About 820 feet downstream from the site, sparse mature cottonwoods occur which might provide habitat for jaguars. There is also a rock outcrop approximately 656 feet east of the site. Bog Hole Tank in the San Rafael Valley is over 3,280 feet south. A Forest access road routed through the site, low off-highway vehicle activity, and moderate grazing characterize potential disturbances in the area. |
| Saddle Mountain West | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF12 | This helicopter landing zone occurs in a mix of Interior Chaparral and Madrean Evergreen Woodland with 25 percent tree cover, 20 percent shrub cover, with the remainder grass cover. Human disturbance in the area is minimal but includes a gravel Forest access road, a potentially inactive mining claim on the hill top to the southeast, and livestock grazing. |
| Saddle Mountain South | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF12 | This helicopter landing zone is within the Great Basin Grassland vegetation community. Bog Hole Tank in the San Rafael Valley occurs approximately 0.75 mile southeast of the site. There is little human activity at the site, consisting of a Forest access road of limited use, and limited livestock grazing. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF7, CF9 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 |

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| | | | feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| Caliente | F1, F3, F7, G6 | CF1, CF2, CF3, CF4, CF7, CF9 | This site occurs within Semidesert Grassland. |
| Ranger | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF7, CF9 | The Ranger helicopter landing zone site is located within Madrean Evergreen Woodland consisting of 40 percent tree cover, 10 percent shrub cover, and 75 percent grass cover. The helicopter landing zone is 164 feet north of the Rucker USFS Fire Station. Rucker Creek is 0.5 miles southwest of the site and is seasonally intermittent. Human disturbance in the area includes a Forest road along the western edge, the USFS Rucker Fire Station to the south, livestock grazing, and recreational activity. |
| Redington Pass | G1, G2, G3, G4, G6, G7 | CF1, CF2, CF3, CF4, CF7, CF9 | This site is a designated off roading area. The site is in Semidesert Grassland. |
| Rucker | G1, G2, G3, G5, G6, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF12 | This site is in Madrean Evergreen Woodland. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF7, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Black Mountain Reservoir | W2 | CF1, CF2, CF3, CF4, CF7, CF9 | This site occurs in Arizona Upland Sonoran Desertscrub, but is a water training site at a man-made reservoir in the Town of Sahuarita |
| **Concurrence Rationale:** The temporary and infrequent noise by people, vehicles, and helicopters would be expected to have short-term, negligible impact to the jaguar and its potential prey species through habitat avoidance, if a jaguar was in the area. However, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of jaguars are extremely unlikely to occur (discountable) and unlikely to impede or alter long-distance movements. | | | |

**New Mexico Meadow Jumping Mouse**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF5, CF6, CF7, CF10, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| **Concurrence Rationale:** Training activities at the Caldwell Meadows site use of helicopters, parachute operations, and ground operations which could affect the New Mexico meadow jumping mouse. However, with the exception of light foot-traffic, training activities would be restricted to already disturbed areas in the upland habitat, away from the river. To avoid impacts on the New Mexico meadow jumping mouse, personnel would avoid the West Fork of the Black River and riparian vegetation by limiting activity to the | | | |

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| daytime to avoid disrupting the mouse's nocturnal surface activity. |

**Mexican Long-nosed Bat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Playas Training and Research Center | F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, G1, G2, G3, G5, G6, G7, G8 | CF1, CF3, CF7, CF12 | The Devon site occurs along the USFS Road 4186 and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. |
| **Concurrence Rationale:** Helicopter activity as well as ground operations and movements are expected to occur at each site. Technical rope work activities at the Mount Lemon site could affect any potential roosts there. Collectively, these activities may cause bats temporarily avoid these areas as result of the human activity and helicopter noise. However, with the exception of light foot-traffic, training activities would be restricted to previously disturbed areas and vegetation would not be removed. Impacts on vegetation associated with light foot-traffic would be minimal and no different than the regular use of these sites by USFS employees and Search and Rescue Teams. No vegetation removal would be expected to occur, training activities are spread out between the sites, and the lesser long-nosed bats are mostly active at night when activities are not proposed to occur. | | | |

**Cochise Pincushion Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Highway 80 Paladins | F1, F3, F5, F7, F9, F10, G2, G3, G6 | CF1, CF3, CF7, CF12 | This site occurs within Chihuahaun Desertscrub. |
| **Concurrence Rationale:** The Cochise pincushion cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to the Cochise pincushion cactus are extremely unlikely to occur (discountable). | | | |

**Pima Pineapple Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Caliente | F1, F3, F7, G6 | CF1, CF3, CF7, CF12 | This site occurs within Semidesert Grassland. |
| Ruby Fuzzy Paladins | G2, G3, G4, G5, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF3, CF7, CF12 | This site occurs in Semidesert Grassland. |
| Blackhills | G6, F1, F3, F4, F5, F7 | CF1, CF3, CF7, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub. |

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| Penitas | G2, G3, G6, F1, F3, F5, F7 | CF1, CF3, CF7, CF12 | This site occurs in Semidesert Grassland. |
| Sierrita | G6, F1, F3, F5, F7 | CF1, CF3, CF7, CF12 | This site is in Mohave Desertscrub. |
| Black Mountain Reservoir | W2 | CF1, CF3, CF7, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub, but is a water training site at a man-made reservoir in the Town of Sahuarita. |
| **Concurrence Rationale:** The Pima pineapple cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to the Pima pineapple cactus are extremely unlikely to occur (discountable). | | | |

**Nichol's Turk's Head Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Lost Acre | G6, F1, F3, F7 | CF1, CF3, CF7, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub |
| Silvermine | G6, F1, F3, F7 | CF1, CF3, CF7, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub. |
| Waterman | G2, G3, G6, F1, F3, F7 | CF1, CF3, CF7, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub, 500 feet from an area where water pools. |
| **Concurrence Rationale:** The Nichol's Turk's Head Cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to the Nichol's Turk's Head Cactus are extremely unlikely to occur (discountable). | | | |

**Acuna Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Target 333 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F9, F10 | CF1, CF3, CF7, CF12 | This site is in Mohave Desertscrub. |
| **Concurrence Rationale:** The Acuna Cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to Acuna Cactus are extremely unlikely to occur (discountable). | | | |

**Fickeisen Plains Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Sinkhole | F1, F3, F5, F7, G1, G2, G3, | CF1, CF3, CF7, CF12 | The Sinkhole site is used as a helicopter landing zone and occurs on the western |

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| | G4, G6 | | outskirts of the town of Gray Mountain in Great Basin Desertscrub off Highway 89. |
| Babbit Ranch 1 | F1, F3, F5, F7, G1, G2, G3, G4, G6 | CF1, CF3, CF7, CF12 | This site is next to the Panda Site and is within Plains and Great Basin Grassland. |
| Panda | F1, F3, F5, F7, G1, G2, G3, G4, G6 | CF1, CF3, CF7, CF12 | This site is next to the Babbit Ranch 1 Site and is within Plains and Great Basin Grassland. |
| **Concurrence Rationale:** The proposed action has a small footprint of between 0.3 and 2.7 acres in size and the likelihood of this rare cactus occurring within the footprint of the training site is minimal. Additionally, all training activities at the Sinkhole Site will be restricted to already disturbed areas, south of Black Mesa Pump Station Road and west of Arizona Hwy 89 (outside of the cactus' designated critical habitat), which minimizes the probability of adverse effects to the Fickeisen Plains Cactus even further. | | | |

Certain project activities may also affect species protected under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. sec. 703-712) and/or bald and golden eagles protected under the Bald and Golden Eagle Protection Act (Eagle Act). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the FWS. The Eagle Act prohibits anyone, without a FWS permit, from taking (including disturbing) eagles, and including their parts, nests, or eggs. If you think migratory birds and/or eagles will be affected by this project, we recommend seeking our Technical Assistance to identify available conservation measures that you may be able to incorporate into your project.

For more information regarding the MBTA and Eagle Act, please visit the following websites. More information on the MBTA and available permits can be retrieved from http://www.fws.gov/migratorybirds and http://www.fws.gov/migratorybirds/mbpermits.html. For information on protections for bald eagles, please refer to the FWS's National Bald Eagle Management Guidelines (72 FR 31156) and regulatory definition of the term "disturb" (72 FR 31132) published in the Federal Register on June 5, 2007 (http://www.fws.gov/southwest/es/arizona/BaldEagle.htm), as well at the Conservation Assessment and Strategy for the Bald Eagle in Arizona (SWBEMC.org).

In keeping with our trust responsibilities to American Indian Tribes, by copy of this letter we are notifying Tribes that may be affected by this proposed action and encourage you to invite the Bureau of Indian Affairs to participate in the review of your proposed action. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department.

Thank you for your continued coordination. No further section 7 consultation is required for this project at this time. Should project plans change, or if information on the distribution or abundance of listed species or critical habitat becomes available, this determination may need to be reconsidered. In all future correspondence on this project, please refer to consultation number 02EAAZ00-2020-I-0217.

Should you require further assistance or if you have any questions, please contact Julie McIntyre (520-670-6150 x223) or Scott Richardson (x242).

Sincerely,

Julie McIntyre for

Digitally signed by Julie McIntyre for
Date: 2019.12.17 11:52:54 -07'00'

Jeffrey A. Humphrey
Field Supervisor

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cc (electronic copies):
Field Supervisor, Fish and Wildlife Service, Phoenix, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson and Flagstaff, AZ
Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ (pep@azgfd.gov)

Manager, Cultural Resources, Ak Chin Indian Community, Maricopa, AZ
Tribal Historic Preservation Office, Colorado River Indian Tribes, Parker, AZ
Director, Aha Makav Cultural Society Fort Mojave Indian Tribe, Mohave Valley, AZ
Tribal Historic Preservation Officer, Gila River Indian Community, Sacaton, AZ
Chairperson, Havasupai Tribe, Peach Springs, AZ
Director, Cultural Preservation Office, Hopi Tribe, Kykotsmovi, AZ
Director, Cultural Resources Department, Hualapai Tribe, Peach Springs, AZ
Coordinator, Cultural Resources, Kaibab Band of Paiute Indians, Fredonia, AZ
Director, Heritage and Historic Preservation, Navajo Nation, Window Rock, AZ
Chairman, Pascua Yaqui Tribe, Tucson, AZ
Historic Preservation Officer, Quechan Tribe, Yuma, AZ
Director, Cultural Resources, Salt River Pima-Maricopa Indian Community, Scottsdale, AZ
Director, San Carlos Tribal Historic Preservation and Archaeology, San Carlos, AZ
President, San Juan Southern Paiute Tribe, Tuba City, AZ
Manager, Cultural Affairs, Tohono O'odham Nation, Sells, AZ
Director, Cultural Resources Department, Tonto Apache Tribe, Payson, AZ
Director, Cultural Resources, White Mountain Apache Tribe, Whiteriver, AZ
Director, Heritage/Archaeology Program, White Mountain Apache Tribe, Whiteriver, AZ
Sensitive Species Coordinator, Game and Fish Department, White Mountain Apache Tribe, Whiteriver, AZ
Special Counsel, White Mountain Apache Tribe, Whiteriver, AZ
Tribal Archaeologist, Yavapai-Apache Nation, Camp Verde, AZ
Director, Cultural Research Program, Yavapai-Prescott Indian Tribe, Prescott, AZ
Branch Chief, Environmental Quality Services, Western Regional Office, Bureau of Indian Affairs, Phoenix, AZ
Archaeologist, Western Regional Office, Bureau of Indian Affairs, Phoenix, AZ

**Section 106 -- State Historic Preservation Office and Tribal Consultation Initiation Letters**

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

24 September 2019

Ms. Kathryn Leonard, SHPO
State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007

**Subject:** **Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Leonard:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential environmental impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (Proposed Action) in accordance with the National Environmental Policy Act (NEPA). The environmental impact process for this proposed undertaking is being conducted by the USAF in accordance with the Council on Environmental Quality regulations pursuant to requirements of NEPA. The USAF is complying with Section 106 of the National Historic Preservation Act (NHPA) concurrently with development of the EA as recommended by NEPA's implementing regulations Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation for this undertaking and requests your input on the proposed undertaking.

The purpose of the proposed undertaking is to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations. PR training participants would include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) Interagencies, and Foreign Partner Nations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense*, defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. The PR training needs to provide the most realistic PR training environment available to USAF PR forces so that it complies with DoD Directive 3002.01E, as well as Air Force Policy Directive 10-30, *Personnel Recovery*. The proposed undertaking is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites which have the required characteristics for PR training activities. Commanders face challenges in ensuring that routine and formal training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

Under the proposed undertaking, the USAF is proposing to improve PR training conducted throughout the southwestern United States (U.S.). This would include routine and specialized formal training for PR forces as well as Large Force joint/multi-national events. The Proposed Action would authorize additional training sites, and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, there would be no change in the organizations at Davis-Monthan AFB that conduct the training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities would be centered out of Davis-Monthan AFB, Arizona and would be conducted in Arizona, California, Nevada, and New Mexico in areas that have been previously disturbed or are currently or were previously used for activities similar to

those defined under the Proposed Action and No-Action Alternative. A total of 181 sites may be utilized during PR training, 160 of which are already authorized and used for PR training. Under the proposed undertaking, 21 additional sites would be authorized for use. Specifically, the proposed undertaking would include using DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations. Proposed PR training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan AFB. Given the complexity of the proposed undertaking and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three probable PR training and event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the proposed PR training activities and events are provided in Attachment 1, and a summary of the proposed PR training activities is provided in Attachment 2. The Area of Potential Effect (APE) for each proposed PR training site in Arizona is defined in Attachment 3 and depicted on a map in Attachment 4. In addition, coordinates of the PR training sites in Arizona are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies. If changes occur to proposed PR training sites in Arizona, that information will be provided to you.

The USAF has conducted searches of publicly available records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, National Forest Districts, and DoD installations' Cultural Resource Management Plans and environmental documents to identify historic properties at proposed PR training sites in Arizona. PR training sites on DoD facilities have been previously analyzed and approved for activities similar to the Proposed Action under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which have also been reviewed. Approximately 32 proposed PR training sites on National Forest, state, municipal, or private lands in Arizona require cultural resources surveys, which are ongoing. Information regarding historic properties at the proposed PR training sites in Arizona will be provided to you when those studies have been completed.

Please note that 29 proposed PR training sites in Arizona shown in Attachments 1, 3, and 4 were previously addressed under separate undertakings. Specifically, 17 of the 29 proposed PR training sites were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and SHPO concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHPO-2013-0702 [113064]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018), providing there will be no change in use or improvements needed. Copies of the concurrence communications and tables of those proposed PR trainings sites are provided in Attachment 5. Your concurrence is requested that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, the New Mexico Historic Preservation Division, the California Office of Historic Preservation, the Nevada Historic Preservation Office, and federally-recognized tribes. A Tribal contact list for the Proposed Action is provided as Attachment 6. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, 355 CES/CEIE, by mailing address at 3775 South 5th Street, Davis-Monthan AFB, AZ 85707-4927; by e-mail at kevin.wakefield.1@us.af.mil; or by phone at 520-228-4035.

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

cc: Ms. Erin Davis, Archaeological Compliance Specialist

Attachments:

1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. APE Definitions and Coordinates of Arizona Proposed PR Training Sites
4. APE Maps of Arizona Proposed PR Training Sites
5. Prior SHPO Concurrence of Proposed PR Training Sites
6. Tribal Consultation List

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

24 September 2019

Ms. Julianne Polanco, SHPO
Office of Historic Preservation
Department of Parks & Recreation
1725 23rd Street, Suite 100
Sacramento, CA 96816

**Subject:** **Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Polanco:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential environmental impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (Proposed Action) in accordance with the National Environmental Policy Act (NEPA). The environmental impact process for this proposed undertaking is being conducted by the USAF in accordance with the Council on Environmental Quality regulations pursuant to requirements of NEPA. The USAF is complying with Section 106 of the National Historic Preservation Act (NHPA) concurrently with development of the EA as recommended by NEPA's implementing regulations Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation for this undertaking and requests your input on the proposed undertaking.

The purpose of the proposed undertaking is to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations. PR training participants would include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) Interagencies, and Foreign Partner Nations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense*, defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. The PR training needs to provide the most realistic PR training environment available to USAF PR forces so that it complies with DoD Directive 3002.01E, as well as Air Force Policy Directive 10-30, *Personnel Recovery*. The proposed undertaking is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites which have the required characteristics for PR training activities. Commanders face challenges in ensuring that routine and formal training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

Under the proposed undertaking, the USAF is proposing to improve PR training conducted throughout the southwestern United States (U.S.). This would include routine and specialized formal training for PR forces as well as Large Force joint/multi-national events. The Proposed Action would authorize additional training sites, and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, there would be no change in the organizations at Davis-Monthan AFB that conduct the training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities would be

centered out of Davis-Monthan AFB, Arizona and would be conducted in Arizona, California, Nevada, and New Mexico in areas that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action and No-Action Alternative. A total of 181 sites may be utilized during PR training, 160 of which are already authorized and used for PR training. Under the proposed undertaking, 21 additional sites would be authorized for use. Specifically, the proposed undertaking would include using DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations. Proposed PR training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan AFB. Given the complexity of the proposed undertaking and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1, and a summary of the proposed PR training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training site in California is defined in Attachment 3 and depicted on a map in Attachment 4. In addition, coordinates of the PR training site in California is provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies. If changes occur to proposed training sites in California, that information will be provided to you.

The USAF has conducted searches of publicly available records, the National Register of Historic Places, the Eastern Information Center (EIC), the Native American Heritage Commission (NAHC), and applicable DoD installation's Cultural Resource Management Plan and environmental documents to identify historic properties at the proposed PR training site in California. Information regarding historic properties at the proposed PR training site in California will be provided to you when those studies have been completed.

Please note that the proposed San Clemente Island and Leon PR training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under a separate undertaking (U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final Environmental Impact Statement/Overseas Environmental Impact Statement) and SHPO concurred on 20 October 2017 (case reference number USN120509). A copy of the concurrence letter is provided in Attachment 5.

Also, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they would engage in Section 106 consultation with you related to proposed activities on their property.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, the Arizona State Historic Preservation Office, the New Mexico Historic Preservation Division, the Nevada Historic Preservation Office, and federally-recognized tribes. A Tribal contact list for the project is provided as Attachment 6. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, 355 CES/CEIE, by mailing address at 3775 South 5th Street, Davis-Monthan AFB, AZ 85707-4927; by e-mail at kevin.wakefield.1@us.af.mil; or by phone at 520-228-4035.

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

cc: Ms. Jenan Saunders, Deputy

Attachments:

1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. APE Definition and Coordinates of California Proposed PR Training Sites
4. APE Maps of California Proposed PR Training Sites
5. Prior SHPO Concurrence of Proposed PR Training Sites
6. Tribal Consultation List

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

24 September 2019

Ms. Rebecca Palmer, SHPO
Historic Preservation Office
901 S. Stewart Street
Suite 5004
Carson City, NV 89701-4285

**Subject:** **Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Palmer:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential environmental impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (Proposed Action) in accordance with the National Environmental Policy Act (NEPA). The environmental impact process for this proposed undertaking is being conducted by the USAF in accordance with the Council on Environmental Quality regulations pursuant to requirements of NEPA. The USAF is complying with Section 106 of the National Historic Preservation Act (NHPA) concurrently with development of the EA as recommended by NEPA's implementing regulations Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation for this undertaking and requests your input on the proposed undertaking.

The purpose of the proposed undertaking is to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations. PR training participants would include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) Interagencies, and Foreign Partner Nations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense*, defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. The PR training needs to provide the most realistic PR training environment available to USAF PR forces so that it complies with DoD Directive 3002.01E, as well as Air Force Policy Directive 10-30, *Personnel Recovery*. The proposed undertaking is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites which have the required characteristics for PR training activities. Commanders face challenges in ensuring that routine and formal training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

Under the proposed undertaking, the USAF is proposing to improve PR training conducted throughout the southwestern United States (U.S.). This would include routine and specialized formal training for PR forces as well as Large Force joint/multi-national events. The Proposed Action would authorize additional training sites, and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, there would be no change in the organizations at Davis-Monthan AFB that conduct the training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities would be

centered out of Davis-Monthan AFB, Arizona and would be conducted in Arizona, California, Nevada, and New Mexico in areas that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action and No-Action Alternative. A total of 181 sites may be utilized during PR training, 160 of which are already authorized and used for PR training. Under the proposed undertaking, 21 additional sites would be authorized for use. Specifically, the proposed undertaking would include using DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations. Proposed PR training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan AFB. Given the complexity of the proposed undertaking and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three probable PR training events levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1, and a summary of the proposed PR training activities is provided in Attachment 2. The Area of Potential Effect (APE) for each proposed PR training site in Nevada is defined in Attachment 3 and depicted on a map in Attachment 4. In addition, coordinates of the PR training sites in Nevada are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies. If changes occur to proposed PR training sites in Nevada, that information will be provided to you.

The USAF has conducted searches of publicly available records, the National Register of Historic Places, the Nevada Cultural Resources Information system (NVCRIS), and DoD installation's Cultural Resource Management Plan and environmental documents to identify historic properties at proposed PR training sites in Nevada. Information regarding historic properties at proposed PR training sites in Nevada will be provided to you when those studies have been completed.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, the Arizona State Historic Preservation Office, the New Mexico Historic Preservation Division, the California Office of Historic Preservation, and federally-recognized tribes. A Tribal contact list for the Proposed Action is provided as Attachment 5. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, 355 CES/CEIE, by mailing address at 3775 South 5th Street, Davis-Monthan AFB, AZ 85707-4927; by e-mail at kevin.wakefield.1@us.af.mil; or by phone at 520-228-4035.

Sincerely,



Christopher L. Brewster, PE
Chief, Environmental

cc: Robin K. Reed, Deputy

Attachments:

1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. APE Definitions and Coordinates of Nevada Proposed PR Training Sites
4. APE Maps of Nevada Proposed PR Training Sites
5. Tribal Consultation List

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

24 September 2019

Dr. Jeff Pappas, Director and SHPO
DCA – Historic Preservation Division
407 Galisto Street
Suite 236
Santa Fe, NM 87501

**Subject:** **Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Dr. Pappas:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential environmental impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (Proposed Action) in accordance with the National Environmental Policy Act (NEPA). The environmental impact process for this proposed undertaking is being conducted by the USAF in accordance with the Council on Environmental Quality regulations pursuant to requirements of NEPA. The USAF is complying with Section 106 of the National Historic Preservation Act (NHPA) concurrently with development of the EA as recommended by NEPA's implementing regulations Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation for this undertaking and requests your input on the proposed undertaking.

The purpose of the proposed undertaking is to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations, multi-national partnerships, and operations with other federal, state, and local agencies/organizations. PR training participants would include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) Interagencies, and Foreign Partner Nations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense*, defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. The PR training needs to provide the most realistic PR training environment available to USAF PR forces so that it complies with DoD Directive 3002.01E, as well as Air Force Policy Directive 10-30, *Personnel Recovery*. The proposed undertaking is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites which have the required characteristics for PR training activities. Commanders face challenges in ensuring that routine and formal training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

Under the proposed undertaking, the USAF is proposing to improve PR training conducted throughout the southwestern United States (U.S.). This would include routine and specialized formal training for PR forces as well as Large Force joint/multi-national events. The Proposed Action would authorize additional training sites, and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, there would be no change in the organizations at Davis-Monthan AFB that conduct the training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities would be centered out of Davis-Monthan AFB, Arizona and would be conducted in Arizona, California, Nevada, and New

Mexico in areas that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action and No-Action Alternative. A total of 181 sites may be utilized during PR training, 160 of which are already authorized and used for PR training. Under the proposed undertaking, 21 additional sites would be authorized for use. Specifically, the proposed undertaking would include using DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations. Proposed PR training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan AFB. Given the complexity of the proposed undertaking and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the proposed PR training activities and events are provided in Attachment 1, and a summary of the proposed PR training activities is provided in Attachment 2. The Area of Potential Effect (APE) for each proposed PR training site in New Mexico is defined in Attachment 3 and depicted on a map in Attachment 4. In addition, coordinates of the PR training sites in New Mexico are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies. If changes occur to proposed PR training sites in New Mexico, that information will be provided to you.

The USAF has conducted searches of publicly available records, the National Register of Historic Places, the New Mexico Cultural Resources Information System (NMCRIS), Native American Heritage Commission (NAHC), National Forest Districts, and DoD installations' Cultural Resource Management Plans and environmental documents to identify historic properties at proposed PR training sites in New Mexico. PR training sites on DoD facilities have been previously analyzed and approved for activities similar to the proposed undertaking under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which have also been reviewed. Three proposed PR training sites on National Forest or state lands in New Mexico require cultural resources surveys, which are ongoing. Information regarding historic properties at the proposed PR training sites in New Mexico will be provided to you when those studies have been completed.

Please note that the five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico shown in Attachments 1, 3, and 4 were previously addressed under separate undertakings. Specifically, the WSMR Small Arms Range PR training site was previously addressed under the U.S. Army's 2011 Environmental Assessment Network Integration Evaluation White Sands Missile Range, New Mexico. Also, the Stallion Army Airfield, Sierra Maneuver Area, Thurgood West Maneuver Area, and Otero Maneuver Area PR training sites were previously addressed under the U.S. Army's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities at WSMR, New Mexico and the 2015-2019 WSMR Integrated Natural and Cultural Resources Management Plan and EA. The U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation executed a Programmatic Memorandum of Agreement (PMOA) on 18 April 1985 for the treatment of historic properties, and the APE for this proposed undertaking falls within the area addressed by that PMOA. Proposed PR training events would follow the established WSMR siting process to avoid adverse effects to historic properties. Your concurrence is requested that implementation of the mitigation measures and any operational constraints identified in these documents would result in no adverse effects to historic properties, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, the Arizona State Historic Preservation Office, the California Office of Historic Preservation, the Nevada Historic Preservation Office, and federally-recognized tribes. A Tribal contact list for the proposed undertaking is provided as Attachment 5. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, 355 CES/CEIE, by mailing address at 3775 South 5th Street, Davis-Monthan AFB, AZ 85707-4927; by e-mail at kevin.wakefield.1@us.af.mil; or by phone at 520-228-4035.

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

cc: Bob Estes, NM HPD Staff archaeologist

Attachments:

1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. APE Definitions and Coordinates of New Mexico Proposed PR Training Sites
4. APE Maps of New Mexico Proposed PR Training Sites
5. Tribal Consultation List

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

Katharine Kerr, Program Analyst
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington DC 20001

**Subject:** **Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Kerr

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action*) in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) Interagencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness and strengthen between participating agencies or organizations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense*, defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery*. The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that posses the desired training activity characteristics. Commanders face challenges to ensure formal training requirements are met. due the lack of availability of appropriate training sites joint readiness and multi-national partnership strengthening opportunities are limited. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there is no change in the Davis-Monthan AFB organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). Attachment 1 provides a description of the Proposed Action, and Attachment 2 offers a summary of training activities. The Area of Potential Effect (APE) for Nevada training sites and associated coordinates are found in Attachment 3 and depicted on a map in Attachment 4. Please note that some of the PR training sites may change based on controlling agency inputs. If changes occur to proposed Nevada PR training sites, that information will be provided to you.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information system (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico require cultural resources surveys, which are ongoing. Information regarding historic properties at the proposed PR training sites in Arizona, New Mexico, Nevada, and California will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate actions (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico shown in Attachments 1, 3, and 4 were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and SHPO concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHPO-2013-0702 [113064]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018), providing there is no change in use or improvements needed. Copies of the concurrence communications and tables of those proposed PR trainings sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015-2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Arizona State Historic Preservation Office, the New Mexico Historic Preservation Division, the California Office of Historic Preservation, the Nevada Historic Preservation Office, and federally-recognized tribes. A Tribal contact list for the Proposed Action is provided as Attachment 6.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

- 355 CES/CEIE
  3775 South 5th Street,
  Davis-Monthan AFB, AZ 85707-4927;
- e-mail at kevin.wakefield.1@us.af.mil
- Phone at 520-228-4035

Sincerely

VINCENT A. REA, Lt Col, USAF
Commander

cc: Robin K. Reed, Deputy

Attachments:

1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. APE Definitions and Coordinates of Proposed PR Training Sites by State
4. APE Maps of Proposed PR Training Sites by State
5. Prior SHPO Concurrence of Proposed PR Training Sites
6. Tribal Consultation List

| | |
|---|---|
| **From:** | WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> |
| **Sent:** | Tuesday, October 22, 2019 11:13 AM |
| **To:** | executivesecretary@quechantribe.com |
| **Cc:** | Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE |
| **Subject:** | Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern US |
| **Attachments:** | J.Joaquin_ DM PR Training Section 106 consultation.pdf |

Greetings President Joaquin, the U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

We are sending this request for consultation electronically based on consultation protocol information found on the Arizona SHPO Government to Government Web Site.

Sincerely,

Kevin Wakefield, GS-11, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**DEPARTMENT OF THE AIR FORCE**
**355TH WING (ACC)**
**DAVIS-MONTHAN AIR FORCE BASE ARIZONA**

Jordan D. Joaquin, President
Fort Yuma Quechan Tribe
P.O. Box 1899
Yuma, AZ 85366

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Joaquin:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alterative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Additionally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Fort Yuma Quechan Tribe and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Action under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/ Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and the State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [113064]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and the SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015-2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at the U.S. Marine Corps (USMC) Base, Camp Pendleton, in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and arc not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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provided as Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information to identify properties of religious and historic significance at proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult with you to discuss potential avoidance, minimization, and/or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CE IE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield . l@us.af.rnil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Manfred Scott, Acting Chairperson, Quechan Cultural Committee
Jill McCormick, THPO

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. APE Definitions and Coordinates of Proposed PR Training Sites by State
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6. Tribal Consultation List

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Robert Valencia, Chairman
Pascua Yaqui Tribe of Arizona
7474 S. Camino De Oeste
Tucson, AZ 85757

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Valencia:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alterative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Additionally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Pascua Yaqui Tribe of Arizona and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Action under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/ Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

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Additionally, please note that the USAF is considering PR training sites at the U.S. Marine Corps (USMC) Base, Camp Pendleton, in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and arc not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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provided as Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information to identify properties of religious and historic significance at proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult with you to discuss potential avoidance, minimization, and/or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CE IE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield . l@us.af.rnil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Dr. Karl Hoerig, THPO

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**DEPARTMENT OF THE AIR FORCE**
**355TH WING (ACC)**
**DAVIS-MONTHAN AIR FORCE BASE ARIZONA**

Gwendena Lee-Gatewood, Chairwoman
White Mountain Apache Tribe
P.O. Box 1150
Whiteriver, AZ 85941

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Lee-Gatewood:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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Additionally, please note that the USAF is considering PR training sites at the U.S. Marine Corps (USMC) Base, Camp Pendleton, in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and arc not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CE IE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield . l@us.af.rnil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Mark Altaha, Tribal Historic Preservation Officer

Attachments:
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6. Tribal Consultation List

**From:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Friday, October 18, 2019 1:15 PM
**To:** 'Altaha, Mark'
**Cc:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Fitzpatrick, Hallie; 'Wahoff,Tanya'; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE
**Subject:** Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern US

Greetings Mr. Altaha, the U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

We are sending this request for consultation electronically based on consultation protocol information found on the Arizona SHPO Government to Government Web Site. A letter has already been mail to the Chairwoman of the White Mountain Apache Tribe.

Since the file is too large to send by email, you will receive an email from the DoD Safe web site with instructions on how to download the files.

Sincerely,

Kevin Wakefield, GS-11, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**DEPARTMENT OF THE AIR FORCE**
**355TH WING(ACC)**
**DAVIS-MONTHAN AIR FORCE BASE**
**ARIZONA**

Arthur Blazer, President
Mescalero Apache Tribe
P.O. Box 227
108 Central Avenue
Mescalero, NM 88340

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Blazer:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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cc: Holly Houghton, THPO

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DEPARTMENT OF THE AIR FORCE
355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Holly Houghton, THPO
Mescalero Apache Tribe
P.O. Box 227
Mescalero, NM 88340

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

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**DEPARTMENT OF THE AIR FORCE**
**355TH WING (ACC)**
**DAVIS-MONTHAN AIR FORCE BASE ARIZONA**

Brian D. Vallo, Governor
Pueblo of Acoma
P.O. Box 309
Acoma, NM 87034

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Governor Vallo:

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Additionally, please note that the USAF is considering PR training sites at the U.S. Marine Corps (USMC) Base, Camp Pendleton, in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and arc not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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provided as Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information to identify properties of religious and historic significance at proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult with you to discuss potential avoidance, minimization, and/or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CE IE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield . l@us.af.rnil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Todd Scissons, THPO

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. APE Definitions and Coordinates of Proposed PR Training Sites by State
4. APE Maps of Proposed PR Training Sites by State
5. Prior SHPO Concurrence of Proposed PR Training Sites
6. Tribal Consultation List

**From:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, October 8, 2019 8:53 AM
**To:** damon.clarke@hualapai-nsn.gov; pbungart@circaculture.com
**Cc:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Subject:** Consultation Request for the Personnel Recovery Training Program Draft Environmental Assessment

Greetings, Chairman Clarke and Mr. Bungart, the U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

We are sending this request for consultation electronically based on consultation protocol information found on the Arizona SHPO Government to Government Web Site.

Since the file is too large to send by email, you will receive an email from the DoD Safe web site with instructions on how to download the files.

Sincerely,

Kevin Wakefield, GS-11, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Dr. Damon R. Clarke, Chairman
Hualapai Indian Tribe of the Hualapai Indian Reservation
P.O. Box 179
Peach Springs, AZ 86434

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Dr. Clarke:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alterative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Additionally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Hualapai Indian Tribe of the Hualapai Indian Reservation and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Action under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

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e-mail at kevin.wakefield . l@us.af.rnil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Peter Bungart, THPO

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Dennis Patch, Chairman
Colorado River Indian Tribes of the Colorado River Indian Reservation
26600 Mohave Road
Parker, AZ 85344

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairman Patch:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

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4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Brian Etsitty, Tribal Historic Preservation Officer

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**DEPARTMENT OF THE AIR FORCE**
**355TH WING (ACC)**
**DAVIS-MONTHAN AIR FORCE BASE ARIZONA**

Stephen R. Lewis, Governor
Gila River Indian Community
P.O. Box 97
Sacaton, AZ 85147

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Governor Lewis:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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Additionally, please note that the USAF is considering PR training sites at the U.S. Marine Corps (USMC) Base, Camp Pendleton, in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and arc not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, Arizona State Historic Preservation Office, the New Mexico Historic Preservation Division, the California Office of Historic Preservation, and the Nevada Historic Preservation Office. A Tribal contact list for the proposed undertaking is

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CE IE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield . l@us.af.rnil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Barnaby V. Lewis, Tribal Historic Preservation Officer
Larry Benallie Jr., Archaeological Compliance Specialist

Attachments:
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2. Summary of Proposed PR Training Activities
3. APE Definitions and Coordinates of Proposed PR Training Sites by State
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6. Tribal Consultation List

**From:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Monday, October 7, 2019 3:16 PM
**To:** Larry.BenallieJr@gric.nsn.us; Barnaby.lewis@gric.nsn.us
**Cc:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE; Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Subject:** Consultation Request for the Personnel Recovery Training Program Draft Environmental Assessment

Greetings, the U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

We are sending this request for consultation electronically based on consultation protocol information found on the Arizona SHPO Government to Government Web Site.

Since the file is too large to send by email, you will receive an email from the DoD Safe web site with instructions on how to download the files.

Sincerely,

Kevin Wakefield, GS-11, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**DEPARTMENT OF THE AIR FORCE**
**355TH WING (ACC)**
**DAVIS-MONTHAN AIR FORCE BASE ARIZONA**

Shasta Gaughen, Tribal Historic Preservation Officer
Pala Band of Mission Indians
PMB 50
35008 Pala Temecula Road
Pala, CA 92059

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Gaughen:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alterative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Additionally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Pala Band of Mission Indians and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Action under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Jim McPherson, Tribal Historic Preservation Officer
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA 92082

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. McPherson:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Dr. Henry Walt, THPO
Pueblo of Isleta
P.O. Box 1270
Isleta, NM 87022

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Dr. Walt:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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Additionally, please note that the USAF is considering PR training sites at the U.S. Marine Corps (USMC) Base, Camp Pendleton, in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and arc not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CE IE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield . l@us.af.rnil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
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2. Summary of Proposed PR Training Activities
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**DEPARTMENT OF THE AIR FORCE**
**355TH WING (ACC)**
**DAVIS-MONTHAN AIR FORCE BASE ARIZONA**

Richard Smith, Sr., THPO
Pueblo of Laguna
P.O. Box 194
Laguna, NM 87026

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Smith:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.01E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alterative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Additionally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Pueblo of Laguna and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Action under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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Sincerely,

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Robert Miguel, Chairman
Ak-Chin Indian Community
42507 W. Peters & Nall Road
Maricopa, AZ 85239

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairman Miguel:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Ak-Chin Indian Community and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSITE), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Elaine Peters, Director, Him Dak Eco Museum

Attachments:
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Sherry Cordova, Chairwoman
Cocopah Indian Tribe
Cocopah Indian Reservation
14515 S. Veterans Drive
Sommerton, AZ 85350

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairwoman Cordova:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Justin Brundin, Cultural Resources Manager

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Bernadine Burnette, President
Fort McDowell Yavapai Nation
P.O. Box 17779
Fountain Hills, AZ 85269

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Burnette:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Fort McDowell Yavapai Nation and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Mark Frank, Director, Economic Development Division
Erika McCalvin, Planning & Project Manager
Albert C. Nelson, Cultural Resource Manger

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. Coordinates of the Proposed PR Training Sites
4. Proposed PR Training Sites Mapbook
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6. Tribal Consultation List

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Timothy Williams, Chairman
Fort Mojave Indian Tribe
500 Merriman Ave.
Needles, CA 92363

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairman Williams:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

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The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Linda Otero, Director, AhaMakav Cultural Society
Christopher Harper, Cultural Heritage Manager

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Muriel Uqualla-Coochytewa, Chairwoman
Havasupai Tribe of the Havasupai Reservation
P.O. Box 10
Supai, AZ 86435

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairwoman Uqualla-Coochytewa:

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The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Travis Hamidreek, Director of Natural Resources

Attachments:
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Timothy L. Nuvangyaoma, Chairman
Hopi Tribe of Arizona
P.O. Box 123
Kykotsmovi, AZ 86039

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairman Nuvangyaoma:

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The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, Arizona State Historic Preservation Office, the New Mexico Historic Preservation Division, the California Office of Historic Preservation, and the Nevada Historic Preservation Office. A Tribal contact list for the proposed undertaking is

provided at Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information and to identify properties of religious and historic significance at the proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult to discuss potential avoidance, minimization, or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Stewart Koyiyumptewa, CPO Director

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. Coordinates of the Proposed PR Training Sites
4. Proposed PR Training Sites Mapbook
5. Prior SHPO Concurrence of Proposed PR Training Sites
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Ona Segundo, Chairwoman
Kaibab Band of Paiute Indians of the Kaibab Indian Reservation
HC 65, Box 2, Tribal Affairs Bldg.
Fredonia, AZ 86022

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairwoman Segundo:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Kaibab Band of Paiute Indians of the Kaibab Indian Reservation and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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provided at Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information and to identify properties of religious and historic significance at the proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult to discuss potential avoidance, minimization, or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Charley Bulletts, Cultural Resources Director

Attachments:
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Martin Harvier Sr., President
Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona
10005 East Osborn Road
Scottsdale, AZ 85256

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Harvier:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: SRP-MIC Cultural Resources Department Cultural Preservation Program
Angela D. Garcia-Lewis, Cultural Preservation Compliance Supervisor
Martha Martinez, NAGPRA Coordinator

Attachments:
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2. Summary of Proposed PR Training Activities
3. Coordinates of the Proposed PR Training Sites
4. Proposed PR Training Sites Mapbook
5. Prior SHPO Concurrence of Proposed PR Training Sites
6. Tribal Consultation List

**From:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, October 22, 2019 11:29 AM
**To:** Martha.Martinez@srpmic-nsn.gov; Angela.Garcia-Lewis@srpmic-nsn.gov
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE
**Subject:** Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern US

Greetings Ms. Garcia-Lewis and Ms. Martinez, the U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section l50225(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

We are sending this request for consultation electronically based on consultation protocol information found on the Arizona SHPO Government to Government Web Site.

Because the letter and it attachments are large, we will be sending the letter by the DoD SAFE file transfer system. You will receive an email from DoD SAFE with instructions on how to down-load the file.

Sincerely,

Kevin Wakefield, GS-11, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Jeri DeCola, Chairwoman
Tonto Apache Tribe of Arizona
Tonto Apache Reservation #30
Payson, AZ 85541

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairwoman DeCola:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Wally Davis Jr., Cultural & NAGPRA Representative

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Gari Lafferty, Chairwoman
Paiute Indian Tribe of Utah
440 N. Paite Drive
Cedar City, UT 84721

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairwoman Lafferty:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to the Paiute Indian Tribe of Utah and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

cc: Dorena Martineau, Cultural Resources Director, Chairwoman

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Bureau of Indian Affairs Western Regional Office
2600 N. Central Avenue, 4th Floor Mailroom
Phoenix, AZ 85001

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

To whom it may concern:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your region for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Bureau of Indian Affairs Western Regional Office and, if such properties exist, to help assess how the proposed undertaking might affect them.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Kristine FireThunder, Director
State of Arizona Governor's Office of Tribal Relations
1700 W. Washington Street, Suite 235
Phoenix, AZ 85007

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. FireThunder:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Carlene Yellowhair, President
San Juan Southern Paiute Tribe of Arizona
P.O. Box 2950
Tuba City, AZ 86045

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Yellowhair:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to San Juan Southern Paiute Tribe of Arizona and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, Arizona State Historic Preservation Office, the New Mexico Historic Preservation Division, the California Office of Historic Preservation, and the Nevada Historic Preservation Office. A Tribal contact list for the proposed undertaking is

provided at Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information and to identify properties of religious and historic significance at the proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult to discuss potential avoidance, minimization, or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
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6. Tribal Consultation List

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

P. Steere, J. Francisco
Tohono O'odham Nation
P.O. Box 837
Sells, AZ 85634

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Messrs. Steere and Francisco:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Tohono O'odham Nation and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Chris Coder, Tribal Archaeologist
Yavapai-Apache Nation
2400 W. Datsi St.
Camp Verde, AZ 86322

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Coder:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Chris Spotted Eagle, Chairman
Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony
1 Paiute Drive
Las Vegas, NV 89106

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairman Spotted Eagle:

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
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e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Vickie Simmons, Chairperson
Moapa Band of Paiute Indians of the Moapa River Indian Reservation
P.O. Box 340
Moapa, NV 89025

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Simmons:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Moapa Band of Paiute Indians of the Moapa River Indian Reservation and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Bureau of Indian Affairs
Southwest Regional Office
1001 Indian School Road, NW
Albuquerque, NM 87104

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

To Whom It May Concern:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Max Zuni, Governor
Pueblo of Isleta
P.O. Box 1290
Isleta, NM 87022

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Governor Zuni:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Wilfred Herrera, Jr., Governor
Pueblo of Laguna
P.O. Box 194
Laguna, NM 87026

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Governor Herrera:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Pueblo of Laguna and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

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Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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provided at Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information and to identify properties of religious and historic significance at the proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult to discuss potential avoidance, minimization, or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. Coordinates of the Proposed PR Training Sites
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6. Tribal Consultation List

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Sherrie Catanach, Public Relations Coordinator
State of New Mexico New Mexico Indian Affairs Department
Wendell Chino Building, 2nd Floor
1220 South St. Francis Drive
Santa Fe, NM 87505

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Catanach:

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The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Jeff Grubbe, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Grubbe:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Patricia Garcia-Plotkin, Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Amanda Vance, Chairperson
Augustine Band of Cahuilla Mission Indians
P.O. Box 846
Coachella, CA 92236

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Vance:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

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The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Edwin Romero, Chairperson
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, CA 92040

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Romero:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

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and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Barona Group of the Capitan Grande and, if such properties exist, to help assess how the proposed undertaking might affect them.

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MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Doug Welmas, Chairperson
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio, CA 92203

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Welmas:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Daniel Salgado, Chairperson
Cahuilla Band of Indians
52701 U.S. Highway 371
Anza, CA 92539

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Salgado:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Cahuilla Band of Indians and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

The USAF welcomes your comments and concerns regarding known culturally and historically significant properties at or near the proposed PR training sites. The USAF is concurrently seeking additional information regarding historic properties within or near the APE from the Advisory Council on Historic Preservation, Arizona State Historic Preservation Office, the New Mexico Historic Preservation Division, the California Office of Historic Preservation, and the Nevada Historic Preservation Office. A Tribal contact list for the proposed undertaking is

provided at Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information and to identify properties of religious and historic significance at the proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult to discuss potential avoidance, minimization, or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. Coordinates of the Proposed PR Training Sites
4. Proposed PR Training Sites Mapbook
5. Prior SHPO Concurrence of Proposed PR Training Sites
6. Tribal Consultation List

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Ralph Goff, Chairperson
Campo Band of Diegueno Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Goff:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

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The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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3775 South 5th Street,
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Michael Garcia, Vice Chairperson
Ewiiaapaayp Tribe
4054 Willows Road
Alpine, CA 91901

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Vice Chairperson Garcia:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Robert Pinto, Chairperson
Ewiiaapaayp Tribe
4054 Willows Road
Alpine, CA 91901

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Pinto:

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3775 South 5th Street,
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e-mail at kevin.wakefield. l@us.af.mil

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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, CA 91723

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Salas:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

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Sincerely,

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel
Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Morales:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Sandonne Goad, Chairperson
Gabrielino /Tongva Nation
106 1/2 Judge John Aiso Street, #231
Los Angeles, CA 90012

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Goad:

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## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Dorame:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Gabrielino Tongva Indians of California Tribal Council and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
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6. Tribal Consultation List

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Charles Alvarez, Tribal Councilman
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA 91307

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Alvarez:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Clint Linton, Director of Cultural Resources
Iipay Nation of Santa Ysabel
P.O. Box 507
Santa Ysabel, CA 92070

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Linton:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Virgil Perez, Chairperson
Iipay Nation of Santa Ysabel
P.O. Box 130
Santa Ysabel, CA 92070

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Perez:

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Rebecca Osuna, Chairperson
Inaja-Cosmit Band of Indians
2005 S. Escondido Boulevard
Escondido, CA 92025

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Osuna:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

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The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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Sincerely,

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Erica Pinto, Chairperson
Jamul Indian Village
P.O. Box 612
Jamul, CA 91935

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Pinto:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

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and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Jamul Indian Village and, if such properties exist, to help assess how the proposed undertaking might affect them.

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MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Fred Nelson, Chairperson
La Jolla Band of Luiseno Indians
22000 Highway 76
Pauma Valley, CA 92061

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Nelson:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Javaughn Miller, Tribal Administrator
La Posta Band of Diegueno Mission Indians
8 Crestwood Road
Boulevard, CA 91905

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Miller:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to La Posta Band of Diegueno Mission Indians and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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provided at Attachment 6. To further that investigation to determine cultural resources present at the sites, the USAF respectfully requests Government-to-Government consultation to provide the opportunity to share information and to identify properties of religious and historic significance at the proposed PR training sites located within your tribe's traditional territory. Once properties are identified, we would like to consult to discuss potential avoidance, minimization, or mitigation measures. Given the complexity and geographical scope of this action, along with the programmatic nature of the EA, the USAF believes development of a Programmatic Agreement (PA) would be appropriate. Please let us know if you would be amenable to and willing to participate in development of a PA for this action.

If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. Coordinates of the Proposed PR Training Sites
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Gwendolyn Parada, Chairperson
La Posta Band of Diegueno Mission Indians
La Posta Band of Diegueno Mission Indians
8 Crestwood Road
Boulevard, CA 91905

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Parada:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Shane Chapparosa, Chairperson
Los Coyotes Band of Cahuilla and Cupeño Indians
P.O. Box 189
Warner Springs, CA 92086

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Chapparosa:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

John Perada, Environmental Director
Los Coyotes Band of Cahuilla and Cupeño Indians
P.O. Box 189
Warner Springs, CA 92086

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

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Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Angela Elliott Santos, Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, CA 91905

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Elliott Santos:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Manzanita Band of Kumeyaay Nation and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Michael Linton, Chairperson
Mesa Grande Band of Diegueno Mission Indians
P.O. Box 270
Santa Ysabel, CA 92070

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Linton:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Mesa Grande Band of Diegueno Mission Indians and, if such properties exist, to help assess how the proposed undertaking might affect them.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Denisa Torres, Cultural Resources Manager
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Torres:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Morongo Band of Mission Indians and, if such properties exist, to help assess how the proposed undertaking might affect them.

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Phone at 520-228-4035

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Robert Martin, Chairperson
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Martin:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

The Proposed Action will improve routine and specialized formal PR training in the southwestern United States (U.S.), as well as any Large-Force joint/multi-national events. The Proposed Action will further authorize additional training sites, and expand the range of authorized PR training activities on some current sites. However, there are no changes in the organizations that conduct the training, the number of personnel involved, the amount or type of equipment used, or current procedures used to avoid and protect environmental resources. Proposed PR training activities are centered at Davis-Monthan AFB, Arizona but conducted in Arizona, California, Nevada, and New Mexico in previously disturbed areas or those previously used for similar activities as defined under the Proposed Action and No-Action Alternative. A total of 181 sites are included, 160 of which are already authorized. Specifically, DoD and non-DoD properties for ground, flight (including activation of a Temporary Military Operations Area [MOA] above the Playas Training and Research Center), and water operations were added. Given the complexity of the proposed undertaking and dispersed geographical locations involved, the following scale categories were developed to capture three probable PR training event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training). A description of the Proposed Action is provided in Attachment 1. The summary of training activities is provided in Attachment 2. The Area of Potential Effect (APE) for the proposed PR training sites is defined in Attachment 3 and depicted on maps in Attachment 4. Addition ally, the latitude and longitude coordinates of the PR training sites are provided in Attachment 3. Please note that some of the PR training sites may change based on ongoing coordination with the controlling agencies.

In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

and your tribe for this effort is also in accordance with Executive Order 13 175, *Consultation and Coordination with Indian Tribal Governments:* Air Force Instruction (AFI) 32-7065, *Cultural Resources Management Program;* and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes.* The USAF is particularly interested in your input on properties at or near the proposed PR training sites that may have religious and cultural significance to Morongo Band of Mission Indians and, if such properties exist, to help assess how the proposed undertaking might affect them.

The USAF used public records, the National Register of Historic Places, Arizona's Cultural Resource Inventory (AZSIT E), the Arizona Department of Emergency and Military Affairs (AZDEMA) Cultural Resource Team, the New Mexico Cultural Resources Information System (NMCRIS), the Nevada Cultural Resources Information System (NVCRIS), and the Native American Heritage Commission (NAHC) to develop this plan. In addition, reviews of records maintained by the (California) Eastern Information Center, National Forest Districts, and DoD installations helped identify cultural properties on proposed PR training sites. PR training sites on DoD facilities were previously analyzed and approved for activities similar to the Proposed Actions under a variety of Cultural Resource Management Plans, EAs, and Environmental Impact Statements (EISs), which were also reviewed. Approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico are currently being evaluated for cultural resources. Information regarding historic properties at the proposed PR training sites will be provided to you when those studies are complete.

Please note that the proposed San Clemente Island and Leon training sites in California shown in Attachments 1, 3, and 4 are not part of this consultation. The proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS for the San Clemente Island and Leon PR training sites). A copy of the concurrence letter is provided in Attachment 5.

Note that 29 proposed PR sites in Arizona and five proposed PR training sites at the White Sands Missile Range (WSMR) in New Mexico, as shown in Attachments 1, 3, and 4, were previously addressed under separate actions. Specifically, 17 of the 29 proposed PR training sites in Arizona were addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EIS and State Historic Preservation Office (SHPO) concurred with the determination of no effects to historic properties on 12 July 2013 (case reference number SHP0-2013-0702 [1130 64]); the remaining 12 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, and SHPO concurred on 30 October 2018 (Davis 2018). Copies of the concurrence communications and tables of those proposed PR training sites are provided in Attachment 5. In addition, the five proposed PR training sites at WSMR in New Mexico were addressed in WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities, 2011 Final EA for Network Integration Evaluation, and 2015 - 2019 Integrated Natural and Cultural Resources Management Plan and EA. The proposed WSMR PR training sites were also addressed in the Programmatic Memorandum of Agreement (PMOA) executed on 18 April 1985 by the U.S. Army, WSMR, SHPO, and the Advisory Council on Historic Preservation for the treatment of historic properties. The APE for this Proposed Action on WSMR falls within the area addressed by that PMOA. Proposed training events will follow the established WSMR siting process to avoid adverse effects to historic properties. The USAF is seeking SHPO concurrence that implementation of the mitigation measures and any operational constraints identified in these documents will result in no adverse effects to cultural resources, and that for those proposed PR training sites, no further cultural resources studies are needed and no further consultation is warranted.

Additionally, please note that the USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton in California as part of the Proposed Action and is currently coordinating with the USMC. These proposed PR training sites are shown in Attachments 1, 3, and 4 for reference purposes only, and are not part of this consultation. If a training event is proposed for any of these sites, USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property.

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
1. Description of Proposed Action
2. Summary of Proposed PR Training Activities
3. Coordinates of the Proposed PR Training Sites
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6. Tribal Consultation List

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Temet Aguilar, Chairperson
Pauma Band of Luiseno Indians
P.O. Box 369
Pauma Valley, CA 92061

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Aguilar:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Paul Macarro, Cultural Resources Coordinator
Pechanga Band of Luiseno Indians
P.O. Box 1477
Temecula, CA 92593

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Mark Macarro, Chairperson
Pechanga Band of Luiseno Indians
P.O. Box 1477
Temecula, CA 92593

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

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3775 South 5th Street,
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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Joseph Hamilton, Chairperson
Ramona Band of Cahuilla
P.O. Box 391670
Anza, CA 92539

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Hamilton:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

John Gomez, Environmental Coordinator
Ramona Band of Cahuilla
P.O. Box 391670
Anza, CA 92539

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Gomez:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Bo Mazzetti, Chairperson
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA 92082

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Mazzetti:

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

San Luis Rey Tribal Council, Tribal Council
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

To Whom It May Concern:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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355 CES/CEIE
3775 South 5th Street,
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e-mail at kevin.wakefield. l@us.af.mil

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MICHAEL R. DROWLEY, Colonel, USAF
Commander

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

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Allen Lawson, Chairperson
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P.O. Box 365
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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Mercedes Estrada
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA 92539

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Estrada:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Steven Estrada, Chairperson
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA 92539

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Estrada:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Scott Cozart, Chairperson
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92583

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Cozart:

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## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Cody J. Martinez, Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Martinez:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

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In accordance with NEPA and the USAF's implementing regulations, 32 CFR Section 989.14(1), the USAF is also seeking your input on the proposed undertaking. Government-to-Government consultation between the USAF

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
Commander

Attachments:
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2. Summary of Proposed PR Training Activities
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Kristie Orosco, Cultural Resources Manager
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Michael Mirelez, Cultural Resource Coordinator
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, CA 92274

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If you have any questions or inputs, please contact Kevin Wakefield, at the following:

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3775 South 5th Street,
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Sincerely,

MICHAEL R. DROWLEY, Colonel, USAF
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Attachments:
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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Ernest Pingleton, Tribal Historic Officer, Resource Management
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Pingleton:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

PR training participants may include USAF PR forces, Joint Services, local/state agencies, Department of Defense (DoD) lnteragencies, and Foreign Partner Nations. The Proposed Action will enhance PR force readiness of participating agencies and organizations. DoD Directive 3002.0 1E, *Personnel Recovery in the Department of Defense,* defines PR as "one of the highest priorities of the DoD," and tasks Service Chiefs with this responsibility. Effective PR training uses realistic environments to comply with DoD Directive 3002.01E, and Air Force Policy Directive 10-30, *Personnel Recovery.* The Proposed Action is needed because PR forces operating out of Davis-Monthan AFB are limited by the number of adequate and realistic training sites that include the desired training activity characteristics. The range of currently available sites also does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Robert Welch, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Welch:

The U.S. Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (hereafter the *Proposed Action)* in accordance with the National Environmental Policy Act (NEPA). The USAF will execute the environmental impact process in accordance with the Council on Environmental Quality regulations pursuant to NEPA requirements. The USAF will comply with Section 106 of the National Historic Preservation Act (NHPA) concurrently with EA development, as recommended by Title 40 Code of Federal Regulations (CFR) Section 1502.25(a). In accordance with 36 CFR Section 800.3(c), this letter initiates Section 106 consultation and requests your input on the Proposed Action.

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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE ARIZONA

Jeff Haozous, Chairperson
Fort Sill Apache Tribe
43187 US Hwy 281
Apache, OK 73006

**Subject: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Chairperson Haozous:

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**Section 106 -- State Historic Preservation Office and Tribal Consultation Continuation Letters**

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

16 October 2019

Ms. Julianne Polanco, SHPO
Office of Historic Preservation
Department of Parks & Recreation
1725 23rd Street, Suite 100
Sacramento, CA 96816

**Subject:** **Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States (SHPO Reference # [to be provided by SHPO])**

Dear Ms. Polanco:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter dated 24 September 2019 that also requested your input on the proposed undertaking. Our previous letter had provided the following information: (1) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Area of Potential Effect (APE) Definitions and Coordinates of California Proposed PR Training Sites, (4) APE Maps of California Proposed PR Training Sites, (5) Prior SHPO Concurrence of Proposed PR training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information and request your concurrence that the proposed undertaking would result in No Historic Properties Affected. Specifically, this letter provides additional materials related to the tribal consultation which has now been initiated for the proposed undertaking (e.g., example tribal consultation letter) in Attachment 1; also, this letter provides details on effects on historic properties within the APE for proposed PR training sites in California in Attachment 2. Maps showing the APE for the proposed PR training sites in California are provided in Attachment 3.

Based on the findings shown in Attachment 2, we have made a finding of "No Historic Properties Affected" pursuant to 36 CFR 800. We request your concurrence with this finding. We also request your concurrence on the APE, as shown on the maps included in Attachment 3.

If you have any questions or inputs, please contact Kevin Wakefield at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at Kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

cc. Ms. Jenan Saunders, Deputy

Attachments:

1. Example Tribal Consultation Letter
2. Effects on Cultural Resources for Proposed Personnel Recovery Training Sites in California
3. PR EA California APE Maps

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, November 19, 2019 1:18 PM
**To:** Saunders, Jenan@Parks
**Cc:** Polanco, Julianne@Parks; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** RE: Section 106 Submission Follow-up

Just mailed out the hard copy, Priority Mail/Registered.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** Saunders, Jenan@Parks <Jenan.Saunders@parks.ca.gov>
**Sent:** Tuesday, November 19, 2019 2:08 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Polanco, Julianne@Parks <Julianne.Polanco@parks.ca.gov>; larry.w.neal@aecom.com; Tanya.Wahoff@aecom.com; hallie.fitzpatrick@aecom.com; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>
**Subject:** [Non-DoD Source] RE: Section 106 Submission Follow-up

Thank you. I'll share this letter with our Air Force reviewer as a heads up, and we'll keep an eye out for the hard copy.

Jenan

Jenan Saunders
Deputy State Historic Preservation Officer
California Office of Historic Preservation
1725 23rd St, Ste 100, Sacramento CA 95816
916 445-7019
Jenan.Saunders@parks.ca.gov
www.ohp.parks.ca.gov

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, November 19, 2019 12:51 PM
**To:** Saunders, Jenan@Parks <Jenan.Saunders@parks.ca.gov>
**Cc:** Polanco, Julianne@Parks <Julianne.Polanco@parks.ca.gov>; larry.w.neal@aecom.com; Tanya.Wahoff@aecom.com; hallie.fitzpatrick@aecom.com; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>
**Subject:** RE: Section 106 Submission Follow-up

Here is the cover letter, will be sending the hard copy out today as well. We are consulting with the New Mexico, Arizona, and Nevada SHPOs as well.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** Saunders, Jenan@Parks <Jenan.Saunders@parks.ca.gov>
**Sent:** Tuesday, November 19, 2019 1:11 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Polanco, Julianne@Parks <Julianne.Polanco@parks.ca.gov>; larry.w.neal@aecom.com; Tanya.Wahoff@aecom.com; hallie.fitzpatrick@aecom.com; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] RE: Section 106 Submission Follow-up

SHPO Polanco asked me to respond to your email below. Unfortunately, we are not seeing that your submittal ever came to our office as we cannot find any record of it in our project database.

If your consultation was in fact with the California SHPO (rather than the Arizona SHPO—we thought perhaps your email was sent to us in error), I suggest you try resending the submittal in hard copy and sending us the cover letter by email (we couldn't find/open the attachment referenced in your email of this morning). Please let us know if you have any questions.

Jenan

Jenan Saunders
Deputy State Historic Preservation Officer
California Office of Historic Preservation
1725 23rd St, Ste 100, Sacramento CA 95816
916 445-7019
Jenan.Saunders@parks.ca.gov

www.ohp.parks.ca.gov

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>

**Sent:** Tuesday, November 19, 2019 10:09:39 AM

**To:** OHP, CALSHPO@Parks <CALSHPO.OHP@parks.ca.gov>; Polanco, Julianne@Parks <Julianne.Polanco@parks.ca.gov>

**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>

**Subject:** Section 106 Submission Follow-up

Ms. Julianne Polanco, I am writing to request the status of the Section 106 Submission for the Personnel Recovery (PR) Training Program for Davis-Monthan Air Force Base, Arizona.

The original request was mailed out on 24 September 2019.

We have been working to completed the Final Environmental Assessment for the project but need your input to complete.

I have provided a copy of the original request that was submitted to your office.

If you have any questions please call.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

16 October 2019

Ms. Rebecca Palmer, SHPO
Historic Preservation Office
901 S. Stewart Street
Suite 5004
Carson City, NV 89701-4285

**Subject:** **Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States (SHPO Reference # [to be provided by SHPO])**

Dear Ms. Palmer:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter dated 24 September 2019 that also requested your input on the proposed undertaking. Our previous letter had provided the following information: (1) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Area of Potential Effect (APE) Definitions and Coordinates of Nevada Proposed PR Training Sites, (4) APE Maps of Nevada Proposed PR Training Sites, (5) Prior SHPO Concurrence of Proposed PR training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information and request your concurrence that the proposed undertaking would result in No Adverse Effects. Specifically, this letter provides additional materials related to the tribal consultation which has now been initiated for the proposed undertaking (e.g., example tribal consultation letter) in Attachment 1; also, this letter provides details on effects on historic properties within the APE for proposed PR training sites in Nevada in Attachment 2. Maps showing the APE for the proposed PR training sites in Nevada are provided in Attachment 3.

Based on the findings shown in Attachment 2, we have made a finding of "No Adverse Effects" pursuant to 36 CFR 800. We request your concurrence with this finding. We also request your concurrence on the APE, as shown on the maps included in Attachment 3.

If you have any questions or inputs, please contact Kevin Wakefield at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at Kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

cc. Robin Reed, Deputy

Attachments:

1. Example Tribal Consultation Letter
2. Effects on Cultural Resources for Proposed Personnel Recovery Training Sites in Nevada
3. PR EA Nevada APE Maps

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

19 November 2019

Ms. Erin Davis, Archaeological Compliance Specialist
State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007

**Subject:** **Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Davis:

Thank you for your response to our letter of 24 September 2019 initiating Section 106 consultation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program. The USAF has some points of clarification and some additional information for your consideration:

- We would like to clarify that the number of Proposed PR training sites has been revised to 175, of which 150 are in Arizona. Those 150 proposed PR training sites include 129 previously authorized training sites and 21 additional locations.

- Regarding the 29 proposed PR training sites where we determined that no additional cultural resources investigations are needed, 17 of these sites were addressed in the USAF's 2017 Rescue Group Personnel Recovery Supplemental Review. We thank you for your concurrence regarding those sites. We would further like to clarify that the remaining 12 of the 29 proposed PR training sites were addressed as part of the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review, which SHPO concurred on 30 October 2018, providing there would be no change in use or improvements needed. A copy of that communication was included in Attachment 5 of our prior consultation letter and is included as Attachment 1 to this letter for your reference. We ask for your concurrence for these 12 sites as well.

- The cultural resources surveys and investigations conducted at current and proposed PR training sites have been completed, which resulted in the identification of NRHP-eligible resources at proposed PR training sites. Based on the investigations, six proposed PR training sites (Babbitt Ranch 2, HLZ 7, Jacks Canyon, Rough Rider, Sage, and HLZ 8) have been removed from consideration for the PR Training Program in order to eliminate impacts to those assets from these actions. The final cultural resources inventory report is currently being prepared and will be provided to you when completed to consult on our official determination.

- We understand that the Arizona SHPO concurs with the development of a Programmatic Agreement (PA) for the proposed undertaking and would be interested in participating in the development of a PA. However, we would like the Arizona SHPO to consider, as an alternative, incorporating language directly in the EA that would facilitate Section 106 consultation, instead of developing a PA or MOA, based on the suggestion of the New Mexico SHPO. The correspondence from New Mexico SHPO is provided as Attachment 2 to this letter. As described in Attachment 2, the language in the EA would include a binding commitment on the part of the USAF to consult under Section 106 on a case-by-case basis with the appropriate agencies and parties. Please let us know if this Section 106 approach is acceptable to you.

If you have any questions or would like to further discuss, please contact Kevin Wakefield at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927

e-mail at Kevin.wakefield.1@us.af.mil;

Phone at 520-228-4035

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

Attachments:

1. Prior SHPO Concurrence of Proposed PR Training Sites
2. New Mexico SHPO Response Letter

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

19 November 2019

Dr. Jeff Pappas, Director and SHPO
DCA – Historic Preservation Division
407 Galisto Street
Suite 236
Santa Fe, NM 87501

**Subject:** **Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States (SHPO Reference #HPD Log 111500)**

Dear Dr. Pappas:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter dated 24 September 2019 that also requested your input on the proposed undertaking. The previous letter submitted by the USAF provided (1) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of New Mexico Proposed PR Training Sites, (4) APE Maps of New Mexico Proposed PR Training Sites, (5) Prior SHPO Concurrence of Proposed PR training Sites, and the (6)Tribal Consultation List.

The purpose of this letter is to provide additional information and request your concurrence that the proposed undertaking would result in "No Adverse Effect" pursuant to 36 CFR 800. Specifically, this letter provides: additional materials related to the tribal consultation, which has now been initiated for the proposed undertaking (e.g., example tribal consultation letter) in Attachment 1; details on effects on historic properties within the APE for proposed PR training sites in New Mexico in Attachment 2; and supporting communication documentation in Attachment 3. In addition, this letter presents the findings of two archaeological inventories conducted in support of the proposed undertaking in Attachment 4. Specifically, these include the following: the negative archaeological survey report *A Cultural Resources Survey for Proposed Helicopter Landing Zones in Hildalgo County, New Mexico* (Kalosky 2019), and the technical report *Archaeological Inventory of Proposed Helicopter Landing Zones (HLZs) and Drop Zones (DZs) in Arizona and New Mexico in support of the Bi-Annual Angel Thunder Search-and-Rescue Training Headquartered from Davis-Monthan Air Force Base, Tucson, Arizona (Miljour and Wegener 2019)*. Maps showing the APE for the proposed PR training sites in New Mexico are provided in Attachment 5.

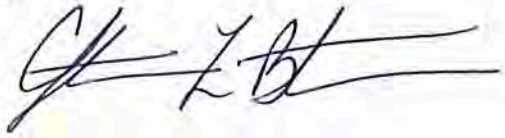
Based on the findings shown in Attachments 2-4, we have made a finding of "No Adverse Effect" pursuant to 36 CFR 800. We request your concurrence with this finding. We also request your concurrence on the APE, as shown on the maps included in Attachment 4.

The USAF is interested in incorporating language directly in the EA that would facilitate Section 106 consultation process, instead of developing a Programmatic Agreement (PA) or Memorandumn of Agreement (MOA), Per the recommendation of the New Mexico SHPO, the languge would include a binding commitment on the part of the USAF to consult under Section 106 on a case-by-case basis with the appropriate agency, SHPO, and consulting parties in the FONSI.

If you have any questions or inputs, please contact Kevin Wakefield at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927
e-mail at Kevin.wakefield.1@us.af.mil;
Phone at 520-228-4035

Sincerely,



Christopher L. Brewster, PE
Chief, Environmental

cc. Bob Estes, NM HPD Staff archaeologist

Attachments:

1. Example Tribal Consultation Letter
2. Effects on Cultural Resources for Proposed Personnel Recovery Training Sites in New Mexico
3. Supporting Gila NF Communication Documentation
4. Cultural Resources Inventories for NM PR Training Sites (Kalosky 2019 and Miljour and Wegener 2019)
5. PR EA New Mexico APE Maps

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

19 November 2019

Katharine Kerr, Program Analyst
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington DC 20001

**Subject:** **Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Ms. Kerr:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (1) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Defintions and Coordinates of Proposed PR Training Sites by State (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment 1.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield. l@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

# DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Robert Miguel, Chairman
Ak-Chin Indian Community
42507 W. Peters & Nall Road
Maricopa, AZ 85138

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairman Miguel:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment l.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Elaine Peters, Director, Him Dak Eco Museum

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Sherry Cordova, Chairwoman
Cocopah Indian Tribe
Cocopah Indian Reservation
14515 S. Veterans Drive
Sommerton, AZ 85350

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairwoman Cordova:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment l.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Justin Brundin, Cultural Resources Manager

# DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Dennis Patch, Chairman
Colorado River Indian Tribes of the Colorado River Indian Reservation
26600 Mohave Road
Parker, AZ 85344

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairman Patch:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment l.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Brian Etsitty, THPO

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Bernadine Burnette, President
Fort McDowell Yavapai Nation
P.O. Box 17779
Fountain Hills, AZ 85269

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Burnette:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment l.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Mark Frank, Director, Economic Development Division
Erika McCalvin, Planning & Project Manager
Albert C. Nelson, Cultural Resource Manger

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Timothy Williams, Chairman
Fort Mojave Indian Tribe
500 Merriman Ave.
Needles, CA 92363

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairman Williams:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment l.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Linda Otero, Director, AhaMakav Cultural Society
Christopher Harper, Cultural Heritage Manager

# DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Muriel Uqualla-Coochytewa, Chairwoman
Havasupai Tribe of the Havasupai Reservation
P.O. Box 10
Supai, AZ 86435

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairwoman Uqualla-Coochytewa:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Travis Hamidreek, Director of Natural Resources

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Timothy L. Nuvangyaoma, Chairman
Hopi Tribe of Arizona
P.O. Box 123
Kykotsmovi, AZ 86039

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairman Nuvangyaoma:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Stewart Koyiyumptewa, CPO Director

# DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Ona Segundo, Chairwoman
Kaibab Band of Paiute Indians of the Kaibab Indian Reservation
HC 65, Box 2, Tribal Affairs Bldg.
Fredonia, AZ 86022

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairwoman Segundo:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Charley Bulletts, Cultural Resources Director

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Martin Harvier Sr., President
Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona
10005 East Osborn Road
Scottsdale, AZ 85256

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Harvier:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: SRP-MIC Cultural Resources Department Cultural Preservation Program
Angela D. Garcia-Lewis, Cultural Preservation Compliance Supervisor
Martha Martinez, NAGPRA Coordinator

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 6:41 AM
**To:** Angela.Garcia-Lewis@srpmic-nsn.gov
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie
**Subject:** DM PR Section 106 Consultation Continuation
**Attachments:** A.Garcia_Lewis - DM PR Section 106 Consult._11.20.19.pdf

Good morning, please find attached our letter addressing our continuing consultation for the PR EA Personnel Recovery Training Program.

If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 6:43 AM
**To:** Martha.Martinez@srpmic-nsn.gov
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie
**Subject:** DM PR Section 106 Consultation Continuation
**Attachments:** M.Martinez-DM PR Training Section 106 Consult._11.20.19.pdf

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If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
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Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

# DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Jeri DeCola, Chairwoman
Tonto Apache Tribe of Arizona
Tonto Apache Reservation #30
Payson, AZ 85541

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairwoman DeCola:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Wally Davis Jr., Cultural & NAGPRA Representative

# DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Gari Lafferty, Chairwoman
Paiute Indian Tribe of Utah
440 N. Paite Drive
Cedar City, UT 84721

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairwoman Lafferty:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

cc: Dorena Martineau, Cultural Resources Director, Chairwoman

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Bureau of Indian Affairs Western Regional Office
2600 N. Central Avenue, 4th Floor Mailroom
Phoenix, AZ 85001

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

To whom it may concern:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Kristine FireThunder, Director
State of Arizona Governor's Office of Tribal Relations
1700 W. Washington Street, Suite 235
Phoenix, AZ 85007

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. FireThunder:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Carlene Yellowhair, President
San Juan Southern Paiute Tribe of Arizona
P.O. Box 2950
Tuba City, AZ 86045

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Yellowhair:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Phone at 520-228-4035

Sincerely,

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Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

P. Steere, J. Francisco
Tohono O'odham Nation
Cultural Affairs Office, Cultural Center Museum
Route 19 and Fresnal Canyon Road
Topowa, AZ 85639

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Messrs. Steere and Francisco:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Chris Coder, Tribal Archaeologist
Yavapai-Apache Nation
2400 W. Datsi St.
Camp Verde, AZ 86322

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Coder:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Chris Spotted Eagle, Chairman
Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony
1 Paiute Drive
Las Vegas, NV 89106

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairman Spotted Eagle:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Vickie Simmons, Chairperson
Moapa Band of Paiute Indians of the Moapa River Indian Reservation
P.O. Box 340
Moapa, NV 89025

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Simmons:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Bureau of Indian Affairs
Southwest Regional Office
1001 Indian School Road, NW
Albuquerque, NM 87104

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

To Whom It May Concern:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Max Zuni, Governor
Pueblo of Isleta
P.O. Box 1290
Isleta, NM 87022

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Zuni:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Wilfred Herrera, Jr., Governor
Pueblo of Laguna
P.O. Box 194
Laguna, NM 87026

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Herrera:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Sherrie Catanach, Public Relations Coordinator
State of New Mexico New Mexico Indian Affairs Department
Wendell Chino Building, 2nd Floor
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Catanach:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Jeff Grubbe, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Grubbe:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Patricia Garcia-Plotkin, Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Garcia-Plotkin:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Edwin Romero, Chairperson
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, CA 92040

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Romero:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Doug Welmas, Chairperson
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio, CA 92203

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Welmas:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Daniel Salgado, Chairperson
Cahuilla Band of Indians
52701 U.S. Highway 371
Anza, CA 92539

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Salgado:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Ralph Goff, Chairperson
Campo Band of Diegueno Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Goff:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Michael Garcia, Vice Chairperson
Ewiiaapaayp Tribe
4054 Willows Road
Alpine, CA 91901

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Vice Chairperson Garcia:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Robert Pinto, Chairperson
Ewiiaapaayp Tribe
4054 Willows Road
Alpine, CA 91901

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Pinto:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, CA 91723

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Salas:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel
Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Morales:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Sandonne Goad, Chairperson
Gabrielino /Tongva Nation
106 1/2 Judge John Aiso Street, #231
Los Angeles, CA 90012

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Goad:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Dorame:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Charles Alvarez, Tribal Councilman
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA 91307

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Alvarez:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Virgil Perez, Chairperson
Iipay Nation of Santa Ysabel
P.O. Box 130
Santa Ysabel, CA 92070

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Perez:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Rebecca Osuna, Chairperson
Inaja-Cosmit Band of Indians
2005 S. Escondido Boulevard
Escondido, CA 92025

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Osuna:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Erica Pinto, Chairperson
Jamul Indian Village
P.O. Box 612
Jamul, CA 91935

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Pinto:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Fred Nelson, Chairperson
La Jolla Band of Luiseno Indians
22000 Highway 76
Pauma Valley, CA 92061

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Nelson:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Javaughn Miller, Tribal Administrator
La Posta Band of Diegueno Mission Indians
8 Crestwood Road
Boulevard, CA 91905

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Miller:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Gwendolyn Parada, Chairperson
La Posta Band of Diegueno Mission Indians
La Posta Band of Diegueno Mission Indians
8 Crestwood Road
Boulevard, CA 91905

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Parada:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Shane Chapparosa, Chairperson
Los Coyotes Band of Cahuilla and Cupeño Indians
P.O. Box 189
Warner Springs, CA 0

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Chapparosa:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

John Perada, Environmental Director
Los Coyotes Band of Cahuilla and Cupeño Indians
P.O. Box 189
Warner Springs, CA 92086

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Perada:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Angela Elliott Santos, Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, CA 91905

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Elliott Santos:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Michael Linton, Chairperson
Mesa Grande Band of Diegueno Mission Indians
P.O. Box 270
Santa Ysabel, CA 92070

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Linton:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Denisa Torres, Cultural Resources Manager
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Torres:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Base Natural and Cultural Resource Manager

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Robert Martin, Chairperson
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Martin:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Temet Aguilar, Chairperson
Pauma Band of Luiseno Indians
P.O. Box 369
Pauma Valley, CA 92061

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Aguilar:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Paul Macarro, Cultural Resources Coordinator
Pechanga Band of Luiseno Indians
P.O. Box 1477
Temecula, CA 92593

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Macarro:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Mark Macarro, Chairperson
Pechanga Band of Luiseno Indians
P.O. Box 1477
Temecula, CA 92593

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Joseph Hamilton, Chairperson
Ramona Band of Cahuilla
P.O. Box 391670
Anza, CA 92539

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Hamilton:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

John Gomez, Environmental
Coordinator
Ramona Band of Cahuilla
P.O. Box 391670
Anza, CA 92539

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Gomez:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Bo Mazzetti, Chairperson
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA 92082

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Mazzetti:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

San Luis Rey Tribal Council, Tribal Council
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

To Whom It May Concern:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

To Whom It May Concern:

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Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Allen Lawson, Chairperson
San Pasqual Band of Diegueno Mission Indians
P.O. Box 365
Valley Center, CA 92082

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Lawson:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Base Natural and Cultural Resource Manager

Attachments:
l. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

John Flores, Environmental Coordinator
San Pasqual Band of Diegueno
Mission Indians
P.O. Box 365
Valley Center, CA 92082

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Flores:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Mercedes Estrada,
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA 92539

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Estrada:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Base Natural and Cultural Resource Manager

Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Steven Estrada, Chairperson
Santa Rosa Band of Cahuilla Indians
P.O. Box 391820
Anza, CA 92539

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Estrada:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Scott Cozart, Chairperson
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92583

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Cozart:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Cody J. Martinez, Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Martinez:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Sincerely,

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Attachments:
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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Kristie Orosco, Cultural Resources Manager
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Orosco:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Kristie Orosco, Cultural Resources Manager
Sycuan Band of the Kumeyaay Nation
910 Willow Glen Drive
El Cajon, CA 92019

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Orosco:

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Michael Mirelez, Cultural Resource Coordinator
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, CA 92274

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Mirelez:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Ernest Pingleton, Tribal Historic Officer, Resource Management
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Pingleton:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Robert Welch, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Welch:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Jeff Haozous, Chairperson
Fort Sill Apache Tribe
43187 US Hwy 281
Apache, OK 73006

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairperson Haozous:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Jordan D. Joaquin, President
Fort Yuma Quechan Tribe
P.O. Box 1899
Yuma, AZ 85366

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Joaquin:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment I.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Manfred Scott, Acting Chairperson, Quechan Cultural Committee
Jill McCormick, THPO

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 6:42 AM
**To:** executivesecretary@quechantribe.com
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie
**Subject:** DM PR Section 106 Consultation Continuation
**Attachments:** J.Joaquin_ DM PR Training  Section 106 Consult._11.20.19.pdf

Good morning, please find attached our letter addressing our continuing consultation for the PR EA Personnel Recovery Training Program.

If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Robert Valencia, Chairman
Pascua Yaqui Tribe of Arizona
7474 S. Camino De Oeste
Tucson, AZ 85757

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Valencia:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment I.

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Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Dr. Karl Hoerig, THPO

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Gwendena Lee-Gatewood, Chairwoman
White Mountain Apache Tribe
P.O. Box 1150
Whiteriver, AZ 85941

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Lee-Gatewood:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Mark Altaha, Tribal Historic Preservation Officer

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 6:58 AM
**To:** Altaha, Mark
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie
**Subject:** DM PR Section 106 Consultation Continuation
**Attachments:** M.Altaha_DM PR Training Section 106 consult._11.20.19.pdf

Good morning, please find attached our letter addressing our continuing consultation for the PR EA Personnel Recovery Training Program.

If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Arthur Blazer, President
Mescalero Apache Tribe
P.O. Box 227
108 Central Avenue
Mescalero, NM 88340

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Blazer:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Holly Houghton, THPO

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Brian D. Vallo, Governor
Pueblo of Acoma
P.O. Box 309
Acoma, NM 87034

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Vallo:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Todd Scissons, THPO

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 6:57 AM
**To:** damon.clarke@hualapa.nsn.gov; Peter Bungart
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie
**Subject:** DM PR Section 106 Consultation Continuation
**Attachments:** D.Clarke - DM PR Training Section 106 Consult._11.20.19.pdf

Good morning, please find attached our letter addressing our continuing consultation for the PR EA Personnel Recovery Training Program.

If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 6:57 AM
**To:** Peter Bungart
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie
**Subject:** DM PR Section 106 Consultation Continuation
**Attachments:** P.Bungart - DM PR Training Section 106 Consult._11.20.19.pdf

Good morning, please find attached our letter addressing our continuing consultation for the PR EA Personnel Recovery Training Program.

If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Dr. Damon R. Clarke, Chairman
Hualapai Indian Tribe of the Hualapai Indian Reservation
P.O. Box 179
Peach Springs, AZ 86434

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Dr. Clarke:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Peter Bungart, THPO

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Stephen R. Lewis, Governor
Gila River Indian Community
P.O. Box 97
Sacaton, AZ 85147

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Lewis:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Barnaby V. Lewis, Tribal Historic Preservation Officer
Larry Benallie Jr., Archaeological Compliance Specialist

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 7:26 AM
**To:** Barnaby Lewis
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Subject:** DM PR Section 106 Consultation Continuation
**Attachments:** B.V.Lewis-DM PR training Section 106 Consult._11.20.19.pdf

Good morning, please find attached our letter addressing our continuing consultation for the PR EA Personnel Recovery Training Program.

If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 7:24 AM
**To:** Larry Benallie Jr
**Cc:** Barnaby Lewis; Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** RE: DM PR Section 106 Consultation Continuation

Thank you sir, I will sent it to his new email address.

Barnaby.Lewis2@gric.nsn.us

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Larry Benallie Jr <Larry.BenallieJr@gric.nsn.us>
**Sent:** Thursday, November 21, 2019 8:13 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Barnaby Lewis <Barnaby.Lewis2@gric.nsn.us>
**Subject:** [Non-DoD Source] RE: DM PR Section 106 Consultation Continuation

Barnaby is on leave today. I have cc'd him on this reply. Check email address for Barnaby and send again?

*Larry Benallie, Jr.*
**Archaeological Compliance Specialist**
**Tribal Historic Preservation Office**
**Gila River Indian Community**
**P.O. Box 2193**
**Sacaton, Arizona 85147**
**(520) 562-7153**
Larry.BenallieJr@gric.nsn.us

Government to Government Consultation Toolkit

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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE [mailto:kevin.wakefield.1@us.af.mil]
**Sent:** Thursday, November 21, 2019 8:00 AM
**To:** Larry Benallie Jr <Larry.BenallieJr@gric.nsn.us>

**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** RE: DM PR Section 106 Consultation Continuation

Mr. Benallie, tried to send an email to Mr. Lewis but it was returned. Is he still with the office.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Thursday, November 21, 2019 7:52 AM
**To:** Larry.BenallieJr@gric.nsn.us
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>
**Subject:** DM PR Section 106 Consultation Continuation

Good morning, please find attached our letter addressing our continuing consultation for the PR EA Personnel Recovery Training Program.

If you have additional questions please email me.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

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DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Shasta Gaughen, Tribal Historic
Preservation Officer
Pala Band of Mission Indians
PMB 50
35008 Pala Temecula Road
Pala, CA 92059

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Ms. Gaughen:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Jim McPherson, Tribal Historic
Preservation Officer
Rincon Band of Luiseno Indians
One Government Center Lane
Valley Center, CA 92082

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. McPherson:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Dr. Henry Walt, THPO
Pueblo of Isleta
P.O. Box 1270
Isleta, NM 87022

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Dr. Walt:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

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Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE
ARIZONA

Richard Smith, Sr., THPO
Pueblo of Laguna
P.O. Box 194
Laguna, NM 87026

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Mr. Smith:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided ( l ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) APE Definitions and Coordinates of Proposed PR Training Sites by State, (4) APE Maps of Proposed PR Training Sites by State, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment I.

If you have any questions or inputs, please contact me, at the following:

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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 4, 2019 8:35 AM
**To:** rmiguel@ak-chin.nsn.us
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:10 AM
**To:** ablazer@mescaleroapachetribe.com; holly@mathpo.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:59 AM
**To:** Angela.Garcia-Lewis@srpmic-nsn.gov; Martha.Martinez@srpmic-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:12 AM
**To:** allenl@sanpasqualtribe.org; johnf@sanpasqualtribe.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:36 AM
**To:** admin@gabrielenoindians.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:42 AM
**To:** bburnette@fmyn.org; anelson@fmyn.org; Mfrank@fmyn.org; emccalvin@fmyn.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:05 AM
**To:** bennaecalac@aol.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:39 AM
**To:** besitty@crti-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:09 AM
**To:** 'ccoder@yan-tribe.org' <ccoder@yan-tribe.org>
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:32 AM
**To:** Chairman@cahuilla.net
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**Sent:** Wednesday, December 04, 2019 9:59 AM
**To:** Chapparosa@msn.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**Sent:** Wednesday, December 04, 2019 10:11 AM
**To:** cjmojado@slrmissionindians.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:16 AM
**To:** ssilva@sycuan-nsn.gov; lhaws@sycuan-nsn.gov; lhaws@sycuan-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**Sent:** Wednesday, December 04, 2019 10:24 AM
**To:** CRITTHPO@crit-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**To:** contact@lvpaiute.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:01 AM
**To:** c.yellowhair@sanjuanpaiute-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**Sent:** Wednesday, December 04, 2019 8:54 AM
**To:** damon.clarke@hualapai-nsn.gov; Peter.bungart@circaculture.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

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Thank you,

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EIAP Program Manager
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3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
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DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:03 AM
**To:** dtorres@morongo-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:31 AM
**To:** jstapp@cabazonindians-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:57 AM
**To:** epinto@jiv-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:22 AM
**To:** cloyd@barona-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:21 AM
**To:** garilafferty@gmail.com; Dorena.martineau@ihs.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:49 AM
**To:** executivemail@gric.nsn.us; Barnaby.lewis2@gric.nsn.us
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:13 AM
**To:** henryj@toast.net
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:04 AM
**To:** vburdette@tontoapache.org; wdavis@tontoapache.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:08 AM
**To:** admin@ramona-nsn.gov; jgomez@ramona-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:19 AM
**To:** jeff@fortsillapache.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:10 AM
**To:** vwhipple@rincontribe.org; bomazzetti@aol.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:58 AM
**To:** jmiller@LPtribe.net; LP13boots@aol.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 11:07 AM
**To:** ljbirdsinger@aol.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:44 AM
**To:** timothywilliams@formojave.com; lindaotero@formojave.com; christopherharper@fortmojave.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:05 AM
**To:** gwendena@wmat.us; Altaha, Mark <MarkAltaha@wmat.us>
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:14 AM
**To:** mercedes.estrada@santarosacahuilla-nsn.gov; mflaxbeard@santarosacahuillansn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:34 AM
**To:** michaelg@leaningrock.net; wmicklin@leaningrock.net
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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Thank you,

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Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:02 AM
**To:** mesagrandeband@msn.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:17 AM
**To:** mmirelez@tmdci.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:56 AM
**To:** osegundo@kaibabpaiute-nsn.gov; cbulletts@kaibabpaiute-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:19 AM
**To:** ACBCI-THPO@aguacaliente.net
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:02 AM
**To:** Jefford.francisco@tonation-nsn.gov; Peter Steere <Peter.Steere@tonation-nsn.gov>
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:40 AM
**To:** roadkingcharles@aol.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:33 AM
**To:** rgoff@campo-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:15 AM
**To:** rsmith2@lagunapueblo-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:57 AM
**To:** Robert.Valencia@pascuayaqui-nsn.gov; Karl.Hoerig@pascuayaqui-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**Sent:** Wednesday, December 04, 2019 9:17 AM
**To:** Sherrie.Catanach2@state.nm.us
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:37 AM
**To:** cocotcsec@cocopah.com; brundinj@cocopah.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:15 AM
**To:** jontiveros@soboba-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 10:04 AM
**To:** sgaughen@palatribe.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:38 AM
**To:** GTTribalcouncil@aol.com; sgoad@gabrielino-tongva.com; gtongva@gmail.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:52 AM
**To:** Blomayestewa@hopi.nsn.us; SKoyiyumptewa@hopi.nsn.us
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:47 AM
**To:** executivesecretary@quechantribe.com; scottmanfred@yahoo.com; historicpreservation@quechantribe.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 8:51 AM
**To:** htchair@havasupai-nsn.gov; travishamidreek@yahoo.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 11:25 AM
**To:** thomas.rodriguez@lajolla-nsn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

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Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

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3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:12 AM
**To:** administration@puebloofacoma.org; TScissons@poamail.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

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Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 04, 2019 9:09 AM
**To:** Chair.mbop@moapabandofpaiutes.org
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
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Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

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EIAP Program Manager
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Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**Section 106 -- State Historic Preservation Office and Tribal Consultation Responses**

Michelle Lujan Grisham
Governor

STATE OF NEW MEXICO
**DEPARTMENT OF CULTURAL AFFAIRS**
**HISTORIC PRESERVATION DIVISION**

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 FAX (505) 827-6338

September 26th, 2019

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, Arizona, 85707

*Re: Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Davis-Monthan Air Force Base Personnel Recovery Training Program (HPD Log 111500)*

Dear Mr. Wakefield,

Thank you for sending the State Historic Preservation Officer (SHPO) the above draft EA. The New Mexico SHPO was wondering if it might be possible to use the EA to facilitate the Section 106 process by incorporating language that includes a binding commitment on the part of the Air Force to consult under Section 106 on a case by case basis with the appropriate agency, SHPO and consulting parties in the FONSI. This could eliminate the need to develop a separate MOA or PA to conclude the Section 106 process.

New Mexico SHPO looks forward to working with the Air Force to complete the Section 106 process for this undertaking. Please do not hesitate to contact State Archaeologist Michelle Ensey (michelle.ensey@state.nm.us) or Geoff Cunnar (geoff.cunnar@state.nm.us) if you would like to discuss these comments or the potential development of a PA for this undertaking.

Sincerely,

Geoffrey Cunnar

Geoffrey Cunnar, PhD
Staff Archaeologist
Historic Preservation Division

**MEMORANDUM FOR RECORD**

Phone conversation with Dr. Bob Estes, New Mexico State Historic Preservation Office (505-827-4225) on 8 January 2020 at 8:52 am CST.

- Regarding the Personnel Recovery Training Program Environmental Assessment (EA), Dr. Estes called to request clarification on the Air Force's Section 106 consultation.
    - The Air Force's Section 106 package requesting SHPO concurrence with the determination of No Adverse Effect resulting from this action was sent to the NM SHPO on 20 November 2019.
    - After sending that email, it was determined that the surveys completed for the Negrito North and Negrito South sites, which were included in the consultation, were not conducted in the correct location. A follow-up email was sent to NM SHPO on 8 Jan 2020 explaining the error and stating that the Air Force is no longer requesting concurrence for those sites at this time.

- Dr. Estes stated that the Air Force's email submission of the Section 106 consultation package requesting SHPO concurrence on 20 Nov 2019 was received, but never input into their system for review. He stated he would initiate that process that same day.
    - The Air Force informed Dr. Estes of the planned 27 January 2020 Final EA delivery date and the criticality of meeting this timeline, while expressing concern that 27 January is less than 30 days away.
    - Dr. Estes stated that their allotted 30 days for response had already passed, as they did receive the package on 20 November 2019. He still plans to initiate a review and try to provide a response before then.

- Dr. Estes inquired about comments received on the Draft EA, and was informed that we received multiple comments from agencies, including various National Forests, and some public conservation groups.
    - He further inquired what kinds of comments we received from the National Forests, and was informed that the comments included corrections on activities to be conducted and additional coordination and safety measures, all of which were incorporated into our EA.

KEESLING.GRACE.ELIZABETH.1470224165

Digitally signed by KEESLING.GRACE.ELIZABETH.1470224165
Date: 2020.01.08 17:01:42 -06'00'

**From:** Estes, Bob, DCA <Bob.Estes@state.nm.us>
**Sent:** Thursday, January 30, 2020 12:30 PM
**To:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Dell'Olio, Laura A-CTR (FAA) (laura.a-ctr.dell'olio@faa.gov) <laura.a-ctr.dell'olio@faa.gov>
**Cc:** Cunnar, Geoff, DCA <Geoff.Cunnar@state.nm.us>
**Subject:** [Non-DoD Source] FW: HPD Log 112240

Mornin' Ladies,

Here is the SHPO response to the last consultations for the DMAFB- PRTC.

Please lets us know if this is what you need, or not.

Please note that Geoff Cunnar  is now the USAF reviewer, except for CAFB and KAFB, which are still mine.

Have a great day.

Bob Estes Ph.D.
NM HPD Staff Archaeologist
407 Galisteo St., Suite 236
Santa Fe, NM 87501
505-827-4225

---

**From:** Cunnar, Geoff, DCA
**Sent:** Thursday, January 30, 2020 11:23 AM
**To:** Estes, Bob, DCA
**Subject:** HPD Log 112240

Bob,
Proposes Davis-Monthan recovery training program letter is attached.

geoff

Geoff Cunnar, PhD RPA
Staff Archaeologist
State of New Mexico Department of Cultural Affairs
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, New Mexico 87501
505-476-0530

Michelle Lujan Grisham
Governor

STATE OF NEW MEXICO
**DEPARTMENT OF CULTURAL AFFAIRS**
**HISTORIC PRESERVATION DIVISION**

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 FAX (505) 827-6338

January 22nd, 2020

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, Arizona, 85707

*Re: Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States (HPD Log112240 as well as 111500, 111554 )*

Dear Mr. Wakefield,

Thank you for sending the State Historic Preservation Officer (SHPO) a letter continuing the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program and requesting SHPO's concurrence that the undertaking will result in "No Adverse Effect" pursuant to 36 CFR 800. The SHPO has the following comments.

**Melrose Air Force Range**
The SHPO concurs that there will be no adverse effect to historical resources as there are no planned ground activities in the APE.

**WSMR Small Arms Range**
The SHPO acknowledges that the APE has been surveyed and there should be no adverse effect to cultural resources.

**WSMR (Stallion Army Airfield)**
The SHPO acknowledges that the airstrip was previously surveyed and if the identified cultural resource within the APE is avoided there will be no adverse effect to cultural properties.

**WSMR (maneuver areas)**
The SHPO acknowledges that the PR activities are to be conducted in the various identified Areas of Potential Effect (APE) that have already been surveyed and if avoidance is practiced there will be no adverse effects to identified cultural resources. The SHPO suggests that prior to the initiation of the undertaking, WSMR Cultural Resource Personnel should be consulted on the condition of the Siebert Stakes in the three maneuver areas to ensure that they are still intact and upright.

**Catron County Fairgrounds**
The SHPO acknowledges that the proposed training site APE has been surveyed, but as the Forest Service has indicated that survey was done a long time ago and may not constitute a full

coverage survey. This indicates that there could be the need for additional pedestrian survey in the area of potential effect.

**Gila National Forest (various identified locations)**
The SHPO notes that the Forest Service has expressed concerns over the location of bivouacking/camping locations and where off-road travel would occur. The Forest Service indicates that the USAF must consult with the Gila NF Forest Archaeologist for bivouac locations, as in certain areas there has not been a valid survey. This indicates that there could be the need for additional pedestrian survey in proposed areas of potential effect that have not been previously surveyed but may be used for bivouac/camping locations.

The SHPO acknowledges receiving email correspondence from Grace Kiesling on January 8th, 2020 (this log number) indicating that the Air Force is no longer requesting concurrence with the finding of no adverse effect for the Negrito North and South training sites and that the Air Force will reengage consultation when new surveys are completed.

**Playas**
The SHPO acknowledges that PR activities will occur in previously disturbed, paved, or MOUT areas in designated zones (Zones F, H and associated housing zones; New Mexico Tech and U.S. Department of Homeland Security 2006) and these activities will not adversely affect cultural resources in the proposed APE.

**Tombstone 8**
The SHPO acknowledges the results of the negative pedestrian survey (NMCRIS 143438) and that no historical properties will be affected by PR activities in that location.

Please do not hesitate to contact me if you would like to discuss these comments.

Sincerely,



Geoff Cunnar, PhD RPA
Staff Archaeologist
State of New Mexico Department of Cultural Affairs
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, New Mexico 87501
505-476-0530

October 24, 2019

Mr. Christopher L. Brewster, PE
Chief, Environmental
Department of the Air Force
355th Civil Engineer Squadron (ACC)
Davis-Monthan Air Force Base, Arizona

Re: Davis-Monthan Air Force Base (DMAFB) Personnel Recovery Training Program; Section 106 Review; Department of the Air Force (USAF); SHPO-2019-1194(150570)

ATTN: Kevin Wakefield

Dear Mr. Brewster:

Thank you for initiating consultation with our office for the proposed DMAFB Personnel Recovery Training Program (PR). We understand that the project will include locations in Arizona, California, Nevada, and New Mexico. Our comments are restricted to activities occurring in Arizona. As the activities would use federal funds, this review is conducted pursuant to Section 106 of the National Historic Preservation Act, 54 U.S.C. § 306108.

The area of potential effects (APE) within Arizona consists of 181 locations of varying size, although we understand that some locations may change based on coordination with other agencies. AZ SHPO has the following comments:

1. We understand that an Environmental Assessment (EA) is being prepared to evaluate the effects of expanding activities at 160 previously authorized PR training areas and authorizing 21 additional locations.
2. We understand that 29 of the proposed PR training sites USAF were included in the USAF's 2017 Rescue Group Personnel Recovery Supplemental Environmental Impact Statement (EIS). USAF has requested SHPO concurrence that these PR training sites would not require any further cultural resources studies or consultation for the current undertaking. SHPO concurs, provided the activities and APE at these 29 sites do not change from those stipulated in the 2017 EIS.
3. We understand that cultural resources surveys are currently being conducted at current and proposed PR training sites, and we look forward to reviewing those reports and USAF's determinations of eligibility and project effects.
4. We understand that the USAF has determined that a Programmatic Agreement (PA) should be developed for this undertaking, due to its complexity, broad geographical scope, and programmatic nature. SHPO concurs and we look forward to participating in development of the PA.

5. Please keep us informed of any substantive comments from Tribes or other consulting parties that are relevant to project activities in Arizona.

We look forward to continuing Section 106 consultation for this undertaking. We appreciate your cooperation in complying with historic preservation requirements for federal undertakings. Please contact me by telephone, 602.542.7141, or via e-mail at edavis@azstateparks.gov, if you have any questions or concerns.

Sincerely,

Erin Davis, M.A., RPA
Archaeological Compliance Specialist
State Historic Preservation Office

cc: Julianne Polanco, California State Historic Preservation Officer
Rebecca L. Palmer, Nevada State Historic Preservation Officer
Jeff Pappas, New Mexico State Historic Preservation Officer

**From:** Erin Davis <edavis@azstateparks.gov>
**Sent:** Thursday, January 2, 2020 9:45 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Cc:** Wahoff,Tanya; Neal, Larry W; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE
**Subject:** Re: DM PR EA Section 106 Continued Consultation

Hi Kevin,

Thanks, all attachments downloaded successfully. Looks like I have a bit of reading to do! Happy new year!

Erin Davis, M.A., RPA
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007
602.542.7141
edavis@azstateparks.gov

On Thu, Jan 2, 2020 at 10:02 AM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

> Good morning Erin, hope you had a great Christmas and start to the New Year and Decade. As part of our continuing consultation on the Personnel Recovery Program EA and cultural surveys, attached is the letter from Mr. Christopher Brewster signed on 23 Dec 2019. Due to personnel being on leave (me) it was not sent until today. There are multiple attachments to the document (six total) and not all can be sent by email. I will be sending attachments # 4 (Part 1 and Part II) and #5 to you by DOD SAFE today as well. Please contact me if you have any questions.
>
> Thank you,
>
> v/r kevin
>
> Kevin Wakefield, GS-12, DAFC
>
> Base Natural and Cultural Resource Manager
>
> EIAP Program Manager
> 355 CES/CEIE
>
> 3775 South Fifth Street
>
> Davis-Monthan AFB AZ 85707-3012
>
> Email: kevin.wakefield.1@us.af.mi
>
> DSN: 228-4035
>
> Comm: (520) 228-4035

**From:** Erin Davis <edavis@azstateparks.gov>
**Sent:** Thursday, January 16, 2020 8:12 AM
**To:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya
**Subject:** Re: [Non-DoD Source] Re: PR AZ SHPO Determination

You are most welcome!

Erin Davis, M.A., RPA
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007
602.542.7141
edavis@azstateparks.gov

On Thu, Jan 16, 2020 at 9:09 AM KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil> wrote:

> Thank you so much, Ms. Davis! Again, we sincerely apologize for the confusion. If you're able to concur with our determination without a PA given this clarification, we agree no call would be required.
>
> Thank you again for your willingness to work with us through all of this and all your time and efforts to help keep us on schedule! We greatly appreciate it!
>
> //SIGNED//
>
> Grace Keesling, GS-13, DAF
>
> Air Force NEPA Division (AFCEC/CZN)
>
> JBSA-Lackland
>
> San Antonio, TX 78226

Comm: (210) 925-4534

DSN: 945-4534

**From:** Erin Davis <edavis@azstateparks.gov>
**Sent:** Thursday, January 16, 2020 9:51 AM
**To:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>
**Subject:** Re: [Non-DoD Source] Re: PR AZ SHPO Determination

Thank you for the clarification. I have read the letter and Attachment 3 and find they are both very detailed and helpful. It was not clear to me during our previous phone call that the 18 sites would be dropped. I am not concerned about the 26 sites that haven't been surveyed, as they appear to be primarily in existing airfields or helipads or in the water. I appreciate your documentation of consultation with other agencies and landowners regarding their resources and procedures. Based on this information, I have no problem concurring with "no adverse effect" and will get a letter out to you before your deadline. No PA will be needed.

We can have a call anytime today (until 5pm AZ time) or tomorrow morning; however, I don't think it is necessary at this time due to the thorough documentation provided. I had hoped to have it reviewed earlier, but holidays and understaffing caused delays...! I may have some minor comments on the survey reports (I am reviewing them today to make sure they have all the information needed for our records), but any requests for revisions can be completed at a later date, and will not affect our concurrence or your timeline.

Cheers,

Erin Davis, M.A., RPA
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007

602.542.7141
edavis@azstateparks.gov

On Thu, Jan 16, 2020 at 6:42 AM KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil> wrote:

> Ms. Davis,
>
> As Chris sent that email, we received a reminder from our contractor team that some other sites included in the consultation had not been surveyed for other reasons. The sites for which surveys were conducted in the wrong areas were dropped from the consultation and will be dropped from the FONSI, which we discussed with you in December; but there are 26 other sites which have not been surveyed that are identified in Attachment 3 of our consultation package. I misunderstood the information and I sincerely apologize for any confusion.
>
> I do want to emphasize that we will absolutely complete a PA if required; however, doing so would result in timeline implications for the EA and impact the mission so we just want to make sure we're all on the same page and ensure it's truly necessary. The timeline is being driven by the FAA's need for our Final EA by the end of January in order to adopt this analysis and establish the Playas Temporary Military Operations Area in New Mexico for the Air Force's May 2020 Red-Flag Rescue exercise.
>
> We would still greatly benefit from a brief phone call with you to clarify the issues, and better understand your requirements and expectations should a PA be necessary. We have also identified some potential options to address the timeline concerns on which we'd like to seek your input. Please let us know if you would be available at any time today or tomorrow.
>
> Thank you, and again I sincerely apologize for all the confusion.
>
> //SIGNED//
>
> Grace Keesling, GS-13, DAF
>
> Air Force NEPA Division (AFCEC/CZN)
>
> JBSA-Lackland

San Antonio, TX 78226

Comm: (210) 925-4534

DSN: 945-4534

**EXEMPT FROM MANDATORY DISCLOSURE under FOIA, Exemption 5, deliberative process applies. Further distribution is prohibited without the approval of AFCEC/CZN or SAF/IEIP.**

---

**From:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>
**Sent:** Thursday, January 16, 2020 7:16 AM
**To:** Erin Davis <edavis@azstateparks.gov>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>
**Subject:** RE: [Non-DoD Source] Re: PR AZ SHPO Determination

Ms. Davis,

The letter that we sent indicated that we were not requesting consultation for those sites that have not yet been surveyed at this time. Although the analysis for those sites will remain in the EA, the FONSI will clearly state that those specific sites are not included in the "finding" and that we will reengage with AZ SHPO once we complete those specific surveys. We are only requesting concurrence for the sites that have been surveyed.

Does that help clarify what we are asking? We have a different contract mechanism in place that will be used to survey those specific sites. We have essentially eliminated those sites from being used until all site surveys are performed and when we have SHPO concurrence for those specific sites.

Do you have time for a phone call this morning or Friday morning with us, along with our Support Section? Our intent is to make sure SHPO understands what we are trying to do and to assure you that those sites will not be used for these proposed actions until all surveys are completed. I know that I just repeated myself three times but that's how important this is for us. We hope that we can come to an understanding as we want to continue to be transparent in our actions.

As always, we appreciate your time and willingness to work with us.

Standing by.

Christopher L. Brewster, PE

Chief, Environmental Compliance

Installation Management Flight

Davis-Monthan AFB, 355 CES/CEI

3775 S. Fifth Street

Tucson, AZ  85707

DSN: 228-7201

Comm: (520) 228-7201

Mobile: (423) 619-4484

christopher.brewster@us.af.mil

**From:** Erin Davis <edavis@azstateparks.gov>
**Sent:** Wednesday, January 15, 2020 2:58 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>
**Subject:** Re: [Non-DoD Source] Re: PR AZ SHPO Determination

Hey Kevin,

It's my understanding that all of the proposed areas in AZ have not been surveyed; therefore project effect is unknown at this time. A PA would stipulate the actions to take if eligible sites were found. Were the unsurveyed areas all dropped? Once I've reviewed everything, I'll have a better answer.

Cheers,

Erin Davis, M.A., RPA
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007
602.542.7141
edavis@azstateparks.gov

On Wed, Jan 15, 2020 at 2:36 PM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

> Erin, I was just asked the question why do we need a PA if our determination is No Adverse Effect? The CA, NM, and NV SHPOs have all indicated that a PA was not necessary and the determination was the same for the activities in their states.
>
> v/r kevin
>
> Kevin Wakefield, GS-12, DAFC
>
> Base Natural and Cultural Resource Manager
>
> EIAP Program Manager
>
> 355 CES/CEIE
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> 3775 South Fifth Street
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> Email: kevin.wakefield.1@us.af.mi
>
> DSN: 228-4035
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> Comm: (520) 228-4035

**From:** Erin Davis <edavis@azstateparks.gov>
**Sent:** Wednesday, January 15, 2020 2:19 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>
**Subject:** Re: [Non-DoD Source] Re: PR AZ SHPO Determination

It just so happens we have a handy guide for that (attached)! Your cultural consultant could help draft one as well, I'm sure. There is also good guidance on the Advisory Council for Historic Places' website (https://www.achp.gov/initiatives/guidance-agreement-documents). And I am always available for questions. When you do submit the draft PA, please do it in Word so that we can review with "track changes"--makes it easier for everyone.

Cheers,

Erin Davis, M.A., RPA
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007
602.542.7141
edavis@azstateparks.gov

On Wed, Jan 15, 2020 at 2:13 PM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

Thank Erin, what should/do we need to include in the Programmatic Agreement. (I have never done one.)

v/r kevin

Kevin Wakefield, GS-12, DAFC

Base Natural and Cultural Resource Manager

EIAP Program Manager

355 CES/CEIE

3775 South Fifth Street

Davis-Monthan AFB AZ 85707-3012

Email: kevin.wakefield.1@us.af.mi

DSN: 228-4035

Comm: (520) 228-4035

**From:** Erin Davis <edavis@azstateparks.gov>
**Sent:** Wednesday, January 15, 2020 2:04 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>
**Subject:** [Non-DoD Source] Re: PR AZ SHPO Determination

Hi Kevin,

I will have comments/concurrence by Jan 21st, no problem, it's next on the list. I was discussing this project with our SHPO, Kathryn Leonard, and we still will be requesting to have a Programmatic Agreement developed as opposed to just language in the environmental document.

Cheers,

Erin Davis, M.A., RPA
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007
602.542.7141
edavis@azstateparks.gov

On Wed, Jan 15, 2020 at 1:53 PM WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil> wrote:

> Hi Erin, checking the status of your review and concurrence with our determination for the PR Program Out of Davis-Monthan AFB. The contractor has been working hard to finish the Final EA and FONSI, but we cannot move forward without the AZ SHPO concurrence. The folks at Headquarters what us to have it ready for signature by 27 Jan 2020, but in order to meet that timeline we need the AZ SHPO comments by 1200 on Tuesday 21 Jan 2020.
>
> Please provide me with the current status and insight to if you believe we can meet the 21 January 2020 deadline.
>
> I truly would like to thank you for the work you have done to keep our project moving forward, and if you need any assistance please call.
>
> v/r kevin
>
> Kevin Wakefield, GS-12, DAFC

Base Natural and Cultural Resource Manager

EIAP Program Manager

355 CES/CEIE

3775 South Fifth Street

Davis-Monthan AFB AZ 85707-3012

Email: kevin.wakefield.1@us.af.mi

DSN: 228-4035

Comm: (520) 228-4035

**From:** Erin Davis <edavis@azstateparks.gov>
**Sent:** Friday, January 17, 2020 8:04 AM
**To:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya
**Subject:** Re: [Non-DoD Source] Re: PR AZ SHPO Determination

SHPO concurrence attached. I have no revision requests on the reports, they are accepted as final.

Cheers,

Erin Davis, M.A., RPA
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007
602.542.7141
edavis@azstateparks.gov

SHPO-2019-1194 (150271)
STATE HISTORIC PRESERVATION OFFICE

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

RECEIVED
JAN 02 2020

23 December 2019

Ms. Kathryn Leonard, SHPO
State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007

**Subject:** **Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States (SHPO Case Reference # SHPO-2019-1194 [150570])**

Dear Ms. Leonard:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter dated 24 September 2019, and has continued since then with our response to AZ SHPO's 24 October 2019 letter submitted via e-mail on 19 November 2019 and follow-up phone call with AZ SHPO on 16 December 2019. The 19 November 2019 letter included the following: (1) identified that six proposed PR training sites have been removed from consideration based on the results of surveys by Statisical Research, Inc. (SRI); (2) provided clarification regarding the number of proposed PR training sites and the sites previously addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental Environmental Assessment (EA) and the Continuing Consultation for Remaining Angel Thunder Exercise Locations Needing Additional Review (which SHPO concurred with on 30 October 2018); and, (3) requested the SHPO to consider the incorporation of binding Section 106 language directly in the PR Training EA instead of developing a Programmatic Agreement (PA) or Memorandum of Agreement (MOA), as suggested by the New Mexico SHPO.

Regarding the 16 December 2019 phone call, the USAF discussed with the AZ SHPO the PR training sites surveyed by SRI and minor discrepancies of the GPS coordinates between those sites surveyed and those provided in the PR Training Program EA. The AZ SHPO agreed to consult on PR training sites surveyed by SRI that were within 200 feet of the coordinates provided in the PR Training Program EA; the remaining sites (that were located more than 200 feet from the coordinates provided in the PR Training Program EA) will be removed from consultation for this proposed undertaking at this time (see Attachment 1 to this letter for a list of the PR training sites removed from consultation). No PR training activities will occur at these sites until such a time when it can be determined through the Section 106 process that the PR Training Program would not result in impacts at those sites. A statement noting this will be added to the Finding of No Significant Impact (FONSI) for the PR Training Program EA.

The purpose of this letter is to provide additional information and request your concurrence that the proposed undertaking would result in "No Adverse Effect" pursuant to 36 CFR 800. Specifically, this letter provides a list of the PR Training sites surveyed by SRI in Attachment 1, and notes the sites on which the Air Force is requesting consultation for the PR Training Program EA; provides additional materials related to the tribal consultation, which has been initiated for the proposed undertaking (e.g., example tribal consultation letter and a summary of the consultation to date) in Attachment 2; also, this letter provides details on effects on historic properties within the APE for proposed PR training sites in Arizona in Attachment 3. In addition, this letter presents the findings of two archaeological inventories conducted in support of the proposed undertaking in Attachment 4. Specifically, these

include the following: the technical reports *Final Cultural Resources Inventory Report for Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program Sites in Cochise County, Arizona and Hidalgo County, New Mexico* (Wahoff et al. 2019) and *Archaeological Inventory of Proposed Helicopter Landing Zones (HLZs) and Drop Zones (DZs) in Arizona in support of the Bi-Annual Angel Thunder Search-and-Rescue Training Headquartered from Davis-Monthan Air Force Base, Tucson, Arizona* (Miljour and Wegener 2019). Maps showing the APE for the proposed PR training sites in Arizona are provided in Attachment 5. Additionally, this letter notifies you that based on the suggestion of the New Mexico SHPO, the USAF will be incorporating language directly into the EA that would facilitate Section 106 consultation for the proposed undertaking. The language in the EA will include a binding commitment on the part of the USAF to consult under Section 106 on a case-by-case basis with the appropriate agencies and parties. Furthermore, as discussed in the EA, the proposed undertaking would result in no adverse effects to historic properties. Please let us know if you are in agreement with this approach. The correspondence from the New Mexico SHPO is provided as Attachment 6 to this letter.

Concur
No PA
needed

Based on the findings shown in Attachments 3-4, we have made a finding of "No Adverse Effect" pursuant to 36 CFR 800. We request your concurrence with this finding. We also request your concurrence on the APE, as shown on the maps included Attachment 5.

If you have any questions or inputs, please contact Kevin Wakefield at the following:

355 CES/CEIE
3775 South 5th Street,
Davis-Monthan AFB, AZ 85707-4927

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

CONCUR

E R 1/16/2020

ARIZONA STATE HISTORIC PRESERVATION OFFICE
ARIZONA STATE PARKS BOARD
ERIN DAVIS

Concur with "No Adverse Effect" and definition of the APE.
Thank you for the detailed information.

Sincerely,

Christopher L. Brewster, PE
Chief, Environmental

cc. Ms. Erin Davis, Archaeological Compliance Specialist

Attachments:

1. PR Training Sites Surveyed by SRI
2. Example Tribal Consultation Letter and Summary of Tribal Consultation
3. Effects on Cultural Resources for Proposed Personnel Recovery Training Sites in Arizona
4. Cultural Resources Inventories for AZ PR Training Sites (Wahoff et al. 2019; Miljour and Wegener 2019)
5. PR EA Arizona APE Maps
6. New Mexico SHPO Response Letter

NEVADA
**STATE HISTORIC PRESERVATION OFFICE**

**Department of Conservation and Natural Resources**

**Steve Sisolak, Governor**
**Bradley Crowell, Director**
**Rebecca L. Palmer, Administrator, SHPO**

October 24, 2019

Christopher L. Brewster, PE
Environmental Chief
Department of the Air Force
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Re: Proposed Davis-Monthan Air Force Base Personnel Recovery Program in the Southwestern United States (UT 2019-6109)

Dear Mr. Brewster:

The Nevada State Historic Preservation Office (SHPO) received the subject documents on September 27 and October 21, 2019 and has reviewed them in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

**Project Description**
The U.S. Department of the Air Force (USFS) proposes to expand personnel recovery training efforts by designating additional training locations and activities. The Davis-Monthan Air Force Base Personnel Recovery Training Program will include training activities defined as Large Force, Medium Force and Small Force which involves various numbers of aircraft and personnel. Training activities will occur in several states including Nevada. Three training sites are proposed for Nevada: the Colorado River, Delamar Dry Lake runway, and Nellis AFB runways. The SHPO notes that the USAF submission received on October 21, 2019 contains information about the types of activities proposed for each location.

**Area of Potential Effect (APE)**
The proposed APE appears to account only for the undertaking's direct effects. It is unclear if effects such as visual, audible, and atmospheric were considered. Even if these effects are expected to be temporary, the APE is likely to extend beyond the areas currently delineated. Please submit additional information regarding the undertaking's effects and APE.

**Identification and Evaluation of Historic Properties**
The proposed effort to identify historic properties appears to be limited to identifying previously-documented and evaluated cultural resources. Once the APE is finalized, what efforts, if any, are proposed to identify unknown and unevaluated historic properties?

**Native American Consultation**
The SHPO notes that consultation with the affected Native American tribes has been initiated per 36 CFR §800.3(f)(2). If this consultation results in the identification of properties of religious and/or cultural significance that could be affected by the undertaking, the SHPO looks forward to consulting with USAF on the National Register eligibility and possible effects of the undertaking per 36 CFR §800.4(c) and 36 CFR §800.4(d). In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

**Consulting Parties and Public Consultation**
The SHPO reminds USAF that the agency must consult with the public and representatives of organizations that have a demonstrated interest in historic properties per 36 CFR §800.2(c)(5). What efforts have been made to provide the public and interested parties (e.g., National Park Service – Intermountain Trails Office, Old Spanish Trail Association, etc.) with an opportunity to comment on this undertaking? In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

**Finding of Effect**
The SHPO received a letter containing USAF's finding of effect on October 21, 2019. Our office will resume its review of project effect once additional information is received regarding the project effects, APE, and consultation efforts for this undertaking. In addition, our office notes that in the letter received on September 27, 2019, USAF requested consultation regarding the possible development of a Programmatic Agreement (PA) for this undertaking. Please clarify if USAF intends to pursue a PA.

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775) 684-3445 or by email at jaxsom@shpo.nv.gov or SHPO staff architectural historian Kristen Brown at (775) 684-3439 or by email at knbrown@shpo.nv.gov.

Sincerely,

Robin K. Reed
Deputy State Historic Preservation Officer

**From:** Jessica Axsom <jaxsom@shpo.nv.gov>
**Sent:** Thursday, January 2, 2020 3:43 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Robin Reed <rreed@shpo.nv.gov>; Kristen Brown <knbrown@shpo.nv.gov>
**Subject:** [Non-DoD Source] UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Kevin,

This email is a follow up to our conversation this afternoon. The Nevada SHPO agrees that a PA for Nevada is most likely unnecessary as there are only three (3) undertakings within Nevada under this program.

1) The Nellis AFB PR Training Site: seems to be an undertaking without the potential to affect historic properties. If this is the case, the Air Force should notify our office (via email is acceptable) of its finding of No Potential to Affect Historic Properties.

2) Delamar Dry Lake PR Training Site: This undertaking also seems to be without the potential to affect historic properties. If this is the case, the Air Force should notify our office (via email is acceptable) of its finding of No Potential to Affect Historic Properties.

3) Colorado River PR Training Site: This undertaking does have the potential to effect historic properties. A follow up submission for this should include:

    a. that this undertaking is located on a historic property that has been determined by the National Park Service (with Nevada SHPO concurrence) to be eligible for listing in the National Register of Historic Places.
    b. A summary of the consultation effects between the National Park Service (as this is located on the Lake Mead National Recreation Area) and the Air Force. This summary should include any information regarding the identification of historic properties and potential effects of this undertaking provide by NPS. (See contact information provided below)

Hopefully, this is helpful guidance and please feel free to call and/or email me with any questions, comments, and/or concerns.

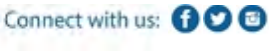
Staffan Peterson, Ph.D.
Chief, Cultural Resources Branch
National Park Service
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, NV 89005

mobile: 702.250.8045
desk: 702.293.8859
staffan_peterson@nps.gov

Jessica Axsom
Review and Compliance Archaeologist
Nevada State Historic Preservation Office
Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5004
(O): 775-684-3445 I (F) 775-684-3442
jaxsom@shpo.nv.gov

**Your Opinion Matters! Read and Comment on the Draft Historic Preservation Plan for 2020-2028 here.**



**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Monday, January 6, 2020 10:17 AM
**To:** Jessica Axsom
**Cc:** Neal, Larry W; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Fitzpatrick, Hallie; Wahoff,Tanya; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** RE: Continued Consultation with the Nevada SHPO – Colorado River PR Training Site - NPS

Hey Jessica, sorry for the confusion and thank you for your response. Still wait for a response to the other two requests sent on Friday.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Jessica Axsom <jaxsom@shpo.nv.gov>
**Sent:** Monday, January 6, 2020 9:59 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] RE: Continued Consultation with the Nevada SHPO – Colorado River PR Training Site -NPS

For some reason I thought you were using the NPS campground boat launch – the Big Bend State Park boat launch is not historic (having been constructed in 1996). Per you correspondence you have consulted with the Nevada State Parks. So long as there are no comments or concerns identified by the tribes a finding of no historic properties affected would be good for this undertaking.

Jessica Axsom
Review and Compliance Archaeologist
Nevada State Historic Preservation Office
Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5004
(O): 775-684-3445 I (F) 775-684-3442
jaxsom@shpo.nv.gov

**Your Opinion Matters! Read and Comment on the Draft Historic Preservation Plan for 2020-2028 here.**

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE [mailto:kevin.wakefield.1@us.af.mil]
**Sent:** Friday, January 3, 2020 1:45 PM
**To:** staffan_peterson@nps.gov
**Cc:** Jessica Axsom <jaxsom@shpo.nv.gov>; Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Continued Consultation with the Nevada SHPO – Colorado River PR Training Site -NPS

Dear Dr. Peterson, the United States Air Force is currently in consultation with the Nevada State Historic Preservation Office (SHPO) regarding the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States Environmental Assessment (EA). The NV SHPO has asked that we included the National Park Service (NPS) in our consolations.

One of the sites we are consulting on is located within the Lake Mead National Recreation Area. The site called the "Colorado River PR Training Site" is located in the Big Bend of the Colorado State Recreation Area near Bullhead City, NV. We are aware that the campground at Big Bend is eligible for listing in the National Register of Historic Places. No activities would occur that would affect the camp ground or any historic places.

The Colorado River PR training site would only include the use of water craft, no aircraft operations or ground disturbing activities would occur. The use of the boat launch area would be used just as it is used by the public. Our training activities would avoid those waterways used extensively for recreational purposes and sensitive habitats and would mostly utilize larger bodies of water given the size requirements for our watercraft. No training activities would occur at the site unless the appropriate permit/approval is obtained for the training event.

The proposed PR training activities on Big Bend of the Colorado State Recreation Area would not restrict the ability of individuals to use or access the area.
We have attached a copy of the APE Map showing the general location of the site, Appendix A from the Draft PR EA that lists the "Proposes Personnel Recovery Training Sites" and identifies the type of training that will occur there, and Table E-1 from the Draft EA showing the "Area of Potential Effect (APE) Definitions and Coordinates of Proposed PR Training Sites by State.

Our findings are that PR Training activities at the Colorado River PR training Site will have No Potential to Affect Historic Properties.

Attachments:

1. TAB 1 – Colorado River APE Map
2. TAB 2 - Appendix A – Proposed Personnel Recovery Training Sites – Colorado River Site Highlighted
3. TAB 3 - Table E-1. Area of Potential Effect (APE) Definitions and Coordinates of Proposed PR Training Sites by State

Please call me at (520) 228-4035 if you have questions or need additional information.

P.S. We have been working with Jessica Axsom at the NV SHPO office, she is also included on the CC line of the email.

v/r kevin

Kevin Wakefield, GS-12, DAFC

Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** Peterson, Staffan <staffan_peterson@nps.gov>
**Sent:** Tuesday, January 7, 2020 7:24 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Cc:** jaxsom@shpo.nv.gov; Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; Toshi Yoshida; Michael Boyles
**Subject:** Re: [EXTERNAL] Continued Consultation with the Nevada SHPO – Colorado River PR Training Site -NPS

Dear Mr. Wakefield - based on our review of the information you provided on 1/3/2020, we have determined that the Area of Potential Effect for the proposed Colorado River training site lies entirely outside of the Lake Mead National Recreation Area. As such, we have no further comment on the proposal for the Colorado River training site, and we request that we not be included in further consultation for the proposed undertaking.

Thank You,
Staffan Peterson

Staffan Peterson, Ph.D.
Chief, Cultural Resources Branch
National Park Service, Interior Region 8
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, NV 89005

mobile: 702.250.8045
desk: 702.293.8859

I'm a graduate of the NPS GOAL Leadership Academy. Ask me about the program.

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, January 14, 2020 9:38 AM
**To:** jaxsom@shpo.nv.gov
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site

Good morning Jessica, following up on my email from 3 January 2020 for the Delamar Dry Lake Training Site determination. Our determination is that the action has a findings of No Potential to Affect Historic Properties.

We would like to close out our consultation on this site.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Sent:** Friday, January 3, 2020 10:58 AM
**To:** jaxsom@shpo.nv.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site

Dear Jessica, as part of our continued consultation with the Nevada State Historic Preservation Office (SHPO), the United State Air Force has determined that the PR activities at Delamar Dry Lake site do not have the potential to affect historic properties. The PR activities at the Delamar Dry Lake site will occur on an existing airfield, currently approved for similar activities. No archaeological or historic sites are within the Delamar Dry Lake APE.

Three attachments are included to support our determination, all are from the Draft PR EA.

Determination:  Findings of No Potential to Affect Historic Properties.

Attachments:

1. TAB 1 - Delamar Dry Lake APE Map
2. TAB 2 - Appendix A – Proposed Personnel Recovery Training Sites – Delamar Dry Lake Highlighted
3. TAB 3 - Table E-1. Area of Potential Effect (APE) Definitions and Coordinates of Proposed PR Training Sites by State

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email:  kevin.wakefield.1@us.af.mi
DSN:  228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, January 14, 2020 9:37 AM
**To:** jaxsom@shpo.nv.gov
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Nellis AFB Site

Good morning Jessica, following up on my email from 3 January 2020 for the Nellis AFB Training Site determination. Our determination is that the action has a findings of No Potential to Affect Historic Properties.

We would like to close out our consultation on this site.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Sent:** Friday, January 3, 2020 10:58 AM
**To:** jaxsom@shpo.nv.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Nellis AFB Site

Dear Jessica, as part of our continued consultation with the Nevada State Historic Preservation Office (SHPO), the United State Air Force has determined that the PR activities at Nellis AFB site do not have the potential to affect historic properties. The PR activities at the Nellis AFB site will occur on an existing airfield, currently approved for similar activities. No archaeological or historic sites are within the Nellis AFB APE.

Three attachments are included to support our determination, all are from the Draft PR EA.

Determination:  Findings of No Potential to Affect Historic Properties.

Attachments:

1. TAB 1 – Nellis APE Map
2. TAB 2 - Appendix A – Proposed Personnel Recovery Training Sites – Nellis AFB Site Highlighted
3. TAB 3 - Table E-1. Area of Potential Effect (APE) Definitions and Coordinates of Proposed PR Training Sites by State

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email:  kevin.wakefield.1@us.af.mi
DSN:  228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, January 15, 2020 1:12 PM
**To:** jaxsom@shpo.nv.gov
**Cc:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya
**Subject:** RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Hey Jessica, following up on our request that was emailed on 3 January 2020 for the Delamar Dry Lake and Nellis AFB Training Sites. I sent an email for each site.

If you need any additional information please let me know.

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, January 22, 2020 11:15 AM
**To:** rreed@shpo.nv.gov
**Cc:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** FW: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Hi Robin, checking on the status of our project letters being worked by Jessica. I sent her an email, put it returned with an out of office reply.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

-----Original Message-----
From: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
<kevin.wakefield.1@us.af.mil>
Sent: Wednesday, January 22, 2020 11:11 AM
To: Jessica Axsom <jaxsom@shpo.nv.gov>
Cc: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
<kevin.wakefield.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>;
Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie
<hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
<grace.keesling.1@us.af.mil>
Subject: RE: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base
Personnel Recovery Training Program in the Southwestern United States -
Delamar Dry Lake Training Site and Nellis AFB Training Site

Hi Jessica, any word yet on the reply letter.

Thanks,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

-----Original Message-----
From: Jessica Axsom <jaxsom@shpo.nv.gov>
Sent: Friday, January 17, 2020 3:10 PM
To: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
Cc: Robin Reed <rreed@shpo.nv.gov>
Subject: [Non-DoD Source] Re: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Hi Kevin,

Thank goodness - I could not reply to your email as I am working away from my desk and I think the security on your email blocked me.

I printed and logged your January 4th emails with the Air Force's findings for the 2 of the 3 undertakings in Nevada.

I hope to be back in the office next week. In the meantime I will draft our reply letter for your three undertakings. Once they are signed and approved by folks in our office I can send you a pdf copy in addition to the hard copy letter that will go out in the mail.

Jessica Axsom
Review and Compliance Archaeologist
Nevada State Historic Preservation Office Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5004
(O): 775-684-3445 I (F) 775-684-3442
jaxsom@shpo.nv.gov

_____

From: Rebecca Palmer
Sent: Friday, January 17, 2020 1:16:29 PM
To: 'WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE'
Cc: Jessica Axsom; Neal, Larry W; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Wahoff,Tanya; Fitzpatrick, Hallie; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; Robin Reed

Subject: RE: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Dear Mr. Wakefield,

I have forwarded your request to my Deputy, Robin Reed.

Best Regards,

Rebecca Lynn Palmer
Administrator/State Historic Preservation Officer Nevada State Historic Preservation Office
(O): 775-684-3443
rlpalmer@shpo.nv.gov<mailto:rlpalmer@shpo.nv.gov>[cid:image002.png@01D5CD38.53869810]

From: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
Sent: Friday, January 17, 2020 11:47 AM
To: Rebecca Palmer <rlpalmer@shpo.nv.gov>
Cc: Jessica Axsom <jaxsom@shpo.nv.gov>; Neal, Larry W <larry.w.neal@aecom.com>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>
Subject: FW: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Dear Ms. Palmer, I have been work a project review with Jessica Axsom. I sent her two emails on 4 Jan 2020 after she provided me with guidance on how to proceed. We are in a time crunch and had hope to complete our consultation with the Nevada SHPO this week but yesterday I found out she was out of the office. I have attached the emails I sent her. I also tried to contact Carla Hitchcock and found that she is out as well.

We have completed consultation on the Colorado River Site, but still need concurrence on the Nellis AFB and Delamar Dry Lake Site. If you have any questions please give me a call.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street

Davis-Monthan AFB AZ 85707-3012
Email:  kevin.wakefield.1@us.af.mi<mailto:kevin.wakefield.1@us.af.mi>
DSN:  228-4035
Comm: (520) 228-4035

-----Original Message-----
From: Jessica Axsom <jaxsom@shpo.nv.gov>
Sent: Monday, January 27, 2020 12:28 PM

To: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; Rebecca Palmer <rlpalmer@shpo.nv.gov>; Robin Reed <rreed@shpo.nv.gov>
Cc: BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>
Subject: [Non-DoD Source] RE: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Dear Kevin,

To follow up on my phone call this morning - the two undertakings in Nevada that the Air Force has determined has No potential to Affect Historic Properties do not require SHPO concurrence in order for the agency to move forward. However, the SHPO is working on getting a letter acknowledging receipt of the subject documentation and associated findings. Under NHPA the SHPO has 30 calendar days to reply, which is February 2, 2020.

However, the one undertaking, the Colorado River project, which I believe the Air Force has made a finding of No Historic Properties Affected does require SHPO concurrence (within the 30 day review period, which also 2/1/2020) in order to stay in compliance with NHPA. The SHPO is also working on this letter and will email pdf copies to expedite the Air Force's receipt once they are available.

Jessica Axsom
Review and Compliance Archaeologist
Nevada State Historic Preservation Office Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5004
(O): 775-684-3445 I (F) 775-684-3442
jaxsom@shpo.nv.gov

Your Opinion Matters! Read and Comment on the Draft Historic Preservation Plan for 2020-2028 here.

-----Original Message-----
From: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
[mailto:kevin.wakefield.1@us.af.mil]
Sent: Friday, January 24, 2020 2:31 PM
To: Rebecca Palmer <rlpalmer@shpo.nv.gov>; m.lockyer@shpo.nv; Robin Reed <rreed@shpo.nv.gov>
Cc: Ashley Wiley <awiley@shpo.nv.gov>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>; Jessica Axsom <jaxsom@shpo.nv.gov>
Subject: FW: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Have been working a project with Jessica Axsom since early January, understand that she is out with a family emergency but can we get the status of the concurrence letters referenced in the subject line above. We had hoped to receive the letters yesterday or this morning and planed to send the Final Environmental Assessment and FONSI up for signature on Monday, 27 Jan 2020.

Any information would be appreciated.

Thank you,

(P.S. I will be checking my email over the weekend)

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

-----Original Message-----
From: Jessica Axsom <jaxsom@shpo.nv.gov>
Sent: Monday, January 27, 2020 1:57 PM
To: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; Rebecca Palmer <rlpalmer@shpo.nv.gov>; Robin Reed <rreed@shpo.nv.gov>
Cc: BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; Neal, Larry W <larry.w.neal@aecom.com>
Subject: [Non-DoD Source] RE: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Kevin,

I have attached a pdf copy of the SHPO letter for the Colorado River Site undertaking. This letter was prioritized as it is the only undertaking that requires SHPO concurrence for the USAF to move forward. I will send you pdf copies of the two acknowledgement letters once they are signed.

Jessica Axsom
Review and Compliance Archaeologist
Nevada State Historic Preservation Office Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5004
(O): 775-684-3445 I (F) 775-684-3442
jaxsom@shpo.nv.gov

Your Opinion Matters! Read and Comment on the Draft Historic Preservation Plan for 2020-2028 here.

NEVADA
**STATE HISTORIC PRESERVATION OFFICE**

**Department of Conservation and Natural Resources**

**Steve Sisolak, Governor**
**Bradley Crowell, Director**
**Rebecca L. Palmer, Administrator, SHPO**

January 27, 2020

Christopher L. Brewster, PE
Environmental Chief
Department of the Air Force
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Re: Proposed Davis-Monthan Air Force Base Personnel Recovery Program in the Southwestern United States: Colorado River PR Training Site (UT 2019-6109)

Dear Mr. Brewster:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received September 27, 2019, October 21, 2019, December 9, 2019, and January 3, 2020 in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

**Project Description**
The U.S. Department of the Air Force (USAF) proposes to expand personnel recovery training efforts by designating additional training locations and activities. The Davis-Monthan Air Force Base Personnel Recovery Training Program will include training activities defined as Large Force, Medium Force and Small Force, which involves various numbers of aircraft and personnel. Training activities will occur in several states including Nevada. One training site is proposed in Nevada on the Colorado River.

**Area of Potential Effect (APE)**
The SHPO **concurs** with the USAF's determination that the area of potential effect (APE) presented in the subject documents accounts for all potential effects that may result from this undertaking in keeping with 36 CFR §800.4(a)(1) and 36 CFR §800.16(d).

**Identification and Evaluation of Historic Properties**
The SHPO **concurs** with the USAF's determination that the identification efforts are adequate for the area of potential effect (APE) and actions outline for the above-mentioned undertaking under NHPA.

The boat launch located within the APE of this undertaking was constructed in 1994. Therefore, the SHPO **concurs** with the USAF's determination that this effort not result in the identification of historic properties.

**Consulting Parties and Public Consultation**
The SHPO acknowledges receipt of documentation that consultation with the public and representatives of organizations that have a demonstrated interest in historic properties has been concluded per 36 CFR §800.2(c)(5) and 36 CFR §800.3(f)(2). This consultation did not result in the identification of historic properties that could be affected by the undertaking.

**Finding of Effect**
The SHPO **concurs** with the USAF's finding of **No Historic Properties Affected** for this undertaking.

**Unanticipated Discovery or Effects**
If any buried and/or previously unidentified resources are located during the project activities, the SHPO recommends that all work in the vicinity of the find cease and this office be contacted for additional consultation per 36 CFR §800.13(b)(3) or NRS 383.150-383.190.

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775) 684-3445 or by email at jaxsom@shpo.nv.gov.

Sincerely,

Rebecca Lynn Palmer
State Historic Preservation Officer

-----Original Message-----
From: Jessica Axsom <jaxsom@shpo.nv.gov>
Sent: Thursday, January 30, 2020 2:24 PM
To: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
Cc: BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>
Subject: [Non-DoD Source] RE: RE: UT 2019-6109: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States - Delamar Dry Lake Training Site and Nellis AFB Training Site

Dear Kevin,

I have attached pdf copies of the SHPO letter acknowledging receipt for the last two undertakings within Nevada. The hard copy letters went in the mail yesterday.

Jessica Axsom
Review and Compliance Archaeologist

Nevada State Historic Preservation Office Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5004
(O): 775-684-3445 I (F) 775-684-3442
jaxsom@shpo.nv.gov

Your Opinion Matters! Read and Comment on the Draft Historic Preservation Plan for 2020-2028 here.

NEVADA
**STATE HISTORIC PRESERVATION OFFICE**

**Department of Conservation and Natural Resources**

**Steve Sisolak, Governor**
**Bradley Crowell, Director**
**Rebecca L. Palmer, Administrator, SHPO**

January 29, 2020

Christopher L. Brewster, PE
Environmental Chief
Department of the Air Force
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Re: Proposed Davis-Monthan Air Force Base Personnel Recovery Program in the Southwestern United States: Delamar Dry Lake runway (UT 2020-6223)

Dear Mr. Brewster:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received September 27, 2019, October 21, 2019, December 9, 2019, and January 3, 2020 in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

The SHPO acknowledges receipt of documentation stating that the USAF has determined that this undertaking has no potential to affect historic properties.

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775) 684-3445 or by e-mail at jaxsom@shpo.nv.gov.

Sincerely,

Robin K. Reed
Deputy State Historic Preservation Officer

26010

NEVADA
**STATE HISTORIC PRESERVATION OFFICE**

**Department of Conservation and Natural Resources**

**Steve Sisolak, Governor**
**Bradley Crowell, Director**
**Rebecca L. Palmer, Administrator, SHPO**

January 29, 2020

Christopher L. Brewster, PE
Environmental Chief
Department of the Air Force
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Re: Proposed Davis-Monthan Air Force Base Personnel Recovery Program in the Southwestern United States: Nellis AFB runways (UT 2020-6222)

Dear Mr. Brewster:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received September 27, 2019, October 21, 2019, December 9, 2019, and January 3, 2020 in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

The SHPO acknowledges receipt of documentation stating that the USAF has determined that this undertaking has no potential to affect historic properties.

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775) 684-3445 or by e-mail at jaxsom@shpo.nv.gov.

Sincerely,

Robin K. Reed
Deputy State Historic Preservation Officer

26009

**MEMORANDUM FOR RECORD**

Phone conversation with Mr. Ed Carroll, California State Historic Preservation Office (916-445-7006) on 3 December 2019 at 3:48 pm CST.

- Regarding the Personnel Recovery Training Program Environmental Assessment (EA), Mr. Carroll indicated that the Air Force proposal to continue Personnel Recovery training activities on DoD facilities already used for these purposes is not considered an undertaking as defined in 36 CFR 800.
    - When asked if the California SHPO would provide concurrence on a letter or email stating this, Mr. Carroll stated that they would not as that is an Air Force determination and the SHPO is not required to provide concurrence.

- Further, Mr. Carroll indicated that the California SHPO does not want to be consulted with for any Air Force action in which ground disturbance would not occur.

- Mr. Carroll also indicated that the California SHPO does not want to be consulted with on Air Force beddown actions where a California installation is among those being considered unless and until that installation is selected as the Preferred Alternative.

KEESLING.GRACE.ELIZABETH.1470224165

Digitally signed by KEESLING.GRACE.ELIZABETH.1470224165
Date: 2019.12.03 16:51:08 -06'00'

**From:** Carroll, Ed@Parks <Ed.Carroll@parks.ca.gov>
**Sent:** Wednesday, December 4, 2019 8:52 AM
**To:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Cc:** BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; Wahoff,Tanya; Fitzpatrick, Hallie; Neal, Larry W
**Subject:** RE: CA SHPO Phone Call

Thank you for your time Grace. Hopefully we gained a bit of understanding between us but feel free to reach out if need be.

Regards,

Ed

Ed Carroll
Historian II
Architectural Review and Environmental Compliance Unit
Office of Historic Preservation
(916) 445-7006
1725 23rd Street, Suite 100
Sacramento, California 95816

---

**From:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>
**Sent:** Tuesday, December 3, 2019 3:02 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Carroll, Ed@Parks <Ed.Carroll@parks.ca.gov>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Neal, Larry W <larry.w.neal@aecom.com>
**Subject:** RE: CA SHPO Phone Call

Thanks for passing this along, Kevin! I spoke with Mr. Carroll this afternoon, and based on our discussion we concluded that the proposal to continue Personnel Recovery training activities at DoD installations in California where such activities already occur is not an undertaking as defined by 36 CFR 800. As such, the CA SHPO does not have any need to consult with us on this EA; he expects the SHPO will hear from those installations, if necessary, once those sites are proposed.

Mr. Carroll – thank you again for your time this afternoon, and please correct me if I've mischaracterized any part of our conversation. We will move forward with finalizing the EA.

Thank you! Please let me know if you have any questions or need anything else.

//SIGNED//
Grace Keesling, GS-13, DAF

Air Force NEPA Division (AFCEC/CZN)
JBSA-Lackland
San Antonio, TX 78226
Comm: (210) 925-4534
DSN: 945-4534

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, December 3, 2019 8:12 AM
**To:** KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>
**Cc:** Carroll, Ed@Parks <Ed.Carroll@parks.ca.gov>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Neal, Larry W <larry.w.neal@aecom.com>
**Subject:** CA SHPO Phone Call

Yesterday I had a discussion with Mr. Ed Carroll from the CA SHPO Office. He is included in the CC line above. He is open to have a discussion with you about the way- a-head. His number is 916-445-7006.

Mr. Carroll relayed that our letter was a bit confusing and was written more as a NEPA document than a Section 106 document.

He also said that since the sites were on military installations and already being used for the same type of activities, how does it qualify as an action.

He also stressed that the CA SHPO Office does not provide information on proposed actions or make any decisions for the agency submitting the request.

We need to provide them with our decision up front.

Also had a comment on who the host organization is for each of the locations listed and why aren't they making the request.

I suggest we rewrite the letter and make it more specific:

1. Remove language about proposed locations.
2. Provide list of CA sites that will be used by installation.
3. Provide APE maps for those sites.
4. Provide any coordination we have had with each installation to show the SHPO that we have been working with them.
5. Remove sample Letter to Tribes and only state that we have initiated Section 106 consultation with them.

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** Office of Federal Agency Programs <ofap@achp.gov>
**Sent:** Friday, December 27, 2019 7:56 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Katharine R. Kerr <kkerr@achp.gov>; YACUBIC, MATTHEW P GS-12 USAF AFCEC 99 CES/CZOW <matthew.yacubic@us.af.mil>
**Subject:** [Non-DoD Source] Proposal to Improve the Personnel Recovery Training Program at Davis-Monthan Air Force Base Arizona, California, Nevada, and New Mexico ACHPConnect Log Number: 014331

From: Office of Federal Agency Programs

Advisory Council on Historic Preservation

Attached is our letter on the subject undertaking (in Adobe Acrobat PDF format)

If you have any questions concerning our letter, please contact

Katharine Kerr
202-517-0216
kkerr@achp.gov

Case #014331

***e*106**-online section 106 documentation submittal system

now available to all federal agencies

http://www.achp.gov/work106.html

Preserving America's Heritage

December 27, 2019

Mr. Kevin Wakefield
Base Natural and Cultural Resource Manager
355th Civil Engineer Squadron
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012

Ref: *Proposal to Improve the Personnel Recovery Training Program at Davis-Monthan Air Force Base*
*Arizona, California, Nevada, and New Mexico*
*ACHPConnect Log Number: 014331*

Dear Mr. Wakefield:

On November 21, 2019, the Advisory Council on Historic Preservation (ACHP) received your supporting documentation regarding the Section 106 consultation regarding the referenced undertaking. Based upon the information you provided, we have concluded that our participation at this time, pursuant to Section 800.2(b)(1), of our regulations, "Protection of Historic Properties" (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act, may be premature.

The 355th Civil Engineer Squadron (355 CES/CEIE) should continue consultation with the Arizona, California, Nevada, and New Mexico State Historic Preservation Officers, Indian tribes and other consulting parties, as appropriate, to identify and evaluate historic properties and to assess any potential adverse effects on those historic properties. If you determine, through consultation, that the undertaking will adversely affect historic properties and that a Section 106 agreement document (Agreement) is necessary, 355 CES/CEIE must notify the ACHP of the finding of adverse effect and provide the documentation detailed at 36 CFR § 800.11(e). In the event that this undertaking is covered under the terms of an existing Agreement, you should follow the process set forth in the applicable Agreement.

If you have any questions or require our further assistance at this time, please contact Ms. Katharine R. Kerr at (202) 517-0216 or by e-mail at kkerr@achp.gov and reference the ACHPConnect Log Number above.

Sincerely,

Artisha Thompson
Historic Preservation Technician
Office of Federal Agency Programs

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Southwest Regional Office
1001 Indian School Road NW
Albuquerque, New Mexico 87104

In Reply Refer To
620-Division of Environmental, Safety,
and Cultural Resources Management

DEC 3 1 2019

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan Air Force Base, Arizona 85707-4927

Dear Mr. Wakefield:

Our office has received your request for input on the proposed undertaking of the Davis-Monthan Air Force Base Personnel Recovery (PR) Training in the Southwestern United States. We appreciate that the United States Air Force (USAF) acknowledges its trust responsibility in contacting the Bureau of Indian Affairs (BIA) and on a government-to-government basis by initiating consultation with Tribes and Pueblos within the proposed action areas. It is our understanding that the Section 106 of the National Historic Preservation Act (NHPA) compliance will be completed for the proposed action by USAF.

As is, the proposed action does not impact any trust resources under the jurisdiction of the BIA-Southwest Region. Therefore, at this time we do not have any comments.

Thank you for the opportunity to participate and comment on the proposed action. If you have any questions or concerns, please contact Mrs. Priscilla J Avila, Regional Environmental Protection Specialist at (505) 563-3417.

Sincerely,

Patricia L. Mattingly
Regional Director

VIEJAS
TRIBAL GOVERNMENT

P.O Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

October 9, 2019

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

**RE: Davis-Monthan Air Force Base Personnel Recovery Training Program**

Dear, Mr. Wakefield

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has cultural significance or ties to Viejas.

Viejas Band request that a Kumeyaay Cultural Monitor be on site for ground disturbing activities to inform us of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains.

Please call me at 619-659-2312 or Ernest Pingleton at 619-659-2314 or email, rteran@viejas-nsn.gov or epingleton@viejas-nsn.gov , for scheduling. Thank you.

Sincerely,

Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, November 19, 2019 2:21 PM
**To:** rteran@viejas-nsn.gov; epingleton@viejas-nsn.gov
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE
**Subject:** PR EA Response 11-19-2019
**Attachments:** DM PR EA Response Viejas 11-19-2019.pdf

Please find attached the USAF response to your letter dated 9 Oct 2019.

If you have additional questions please call.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Ray Teran, Resource Management
Viejas Band of Kumeyaay Indians
P.O. Box 908
Alpine, CA 91903

**Subject: Draft EA for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States and Section 106 Consultation**

Dear Mr. Teran:

Thank you for your comments on the Draft EA for the Davis-Monthan Air Force Base (AFB) Personnel Recovery Training Program (Proposed Action). In response to your comments, we would like to request more specific information on the project area(s) (more specifically, the PR training sites) that could contain cultural significance or ties to the Viejas Band of Kumeyaay Indians. Please note that, as discussed in the Draft EA, the USAF does not anticipate any ground disturbing activities under this Proposed Action. Also, please note that in accordance with Section 106, a consultation initiation letter with additional information on the Proposed Action (including Area of Potential Effect [APE] maps of the PR training sites) was mailed to the Viejas Band of Kumeyaay Indians' Tribal Historic Officer and Chairperson on 4 October 2019; copies of the letters and delivery receipts are included in Attachment 1 to this letter for your reference.

Please feel free to contact me via e-mail at kevin.wakefield.1@us.af.mil or phone at (520) 228-4035 if you would like to further discuss.

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Section 106 Consultation Initiation Letters and Delivery Receipts

!

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, December 10, 2019 1:39 PM
**To:** Ray Teran; Ernest Pingleton
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; MistyEve Brown
**Subject:** RE: PR EA Response 11-19-2019
**Attachments:** Response to Viejas Band of Kumeyaay Indians 12-10-2019.pdf

Mr. Ray, attached is our response to your email dated 11-19-2019. If you have any further questions or comments please email me.

Thank you,

Kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Ray Teran <rteran@viejas-nsn.gov>
**Sent:** Tuesday, November 19, 2019 5:59 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; Ernest Pingleton <epingleton@viejas-nsn.gov>
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE <christopher.brewster@us.af.mil>; MistyEve Brown <mebrown@viejas-nsn.gov>
**Subject:** [Non-DoD Source] RE: PR EA Response 11-19-2019

The project area may contain many sacred sites to the Kumeyaay people. We request that these sacred sites be avoided with adequate buffer zones.

Additionally, Viejas is requesting, as appropriate, the following:

- All NEPA/CEQA/NAGPRA laws be followed
- Immediately contact Viejas on any changes or inadvertent discoveries
- If there are any ground disturbing activities, a Kumeyaay Native American monitor be present

Please call Ernest Pingleton at 619-659-2314 or email, epingleton@viejas-nsn.gov, for scheduling. Thank you

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE [mailto:kevin.wakefield.1@us.af.mil]
**Sent:** Tuesday, November 19, 2019 2:21 PM
**To:** Ray Teran; Ernest Pingleton
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE
**Subject:** PR EA Response 11-19-2019

Please find attached the USAF response to your letter dated 9 Oct 2019.

If you have additional questions please call.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

10 December 2019

Ray Teran, Resource Management
Viejas Band of Kumeyaay Indians
P.O. Box 908
Alpine, CA 91903

**Subject: Section 106 Consultation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Teran:

Thank you for your e-mail comments of 19 November 2019 to our letter of that same date which addressed your letter of 9 October 2019 regarding the Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program (proposed undertaking) Draft EA and Section 106 consultation. In response to your 19 November 2019 comments:

- Any proposed PR training site surveyed for the proposed undertaking which could have resulted in potential impacts to cultural resources has been removed from consideration. However, we would like to request more specific information on the project area(s) (more specifically, the PR training sites) that could contain locations that are sacred or have other cultural significance or ties to the Viejas Band of Kumeyaay Indians so that we may address your concerns on this matter.

- The EA that has been developed to assess this proposed undertaking has been prepared in compliance with NEPA, NAGPRA, NHPA, and other relevant environmental laws. Given this is a federal action where PR training sites are proposed only on federal land in the State of California, the California Environmental Quality Act (CEQA) does not apply.

- As discussed in the Draft EA for the proposed undertaking, should cultural resources or potential human remains be discovered during proposed PR training activities, those materials would be avoided, and the appropriate authorities would be notified regarding the discovery.

- Please note that, as discussed in the Draft EA, the USAF does not anticipate any ground disturbing activities as part of this proposed undertaking.

Please feel free to contact me via e-mail at kevin.wakefield.1@us.af.mil or phone at (520) 228-4035 if you would like to further discuss.

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

cc. Ernest Pingleton, Tribal Historic Officer, Resource Management

TRAIN - DEPLOY - WIN
RESCUE & ATTACK!

**From:** Ray Teran <rteran@viejas-nsn.gov>
**Sent:** Tuesday, January 14, 2020 2:53 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; Ernest Pingleton
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; MistyEve Brown
**Subject:** RE: PR EA Response 11-19-2019

Kevin, Viejas agrees to close consultation. We also support and recognize the mitigation elements mentioned in your response letter dated November 19, 2019. Ray

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE [mailto:kevin.wakefield.1@us.af.mil]
**Sent:** Tuesday, January 14, 2020 9:51 AM
**To:** Ray Teran; Ernest Pingleton
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; MistyEve Brown
**Subject:** RE: PR EA Response 11-19-2019

Dear Mr. Teran and Mr. Pingleton, the USAF would like to close our consultation on the PR EA project with the Viejas Band of the Kumeyaay Indians so we can complete the development of the Final EA and FONSI. Your comments have been heard and will be addressed on the Final EA as referenced in the attached letter that was sent on 10 Dec 2019.

Reply requested.

Thank you,

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

THE HOPI TRIBE

Timothy L. Nuvangyaoma
CHAIRMAN

Clark W. Tenakhongva
VICE-CHAIRMAN

October 21, 2019

Colonel Michael R. Drowley, Commander
Attention: Kevin Wakefield, Resources Manager
Department of the Air Force 355th Fighter Wing (ACC)
3775 S. Fifth Street
Davis-Monthan Air Force Base, Arizona 85707-4927

Re: Personnel Recovery Training Program

Dear Colonel Drowley,

This letter is in response to your correspondence regarding the development of an environmental assessment for a Personnel Recovery Training Program in the Southwestern United States. The Hopi Tribe claims cultural affiliation to earlier identifiable cultural groups in the Southwestern United States. The Hopi Cultural Preservation Office supports the identification and avoidance of our ancestral sites, and we consider the prehistoric archaeological sites of our ancestors to be Traditional Cultural Properties. Therefore, we appreciate your solicitation of our input and your efforts to address our concerns.

The Hopi Cultural Preservation Office requests consultation on any proposal with the potential to adversely affect prehistoric cultural resources in Arizona and New Mexico. We appreciate that the Air Force is avoiding sites pursuant to the National Historic Preservation Act, understand that 38 proposed training sites on National Forest, state and private lands in Arizona and New Mexico are currently being evaluated for cultural resources, and that a Programmatic Agreement is being developed. Therefore, to enable us to determine if this proposal may affect cultural resources significant to the Hopi Tribe, please provide us with copies of the Programmatic Agreement and environmental assessment for review and comment.

If cultural resources surveys of the areas of potential effect identify prehistoric sites that may be adversely affected by project activities please provide us with copies of the survey report and any proposed treatment plans for review and comment. In addition, if any prehistoric cultural features or deposits are encountered during project activities, these activities must be discontinued in the immediate area of the remains, and the State Historic Preservation Office must be consulted to evaluate their nature and significance, and if any Native American human remains or funerary objects are discovered they must be reported as required by law.

If you have any questions or need additional information, please contact Terry Morgart at tmorgart@hopi.nsn.us. Thank you for your consideration.

Respectfully,

Stewart B. Koyiyumptewa

Stewart B. Koyiyumptewa, Program Manager
Hopi Cultural Preservation Office

xc: Steven Hattenbach, Cibola National Forest
Arizona State Historic Preservation Office

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, November 19, 2019 2:07 PM
**To:** SKoyiyumptewa@hopi.nsn.us
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE
**Subject:** PR EA Hopi Response from USAF 11-19-2019
**Attachments:** DM PR EA HOPI Response 11-19-2019.pdf

Sir, please find the attached response to your letter for the DMAFB PR EA.

If you have any additional questions please feel free to ask.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Stewart B. Koyiyumptewa, Program Manager
Hopi Cultural Preservation Office
P.O. Box 123
Kykotsmovi, AZ 86039

**Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States**

Dear Mr. Koyiyumptewa:

Thank you for your response to our letter of 4 October 2019 initiating Section 106 consultation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program. In response to your comments, any proposed PR training site surveyed for the Proposed Action which could have resulted in potential impacts to cultural resources has been removed from consideration. Please note that, as discussed in the Draft EA, the USAF does not anticipate any ground disturbing activities under this Proposed Action. As discussed in the Draft EA, should cultural resources or human remains be found during proposed PR training activities, those materials would be avoided and the appropriate authorities would be notified regarding the discovery. The Draft EA is available at the following link (under "Environmental Assessment"): https://www.dm.af.mil/. A copy of the Notice of Availability of the Draft EA, which included a link and list of public libraries where the Draft EA was available to review during the public review period (i.e., from 20 September 2019 to 26 October 2019), was mailed to you on 20 September 2019 and is included as Attachment 1 to this letter.

Regarding the Programmatic Agreement (PA) for the proposed undertaking, we are currently exploring the option of incorporating binding language directly in the EA for Section 106 consultation, instead of developing a PA or MOA, per the suggestion of the New Mexico SHPO. Should the development of the PA continue, we will be pleased to further consult with you regarding its development.

The USAF would be happy to further consult on the Proposed Action. Please feel free to contact me via e-mail at kevin.wakefield.1@us.af.mil or phone at (520) 228-4035 to set up a call at your earliest convenience.

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Draft EA Notice of Availability

# DEPARTMENT OF THE AIR FORCE 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

received
12/3/19
CPO

Timothy L. Nuvangyaoma, Chairman
Hopi Tribe of Arizona
P.O. Box 123
Kykotsmovi, AZ 86039

Subject: Section 106 Consultation Continuation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States

Dear Chairman Nuvangyaoma:

This letter continues the consultation on the proposed Davis-Monthan Air Force Base (AFB) Personnel Recovery (PR) Training Program, which was initiated in accordance with Section 106 of the National Historic Preservation Act of 1966 in the USAF's letter submitted 25 September 2019 that also requested your input on the proposed undertaking. The previous letter identified that the USAF was in the process of preparing an Environmental Assessment (EA) evaluating the potential impacts associated with the proposed undertaking, and provided (1 ) Description of Proposed Action, (2) Summary of Proposed PR Training Activities, (3) Coordinates of the Proposed PR Training Sites, (4) Proposed PR Training Sites Mapbook, (5) Prior SHPO Concurrence of Proposed PR Training Sites, and (6) Tribal Consultation List.

The purpose of this letter is to provide additional information regarding the proposed undertaking. Specifically, our previous letter noted that approximately 38 proposed training sites on National Forest, state, municipal, or private lands in Arizona and/or New Mexico were being evaluated for cultural resources, and that the USAF would provide information regarding any historic properties to you. Those studies are now complete, and relevant information regarding historic properties at those proposed PR training sites is provided in Attachment 1.

If you have any questions or inputs, please contact me, at the following:

Kevin Wakefield
355 CES/CEIE
3775 South 5th street,
Davis-Monthan AFB, AZ 85707-4927;

e-mail at kevin.wakefield.1@us.af.mil

Phone at 520-228-4035

12-6-19
concur
Margaret
for
Kevin Wakefield

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Cultural Resources Survey Historic Properties Information

cc: Stewart Koyiyumptewa, CPO Director

**From:** Cheryl Madrigal <CMadrigal@rincon-nsn.gov>
**Sent:** Thursday, October 17, 2019 12:07 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Deneen Pelton <DPelton@rincon-nsn.gov>
**Subject:** [Non-DoD Source] Davis-Monthan Air Force Base Personnel Recovery Training Program

Dear Mr. Wakefield,

Please see attached response letter to above mentioned project. If you have any questions or comments, please contact us.

Thank you,

*Cheryl*

**Cheryl Madrigal, M.A.**
Cultural Resources Manager
Cultural Resources Department
Wa$xayam Pomki Museum

**Rincon Band of Luiseño Indians**
1 West Tribal Road | Valley Center, CA 92082
**Mailing address: One Government Center Ln. | Valley Center, CA 92082**
Office:760-297-2635 ext. 323|Cell: 760-648-3000
Fax: 760-749-8901
Email: cmadrigal@rincon-nsn.gov

Rincon Band of Luiseño Indians
www.rincon-nsn.gov

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# RINCON BAND OF LUISEÑO INDIANS

## Cultural Resources Department

One Government Center Lane · Valley Center, California 92082 ·
(760) 297-2635 Fax:(760) 749-8901


October 17, 2019

Mr. Kevin Wakefield
355 CES/CE IE
Davis-Monthan AFB, AZ 85707-4927

**Re: Davis-Monthan Air Force Base Personnel Recovery Training Program**

Dear Mr. Wakefield,

This letter is written on behalf of the Rincon Band of Luiseño Indians. We have received your notification regarding the above referenced project and we thank you for the opportunity to consult and comment on the Draft EA. Identified locations within the Territory of the Luiseño people, and also within Rincon's specific area of Historic interest, are Camp Pendleton, March AFB, and possible PR training sites on San Clemente Island, all located in California.

Embedded in the Luiseño territory are Rincon's history, culture and identity. As mentioned in our email from July 9, 2019, in particular the area of Camp Pendleton in California, is considered by the Rincon Band to be a Traditional Cultural Place (TCP) within a Traditional Cultural Landscape (TCL), as it is associated with the traditional practices. Please provide access to the 2008 SOCAL EIS/OEIS and 2018 HSTT EIS/OIS (pg. 3-136) regarding EAs for San Clemente Island.

We request consultation at this time in order to learn more about the project and any potential impacts to cultural resources, implementation/reviews of mitigation measures, and to explore the opportunity to enter a Programmatic Agreement.

If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 297-2635.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Cheryl Madrigal
Cultural Resources Manager
Rincon Cultural Resources Department


Bo Mazzetti, Tribal Chairman | Tishmall Turner, Vice Chairwoman | Steve Stallings, Council Member | Laurie E. Gonzalez, Council Member | Alfonso Kolb, Council Member

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Tuesday, November 19, 2019 2:11 PM
**To:** Cheryl Madrigal
**Cc:** Deneen Pelton; BREWSTER, CHRISTOPHER L GS-12 USAF ACC 355 CES/CEIE; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie
**Subject:** RE: Davis-Monthan Air Force Base Personnel Recovery Training Program
**Attachments:** PR EA response Rincon Band of Luiseno Indians 11-19-2019.pdf

Good afternoon Cheryl, please find attached the USAF response to your email dated 17 Oct 2019.

I you have any additional questions please feel free to ask.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Cheryl Madrigal <CMadrigal@rincon-nsn.gov>
**Sent:** Thursday, October 17, 2019 12:07 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Deneen Pelton <DPelton@rincon-nsn.gov>
**Subject:** [Non-DoD Source] Davis-Monthan Air Force Base Personnel Recovery Training Program

Dear Mr. Wakefield,

Please see attached response letter to above mentioned project. If you have any questions or comments, please contact us.

Thank you,

*Cheryl*

**Cheryl Madrigal, M.A.**
Cultural Resources Manager
Cultural Resources Department
Wa$xayam Pomki Museum

**Rincon Band of Luiseño Indians**
1 West Tribal Road | Valley Center, CA 92082
**Mailing address: One Government Center Ln. | Valley Center, CA 92082**
Office:760-297-2635 ext. 323|Cell: 760-648-3000
Fax: 760-749-8901
Email: cmadrigal@rincon-nsn.gov




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# DEPARTMENT OF THE AIR FORCE
## 355TH WING (ACC)
## DAVIS-MONTHAN AIR FORCE BASE
## ARIZONA

Cheryl Madrigal, Cultural Resources Manager
Rincon Cultural Resources Management Department
Rincon Band of Luiseño Indians
One Government Center Lane
Valley Center, CA 92082

**Subject: Draft EA for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States and Section 106 Consultation**

Dear Ms. Madrigal:

Thank you for your comments on the Draft EA for the Davis-Monthan Air Force Base (AFB) Personnel Recovery Training Program (Proposed Action). In response to your comments, please find below links to the requested reference documents:

- U.S. Department of the Navy's 2008 Southern California (SOCAL) Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) is available at the following website (scroll down to "Pacific Documents" and the links are provided under the bolded subheader titled "Southern California Range Complex (SOCAL) – Published 2009"): https://www.navfac.navy.mil/products_and_services/ev/products_and_services/environmental-planning/at_sea_compliance.html.

- U.S. Department of the Navy's 2018 Hawaii-Southern California Training and Testing (HSTT) EIS/OEIS is available at the following website: https://www.hstteis.com/Documents/2018-Hawaii-Southern-California-Training-and-Testing-Final-EIS-OEIS/Final-EIS-OEIS.

We understand from your comments that you would like to request consultation at this time in order to learn more about the Proposed Action and any potential impacts to cultural resources and implementation/reviews of mitigation measures. Please note that in accordance with Section 106, a consultation initiation letter with additional information on the Proposed Action (including Area of Potential Effect [APE] maps of the PR training sites) was mailed to you on 4 October 2019; a copy of the letter and delivery receipt are included in Attachment 1 to this letter for your reference. As noted in our letter, regarding the San Clemente Island and Leon PR training sites, the proposed PR training activities at these sites were previously addressed under separate undertakings (i.e., U.S. Department of the Navy's 2018 HSTT EIS/OEIS) and a copy of the concurrence letter was provided in Attachment 5 in our 4 October 2019 letter. Given this, these PR training sites are not part of this consultation. Also, regarding the PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton, these PR training sites are under consideration and the USAF is currently coordinating with the USMC. These proposed PR training sites are only provided for reference purposes and are not part of this consultation. If a training event is proposed for any of these sites, the USMC has indicated that they will engage in the Section 106 consultation related to proposed activities on their property. In addition, regarding the PR training site at March Air Reserve Base (ARB), as discussed in the Draft EA, the March ARB has been previously completely surveyed for cultural resources and no archaeological sites are present within the proposed PR training site's APE. Lastly, please note that, as discussed in the Draft EA, the USAF does not anticipate any ground disturbing activities under this Proposed Action.

Regarding the Programmatic Agreement (PA) for the proposed undertaking, we understand that the Rincon Band of Luiseño Indians would be interested in exploring the opportunity to participate in the development of the PA. The USAF is currently exploring the option of incorporating binding language

directly in the EA for Section 106 consultation, instead of developing a PA or MOA, per the suggestion of the New Mexico SHPO. Should the development of the PA continue, we will be pleased to further consult with you regarding its development.

The USAF would be happy to further consult on the Proposed Action. Please let us know how you would like to proceed for the consultation process. Please feel free to contact me via e-mail at kevin.wakefield.1@us.af.mil or phone at (520) 228-4035 at your earliest convenience.

Sincerely,

Kevin Wakefield
Base Natural and Cultural Resource Manager

Attachments:
1. Section 106 Consultation Initiation Letter and Delivery Receipt

!

**From:** Cheryl Madrigal <CMadrigal@rincon-nsn.gov>
**Sent:** Thursday, December 19, 2019 11:29 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Deneen Pelton <DPelton@rincon-nsn.gov>
**Subject:** [Non-DoD Source] Draft EA for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training

Dear Kevin,

Please find attached our response letter regarding the above mentioned project.

Thank you for the opportunity to protect our cultural assets.

Sincerely,

*Cheryl*

**Cheryl Madrigal**
Cultural Resources Manager
Tribal Historic Preservation Officer
Cultural Resources Department
**Rincon Band of Luiseño Indians**

1 West Tribal Road | Valley Center, CA 92082
Office:760-297-2635 ext. 323|Cell: 760-648-3000
Fax: 760-749-8901
Email: cmadrigal@rincon-nsn.gov

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# RINCON BAND OF LUISEÑO INDIANS

## Cultural Resources Department

One Government Center Lane · Valley Center, California 92082 · (760) 297-2635 Fax:(760) 749-8901


December 19, 2019

Response sent via email:
**kevin.wakefield.1@us.af.mil**

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

**Re: Draft EA for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United States and Section 106 Consultation**

Dear Mr. Wakefield,

This letter is written on behalf of the Rincon Band of Luiseño Indians. We have received your notification regarding the above referenced project and we thank you for the opportunity to consult. Areas within the Territory of the Luiseño people include your training sites on San Clemente Island, and USMC Base Camp Pendleton, and March Air Reserve Base (ARB); all three areas are also within Rincon's specific area of Historic interest. Embedded in the Luiseño territory are Rincon's history, culture and identity.

Thank you for clarifying that San Clemente Island and USMC Base Camp Pendleton are not included in this consultation. In regards to March ARB, we recognize that the area has been previously completely surveyed for cultural resources and no archaeological sites were identified. Since no ground disturbances are anticipated under this Proposed Action, we do not have further comments or concerns regarding this Proposed Action.

We can conclude consultation at this time but ask that if the Proposed Action changes, that you please notify the Rincon Band. Furthermore, if a Programmatic Agreement is again considered, please contact us. If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 297-2635.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager


Bo Mazzetti, Tribal Chairman | Tishmall Turner, Vice Chairwoman | Steve Stallings, Council Member | Laurie E. Gonzalez, Council Member | Alfonso Kolb, Council Member

**From:** cjlinton73@aol.com <cjlinton73@aol.com>
**Sent:** Wednesday, October 23, 2019 11:04 AM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** tanya.wahoff@aecom.com
**Subject:** [Non-DoD Source] Personnel Recovery Training EA, Section 106 consultation

Hi Kevin,

I have received your letter through AECOM regarding the above referenced project.

Santa Ysabel has no comments regarding this project.

Thank you,

Clint Linton
Director of Cultural Resources
Iipay Nation of Santa Ysabel

-----Original Message-----
From: Stapp, Judy <jstapp@cabazonindians-nsn.gov>
Sent: Wednesday, December 4, 2019 2:16 PM
To: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
<kevin.wakefield.1@us.af.mil>
Subject: [Non-DoD Source] Re: Davis-Monthan AFB PR EA Section 106 Follow-Up

Hi Kevin,

Oops. Attached is the letter you should have received.

Thank you.

Judy Stapp
Director of Cultural Affairs
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio, CA 92203
Phone (760) 238-5770
Fax: (760) 347-7880

This message contains information which may be confidential and privileged. Unless you are the intended addressee (or authorized to receive for the intended addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender at Cabazon Band of Mission Indians by reply to jstapp@cabazonindians-nsn.gov <mailto:pmackey@cabazonindians-nsn.gov> and delete the message. Thank you.

On 12/4/19, 12:18 PM, "WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE" <kevin.wakefield.1@us.af.mil> wrote:

> >Section 106 Consultation Initiation for the Proposed Davis-Monthan Air
> >Force Base Personnel Recovery Training Program in the Southwestern
> >United States.

December 4, 2019

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012

Re.: Section 106 Consultation Initiation for the Proposed
Davis-Monthan Air Force Base Personnel Recovery Training Program in the
Southwestern United States.

Dear Mr. Wakefield:

Thank you for contacting the Cabazon Band of Mission Indians concerning cultural resource information relative to the above referenced project.

The project is located outside of the Tribe's current reservation boundaries but within the geographic area with which the tribe is traditionally and culturally affiliated. The Tribe has no specific archival information on the site indicating that it may be a sacred/religious site or other site of Native American traditional cultural value.

We look forward to continued collaboration in the preservation of cultural resources or areas of traditional cultural importance.

Best regards,

Judy Stapp

Judy Stapp
Director of Cultural Affairs

**From:** Alexis Wallick <awallick@palatribe.com>
**Sent:** Wednesday, December 4, 2019 11:35 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program

Attached is the response to the request for comment on this project, sent on behalf of Shasta Gaughen.


Alexis Wallick
Pala Band of Mission Indians
Assistant Tribal Historic Preservation Officer
Pala Environmental Department, THPO
35008 Pala Temecula Road, Pmb 50; Pala, CA 92059
(760)891-3537
awallick@palatribe.com
ped.palatribe.com



Please consider the environment before printing this email.

THPO
Pala Band of Mission Indians

**TRIBAL HISTORIC PRESERVATION OFFICE**
PALA BAND OF MISSION INDIANS
PMB 50, 35008 Pala Temecula Road | Pala, CA 92059
Phone 760-891-3510 | www.palatribe.com

December 4, 2019

Kevin Wakefield
Dept. of the Air Force
355 CES/ CEIE
3775 South 5th Street
Davis- Monthan AFB, AZ 85707

Re: Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program

Dear Mr. Wakefield:

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact Alexis Wallick by telephone at 760-891-3537 or by e-mail at awallick@palatribe.com.

Sincerely,

Shasta C. Gaughen, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO **SHASTA C. GAUGHEN** AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 4, 2019 10:18 AM
**To:** Mercedes Estrada
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** RE: Davis-Monthan AFB PR EA Section 106 Follow-Up

Thank you for the response.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Mercedes Estrada <mercedes.estrada@santarosacahuilla-nsn.gov>
**Sent:** Wednesday, December 4, 2019 11:16 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] RE: Davis-Monthan AFB PR EA Section 106 Follow-Up

Good morning,

At this time, the Tribe does not have any comments to submit.

*Respectfully,*
*Mercedes Estrada*
*Tribal Administrative Assistant*
*Santa Rosa Band of Cahuilla Indians*
*Work: (951) 659-2700 Ext. 105*
*Fax: (951) 659-2228*
*P.O. Box 391820 Anza, CA 92539*




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**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 4, 2019 10:14 AM
**To:** Mercedes Estrada <mercedes.estrada@santarosacahuilla-nsn.gov>; mflaxbeard@santarosacahuillansn.gov
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

Greetings, writing to follow-up on the Section 106 Consultation Initiation letter sent to your office on or about 7 October 2019 and our follow-up letter sent out on or about 21 November 2019. The subject line of the letter was; Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United State**s**. We are working to complete the final environmental assessment document, but want to insure your comments are included.

Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 4, 2019 9:55 AM
**To:** Garcia-Lewis, Angela
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** RE: Davis-Monthan AFB PR EA Section 106 Follow-Up

Thank you for the reply.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Garcia-Lewis, Angela <Angela.Garcia-Lewis@SRPMIC-nsn.gov>
**Sent:** Wednesday, December 4, 2019 10:32 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] RE: Davis-Monthan AFB PR EA Section 106 Follow-Up

The SRPMIC THPO defers to the TON THPO for further consultation.

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 4, 2019 9:59 AM
**To:** Garcia-Lewis, Angela <Angela.Garcia-Lewis@SRPMIC-nsn.gov>; Martinez, Martha <Martha.Martinez@SRPMIC-nsn.gov>
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

Greetings, writing to follow-up on the Section 106 Consultation Initiation letter sent to your office on or about 7 October 2019 and our follow-up letter sent out on or about 21 November 2019. The subject line of the letter was; Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United State**s**. We are working to complete the final environmental assessment document, but want to insure your comments are included.

Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 4, 2019 12:48 PM
**To:** Altaha, Mark
**Cc:** Neal, Larry W; Wahoff,Tanya; Fitzpatrick, Hallie; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** PR EA Response White Mountain Apache Tribe

Afternoon Mr. Altaha, received your phone message. Not sure why the return email rejected.

Thank you for providing your response that the White Mountain Apache Tribe has no response at this time. We will document the reply in the official record.

Again, Thank you.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** Christopher Harper <christopherharper@fortmojave.com>
**Sent:** Tuesday, December 10, 2019 2:54 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; Timothy Williams; Linda Otero
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Subject:** Re: Davis-Monthan AFB PR EA Section 106 Follow-Up

Good Afternoon Kevin,

I got around to accessing your file safe site and downloaded the file. I will take a look and go from there.

Regards,
Chris

**Christopher Harper, RPA**
Cultural Heritage Manager / Archaeologist
Fort Mojave Indian Tribe / AhaMakav Cultural Society
Cell: 702-241-4299

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Monday, December 9, 2019 8:10:27 AM
**To:** Christopher Harper; Timothy Williams; Linda Otero
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Subject:** RE: Davis-Monthan AFB PR EA Section 106 Follow-Up

I will be sending you the attachments today by DoD File Safe Transfer. You will receive and email stating it is available for pick up.

V/R Kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Christopher Harper <christopherharper@fortmojave.com>
**Sent:** Friday, December 6, 2019 11:27 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; Timothy Williams <timothywilliams@fortmojave.com>; Linda Otero <lindaotero@fortmojave.com>

**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>
**Subject:** [Non-DoD Source] Re: Davis-Monthan AFB PR EA Section 106 Follow-Up

HI Kevin,

We have tracked down the October letter that went to the tribal office (Chairman), but neither Linda or I received the letter or the attachments. Are the attachments of the size that may be emailed?

I have also replaced the Chairman's and Director's emails to their correct addresses.

Regards,
Chris

**Christopher Harper, RPA**
Cultural Heritage Manager / Archaeologist
Fort Mojave Indian Tribe / AhaMakav Cultural Society
Cell: 702-241-4299

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Friday, December 6, 2019 9:09:00 AM
**To:** Christopher Harper; timothywilliams@formojave.com; lindaotero@formojave.com
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Subject:** RE: Davis-Monthan AFB PR EA Section 106 Follow-Up

Thanks again.

v/r kevin

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

---

**From:** Christopher Harper <christopherharper@fortmojave.com>
**Sent:** Friday, December 6, 2019 9:06 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>; timothywilliams@formojave.com; lindaotero@formojave.com
**Cc:** Neal, Larry W <larry.w.neal@aecom.com>; Fitzpatrick, Hallie <hallie.fitzpatrick@aecom.com>; Wahoff,Tanya <Tanya.Wahoff@aecom.com>; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN <grace.keesling.1@us.af.mil>
**Subject:** [Non-DoD Source] Re: Davis-Monthan AFB PR EA Section 106 Follow-Up

Kevin,

I just sent you an email, and both the emails for Chairman and Director Otero are incorrect, the "t" in Fort has been omitted. This may explain why we have not seen emails if sent to them.

The correct emails are:

timothywilliams@fortmojave.com
lindaotero@fortmojave.com

Regards,
Chris

**Christopher Harper, RPA**
Cultural Heritage Manager / Archaeologist
Fort Mojave Indian Tribe / AhaMakav Cultural Society
Cell: 702-241-4299

---

**From:** Christopher Harper
**Sent:** Friday, December 6, 2019 9:02:09 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE; timothywilliams@formojave.com; lindaotero@formojave.com
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN
**Subject:** Re: Davis-Monthan AFB PR EA Section 106 Follow-Up

Good Morning Kevin,

I did not receive this and we searched to find the November letter sent to Chairman. I have looked at the EA when the Public Notice was issued at the end of September, but had not done much since tribal consultation was not initiated. Were these letters emailed or via hard copy, for we can only find hard copy.

We will look at this again and let you know if we have comments.

Regards,
Chris

**Christopher Harper, RPA**
Cultural Heritage Manager / Archaeologist
Fort Mojave Indian Tribe / AhaMakav Cultural Society
Cell: 702-241-4299

---

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Sent:** Wednesday, December 4, 2019 9:44:04 AM
**To:** timothywilliams@formojave.com; lindaotero@formojave.com; Christopher Harper
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

Greetings, writing to follow-up on the Section 106 Consultation Initiation letter sent to your office on or about 7 October 2019 and our follow-up letter sent out on or about 21 November 2019. The subject line of the letter was; Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United State**s**. We are working to complete the final environmental assessment document, but want to insure your comments are included.

Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

**From:** Larry Benallie Jr <Larry.BenallieJr@gric.nsn.us>
**Sent:** Friday, December 6, 2019 8:32 AM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] Personnel Recovery Training Program SW U.S.

The original signed letter is in the mail.

*Larry Benallie, Jr.*
**Archaeological Compliance Specialist**
**Tribal Historic Preservation Office**
**Gila River Indian Community**
**P.O. Box 2193**
**Sacaton, Arizona 85147**
**(520) 562-7153**
Larry.BenallieJr@gric.nsn.us

Government to Government Consultation Toolkit

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TRIBAL HISTORIC PRESERVATION OFFICE

(520) 562-7162
Fax: (520) 562-5083

December 5, 2019

Kevin Wakefield
Base Natural and Cultural Resource Manager
Department of the Air Force
355 CES/CEIE
3775 South 5th Street
Davis-Monthan Air Force Base, Arizona 85707-4927

RE: Section 106 Consultation Proposed Davis-Monthan Air Force Base (DMAFB) Personnel Recovery Training Program, Southwestern United States

Dear Manager Wakefield,

The Gila River Indian Community Tribal Historic Preservation Office (GRIC-THPO) has received your consultation letter by electronic mail on November 21, 2019. The DMAFB is preparing an Environmental Assessment (EA) evaluating potential impacts associated with this proposed training program. There are 38 proposed training locations across the states of Arizona and New Mexico. Eight (8) archaeological sites/historic properties have been identified: 1) Site CAS-2019-DM-01 (Babbitt Ranch 2) is identified as prehistoric lithic scatter with isolated historic artifacts. The site is considered a Register eligible property and will be removed from the proposed training areas; 2) Site SRI 117 (Devon) is identified as a prehistoric lithic scatter which is considered a Register eligible property. The site will not be affected by this undertaking; 3) Site AR-03-04-02 (HLZ 7) is identified as a prehistoric ball court. The site is considered a Register eligible property and will be removed from the proposed training areas; 4) Site AR-03-04-07-01469 (Jacks Canyon) is identified as a multi-component site with historic period features. The site is considered a Register eligible property and will be removed from the proposed training areas; 5) Site AR-03-12-04-0253 (Payson-RimSide) is identified as a large multi-component site with features. The site is considered a Register eligible property and will be removed from the proposed training areas; 6) Site AR-03-04-06-01341 is identified as a prehistoric lithic and groundstone artifact scatter which is considered Register eligible. The site will not be affected by this undertaking; 7) SRI 201 (Ruby Fuzzy Paladins) is identified as a prehistoric lithic scatter with features which is considered a Register eligible property. The site will not be affected by this undertaking; and 8) AR-03-07-04-01199 (Sage) is identified as prehistoric lithic scatter. The site is considered a Register eligible property and will be removed from the proposed training areas.

The GRIC-THPO concurs with recommendations for avoidance of the historic properties and with the removal of the Babbitt Ranch 2, HLZ 7, Jacks Canyon, Payson-RimSide, and Sage training areas from the list of proposed training areas. The GRIC-THPO will continue to participate in the Section 106 consultation for this undertaking. The project areas are partially within the ancestral lands of the Four Southern Tribes (Gila River Indian Community; Salt River Pima-Maricopa Indian Community; Ak-Chin Indian Community and the Tohono O'Odham

Nation). The GRIC-THPO defers, where appropriate, to the Salt River Pima-Maricopa Indian Community and the Tohono O'Odham Nation as leads in the consultation process.

Thank you for contacting the GRIC-THPO. If you have any questions please do not hesitate to contact me or Archaeological Compliance Specialist Larry Benallie, Jr. at 520-562-7162.

Respectfully,

Barnaby V. Lewis
Tribal Historic Preservation Officer
Gila River Indian Community

**From:** Quechan Historic Preservation Officer <historicpreservation@quechantribe.com>
**Sent:** Friday, December 6, 2019 12:40 PM
**To:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] RE: Davis-Monthan AFB PR EA Section 106 Follow-Up

Good afternoon Mr. Wakefield,
The Quechan Historic Preservation Office has no comments on this project.

Jill

**From:** WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE [mailto:kevin.wakefield.1@us.af.mil]
**Sent:** Wednesday, December 04, 2019 9:47 AM
**To:** executivesecretary@quechantribe.com; scottmanfred@yahoo.com; historicpreservation@quechantribe.com
**Cc:** Neal, Larry W; Fitzpatrick, Hallie; Wahoff,Tanya; KEESLING, GRACE E GS-13 USAF AFMC AFIMSC/CZN; WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
**Subject:** Davis-Monthan AFB PR EA Section 106 Follow-Up

Greetings, writing to follow-up on the Section 106 Consultation Initiation letter sent to your office on or about 7 October 2019 and our follow-up letter sent out on or about 21 November 2019. The subject line of the letter was; Section 106 Consultation Initiation for the Proposed Davis-Monthan Air Force Base Personnel Recovery Training Program in the Southwestern United State**s**. We are working to complete the final environmental assessment document, but want to insure your comments are included.

Please email me at kevin.wakefield.1@us.af.mil with your comments or confirm that you have no comments.

Thank you,

Kevin Wakefield, GS-12, DAFC
Base Natural and Cultural Resource Manager
EIAP Program Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: kevin.wakefield.1@us.af.mi
DSN: 228-4035
Comm: (520) 228-4035

-----Original Message-----
From: Padilla, Lacy (TRBL) <lpadilla@aguacaliente.net>
Sent: Monday, January 6, 2020 12:49 PM
To: WAKEFIELD, KEVIN L GS-12 USAF ACC 355 CES/CEIE
<kevin.wakefield.1@us.af.mil>
Subject: [Non-DoD Source] Davis-Monthan Air Force Base Personnel Recovery Training Program

If you have any questions about the attached letter please feel free to contact me.

Thank you,

Lacy Padilla
Archaeologist
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive Palm Springs, CA 92264
D: 760-699-6956 | C: 760-333-5222

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

*01-022-2020-001*

January 06, 2020

[VIA EMAIL TO:kevin.wakefield.1@us.af.mil]
U.S. Air Force
Mr. Kevin Wakefield
355 CES/CEIE 3775 South 5th Street
Davis-Monthan AFB, Arizona 85707-4927

**Re: Davis-Monthan Air Force Base Personnel Recovery Training Program**

Dear Mr. Kevin Wakefield,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Davis-Monthan Air Force Base Personnel Recovery Training Program project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. Since this action does not have the potential to impact cultural resources, we have no concerns at this time. This letter shall conclude our consultation efforts.

> *At this time ACBCI has no comments, but please continue to provide our office with updates as the project progresses. Also, please inform our office if there are changes to the scope of this project.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6956. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Lacy Padilla
Archaeologist
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

# Appendix C

# Airspace Information

# ATADS : TRACON Operations : Standard Report

From 01/2018 To 05/2019 | Facility=P50, L30, SCT, U90

| Calendar Year | Facility | State | Region | DDSO Service Area | Class | IFR Itinerant Air Carrier | IFR Itinerant Air Taxi | IFR Itinerant General Aviation | IFR Itinerant Military | IFR Itinerant Total | IFR Overflight Air Carrier | IFR Overflight Air Taxi | IFR Overflight General Aviation | IFR Overflight Military | IFR Overflight Total | VFR Itinerant Air Carrier | VFR Itinerant Air Taxi | VFR Itinerant General Aviation | VFR Itinerant Military | VFR Itinerant Total | VFR Overflight Air Carrier | VFR Overflight Air Taxi | VFR Overflight General Aviation | VFR Overflight Military | VFR Overflight Total | Total Operations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2018 | L30 | NV | AWP | WE | TRACON, RAPCON, or CERAP | 366,695 | 35,576 | 58,178 | 950 | 461,399 | 326 | 454 | 2,889 | 780 | 4,449 | 10 | 82,819 | 36,063 | 1,111 | 120,003 | 0 | 2,345 | 7,694 | 818 | 10,857 | 596,708 |
| 2018 | P50 | AZ | AWP | WE | TRACON, RAPCON, or CERAP | 398,419 | 68,658 | 85,539 | 4,357 | 556,973 | 615 | 1,492 | 4,827 | 1,574 | 8,508 | 6 | 45,136 | 74,952 | 1,947 | 122,041 | 15 | 5,117 | 19,679 | 878 | 25,689 | 713,211 |
| Sub-Total for Unknown | | | | | | 765,114 | 104,234 | 143,717 | 5,307 | 1,018,372 | 941 | 1,946 | 7,716 | 2,354 | 12,957 | 16 | 127,955 | 111,015 | 3,058 | 242,044 | 15 | 7,462 | 27,373 | 1,696 | 36,546 | 1,309,919 |
| 2018 | SCT | CA | AWP | WE | Combined TRACON | 1,126,236 | 180,624 | 330,368 | 45,374 | 1,682,602 | 3,200 | 3,452 | 10,158 | 6,260 | 23,070 | 49 | 10,533 | 417,171 | 21,504 | 449,257 | 33 | 4,560 | 91,615 | 9,867 | 106,075 | 2,261,004 |
| 2018 | U90 | AZ | AWP | WE | TRACON, RAPCON, or CERAP | 37,443 | 14,335 | 18,395 | 22,810 | 92,983 | 1,273 | 724 | 1,304 | 1,242 | 4,543 | 13 | 14,694 | 46,460 | 23,983 | 85,150 | 7 | 2,842 | 4,416 | 1,870 | 9,135 | 191,811 |
| Sub-Total for 2018 | | | | | | 1,928,793 | 299,193 | 492,480 | 73,491 | 2,793,957 | 5,414 | 6,122 | 19,178 | 9,856 | 40,570 | 78 | 153,182 | 574,646 | 48,545 | 776,451 | 55 | 14,864 | 123,404 | 13,433 | 151,756 | 3,762,734 |
| 2019 | L30 | NV | AWP | WE | TRACON, RAPCON, or CERAP | 153,102 | 16,870 | 25,279 | 360 | 195,611 | 111 | 225 | 1,227 | 306 | 1,869 | 25 | 30,975 | 13,275 | 1,776 | 46,051 | 2 | 918 | 2,505 | 249 | 3,674 | 247,205 |
| 2019 | P50 | AZ | AWP | WE | TRACON, RAPCON, or CERAP | 171,117 | 29,384 | 40,471 | 2,245 | 243,217 | 222 | 707 | 2,152 | 506 | 3,587 | 4 | 13,802 | 32,940 | 639 | 47,385 | 1 | 1,961 | 7,706 | 276 | 9,944 | 304,133 |
| Sub-Total for Unknown | | | | | | 361,662 | 60,589 | 84,145 | 25,415 | 531,811 | 1,606 | 1,656 | 4,683 | 2,054 | 9,999 | 42 | 59,471 | 92,675 | 26,398 | 178,586 | 10 | 5,721 | 14,627 | 2,395 | 22,753 | 743,149 |
| 2019 | SCT | CA | AWP | WE | Combined TRACON | 457,759 | 78,996 | 143,539 | 19,459 | 699,753 | 2,446 | 1,413 | 5,488 | 2,525 | 11,872 | 14 | 3,918 | 152,535 | 7,456 | 163,923 | 1 | 1,670 | 33,619 | 3,070 | 38,360 | 913,908 |
| 2019 | U90 | AZ | AWP | WE | TRACON, RAPCON, or CERAP | 17,555 | 6,499 | 9,516 | 10,133 | 43,703 | 262 | 262 | 616 | 321 | 1,461 | 5 | 6,899 | 21,833 | 11,975 | 40,712 | 1 | 1,159 | 1,837 | 832 | 3,829 | 89,705 |
| Sub-Total for WE | | | | | | 2,728,326 | 430,942 | 711,285 | 105,688 | 3,976,241 | 8,455 | 8,729 | 28,661 | 13,514 | 59,359 | 126 | 208,776 | 795,229 | 70,391 | 1,074,522 | 60 | 20,572 | 169,071 | 17,860 | 207,563 | 5,317,685 |
| Sub-Total for AWP | | | | | | 2,728,326 | 430,942 | 711,285 | 105,688 | 3,976,241 | 8,455 | 8,729 | 28,661 | 13,514 | 59,359 | 126 | 208,776 | 795,229 | 70,391 | 1,074,522 | 60 | 20,572 | 169,071 | 17,860 | 207,563 | 5,317,685 |
| Sub-Total for 2019 | | | | | | 799,533 | 131,749 | 218,805 | 32,197 | 1,182,284 | 3,041 | 2,607 | 9,483 | 3,658 | 18,789 | 48 | 55,594 | 220,583 | 21,846 | 298,071 | 5 | 5,708 | 45,667 | 4,427 | 55,807 | 1,554,951 |
| **Total:** | | | | | | **2,728,326** | **430,942** | **711,285** | **105,688** | **3,976,241** | **8,455** | **8,729** | **28,661** | **13,514** | **59,359** | **126** | **208,776** | **795,229** | **70,391** | **1,074,522** | **60** | **20,572** | **169,071** | **17,860** | **207,563** | **5,317,685** |

Report created on Fri Jul 5 17:55:44 EDT 2019

Sources: Air Traffic Activity System (ATADS)

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# Appendix D

# Air Pollutant Emission Calculation

# Part I – ACAM Short-form Summary

## 1. Introduction

The Air Force's Air Conformity Applicability Model (ACAM) was used to predict all source emissions related to the proposed PR training activities with the exception of emissions from helicopters for which the Air Emissions Guide for Air Force Mobile Sources (AFCEC, August 2018) was used in the calculation.

## 2. Calculation Results Summary

The ACAM short-form summaries presented in this part of appendix include:

- Airfield emissions within Davis-Monthan AFB and other airfields combined, respectively.
- Red Flag-Rescue Large Force training event total training emissions including both aircraft and vehicle emissions with potential to occur at Playas Temporary Military Operations Area (MOA) and Barry M. Goldwater Range (BMGR) sites.
- Medium and Small Force training events combined total training emissions including both aircraft and vehicle emissions with potential to occur in the remaining PR training sites in Arizona, New Mexico, Nevada, and California. These total emissions were then spread across the four states as the following percentages:
    - 80% in Arizona.
    - 10% in New Mexico.
    - 5% in Nevada and California, respectively.

If the above calculated total emissions within each specified area/state as described above could conservatively occur at a specific PR training site for the entire year, they would still be below the project-level General Conformity Rule (GCR) *de minimis* thresholds or the NEPA Assessment Indicator, as shown in Table D-1. Therefore, the proposed PR training activities at any PR training site would be in compliance with either GCR *de minimis* thresholds or NEPA Assessment Indicator.

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| On Base | PR Training Sites at Davis-Monthan AFB, AZ (listed below by County, State):<br><br><u>Pima County, AZ</u><br>• Davis-Monthan AFB<br>• Davis-Monthan AFB Combat Arms Training and Maintenance | Attainment Status by County, State:<br><br><u>Pima County, AZ</u><br>Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | Threshold by County, State:<br><br><u>Pima County, AZ</u><br>$PM_{10}$ and CO: 100<br>Other: 100 | 5.2 | 0.5 | 31.1 | 7.3 | -0.1 | 0.3 | 4,146.3 | No |
| On Base | PR Training Sites at Other Airfields (in AZ, CA, and NV) Combined (listed below by County, State):<br><u>Cochise County, AZ</u><br>• Libby Army Airfield<br><br><u>Maricopa County, AZ</u><br>• Phoenix Sky Harbor IAP | Attainment Status by County, State:<br><br><u>Cochise County, AZ</u><br>Attainment for all pollutants<br><br><u>Maricopa County, AZ</u><br>Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | Threshold by County, State:<br><br><u>Cochise County, AZ</u><br>100<br><br><u>Maricopa County, AZ</u><br>$PM_{10}$: 70<br>$NO_x$, VOC, and CO: 100<br>Other: 100 | 8.2 | 0.9 | 17.8 | 4.1 | 1.4 | 1.3 | 2,142.3 | No |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | Yuma County, AZ<br>• Yuma Airport<br><br>Riverside County, CA<br>• March Air Reserve Base (ARB)<br><br>Clark County, NV<br>• Nellis AFB | Yuma County, AZ<br>Nonattainment: moderate $PM_{10}$<br>Attainment: other pollutants<br><br>Riverside County, CA<br>Nonattainment: extreme $O_3$, moderate $PM_{2.5}$<br>Maintenance: $PM_{10}$, $NO_2$, CO<br>Attainment: other pollutants<br><br>Clark County, NV<br>Nonattainment: marginal $O_3$<br>Maintenance: $PM_{10}$ and CO<br>Attainment: other pollutants | Yuma County, AZ<br>$PM_{10}$: 100<br>Other: 100<br><br>Riverside County, CA<br>$NO_x$ and VOC: 10<br>$PM_{10}$, $NO_2$, and CO: 100<br>Other: 100<br><br>Clark County, NV<br>$NO_x$, VOC, $PM_{10}$, and CO: 100<br>Other: 100 | | | | | | | | |
| Large Force at HLZ/DZ | Playas Temporary MOA (in NM) and/or BMGR (in AZ) for Red Flag-Rescue PR Training Sites (listed below by County, State):<br>Grant County, NM<br>• Playas Training and Research Center<br><br>Hidalgo County, NM<br>• Playas Training and Research Center | Attainment Status by County, State:<br><br>Grant County, NM<br>Attainment for all pollutants<br><br>Hidalgo County, NM<br>Attainment for all pollutants | Threshold by County, State:<br><br>Grant County, NM<br>100<br><br>Hidalgo County, NM<br>100 | 23.5 | 1.7 | 29.1 | 5.3 | 2.4 | 1.4 | 8,859.4 | No |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | Maricopa County, AZ<br>• Aux 6<br>• Aux 6 Circular<br>• Aux 6 Rectangular<br>• NATO Hill (WPT 74)<br>• OP Charlie<br>• Range 3 – HLZ 1<br>• Range 3 – HLZ 2<br>• Range 3 – HLZ 3<br>• Range 3 – HLZ 4<br>• Range 3 – HLZ 5<br>• Range 3 – HLZ 6<br>• Range 3 – Tower Helipad<br>• South Tactical Range<br>• Target 333 | Maricopa County, AZ<br>Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | Maricopa County, AZ<br>$PM_{10}$: 70<br>$NO_x$, VOC, and CO: 100<br>Other: 100 | | | | | | | | |
| Medium and Small Force at HLZ/DZ | Other AZ PR Training Sites Combined (listed below by County, State):<br>Apache County, AZ<br>• Caldwell Meadows<br>• Springerville Airport<br>• St. Johns Industrial Air Park | Attainment Status by County, State:<br><br>Apache County, AZ<br>Attainment for all pollutants | Threshold by County, State:<br><br>Apache County, AZ<br>100 | 25.2 | 2.7 | 40.5 | 6.6 | 5.6 | 2.1 | 8,737.1 | No |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | Cochise County, AZ<br>• Bisbee Douglas IAP (Chang Noi DZ)<br>• Highway 80 Paladins (TW 2 Paladins)<br>• Hubbard<br>• Hubbard (Tombstone)<br>• Humor<br>• Jeep HLZ/DZ<br>• Jenna HLZ/DZ<br>• Kinder HLZ/DZ<br>• Libby Army Airfield<br>• Pinnacle HLZ/DZ<br>• Portal HLZ<br>• Ranger<br>• Rucker HLZ<br>• Tombstone 15 HLZ<br>• Tombstone 18 HLZ<br>• Tombstone 19 HLZ<br>• Tombstone Circular<br>• Tombstone Rectangular<br>• Tombstone Paladins | Cochise County, AZ<br>Attainment for all pollutants | Cochise County, AZ<br>100 | | | | | | | | |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | Coconino County, AZ<br>• Babbitt Ranch 1<br>• Babbitt Ranch 3<br>• Black Mesa USFS Helitack Base<br>• Bone Crusher<br>• Camp Navajo Army Base<br>• Cattle<br>• Cattle LTFW<br>• Comanche<br>• Elk<br>• Flagstaff Hotshot – USFS Helitack Base<br>• Flagstaff Pulliam Airport<br>• FR 320/311<br>• Gerbil<br>• Grand Canyon National Park Airport<br>• Grand Canyon Valle Airport<br>• H. A. Clark Memorial Field<br>• HLZ 5<br>• HLZ 6<br>• L Tank<br>• Lees Ferry Longview – USFS Helitack Base<br>• Metz Tank | Coconino County, AZ<br>Attainment for all pollutants | Coconino County, AZ<br>100 | | | | | | | | |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | • Mogollon Rim (General Crook)<br>• Mohawk<br>• Mormon Lake – USFS Helitack Base<br>• Navajo East<br>• Navajo Railroad<br>• Navajo West<br>• Neill Flat<br>• Panda<br>• Pittman Valley<br>• Powerline<br>• Rogers Lake (Logger Camp)<br>• Rogers Napier<br>• Rogers Wren<br>• Sinkhole<br>• Squirrel<br>• Tribeland<br><br><u>Gila County, AZ</u><br>• Gila County Sheriff Roosevelt Substation<br>• Grapevine HLZ/DZ<br>• Roosevelt Lake | <u>Gila County, AZ</u><br>Maintenance: $PM_{10}$<br>Attainment: other pollutants | <u>Gila County, AZ</u><br>$PM_{10}$: 100<br>Other: 100 | | | | | | | | |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | Graham County, AZ<br>• Froelich HLZ/DZ<br>• Mesa<br><br>Greenlee County, AZ<br>• Hannagan Meadow – USFS Helitack Base<br>• Helibase Circular<br>• KP Circular<br>• KP Tank<br><br>Maricopa County, AZ<br>• Gila Bend Air Force Auxiliary Base<br>• Saguaro Lake Ranch<br>• Scottsdale Osborn<br><br>Mohave County, AZ<br>• Kingman Airport<br><br>Navajo County, AZ<br>• Overgaard – USFS Helitack Base<br>• Winslow-Lindbergh Regional Airport (Wiseman Aviation) | Graham County, AZ<br>Attainment for all pollutants<br><br>Greenlee County, AZ<br>Attainment for all pollutants<br><br>Maricopa County, AZ<br>Nonattainment: serious $PM_{10}$, marginal $O_3$<br>Maintenance: CO<br>Attainment: other pollutants<br><br>Mohave County, AZ<br>Attainment for all pollutants<br><br>Navajo County, AZ<br>Attainment for all pollutants | Graham County, AZ<br>100<br><br>Greenlee County, AZ<br>100<br><br>Maricopa County, AZ<br>$PM_{10}$: 70<br>$NO_x$, VOC, and CO: 100<br>Other: 100<br><br>Mohave County, AZ<br>100<br><br>Navajo County, AZ<br>100 | | | | | | | | |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | Pima County, AZ<br>• Blackhills HLZ/DZ<br>• Davis-Monthan AFB<br>• Lost Acre HLZ/DZ<br>• Marana Regional Airport<br>• Mount Lemmon (Windy Point)<br>• Penitas HLZ/DZ<br>• Pond HLZ/DZ<br>• Prieto HLZ/DZ<br>• Rancho Seco HLZ/DZ<br>• Ruby Fuzzy Paladins<br>• Sierrita HLZ/DZ<br>• Silvermine HLZ/DZ<br>• University of Arizona Medical Center<br>• Waterman HLZ/DZ | Pima County, AZ<br>Nonattainment: moderate $PM_{10}$<br>Maintenance: CO<br>Attainment: other pollutants | Pima County, AZ<br>$PM_{10}$ and CO: 100<br>Other: 100 | | | | | | | | |
| | Pinal County, AZ<br>• Brooke HLZ/DZ<br>• Coolidge Airport<br>• Eloy North<br>• Eloy South<br>• Florence Military Reservation<br>• Florence Range Helicopter Landing Zone (HLZ) | Pinal County, AZ<br>Nonattainment: moderate $PM_{10}$<br>Maintenance: $SO_2$<br>Attainment: other pollutants | Pinal County, AZ<br>$PM_{10}$ and $SO_2$: 100<br>Other: 100 | | | | | | | | |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | • Pinal Air Park<br><br><u>Santa Cruz County, AZ</u><br>• Caliente HLZ/DZ<br>• Devon<br>• Lake Patagonia<br>• Little Outfit<br>• Saddle Mountain East<br>• Saddle Mountain South<br>• Saddle Mountain West<br><br><u>Yavapai County, AZ</u><br>• Rough Rider | <u>Santa Cruz County, AZ</u><br>Attainment for all pollutants<br><br><u>Yavapai County, AZ</u><br>Attainment for all pollutants | <u>Santa Cruz County, AZ</u><br>100<br><br><u>Yavapai County, AZ</u><br>100 | | | | | | | | |
| Medium and Small Force at HLZ/DZ | PR Training Sites in CA (listed below by County, State):<br><br><u>Imperial County, CA</u><br>• El Centro | Attainment Status by County, State:<br><br><u>Imperial County, CA</u><br>Nonattainment: moderate $PM_{2.5}$, serious $PM_{10}$, marginal $O_3$<br>Attainment: other pollutants | Threshold by County, State:<br><br><u>Imperial County, CA</u><br>$PM_{10}$: 70<br>$NO_x$, VOC, and $PM_{2.5}$: 100<br>Other: 100 | 1.6 | 0.2 | 2.6 | 0.4 | 0.3 | 0.1 | 546.1 | No |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| | Los Angeles County, CA<br>• San Clemente Island Naval Auxiliary Landing Field<br>• San Clemente Island Surrounding Off-Shore Areas | Los Angeles County, CA<br>Nonattainment: extreme $O_3$<br>Maintenance: $PM_{10}$, $NO_2$, CO<br>Attainment: other pollutants | Los Angeles County, CA<br>$NO_x$ and VOC: 10<br>$PM_{10}$, $NO_2$, and CO: 100<br>Other: 100 | | | | | | | | |
| | Riverside County, CA<br>• March ARB | Riverside County, CA<br>Nonattainment: extreme $O_3$, moderate $PM_{2.5}$<br>Maintenance: $PM_{10}$, $NO_2$, CO<br>Attainment: other pollutants | Riverside County, CA<br>$NO_x$ and VOC: 10<br>$PM_{10}$, $NO_2$, and CO: 100<br>Other: 100 | | | | | | | | |
| | San Diego County, CA<br>• Camp Pendleton Cartwright Water<br>• Camp Pendleton HOLF<br>• Camp Pendleton NFG<br>• Camp Pendleton Off-Road Trail<br>• Camp Pendleton PDL<br>• Camp Pendleton Red Beach<br>• Leon (Beiringer DZ) | San Diego County, CA<br>Nonattainment: moderate $O_3$<br>Maintenance: CO<br>Attainment: other pollutants | San Diego County, CA<br>$NO_x$, VOC, and CO: 100<br>Other: 100 | | | | | | | | |

| Table D-1. Total Net Change in PR Training Annual Emissions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PR Training Type** | **Location** | **Attainment Status** | **GCR *De Minimis*/ NEPA Assessment Indicator (tons per year)** | **NOx (tons)** | **SOx (tons)** | **CO (tons)** | **VOC (tons)** | **$PM_{10}$ (tons)** | **$PM_{2.5}$ (tons)** | **$CO_2e$ (tons)** | **Exceeding GCR *De Minimis* or NEPA Assessment Indicator** |
| Medium and Small Force at HLZ/DZ | PR Training Sites in NV (listed below by County, State):<br><br><u>Clark County, NV</u><br>• Colorado River<br>• Nellis AFB | Attainment Status by County, State:<br><br><u>Clark County, NV</u><br>Nonattainment: marginal $O_3$<br>Maintenance: $PM_{10}$ and CO<br>Attainment: other pollutants | Threshold by County, State:<br><br><u>Clark County, NV</u><br>$NO_x$, VOC, $PM_{10}$, and CO: 100<br>Other: 100 | 1.6 | 0.2 | 2.6 | 0.4 | 0.3 | 0.1 | 546.1 | No |
| Medium and Small Force at HLZ/DZ | PR Training Sites in NM (listed below by County, State):<br><br><u>Catron County, NM</u><br>• Catron County Fairgrounds<br>• Glenwood Ranger Station<br>• Negrito Airstrip<br>• Negrito Center<br>• Negrito Helibase<br>• Negrito North<br>• Negrito South<br>• Rainy Mesa<br>• Reserve Airport<br>• Reserve Ranger Station<br><br><u>Hidalgo County, NM</u><br>• Tombstone 8 HLZ | Attainment Status by County, State:<br><br><u>Catron County, NM</u><br>Attainment for all pollutants<br><br><u>Hidalgo County, NM</u><br>Attainment for all pollutants | Threshold by County, State:<br><br><u>Catron County, NM</u><br>100<br><br><u>Hidalgo County, NM</u><br>100 | 3.1 | 0.3 | 5.1 | 0.8 | 0.7 | 0.3 | 1092.1 | No |

**Table D-1. Total Net Change in PR Training Annual Emissions**

| PR Training Type | Location | Attainment Status | GCR *De Minimis*/ NEPA Assessment Indicator (tons per year) | NOx (tons) | SOx (tons) | CO (tons) | VOC (tons) | $PM_{10}$ (tons) | $PM_{2.5}$ (tons) | $CO_2e$ (tons) | Exceeding GCR *De Minimis* or NEPA Assessment Indicator |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Otero County, NM<br>• White Sands Missile Range (WSMR) Otero Maneuver Area | Otero County, NM<br>Attainment for all pollutants | Otero County, NM<br>100 | | | | | | | | |
| | Sierra County, NM<br>• WSMR Sierra Maneuver Area<br>• WSMR Thurgood West Maneuver Area | Sierra County, NM<br>Attainment for all pollutants | Sierra County, NM<br>100 | | | | | | | | |
| | Socorro County, NM<br>• WSMR Small Arms Range<br>• WSMR Stallion Army Airfield | Socorro County, NM<br>Attainment for all pollutants | Socorro County, NM<br>100 | | | | | | | | |

AFB – Air Force Base
ARB – Air Reserve Base
AZ – Arizona
BMGR – Barry M. Goldwater Range
CA – California
CO – carbon monoxide
$CO_2e$ – total equivalent emissions of $CO_2$
DZ – Drop Zone
GCR – General Conformity Rule
HLZ – Helicopter Landing Zone
IAP – International Airport
MOA – Military Operations Area
NEPA – National Environmental Policy Act
NM – New Mexico
$NO_x$ – oxides of nitrogen
NV – Nevada
PDL – Piedra de Lumbre
$PM_{10}$ – particulate matter equal to or less than 10 microns in aerodynamic diameter
$PM_{2.5}$ – particulate matter equal to or less than 2.5 microns in aerodynamic diameter
$SO_x$ – sulfur oxide
VOC – volatile organic compound
USFS – United States Forest Service
WSMR – White Sands Missile Range

# Attachment 1 – Airfield Total Annual Emissions

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** DAVIS-MONTHAN AFB and Other Airfields Combined
**State:** Arizona
**County(s):** Various
**Regulatory Area(s):**

**b. Action Title:** Davis-Monthan AFB PR Training Air Quality Analysis for AIRFIELDs

**c. Project Number/s (if applicable):** Change in Aircraft Ops

**d. Projected Action Start Date:** 1 / 2020

**e. Action Description:**

Evaluation of Airfield Op Changes

**f. Point of Contact:**


**Name:** Roger L. Wayson
**Title:** Senior Engineer
**Organization:** AECOM
**Email:** roger.wayson@aecom.com
**Phone Number:** 830 265-7687


**2. Analysis:** Total combined direct and indirect emissions net changes associated with the action around Davis-Monthan AFB and other airfields combined were estimated through ACAM on a calendar-year basis (net gain/loss upon action fully implemented) emissions. Helicopter emission components were calculated based on the AFCEC August 2018 guide and combined with ACAM calculations for available aircraft. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

**Conformity Analysis Summary:**

## Davis-Monthan AFB – Annual Fixed Wing Aircraft Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA IMPACT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| Arizona | | | |
| **VOC** | -0.351 | 100 | No |
| **NOx** | -6.123 | 100 | No |
| **CO** | -9.968 | 100 | No |
| **SOx** | -0.232 | 100 | No |
| **PM 10** | -1.829 | 100 | No |
| **PM 2.5** | -1.263 | 100 | No |

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA IMPACT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| Arizona | | | |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 213.3 | | |

## Davis-Monthan AFB – Annual Helicopter Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA IMPACT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| Arizona | | | |
| **VOC** | 6.273 | 100 | No |
| **NOx** | 3.515 | 100 | No |
| **CO** | 31.804 | 100 | No |
| **SOx** | 0.771 | 100 | No |
| **PM 10** | 1.463 | 100 | No |
| **PM 2.5** | 1.249 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 1663.2 | | |

**Note: Helicopter emissions were calculated using AFCEC August 2018 Guide**

## Davis-Monthan AFB Total Annual Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| Arizona | | | |
| **VOC** | 5.922 | 100 | No |
| **NOx** | -2.609 | 100 | No |
| **CO** | 21.836 | 100 | No |
| **SOx** | 0.539 | 100 | No |
| **PM 10** | -0.365 | 100 | No |
| **PM 2.5** | -0.014 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 1876.5 | | |

## Other Airfields Combined – Annual Fixed Wing Aircraft Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **VOC** | 2.792 | 100 | No |
| **NOx** | 7.458 | 100 | No |
| **CO** | 11.765 | 100 | No |
| **SOx** | 0.760 | 100 | No |
| **PM 10** | 1.145 | 100 | No |

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **PM 2.5** | 1.036 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 1794.4 | | |

## Other Airfields Combined – Annual Helicopter Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **VOC** | 1.348 | 100 | No |
| **NOx** | 0.769 | 100 | No |
| **CO** | 6.031 | 100 | No |
| **SOx** | 0.151 | 100 | No |
| **PM 10** | 0.228 | 100 | No |
| **PM 2.5** | 0.218 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 347.9 | | |

**Note: Helicopter emissions were calculated using AFCEC August 2018 Guide**

## Other Airfields Combined Total Annual Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **VOC** | 4.140 | 100 | No |
| **NOx** | 8.228 | 100 | No |
| **CO** | 17.796 | 100 | No |
| **SOx** | 0.911 | 100 | No |
| **PM 10** | 1.373 | 100 | No |
| **PM 2.5** | 1.254 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 2142.3 | | |

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

Roger L. Wayson, Senior Engineer DATE

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** DAVIS-MONTHAN AFB
**State:** AZ
**County(s):**
**Regulatory Area(s):** Davis Monthan

**b. Action Title:** Davis-Monthan AFB PR Training Air Quality Analysis from Medium and Small Force Training Events Combined at Davis-Monthan AFB On Base

**c. Project Number/s (if applicable):** Change in Use of Ground Vehicles

**d. Projected Action Start Date:** 1 / 2020

**e. Action Description:**

Air Quality Analysis

**f. Point of Contact:**


**Name:** Roger L. Wayson
**Title:** Senior Engineer
**Organization:** AECOM
**Email:** roger.wayson@aecom.com
**Phone Number:** 830 265-7687


**2. Analysis:** Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

**Conformity Analysis Summary:**

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| Ajo (Pima County), AZ | | | |
| **VOC** | 1.437 | 100 | No |
| **NOx** | 7.828 | 100 | No |
| **CO** | 9.326 | 100 | No |
| **SOx** | 0.023 | 100 | No |
| **PM 10** | 0.326 | 100 | No |
| **PM 2.5** | 0.326 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.011 | | |

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| Ajo (Pima County), AZ | | | |
| **CO2e** | 2269.8 | | |

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

Roger L. Wayson, Senior Engineer DATE

# Attachment 2 – Red Flag-Rescue Large Force Annual Training Emissions at Playas Temporary MOA and/or BMGR

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** DAVIS-MONTHAN AFB
**State:** Arizona/New Mexico
**County(s):**
**Regulatory Area(s):** Playas Temporary MOA and BMGR Range Attainment Area

**b. Action Title:** Davis-Monthan AFB PR Training Air Quality Analysis for Red Flag-Rescue Large Force Training Event

**c. Project Number/s (if applicable):** Change in Aircraft Ops

**d. Projected Action Start Date:** 1 / 2020

**e. Action Description:**

Evaluation of Airfield Op Changes

**f. Point of Contact:**


**Name:** Roger L. Wayson
**Title:** Senior Engineer
**Organization:** AECOM
**Email:** roger.wayson@aecom.com
**Phone Number:** 830 265-7687


**2. Analysis:** Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

**Conformity Analysis Summary:**

## Annual Fixed Wing Emission

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| AZ/NM | | | |
| **VOC** | 1.949 | 100 | No |
| **NOx** | 3.907 | 100 | No |
| **CO** | 7.247 | 100 | No |
| **SOx** | 0.464 | 100 | No |
| **PM 10** | 0.780 | 100 | No |
| **PM 2.5** | 0.505 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| AZ/NM | | | |
| **CO2e** | 1337.6 | | |

## Annual Helicopter Emission

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| AZ/NM | | | |
| **VOC** | 1.118 | 100 | No |
| **NOx** | 9.516 | 100 | No |
| **CO** | 8.082 | 100 | No |
| **SOx** | 1.249 | 100 | No |
| **PM 10** | 1.281 | 100 | No |
| **PM 2.5** | 0.635 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 3752.7 | | |

**Note: Helicopter emissions were calculated using AFCEC August 2018 Guide**

## Total Annual Emission from Large Force Training Event

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| AZ/NM | | | |
| **VOC** | 3.067 | 100 | No |
| **NOx** | 13.422 | 100 | No |
| **CO** | 15.329 | 100 | No |
| **SOx** | 1.713 | 100 | No |
| **PM 10** | 2.061 | 100 | No |
| **PM 2.5** | 1.140 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 5090.3 | | |

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

Roger L. Wayson, Senior Engineer DATE

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** Arizona/New Mexico
**County(s):**
**Regulatory Area(s):** Playas Temporary MOA and BMGR Range Attainment Area

**b. Action Title:** Davis-Monthan AFB PR Training Air Quality Analysis for Red Flag-Rescue Large Force Training Event

**c. Project Number/s (if applicable):** Change in Use of Ground Vehicles

**d. Projected Action Start Date:** 1 / 2020

**e. Action Description:**

Air Quality Analysis

**f. Point of Contact:**


**Name:** Roger L. Wayson
**Title:** Senior Engineer
**Organization:** AECOM
**Email:** roger.wayson@aecom.com
**Phone Number:** 830 265-7687


**2. Analysis:** Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

**Conformity Analysis Summary:**

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/ NEPA IMPACT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| AZ/NM | | | |
| **VOC** | 2.240 | 100 | No |
| **NOx** | 10.099 | 100 | No |
| **CO** | 13.781 | 100 | No |
| **SOx** | 0.035 | 100 | No |
| **PM 10** | 0.344 | 100 | No |
| **PM 2.5** | 0.342 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.048 | | |
| **CO2e** | 3769.1 | | |

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

Roger L. Wayson, Senior Engineer DATE

# Attachment 3 – Medium and Small Force Combined Total Annual Training Emissions over Four States Excluding Davis-Monthan AFB Site

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** DAVIS-MONTHAN AFB
**State:** AZ/NM/NV/CA
**County(s):** Pima
**Regulatory Area(s):** AZ/NM/NV/CA Training Sites Combined

**b. Action Title:** Davis-Monthan AFB PR Training Air Quality Analysis for All Training Sites from Medium and Small Force Training Events Combined

**c. Project Number/s (if applicable):** Change in Aircraft Ops

**d. Projected Action Start Date:** 1 / 2020

**e. Action Description:**

Evaluation of Airfield Op Changes

**f. Point of Contact:**


**Name:** Roger L. Wayson
**Title:** Senior Engineer
**Organization:** AECOM
**Email:** roger.wayson@aecom.com
**Phone Number:** 830 265-7687


**2. Analysis:** Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

**Conformity Analysis Summary:**

## Annual Fixed Wing Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **VOC** | 7.550 | 100 | No |
| **NOx** | 4.649 | 100 | No |
| **CO** | 33.784 | 100 | No |
| **SOx** | 0.950 | 100 | No |
| **PM 10** | 3.093 | 100 | No |
| **PM 2.5** | 1.423 | 100 | No |
| **Pb** | 0.000 | 25 | No |

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **NH3** | 0.000 | | |
| **CO2e** | 2871.5 | | |

## Annual Helicopter Emissions

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **VOC** | 0.217 | 100 | No |
| **NOx** | 24.825 | 100 | No |
| **CO** | 13.369 | 100 | No |
| **SOx** | 2.452 | 100 | No |
| **PM 10** | 3.835 | 100 | No |
| **PM 2.5** | 1.137 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 7365.9 | | |

**Note: Helicopter emissions were calculated using AFCEC August 2018 Guide**

## Total Annual Emissions from Medium and Small Force Training Events Combined

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **VOC** | 7.767 | 100 | No |
| **NOx** | 29.474 | 100 | No |
| **CO** | 47.153 | 100 | No |
| **SOx** | 3.402 | 100 | No |
| **PM 10** | 6.929 | 100 | No |
| **PM 2.5** | 2.560 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.000 | | |
| **CO2e** | 10237.4 | | |

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

Roger L. Wayson, Senior Engineer DATE

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** DAVIS-MONTHAN AFB
**State:** AZ/NM/NV/CA
**County(s):** Pima
**Regulatory Area(s):** AZ/NM/NV/CA Training Sites Combined

**b. Action Title:** Davis-Monthan AFB PR Training Air Quality Analysis for All Training Sites from Medium and Small Force Training Events Combined

**c. Project Number/s (if applicable):** Change in Use of Ground Vehicles

**d. Projected Action Start Date:** 1 / 2020

**e. Action Description:**

Air Quality Analysis

**f. Point of Contact:**


**Name:** Roger L. Wayson
**Title:** Senior Engineer
**Organization:** AECOM
**Email:** roger.wayson@aecom.com
**Phone Number:** 830 265-7687


**2. Analysis:** Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

**Conformity Analysis Summary:**

| Pollutant | Action Emissions (ton/yr) | GENERAL CONFORMITY/NEPA ASSESSMENT INDICATOR | |
|---|---|---|---|
| | | Threshold (ton/yr) | Exceedance (Yes or No) |
| | | | |
| **VOC** | 0.447 | 100 | No |
| **NOx** | 1.970 | 100 | No |
| **CO** | 3.502 | 100 | No |
| **SOx** | 0.006 | 100 | No |
| **PM 10** | 0.081 | 100 | No |
| **PM 2.5** | 0.081 | 100 | No |
| **Pb** | 0.000 | 25 | No |
| **NH3** | 0.011 | | |
| **CO2e** | 684.0 | | |

# AIR CONFORMITY APPLICABILITY MODEL REPORT
# RECORD OF CONFORMITY ANALYSIS (ROCA)

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

Roger L. Wayson, Senior Engineer DATE

# Part II – ACAM Detail Calculation Summary

# Attachment 1 – Aircraft Emission Estimate

## 1. Introduction

The PR training activity concerned aircraft operation related emissions would generate at airfields and training sites from aircraft landing and takeoff and low altitude flight below 3,000 feet above ground level, auxiliary power unit (APU) and auxiliary ground equipment (AGE) operations at airfields and training sites.

Aircraft emissions were calculated by multiplying the number of landing and takeoffs per aircraft by the aircraft emission factors for each power setting, number of engines on the aircraft, the fuel rate and time in that power setting mode.

APU emissions were calculated by multiplying the number of landing and takeoffs per aircraft by the APU emission factors for each aircraft, if applicable, the hours of operation for each piece of APU, and number of APU.

AGE emissions were calculated by multiplying the number of sorties for each aircraft by the emission factors for each piece of AGE needed for that aircraft and the number of hours that AGE will run per landing and takeoff.

Air Force ACAM model was used to calculate applicable fixed wing aircraft emissions including arrival, departure and pattern flight emissions and emissions from APU and AGE operations.

## 2. ACAM Report for Airfield Emissions

2.1. General Information

- Action Location
  Base: DAVIS-MONTHAN AFB
  State: Arizona
  County(s): Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Action Title: Davis-Monthan AFB Air Quality Analysis for AIRFIELD

- Project Number/s (if applicable): Change in Aircraft Ops

- Projected Action Start Date: 1 / 2020

- Action Purpose and Need:
  Mission Readiness

- Action Description:
  Evaluation of Airfield Op Changes

- Point of Contact
  Name: Roger L. Wayson
  Title: Senior Engineer
  Organization: AECOM
  Email: roger.wayson@aecom.com
  Phone Number: 830 265-7687

- Activity List:

| Activity Type | | Activity Title |
|---|---|---|
| 2. | Aircraft | Reduction in A10 Ops |
| 3. | Aircraft | Increase in C130 Operations |
| 4. | Aircraft | Reduction in C130 Ops |
| 5. | Aircraft | Addition of F16s Ops |
| 6. | Aircraft | Add F22 Ops |
| 7. | Aircraft | Addition of F35 Ops |
| 8. | Aircraft | Addition of CF/MV22 Operations |
| 9. | Aircraft | Addition of KC135 |
| 10. | Aircraft | Add MC12W Operations |
| 11. | Aircraft | Increase in MQ9 Operations |
| 12. | Aircraft | Increase in f21 Operations |

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 2.2 Aircraft (A10)

### 2.2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
  County: Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Reduction in A10 Ops

- Activity Description:
  Less A10 Operations expected to occur

- Activity Start Date
  Start Month: 1
  Start Year: 2020

- Activity End Date
  Indefinite: Yes
  End Month: N/A
  End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -6.911021 |
| $SO_x$ | -0.672073 |
| $NO_x$ | -10.814033 |
| CO | -17.706914 |
| PM 10 | -2.318301 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -1.717018 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -868.8 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -2.045901 |
| $SO_x$ | -0.166583 |
| $NO_x$ | -0.484224 |
| CO | -10.931936 |
| PM 10 | -1.001535 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.441388 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -503.5 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -4.865120 |
| $SO_x$ | -0.505490 |
| $NO_x$ | -10.329810 |
| CO | -6.774978 |
| PM 10 | -1.316766 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -1.275630 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -365.3 |
| | |

2.2.2 Aircraft & Engines

2.2.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: A-10
  Engine Model: TF34-GE-400
  Primary Function: Combat
  Aircraft has After burn: No
  Number of Engines: 2

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

2.2.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 458.00 | 17.24 | 1.07 | 1.69 | 90.98 | 8.13 | 3.60 | 3234 |
| Approach | 1201.00 | 13.51 | 1.07 | 2.98 | 72.08 | 6.21 | 2.12 | 3234 |
| Intermediate | 2686.00 | 6.05 | 1.07 | 5.57 | 34.29 | 2.66 | 1.68 | 3234 |
| Military | 3800.00 | 0.45 | 1.07 | 7.51 | 5.95 | 2.66 | 1.68 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

2.2.3 Flight Operations

2.2.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 374
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
  Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 18.5 (default)
  Takeoff [Military] (mins): 0.4 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 0.8 (default)
  Approach [Approach] (mins): 3.5 (default)
  Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins): 12 (default)
Approach (mins): 27 (default)
Intermediate (mins): 9 (default)
Military (mins): 12 (default)
AfterBurn (mins): 0 (default)

2.2.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.2.4 Auxiliary Power Unit (APU)

2.2.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.2.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.2.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)

2000: Conversion Factor pounds to tons

2.2.5 Aerospace Ground Equipment (AGE)

2.2.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 374

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 2 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 8 | No | Bomb Lift | MJ-1B |
| 1 | 1 | No | Generator Set | A/M32A-86D |
| 1 | 2 | No | Heater | H1 |
| 1 | 2 | No | Hydraulic Test Stand | MJ-2A |
| 1 | 2 | No | Light Cart | NF-2 |
| 1 | 1 | No | Start Cart | A/M32A-60A |

2.2.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MJ-1B | 0.0 | 3.040 | 0.219 | 4.780 | 3.040 | 0.800 | 0.776 | 141.2 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2A | 0.0 | 0.190 | 0.238 | 3.850 | 2.460 | 0.083 | 0.076 | 172.0 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.2.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year

$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.3. Aircraft (C130)

[redacted]

2.3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in C130 Operations

- Activity Description:
Change to Airfield Activity

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 1.525927 |
| $SO_x$ | 0.182035 |
| $NO_x$ | 3.960494 |
| CO | 2.663211 |
| PM 10 | 0.141149 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.127720 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 439.1 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 1.350441 |
| $SO_x$ | 0.110326 |
| $NO_x$ | 0.561782 |
| CO | 2.049659 |
| PM 10 | 0.077457 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.066494 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 334.9 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.175486 |
| $SO_x$ | 0.071709 |
| $NO_x$ | 3.398712 |
| CO | 0.613551 |
| PM 10 | 0.063692 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.061226 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 104.2 |
| | |

2.3.2 Aircraft & Engines

2.3.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: C-130H
  Engine Model: T56-A-15
  Primary Function: Transport - Bomber
  Aircraft has After burn: No
  Number of Engines: 4

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

2.3.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 794.00 | 24.15 | 1.07 | 3.90 | 32.00 | 0.83 | 0.75 | 3234 |
| Approach | 1185.00 | 14.26 | 1.07 | 4.40 | 22.20 | 0.97 | 0.87 | 3234 |
| Intermediate | 1825.00 | 0.58 | 1.07 | 9.20 | 2.40 | 0.51 | 0.46 | 3234 |
| Military | 2302.00 | 0.46 | 1.07 | 9.30 | 2.10 | 0.50 | 0.45 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

2.3.3 Flight Operations

2.3.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 80
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
  Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 9.2 (default)
  Takeoff [Military] (mins): 0.4 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 1.2 (default)
  Approach [Approach] (mins): 5.1 (default)
  Taxi/Idle In [Idle] (mins): 6.7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)

Intermediate (mins): 9 (default)
Military (mins): 12 (default)
AfterBurn (mins): 0 (default)

2.3.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.3.4 Auxiliary Power Unit (APU)

2.3.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| 1 | 1 | No | GTCP 85-180L | |

2.3.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| GTCP 85-180L | 272.6 | 0.493 | 0.289 | 1.216 | 3.759 | 0.131 | 0.037 | 910.8 |

2.3.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)

2000: Conversion Factor pounds to tons

2.3.5 Aerospace Ground Equipment (AGE)

2.3.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 80

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 1 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 1 | No | Air Conditioner | MA-3D - 120hp |
| 1 | 11 | No | Generator Set | A/M32A-86D |
| 1 | 1 | No | Heater | H1 |
| 1 | 3 | No | Hydraulic Test Stand | MJ-2A |
| 1 | 10 | No | Light Cart | NF-2 |
| 1 | 0.25 | No | Start Cart | A/M32A-60A |

2.3.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MA-3D - 120hp | 7.1 | 0.053 | 0.050 | 4.167 | 0.317 | 0.109 | 0.105 | 161.7 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2A | 0.0 | 0.190 | 0.238 | 3.850 | 2.460 | 0.083 | 0.076 | 172.0 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.3.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year

$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.4. Aircraft (C130)

[redacted]

2.4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Reduction in C130 Ops

- Activity Description:
Reduction in Airfield Ops

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -1.463801 |
| $SO_x$ | -0.174764 |
| $NO_x$ | -3.774188 |
| CO | -2.552302 |
| PM 10 | -0.135314 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.122434 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -422.7 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -1.297089 |
| $SO_x$ | -0.106640 |
| $NO_x$ | -0.545412 |
| CO | -1.969429 |
| PM 10 | -0.074807 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.064269 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -323.7 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -0.166712 |
| $SO_x$ | -0.068124 |
| $NO_x$ | -3.228776 |
| CO | -0.582874 |
| PM 10 | -0.060507 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.058165 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -99.0 |
| | |

2.4.2 Aircraft & Engines

2.4.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: C-130H
  Engine Model: T56-A-15
  Primary Function: Transport - Bomber
  Aircraft has After burn: No
  Number of Engines: 4

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

2.4.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 794.00 | 24.15 | 1.07 | 3.90 | 32.00 | 0.83 | 0.75 | 3234 |
| Approach | 1185.00 | 14.26 | 1.07 | 4.40 | 22.20 | 0.97 | 0.87 | 3234 |
| Intermediate | 1825.00 | 0.58 | 1.07 | 9.20 | 2.40 | 0.51 | 0.46 | 3234 |
| Military | 2302.00 | 0.46 | 1.07 | 9.30 | 2.10 | 0.50 | 0.45 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

2.4.3 Flight Operations

2.4.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 76
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
  Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 9.2 (default)
  Takeoff [Military] (mins): 0.4 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 1.2 (default)
  Approach [Approach] (mins): 5.1 (default)
  Taxi/Idle In [Idle] (mins): 6.7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)

Intermediate (mins): 9 (default)
Military (mins): 12 (default)
AfterBurn (mins): 0 (default)

2.4.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.4.4 Auxiliary Power Unit (APU)

2.4.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| 1 | 1 | No | GTCP 85-180L | |

2.4.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| GTCP 85-180L | 272.6 | 0.493 | 0.289 | 1.216 | 3.759 | 0.131 | 0.037 | 910.8 |

2.4.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs

$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.4.5 Aerospace Ground Equipment (AGE)

2.4.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage
Number of Annual LTO (Landing and Take-off) cycles for AGE: 76

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 1 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 1 | No | Air Conditioner | MA-3D - 120hp |
| 1 | 11 | No | Generator Set | A/M32A-86D |
| 1 | 1 | No | Heater | H1 |
| 1 | 3 | No | Hydraulic Test Stand | MJ-2A |
| 1 | 10 | No | Light Cart | NF-2 |
| 1 | 0.25 | No | Start Cart | A/M32A-60A |

2.4.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MA-3D - 120hp | 7.1 | 0.053 | 0.050 | 4.167 | 0.317 | 0.109 | 0.105 | 161.7 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2A | 0.0 | 0.190 | 0.238 | 3.850 | 2.460 | 0.083 | 0.076 | 172.0 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.4.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.5. Aircraft (F16s)

[redacted]

2.5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Activity Title: Addition of F16s Ops

- Activity Description:
Increase in Airfield Activity

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.272090 |
| $SO_x$ | 0.129374 |
| $NO_x$ | 1.591790 |
| CO | 1.871444 |
| PM 10 | 0.185787 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.166936 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 309.2 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.130434 |
| $SO_x$ | 0.100839 |
| $NO_x$ | 1.184170 |
| CO | 1.622882 |
| PM 10 | 0.143767 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.126172 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 287.7 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.141656 |
| $SO_x$ | 0.028535 |
| $NO_x$ | 0.407620 |
| CO | 0.248562 |
| PM 10 | 0.042020 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.040763 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 21.5 |
| | |

2.5.2 Aircraft & Engines

2.5.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: F-16
  Engine Model: F100-PW-100
  Primary Function: Combat
  Aircraft has After burn: Yes
  Number of Engines: 1

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

2.5.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 1127.00 | 3.79 | 1.07 | 4.64 | 49.58 | 3.13 | 2.82 | 3234 |
| Approach | 2765.00 | 1.06 | 1.07 | 12.52 | 3.99 | 1.57 | 1.41 | 3234 |
| Intermediate | 7685.00 | 0.14 | 1.07 | 27.09 | 0.72 | 0.72 | 0.65 | 3234 |
| Military | 10996.00 | 0.12 | 1.07 | 35.01 | 0.70 | 1.24 | 1.12 | 3234 |
| After Burn | 54007.00 | 0.13 | 1.07 | 6.62 | 9.57 | 0.87 | 0.78 | 3234 |

2.5.3 Flight Operations

2.5.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 80
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
  Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 18.5 (default)
  Takeoff [Military] (mins): 0.2 (default)
  Takeoff [After Burn] (mins): 0.2 (default)
  Climb Out [Intermediate] (mins): 0.8 (default)
  Approach [Approach] (mins): 3.5 (default)
  Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)

Intermediate (mins): 9 (default)
Military (mins): 9 (default)
AfterBurn (mins): 3 (default)

2.5.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.5.4 Auxiliary Power Unit (APU)

2.5.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| 1 | 1 | No | T-62T-40-8 | |

2.5.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| T-62T-40-8 | 272.6 | 0.493 | 0.289 | 1.216 | 3.759 | 0.131 | 0.037 | 910.8 |

2.5.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)

2000: Conversion Factor pounds to tons

2.5.5 Aerospace Ground Equipment (AGE)

2.5.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 80

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 0.33 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 1 | No | Bomb Lift | MJ-1B |
| 1 | 0.33 | No | Generator Set | A/M32A-86D |
| 1 | 0.5 | No | Heater | H1 |
| 1 | 0.5 | No | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp |
| 1 | 8 | No | Light Cart | NF-2 |
| 1 | 0.33 | No | Start Cart | A/M32A-60A |

2.5.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MJ-1B | 0.0 | 3.040 | 0.219 | 4.780 | 3.040 | 0.800 | 0.776 | 141.2 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2/TTU-228 - 130hp | 7.4 | 0.195 | 0.053 | 3.396 | 0.794 | 0.089 | 0.086 | 168.8 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.5.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year

$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.6. Aircraft (F22)

[redacted]

2.6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Activity Title: Add F22 Ops

- Activity Description:
Increase in Airfield Ops

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.136036 |
| $SO_x$ | 0.179454 |
| $NO_x$ | 1.761594 |
| CO | 2.599570 |
| PM 10 | 0.252660 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.208467 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 491.8 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.058125 |
| $SO_x$ | 0.163760 |
| $NO_x$ | 1.537403 |
| CO | 2.462861 |
| PM 10 | 0.229549 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.186047 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 480.0 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.077911 |
| $SO_x$ | 0.015694 |
| $NO_x$ | 0.224191 |
| CO | 0.136709 |
| PM 10 | 0.023111 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.022420 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 11.8 |
| | |

2.6.2 Aircraft & Engines

2.6.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: F-22A
  Engine Model: F119-PW-100
  Primary Function: Combat
  Aircraft has After burn: Yes
  Number of Engines: 2

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

2.6.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 1377.00 | 1.67 | 1.07 | 3.01 | 48.15 | 2.42 | 1.76 | 3234 |
| Approach | 2740.00 | 0.05 | 1.07 | 6.59 | 7.92 | 1.96 | 1.73 | 3234 |
| Intermediate | 10110.00 | 0.03 | 1.07 | 12.40 | 2.14 | 1.40 | 1.09 | 3234 |
| Military | 18612.00 | 0.01 | 1.07 | 19.81 | 0.75 | 1.12 | 0.97 | 3234 |
| After Burn | 50170.00 | 0.00 | 1.07 | 7.37 | 16.10 | 0.85 | 0.75 | 3234 |

2.6.3 Flight Operations

2.6.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 44
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
  Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 18.5 (default)
  Takeoff [Military] (mins): 0.2 (default)
  Takeoff [After Burn] (mins): 0.2 (default)
  Climb Out [Intermediate] (mins): 0.8 (default)
  Approach [Approach] (mins): 3.5 (default)
  Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)

Intermediate (mins): 9 (default)
Military (mins): 9 (default)
AfterBurn (mins): 3 (default)

2.6.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.6.4 Auxiliary Power Unit (APU)

2.6.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.6.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.6.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.6.5 Aerospace Ground Equipment (AGE)

2.6.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage
Number of Annual LTO (Landing and Take-off) cycles for AGE: 44

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 0.33 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 1 | No | Bomb Lift | MJ-1B |
| 1 | 0.33 | No | Generator Set | A/M32A-86D |
| 1 | 0.5 | No | Heater | H1 |
| 1 | 0.5 | No | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp |
| 1 | 8 | No | Light Cart | NF-2 |
| 1 | 0.33 | No | Start Cart | A/M32A-60A |

2.6.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MJ-1B | 0.0 | 3.040 | 0.219 | 4.780 | 3.040 | 0.800 | 0.776 | 141.2 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2/TTU-228 - 130hp | 7.4 | 0.195 | 0.053 | 3.396 | 0.794 | 0.089 | 0.086 | 168.8 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.6.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.7. Aircraft (F35)

[redacted]

2.7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Addition of F35 Ops

- Activity Description:
Increase in Airfield Activity

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.144309 |
| $SO_x$ | 0.168830 |
| $NO_x$ | 1.873784 |
| CO | 1.406661 |
| PM 10 | 0.250685 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.228300 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 445.0 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.002653 |
| $SO_x$ | 0.140295 |
| $NO_x$ | 1.466164 |
| CO | 1.158099 |
| PM 10 | 0.208665 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.187537 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 423.5 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.141656 |
| $SO_x$ | 0.028535 |
| $NO_x$ | 0.407620 |
| CO | 0.248562 |
| PM 10 | 0.042020 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.040763 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 21.5 |
| | |

2.7.2 Aircraft & Engines

2.7.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
    Aircraft Designation: F-35A
    Engine Model: F135-PW-100
    Primary Function: Combat
    Aircraft has After burn: Yes
    Number of Engines: 1

- Aircraft & Engine Surrogate
    Is Aircraft & Engine a Surrogate? No
    Original Aircraft Name:
    Original Engine Name:

2.7.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)
    Proprietary Information. Contact Air Quality Subject Matter Expert for More Information regarding this engine's Emission Factors.

2.7.3 Flight Operations

2.7.3.1 Flight Operations Assumptions

- Flight Operations
    Number of Aircraft: 1
    Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 80
    Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
    Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
    Taxi/Idle Out [Idle] (mins): 18.5 (default)
    Takeoff [Military] (mins): 1.065 (default)
    Takeoff [After Burn] (mins): 0.013 (default)
    Climb Out [Intermediate] (mins): 0.012 (default)
    Approach [Approach] (mins): 2.501 (default)
    Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
    Idle (mins): 12 (default)
    Approach (mins): 27 (default)
    Intermediate (mins): 9 (default)
    Military (mins): 9 (default)
    AfterBurn (mins): 3 (default)

2.7.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL}$ = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL}$ = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)

1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.7.4 Auxiliary Power Unit (APU)

2.7.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.7.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.7.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.7.5 Aerospace Ground Equipment (AGE)

2.7.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 80

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 0.33 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 1 | No | Bomb Lift | MJ-1B |
| 1 | 0.33 | No | Generator Set | A/M32A-86D |
| 1 | 0.5 | No | Heater | H1 |
| 1 | 0.5 | No | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp |
| 1 | 8 | No | Light Cart | NF-2 |
| 1 | 0.33 | No | Start Cart | A/M32A-60A |

2.7.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MJ-1B | 0.0 | 3.040 | 0.219 | 4.780 | 3.040 | 0.800 | 0.776 | 141.2 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2/TTU-228 - 130hp | 7.4 | 0.195 | 0.053 | 3.396 | 0.794 | 0.089 | 0.086 | 168.8 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.7.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year

$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.8. Aircraft (MV22)

[redacted]

2.8.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

County:Pima

Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Activity Title: Addition of CF/MV22 Operations

- Activity Description:
Increase in Airfield Operations

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.544987 |
| $SO_x$ | 0.194170 |
| $NO_x$ | 7.436648 |
| CO | 1.609268 |
| PM 10 | 0.244952 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.231737 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 362.8 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.002125 |
| $SO_x$ | 0.045203 |
| $NO_x$ | 0.337516 |
| CO | 0.190276 |
| PM 10 | 0.066748 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.059989 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 136.6 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.542862 |
| $SO_x$ | 0.148967 |
| $NO_x$ | 7.099132 |
| CO | 1.418993 |
| PM 10 | 0.178204 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.171748 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 226.2 |
| | |

2.8.2 Aircraft & Engines

2.8.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: CV-22
Engine Model: T406-AD-400
Primary Function: Transport - Bomber
Aircraft has After burn: No

Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

2.8.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 362.00 | 0.10 | 1.07 | 4.15 | 8.35 | 1.58 | 1.42 | 3234 |
| Approach | 663.00 | 0.02 | 1.07 | 6.05 | 3.47 | 1.58 | 1.42 | 3234 |
| Intermediate | 948.00 | 0.02 | 1.07 | 7.87 | 1.82 | 1.58 | 1.42 | 3234 |
| Military | 2507.00 | 0.01 | 1.07 | 18.03 | 0.29 | 1.58 | 1.42 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

2.8.3 Flight Operations

2.8.3.1 Flight Operations Assumptions

- Flight Operations
Number of Aircraft: 1
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 160
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
Taxi/Idle Out [Idle] (mins): 9.2 (default)
Takeoff [Military] (mins): 0.4 (default)
Takeoff [After Burn] (mins): 0 (default)
Climb Out [Intermediate] (mins): 1.2 (default)
Approach [Approach] (mins): 5.1 (default)
Taxi/Idle In [Idle] (mins): 6.7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
Idle (mins): 12 (default)
Approach (mins): 27 (default)
Intermediate (mins): 9 (default)
Military (mins): 12 (default)
AfterBurn (mins): 0 (default)

2.8.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds

EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.8.4 Auxiliary Power Unit (APU)

2.8.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.8.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.8.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.8.5 Aerospace Ground Equipment (AGE)

2.8.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 160

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 10 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 1 | No | Air Conditioner | MA-3D - 120hp |
| 1 | 11 | No | Generator Set | A/M32A-86D |
| 1 | 1 | No | Heater | H1 |
| 1 | 3 | No | Hydraulic Test Stand | MJ-2A |
| 1 | 10 | No | Light Cart | NF-2 |
| 1 | 0.25 | No | Start Cart | A/M32A-60A |

2.8.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MA-3D - 120hp | 7.1 | 0.053 | 0.050 | 4.167 | 0.317 | 0.109 | 0.105 | 161.7 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2A | 0.0 | 0.190 | 0.238 | 3.850 | 2.460 | 0.083 | 0.076 | 172.0 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.8.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year

$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.9. Aircraft (KC135)

[redacted]

2.9.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Activity Title: Addition of KC135

- Activity Description:
  Increase in Airfield Activity

- Activity Start Date
  Start Month: 1
  Start Year: 2020

- Activity End Date
  Indefinite: Yes
  End Month: N/A
  End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 5.953159 |
| $SO_x$ | 0.238760 |
| $NO_x$ | 2.757559 |
| CO | 6.018590 |
| PM 10 | 0.238910 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.216990 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 702.9 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 5.874753 |
| $SO_x$ | 0.218607 |
| $NO_x$ | 1.311014 |
| CO | 5.781973 |
| PM 10 | 0.210592 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.189533 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 660.7 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.078407 |
| $SO_x$ | 0.020153 |
| $NO_x$ | 1.446545 |
| CO | 0.236618 |
| PM 10 | 0.028318 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.027457 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 42.2 |
| | |

2.9.2 Aircraft & Engines

2.9.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: KC-135
  Engine Model: J57-P-22
  Primary Function: Transport - Bomber
  Aircraft has After burn: No
  Number of Engines: 4

- Aircraft & Engine Surrogate
    Is Aircraft & Engine a Surrogate? No
    Original Aircraft Name:
    Original Engine Name:

2.9.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 952.00 | 88.55 | 1.07 | 2.20 | 79.00 | 0.16 | 0.14 | 3234 |
| Approach | 3333.00 | 1.61 | 1.07 | 5.80 | 7.90 | 0.93 | 0.84 | 3234 |
| Intermediate | 6508.00 | 0.23 | 1.07 | 9.50 | 2.40 | 1.92 | 1.73 | 3234 |
| Military | 7460.00 | 0.12 | 1.07 | 11.00 | 1.90 | 1.72 | 1.55 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

2.9.3 Flight Operations

2.9.3.1 Flight Operations Assumptions

- Flight Operations
    Number of Aircraft: 1
    Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 40
    Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
    Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
    Taxi/Idle Out [Idle] (mins): 32.8 (default)
    Takeoff [Military] (mins): 0.7 (default)
    Takeoff [After Burn] (mins): 0 (default)
    Climb Out [Intermediate] (mins): 1.6 (default)
    Approach [Approach] (mins): 5.2 (default)
    Taxi/Idle In [Idle] (mins): 14.9 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
    Idle (mins): 12 (default)
    Approach (mins): 27 (default)
    Intermediate (mins): 9 (default)
    Military (mins): 12 (default)
    AfterBurn (mins): 0 (default)

2.9.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL}$ = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines

NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.9.4 Auxiliary Power Unit (APU)

2.9.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.9.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.9.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.9.5 Aerospace Ground Equipment (AGE)

2.9.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 40

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 0.33 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 2 | No | Air Conditioner | MA-3C |
| 1 | 10 | No | Generator Set | A/M32A-86D |
| 1 | 5 | No | Heater | H1 |
| 1 | 2 | No | Light Cart | NF-2 |
| 1 | 1 | No | Start Cart | A/M32A-60A |

2.9.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MA-3C | 7.1 | 0.053 | 0.050 | 4.167 | 0.317 | 0.109 | 0.105 | 161.7 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.9.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year

$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.10. Aircraft (MC12W)

[redacted]

2.10.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Add MC12W Operations

- Activity Description:

Increase in Airfield Activity

- Activity Start Date
  Start Month: 1
  Start Year: 2020

- Activity End Date
  Indefinite: Yes
  End Month: N/A
  End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.155367 |
| $SO_x$ | 0.010484 |
| $NO_x$ | 0.135015 |
| CO | 0.520622 |
| PM 10 | 0.007697 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.007033 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 31.8 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.150962 |
| $SO_x$ | 0.009798 |
| $NO_x$ | 0.043492 |
| CO | 0.513770 |
| PM 10 | 0.006326 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.005704 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 29.6 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.004405 |
| $SO_x$ | 0.000686 |
| $NO_x$ | 0.091523 |
| CO | 0.006852 |
| PM 10 | 0.001370 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.001329 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 2.2 |
| | |

2.10.2 Aircraft & Engines

2.10.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: MC-12W
  Engine Model: PT6A-60
  Primary Function: General - Turboprop
  Aircraft has After burn: No
  Number of Engines: 2

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

2.10.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 131.43 | 53.66 | 1.07 | 1.89 | 166.43 | 1.23 | 1.11 | 3234 |
| Approach | 339.89 | 3.31 | 1.07 | 4.59 | 20.86 | 0.74 | 0.67 | 3234 |
| Intermediate | 570.64 | 0.72 | 1.07 | 6.69 | 6.72 | 0.29 | 0.26 | 3234 |
| Military | 633.06 | 0.53 | 1.07 | 7.08 | 5.36 | 0.26 | 0.23 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

2.10.3 Flight Operations

2.10.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 40
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
  Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 19 (default)
  Takeoff [Military] (mins): 0.5 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 2.5 (default)
  Approach [Approach] (mins): 4.5 (default)
  Taxi/Idle In [Idle] (mins): 7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)
  Intermediate (mins): 9 (default)
  Military (mins): 12 (default)
  AfterBurn (mins): 0 (default)

2.10.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

  $AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
  TIM: Time in Mode (min)
  60: Conversion Factor minutes to hours
  FC: Fuel Flow Rate (lb/hr)

1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.10.4 Auxiliary Power Unit (APU)

2.10.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.10.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.10.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.10.5 Aerospace Ground Equipment (AGE)

2.10.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 40

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 0.75 | No | Generator Set | A/M32A-86D |

2.10.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |

2.10.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.11. Aircraft (MQ9)

[redacted]

2.11.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Activity Title: Increase in MQ9 Operations

- Activity Description:
Increase in Airfield Activity

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.051187 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.005230 |

| | | | |
|---|---|---|---|
| $SO_x$ | 0.002938 | Pb | 0.000000 |
| $NO_x$ | 0.025949 | $NH_3$ | 0.000000 |
| CO | 0.042033 | $CO_2e$ | 8.9 |
| PM 10 | 0.005818 | | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) | Pollutant | Emissions Per Year (TONs) |
|---|---|---|---|
| VOC | 0.051187 | PM 2.5 | 0.005230 |
| $SO_x$ | 0.002938 | Pb | 0.000000 |
| $NO_x$ | 0.025949 | $NH_3$ | 0.000000 |
| CO | 0.042033 | $CO_2e$ | 8.9 |
| PM 10 | 0.005818 | | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) | Pollutant | Emissions Per Year (TONs) |
|---|---|---|---|
| VOC | 0.000000 | PM 2.5 | 0.000000 |
| $SO_x$ | 0.000000 | Pb | 0.000000 |
| $NO_x$ | 0.000000 | $NH_3$ | 0.000000 |
| CO | 0.000000 | $CO_2e$ | 0.0 |
| PM 10 | 0.000000 | | |

2.11.2 Aircraft & Engines

2.11.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine

Aircraft Designation: MQ-9
Engine Model: TPE-331
Primary Function: Unmanned Aerial Vehicle
Aircraft has After burn: No
Number of Engines: 1

- Aircraft & Engine Surrogate

Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

2.11.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 112.00 | 90.97 | 1.07 | 2.86 | 61.52 | 2.68 | 2.41 | 3234 |
| Approach | 250.00 | 0.74 | 1.07 | 9.92 | 6.96 | 2.40 | 2.16 | 3234 |
| Intermediate | 409.00 | 0.17 | 1.07 | 11.86 | 0.98 | 1.47 | 1.32 | 3234 |
| Military | 458.00 | 0.13 | 1.07 | 12.36 | 0.76 | 1.75 | 1.57 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

2.11.3 Flight Operations

2.11.3.1 Flight Operations Assumptions

- Flight Operations
    Number of Aircraft: 1
    Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 40
    Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
    Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
    Taxi/Idle Out [Idle] (mins): 6.8 (default)
    Takeoff [Military] (mins): 0.5 (default)
    Takeoff [After Burn] (mins): 0 (default)
    Climb Out [Intermediate] (mins): 1.4 (default)
    Approach [Approach] (mins): 4 (default)
    Taxi/Idle In [Idle] (mins): 4.4 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
    Idle (mins): 12 (default)
    Approach (mins): 27 (default)
    Intermediate (mins): 9 (default)
    Military (mins): 12 (default)
    AfterBurn (mins): 0 (default)

2.11.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

    $AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
    TIM: Time in Mode (min)
    60: Conversion Factor minutes to hours
    FC: Fuel Flow Rate (lb/hr)
    1000: Conversion Factor pounds to 1000pounds
    EF: Emission Factor (lb/1000lb fuel)
    NE: Number of Engines
    LTO: Number of Landing and Take-off Cycles (for all aircraft)
    2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

    $AE_{LTO}$: Aircraft Emissions (TONs)
    $AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
    $AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
    $AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
    $AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)

$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.11.4 Auxiliary Power Unit (APU)

2.11.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.11.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.11.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.11.5 Aerospace Ground Equipment (AGE)

2.11.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage
Number of Annual LTO (Landing and Take-off) cycles for AGE: 40

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|

2.11.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.11.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)

LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

## 2.12. Aircraft (F21)

[redacted]

### 2.12.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
  County: Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in f21 Operations

- Activity Description:
  Increase in Airfield Activity

- Activity Start Date
  Start Month: 1
  Start Year: 2020

- Activity End Date
  Indefinite: Yes
  End Month: N/A
  End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.261436 |
| $SO_x$ | 0.099006 |
| $NO_x$ | 0.651852 |
| CO | 1.232463 |
| PM 10 | 0.129589 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.117366 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 278.0 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.226022 |
| $SO_x$ | 0.091872 |
| $NO_x$ | 0.549947 |
| CO | 1.170322 |
| PM 10 | 0.119084 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.107175 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 272.6 |
| | |

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.035414 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.010191 |

| | |
|---|---|
| $SO_x$ | 0.007134 |
| $NO_x$ | 0.101905 |
| CO | 0.062140 |
| PM 10 | 0.010505 |

| | |
|---|---|
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 5.4 |
| | |

2.12.2 Aircraft & Engines

2.12.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: F-4C
  Engine Model: J79-GE-15
  Primary Function: Combat
  Aircraft has After burn: Yes
  Number of Engines: 2

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

2.12.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 1111.00 | 13.80 | 1.07 | 2.50 | 57.00 | 0.50 | 0.45 | 3234 |
| Approach | 3492.00 | 1.27 | 1.07 | 4.80 | 9.40 | 1.80 | 1.62 | 3234 |
| Intermediate | 5397.00 | 0.35 | 1.07 | 5.60 | 4.60 | 2.80 | 2.52 | 3234 |
| Military | 8889.00 | 0.23 | 1.07 | 8.90 | 2.20 | 2.20 | 1.98 | 3234 |
| After Burn | 32223.00 | 0.01 | 1.07 | 9.10 | 4.00 | 0.15 | 0.14 | 3234 |

2.12.3 Flight Operations

2.12.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 20
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:0
  Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 18.5 (default)
  Takeoff [Military] (mins): 0.2 (default)
  Takeoff [After Burn] (mins): 0.2 (default)
  Climb Out [Intermediate] (mins): 0.8 (default)
  Approach [Approach] (mins): 3.5 (default)
  Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
    Idle (mins): 12 (default)
    Approach (mins): 27 (default)
    Intermediate (mins): 9 (default)
    Military (mins): 9 (default)
    AfterBurn (mins): 3 (default)

2.12.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

    $AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
    TIM: Time in Mode (min)
    60: Conversion Factor minutes to hours
    FC: Fuel Flow Rate (lb/hr)
    1000: Conversion Factor pounds to 1000pounds
    EF: Emission Factor (lb/1000lb fuel)
    NE: Number of Engines
    LTO: Number of Landing and Take-off Cycles (for all aircraft)
    2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

    $AE_{LTO}$: Aircraft Emissions (TONs)
    $AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
    $AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
    $AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
    $AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
    $AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

    $AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
    TIM: Time in Mode (min)
    60: Conversion Factor minutes to hours
    FC: Fuel Flow Rate (lb/hr)
    1000: Conversion Factor pounds to 1000pounds
    EF: Emission Factor (lb/1000lb fuel)
    NE: Number of Engines
    TGO: Number of Touch-and-Go Cycles (for all aircraft)
    2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.12.4 Auxiliary Power Unit (APU)

2.12.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

2.12.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

2.12.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.12.5 Aerospace Ground Equipment (AGE)

2.12.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 20

- Aerospace Ground Equipment (AGE) (default)

| Total Number of AGE | Operation Hours for Each LTO | Exempt Source? | AGE Type | Designation |
|---|---|---|---|---|
| 1 | 0.33 | No | Air Compressor | MC-1A - 18.4hp |
| 1 | 1 | No | Bomb Lift | MJ-1B |
| 1 | 0.33 | No | Generator Set | A/M32A-86D |
| 1 | 0.5 | No | Heater | H1 |
| 1 | 0.5 | No | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp |
| 1 | 8 | No | Light Cart | NF-2 |
| 1 | 0.33 | No | Start Cart | A/M32A-60A |

2.12.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| MC-1A - 18.4hp | 1.1 | 0.267 | 0.008 | 0.419 | 0.267 | 0.071 | 0.068 | 24.8 |
| MJ-1B | 0.0 | 3.040 | 0.219 | 4.780 | 3.040 | 0.800 | 0.776 | 141.2 |
| A/M32A-86D | 6.5 | 0.294 | 0.046 | 6.102 | 0.457 | 0.091 | 0.089 | 147.0 |
| H1 | 0.4 | 0.100 | 0.011 | 0.160 | 0.180 | 0.006 | 0.006 | 8.9 |
| MJ-2/TTU-228 - 130hp | 7.4 | 0.195 | 0.053 | 3.396 | 0.794 | 0.089 | 0.086 | 168.8 |
| NF-2 | 0.0 | 0.010 | 0.043 | 0.110 | 0.080 | 0.010 | 0.010 | 22.1 |
| A/M32A-60A | 0.0 | 0.270 | 0.306 | 1.820 | 5.480 | 0.211 | 0.205 | 221.1 |

2.12.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year

$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

$AGE_{POL}$: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

## 3. ACAM Report for Red Flag-Rescue Large Force Training

3.1. General Information

[redacted]

- Action Location
  Base: DAVIS-MONTHAN AFB
  State: Arizona
  County(s): Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Action Title: Davis-Monthan AFB Air Quality Analysis for AIRFIELD

- Project Number/s (if applicable): Change in Aircraft Ops

- Projected Action Start Date: 1 / 2020

- Action Purpose and Need:
  Mission Readiness

- Action Description:
  Evaluation of Airfield Op Changes

- Point of Contact
  Name: Roger L. Wayson
  Title: Senior Engineer
  Organization: AECOM
  Email: roger.wayson@aecom.com
  Phone Number: 830 265-7687

- Activity List:

| Activity Type | | Activity Title |
|---|---|---|
| 2. | Aircraft | Increase in A10 Operations |
| 3. | Aircraft | Increase in C130 Operations |
| 4. | Aircraft | Increase in C130 Operations |
| 5. | Aircraft | Increase in F16s Operations |
| 6. | Aircraft | Increase in MC12W Operations |
| 7. | Aircraft | Increase in CV/MV-22 operations |

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

3.2. Aircraft (A10)

[redacted]

3.2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in A10 Operations

- Activity Description:
Increase in A10 Sorties

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.797675 |
| $SO_x$ | 0.101665 |
| $NO_x$ | 0.451769 |
| CO | 4.387525 |
| PM 10 | 0.421050 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.181850 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 307.3 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.797675 |
| $SO_x$ | 0.101665 |
| $NO_x$ | 0.451769 |
| CO | 4.387525 |
| PM 10 | 0.421050 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.181850 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 307.3 |
| | |

3.2.2 Aircraft & Engines

3.2.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: A-10
Engine Model: TF34-GE-400
Primary Function: Combat
Aircraft has After burn: No
Number of Engines: 2

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

3.2.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 458.00 | 17.24 | 1.07 | 1.69 | 90.98 | 8.13 | 3.60 | 3234 |
| Approach | 1201.00 | 13.51 | 1.07 | 2.98 | 72.08 | 6.21 | 2.12 | 3234 |
| Intermediate | 2686.00 | 6.05 | 1.07 | 5.57 | 34.29 | 2.66 | 1.68 | 3234 |
| Military | 3800.00 | 0.45 | 1.07 | 7.51 | 5.95 | 2.66 | 1.68 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

3.2.3 Flight Operations

3.2.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 0
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:560
  Number of Annual Trim Test(s) per Aircraft: 12

  - Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 18.5 (default)
  Takeoff [Military] (mins): 0.4 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 0.8 (default)
  Approach [Approach] (mins): 3.5 (default)
  Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)
  Intermediate (mins): 9 (default)
  Military (mins): 12 (default)
  AfterBurn (mins): 0 (default)

3.2.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)

TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

3.2.4 Auxiliary Power Unit (APU)

3.2.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

3.2.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

3.2.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

3.3. Aircraft (C130 H)

[redacted]

3.3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in C130 Operations

- Activity Description:
Increase in C130H Sorties

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.517702 |
| $SO_x$ | 0.062745 |
| $NO_x$ | 0.381854 |
| CO | 0.821994 |
| PM 10 | 0.044292 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.039862 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 189.6 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.517702 |
| $SO_x$ | 0.062745 |
| $NO_x$ | 0.381854 |
| CO | 0.821994 |
| PM 10 | 0.044292 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.039862 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 189.6 |
| | |

3.3.2 Aircraft & Engines

3.3.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: WC-130H

Engine Model: T56-A-15
Primary Function: Transport - Bomber
Aircraft has After burn: No
Number of Engines: 4

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

3.3.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 794.00 | 24.15 | 1.07 | 3.90 | 32.00 | 0.83 | 0.75 | 3234 |
| Approach | 1185.00 | 14.26 | 1.07 | 4.40 | 22.20 | 0.97 | 0.87 | 3234 |
| Intermediate | 1825.00 | 0.58 | 1.07 | 9.20 | 2.40 | 0.51 | 0.46 | 3234 |
| Military | 2302.00 | 0.46 | 1.07 | 9.30 | 2.10 | 0.50 | 0.45 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

3.3.3 Flight Operations

3.3.3.1 Flight Operations Assumptions

- Flight Operations
Number of Aircraft: 1
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 0
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:80
Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
Taxi/Idle Out [Idle] (mins): 9.2 (default)
Takeoff [Military] (mins): 0.4 (default)
Takeoff [After Burn] (mins): 0 (default)
Climb Out [Intermediate] (mins): 1.2 (default)
Approach [Approach] (mins): 5.1 (default)
Taxi/Idle In [Idle] (mins): 6.7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins): 12 (default)
Approach (mins): 27 (default)
Intermediate (mins): 9 (default)
Military (mins): 12 (default)
AfterBurn (mins): 0 (default)

3.3.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL}$ = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

3.3.4 Auxiliary Power Unit (APU)

3.3.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| 1 | 1 | No | GTCP 85-180L | |

3.3.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| GTCP 85-180L | 272.6 | 0.493 | 0.289 | 1.216 | 3.759 | 0.131 | 0.037 | 910.8 |

3.3.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL}$ = APU * OH * LTO * $EF_{POL}$ / 2000

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

3.4. Aircraft (C130)

[redacted]

3.4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in C130 Operations

- Activity Description:
Increase in C130 Sorties

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -0.517702 |
| $SO_x$ | -0.062745 |
| $NO_x$ | -0.381854 |
| CO | -0.821994 |
| PM 10 | -0.044292 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.039862 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -189.6 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -0.517702 |
| $SO_x$ | -0.062745 |
| $NO_x$ | -0.381854 |
| CO | -0.821994 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.039862 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -189.6 |

| | | | |
|---|---|---|---|
| PM 10 | -0.044292 | | |

3.4.2 Aircraft & Engines

3.4.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: WC-130H
  Engine Model: T56-A-15
  Primary Function: Transport - Bomber
  Aircraft has After burn: No
  Number of Engines: 4

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

3.4.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 794.00 | 24.15 | 1.07 | 3.90 | 32.00 | 0.83 | 0.75 | 3234 |
| Approach | 1185.00 | 14.26 | 1.07 | 4.40 | 22.20 | 0.97 | 0.87 | 3234 |
| Intermediate | 1825.00 | 0.58 | 1.07 | 9.20 | 2.40 | 0.51 | 0.46 | 3234 |
| Military | 2302.00 | 0.46 | 1.07 | 9.30 | 2.10 | 0.50 | 0.45 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

3.4.3 Flight Operations

3.4.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 0
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:80
  Number of Annual Trim Test(s) per Aircraft: 12

  - Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 9.2 (default)
  Takeoff [Military] (mins): 0.4 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 1.2 (default)

Approach [Approach] (mins): 5.1 (default)
Taxi/Idle In [Idle] (mins): 6.7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
Idle (mins): 12 (default)
Approach (mins): 27 (default)
Intermediate (mins): 9 (default)
Military (mins): 12 (default)
AfterBurn (mins): 0 (default)

3.4.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

3.4.4 Auxiliary Power Unit (APU)

3.4.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| 1 | 1 | No | GTCP 85-180L | |

3.4.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GTCP 85-180L | 272.6 | 0.493 | 0.289 | 1.216 | 3.759 | 0.131 | 0.037 | 910.8 |

3.4.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

3.5. Aircraft

[redacted]

3.5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in F16s Operations

- Activity Description:
Increase in F16 Sorties

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.047334 |
| $SO_x$ | 0.116730 |
| $NO_x$ | 1.758667 |
| CO | 0.609014 |
| PM 10 | 0.121371 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.109234 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 287.9 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.047334 |
| $SO_x$ | 0.116730 |
| $NO_x$ | 1.758667 |
| CO | 0.609014 |
| PM 10 | 0.121371 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.109234 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 287.9 |
| | |

3.5.2 Aircraft & Engines

3.5.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: F-16
  Engine Model: F100-PW-100
  Primary Function: Combat
  Aircraft has After burn: Yes
  Number of Engines: 1

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

3.5.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 1127.00 | 3.79 | 1.07 | 4.64 | 49.58 | 3.13 | 2.82 | 3234 |
| Approach | 2765.00 | 1.06 | 1.07 | 12.52 | 3.99 | 1.57 | 1.41 | 3234 |
| Intermediate | 7685.00 | 0.14 | 1.07 | 27.09 | 0.72 | 0.72 | 0.65 | 3234 |
| Military | 10996.00 | 0.12 | 1.07 | 35.01 | 0.70 | 1.24 | 1.12 | 3234 |
| After Burn | 54007.00 | 0.13 | 1.07 | 6.62 | 9.57 | 0.87 | 0.78 | 3234 |

3.5.3 Flight Operations

3.5.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 0
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:280

Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
Taxi/Idle Out [Idle] (mins): 18.5 (default)
Takeoff [Military] (mins): 0.2 (default)
Takeoff [After Burn] (mins): 0.2 (default)
Climb Out [Intermediate] (mins): 0.8 (default)
Approach [Approach] (mins): 3.5 (default)
Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
Idle (mins): 12 (default)
Approach (mins): 27 (default)
Intermediate (mins): 9 (default)
Military (mins): 9 (default)
AfterBurn (mins): 3 (default)

3.5.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year
$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

3.5.4 Auxiliary Power Unit (APU)

3.5.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| 1 | 1 | No | T-62T-40-8 | |

3.5.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM10 | PM2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| T-62T-40-8 | 272.6 | 0.493 | 0.289 | 1.216 | 3.759 | 0.131 | 0.037 | 910.8 |

3.5.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

3.6. Aircraft (MC12W)

[redacted]

3.6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in MC12W Operations

- Activity Description:
Increase in MC-12W Sorties

- Activity Start Date
  Start Month: 1
  Start Year: 2020

- Activity End Date
  Indefinite: Yes
  End Month: N/A
  End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.066263 |
| $SO_x$ | 0.028371 |
| $NO_x$ | 0.152019 |
| CO | 0.393756 |
| PM 10 | 0.013291 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.011986 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 85.7 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.066263 |
| $SO_x$ | 0.028371 |
| $NO_x$ | 0.152019 |
| CO | 0.393756 |
| PM 10 | 0.013291 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.011986 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 85.7 |
| | |

3.6.2 Aircraft & Engines

3.6.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
  Aircraft Designation: MC-12W
  Engine Model: PT6A-60
  Primary Function: General - Turboprop
  Aircraft has After burn: No
  Number of Engines: 2

- Aircraft & Engine Surrogate
  Is Aircraft & Engine a Surrogate? No
  Original Aircraft Name:
  Original Engine Name:

3.6.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 131.4 | 53.6 | 1.0 | 1.8 | 166.4 | 1.2 | 1.1 | 323 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 3 | 6 | 7 | 9 | 3 | 3 | 1 | 4 |
| Approach | 339.89 | 3.31 | 1.07 | 4.59 | 20.86 | 0.74 | 0.67 | 3234 |
| Intermediate | 570.64 | 0.72 | 1.07 | 6.69 | 6.72 | 0.29 | 0.26 | 3234 |
| Military | 633.06 | 0.53 | 1.07 | 7.08 | 5.36 | 0.26 | 0.23 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

3.6.3 Flight Operations

3.6.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 0
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:400
  Number of Annual Trim Test(s) per Aircraft: 12

  - Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 19 (default)
  Takeoff [Military] (mins): 0.5 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 2.5 (default)
  Approach [Approach] (mins): 4.5 (default)
  Taxi/Idle In [Idle] (mins): 7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)
  Intermediate (mins): 9 (default)
  Military (mins): 12 (default)
  AfterBurn (mins): 0 (default)

3.6.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds

EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

3.6.4 Auxiliary Power Unit (APU)

3.6.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

3.6.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

3.6.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

3.7. Aircraft (MV22)

[redacted]

3.7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County:Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in CV/MV-22 operations

- Activity Description:
Increase in CV/MV-22 Sorties

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.001827 |
| $SO_x$ | 0.091801 |
| $NO_x$ | 0.780381 |
| CO | 0.212453 |
| PM 10 | 0.135556 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.121829 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 277.5 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.001827 |
| $SO_x$ | 0.091801 |
| $NO_x$ | 0.780381 |
| CO | 0.212453 |
| PM 10 | 0.135556 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.121829 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 277.5 |
| | |

3.7.2 Aircraft & Engines

3.7.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: CV-22A
Engine Model: T406-AD-400
Primary Function: Transport - Bomber
Aircraft has After burn: No
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

3.7.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 362.00 | 0.10 | 1.07 | 4.15 | 8.35 | 1.58 | 1.42 | 3234 |
| Approach | 663.00 | 0.02 | 1.07 | 6.05 | 3.47 | 1.58 | 1.42 | 3234 |
| Intermediate | 948.00 | 0.02 | 1.07 | 7.87 | 1.82 | 1.58 | 1.42 | 3234 |
| Military | 2507.00 | 0.01 | 1.07 | 18.03 | 0.29 | 1.58 | 1.42 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

3.7.3 Flight Operations

3.7.3.1 Flight Operations Assumptions

- Flight Operations
  Number of Aircraft: 1
  Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 0
  Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:800
  Number of Annual Trim Test(s) per Aircraft: 12

  - Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  Taxi/Idle Out [Idle] (mins): 9.2 (default)
  Takeoff [Military] (mins): 0.4 (default)
  Takeoff [After Burn] (mins): 0 (default)
  Climb Out [Intermediate] (mins): 1.2 (default)
  Approach [Approach] (mins): 5.1 (default)
  Taxi/Idle In [Idle] (mins): 6.7 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  Idle (mins): 12 (default)
  Approach (mins): 27 (default)
  Intermediate (mins): 9 (default)
  Military (mins): 12 (default)
  AfterBurn (mins): 0 (default)

3.7.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines

NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

3.7.4 Auxiliary Power Unit (APU)

3.7.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

3.7.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

3.7.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

## 4. ACAM Report for Medium and Small Force Training

4.1. General Information

- Action Location
  Base: DAVIS-MONTHAN AFB
  State: Arizona
  County(s): Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Action Title: Davis-Monthan AFB Air Quality Analysis for AIRFIELD

- Project Number/s (if applicable): Change in Aircraft Ops

- Projected Action Start Date: 1 / 2020

- Action Purpose and Need:
  Mission Readiness

- Action Description:
  Evaluation of Airfield Op Changes

- Point of Contact
  Name: Roger L. Wayson
  Title: Senior Engineer
  Organization: AECOM
  Email: roger.wayson@aecom.com
  Phone Number: 830 265-7687

- Activity List:

| Activity Type | | Activity Title |
|---|---|---|
| 2. | Aircraft | Increase in A10 Operations |
| 3. | Aircraft | Increase in C130 Operations |
| 4. | Aircraft | Increase in CV/MV-22 operations |

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

4.2. Aircraft (A-10)

4.2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
  County: Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in A10 Operations

- Activity Description:
Increase in A10 Sorties

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 5.566384 |
| $SO_x$ | 0.671646 |
| $NO_x$ | 2.881710 |
| CO | 30.487549 |
| PM 10 | 2.847762 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 1.201926 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 2030.0 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 5.566384 |
| $SO_x$ | 0.671646 |
| $NO_x$ | 2.881710 |
| CO | 30.487549 |
| PM 10 | 2.847762 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 1.201926 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 2030.0 |
| | |

4.2.2 Aircraft & Engines

4.2.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: A-10
Engine Model: TF34-GE-400
Primary Function: Combat
Aircraft has After burn: No
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

4.2.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Idle | 458.00 | 17.24 | 1.07 | 1.69 | 90.98 | 8.13 | 3.60 | 3234 |
| Approach | 1201.00 | 13.51 | 1.07 | 2.98 | 72.08 | 6.21 | 2.12 | 3234 |
| Intermediate | 2686.00 | 6.05 | 1.07 | 5.57 | 34.29 | 2.66 | 1.68 | 3234 |
| Military | 3800.00 | 0.45 | 1.07 | 7.51 | 5.95 | 2.66 | 1.68 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

4.2.3 Flight Operations

4.2.3.1 Flight Operations Assumptions

- Flight Operations
  - Number of Aircraft: 1
  - Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 0
  - Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 4620
  - Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)
  - Taxi/Idle Out [Idle] (mins): 18.5 (default)
  - Takeoff [Military] (mins): 0.4 (default)
  - Takeoff [After Burn] (mins): 0 (default)
  - Climb Out [Intermediate] (mins): 0.8 (default)
  - Approach [Approach] (mins): 3.5 (default)
  - Taxi/Idle In [Idle] (mins): 11.3 (default)

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test
  - Idle (mins): 12 (default)
  - Approach (mins): 27 (default)
  - Intermediate (mins): 9 (default)
  - Military (mins): 12 (default)
  - AfterBurn (mins): 0 (default)

4.2.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

  - $AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
  - TIM: Time in Mode (min)
  - 60: Conversion Factor minutes to hours
  - FC: Fuel Flow Rate (lb/hr)
  - 1000: Conversion Factor pounds to 1000pounds
  - EF: Emission Factor (lb/1000lb fuel)
  - NE: Number of Engines
  - LTO: Number of Landing and Take-off Cycles (for all aircraft)
  - 2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)

$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

4.2.4 Auxiliary Power Unit (APU)

4.2.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|

4.2.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|

4.2.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

4.3. Aircraft (C130)

[redacted]

4.3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County: Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in C130 Operations

- Activity Description:
Increase in C130 Sorties

- Activity Start Date

Start Month: 1
Start Year: 2020

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -1.982088 |
| $SO_x$ | -0.225997 |
| $NO_x$ | -1.303568 |
| CO | -3.177917 |
| PM 10 | -0.168283 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.151455 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -683.1 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | -1.982088 |
| $SO_x$ | -0.225997 |
| $NO_x$ | -1.303568 |
| CO | -3.177917 |
| PM 10 | -0.168283 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | -0.151455 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | -683.1 |
| | |

4.3.2 Aircraft & Engines

4.3.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: WC-130H
Engine Model: T56-A-15
Primary Function: Transport - Bomber
Aircraft has After burn: No
Number of Engines: 4

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

4.3.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 794.00 | 24.15 | 1.07 | 3.90 | 32.00 | 0.83 | 0.75 | 3234 |
| Approach | 1185.00 | 14.26 | 1.07 | 4.40 | 22.20 | 0.97 | 0.87 | 3234 |
| Intermediate | 1825.00 | 0.58 | 1.07 | 9.20 | 2.40 | 0.51 | 0.46 | 3234 |
| Military | 2302.00 | 0.46 | 1.07 | 9.30 | 2.10 | 0.50 | 0.45 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

4.3.3 Flight Operations

4.3.3.1 Flight Operations Assumptions

- Flight Operations

| | |
|---|---|
| Number of Aircraft: | 1 |
| Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: | 0 |
| Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: | 580 |
| Number of Annual Trim Test(s) per Aircraft: | 12 |

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)

| | |
|---|---|
| Taxi/Idle Out [Idle] (mins): | 9.2 (default) |
| Takeoff [Military] (mins): | 0.4 (default) |
| Takeoff [After Burn] (mins): | 0 (default) |
| Climb Out [Intermediate] (mins): | 1.2 (default) |
| Approach [Approach] (mins): | 5.1 (default) |
| Taxi/Idle In [Idle] (mins): | 6.7 (default) |

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

| | |
|---|---|
| Idle (mins): | 12 (default) |
| Approach (mins): | 27 (default) |
| Intermediate (mins): | 9 (default) |
| Military (mins): | 12 (default) |
| AfterBurn (mins): | 0 (default) |

4.3.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)

$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

4.3.4 Auxiliary Power Unit (APU)

4.3.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| 1 | 1 | No | GTCP 85-180L | |

4.3.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| GTCP 85-180L | 272.6 | 0.493 | 0.289 | 1.216 | 3.759 | 0.131 | 0.037 | 910.8 |

4.3.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year
$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

4.4. Aircraft (MV22)

[redacted]

4.4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Pima
Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Increase in CV/MV-22 operations

- Activity Description:
Increase in CV/MV-22 Sorties

- Activity Start Date
Start Month: 1
Start Year: 2020

- Activity End Date

Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.001054 |
| $SO_x$ | 0.052412 |
| $NO_x$ | 0.463780 |
| CO | 0.118491 |
| PM 10 | 0.077394 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.069557 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 158.4 |
| | |

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| VOC | 0.001054 |
| $SO_x$ | 0.052412 |
| $NO_x$ | 0.463780 |
| CO | 0.118491 |
| PM 10 | 0.077394 |

| Pollutant | Emissions Per Year (TONs) |
|---|---|
| PM 2.5 | 0.069557 |
| Pb | 0.000000 |
| $NH_3$ | 0.000000 |
| $CO_2e$ | 158.4 |
| | |

4.4.2 Aircraft & Engines

4.4.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: CV-22A
Engine Model: T406-AD-400
Primary Function: Transport - Bomber
Aircraft has After burn: No
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

4.4.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

| | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| Idle | 362.00 | 0.10 | 1.07 | 4.15 | 8.35 | 1.58 | 1.42 | 3234 |
| Approach | 663.00 | 0.02 | 1.07 | 6.05 | 3.47 | 1.58 | 1.42 | 3234 |
| Intermediate | 948.00 | 0.02 | 1.07 | 7.87 | 1.82 | 1.58 | 1.42 | 3234 |
| Military | 2507.00 | 0.01 | 1.07 | 18.03 | 0.29 | 1.58 | 1.42 | 3234 |
| After Burn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3234 |

4.4.3 Flight Operations

4.4.3.1 Flight Operations Assumptions

- Flight Operations

| | |
|---|---|
| Number of Aircraft: | 1 |
| Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: | 0 |
| Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: | 400 |
| Number of Annual Trim Test(s) per Aircraft: | 12 |

- Default Settings Used: Yes

- Flight Operations TIMs (Time In Mode)

| | |
|---|---|
| Taxi/Idle Out [Idle] (mins): | 9.2 (default) |
| Takeoff [Military] (mins): | 0.4 (default) |
| Takeoff [After Burn] (mins): | 0 (default) |
| Climb Out [Intermediate] (mins): | 1.2 (default) |
| Approach [Approach] (mins): | 5.1 (default) |
| Taxi/Idle In [Idle] (mins): | 6.7 (default) |

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

| | |
|---|---|
| Idle (mins): | 12 (default) |
| Approach (mins): | 27 (default) |
| Intermediate (mins): | 9 (default) |
| Military (mins): | 12 (default) |
| AfterBurn (mins): | 0 (default) |

4.4.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{LTO}$: Aircraft Emissions (TONs)
$AEM_{IDLE\_IN}$: Aircraft Emissions for Idle-In Mode (TONs)
$AEM_{IDLE\_OUT}$: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

$AEM_{POL}$: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

$AE_{TGO}$: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

$AE_{TRIM}$: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

4.4.4 Auxiliary Power Unit (APU)

4.4.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: No

- Auxiliary Power Unit (APU)

| Number of APU per Aircraft | Operation Hours for Each LTO | Exempt Source? | Designation | Manufacturer |
|---|---|---|---|---|
| | | | | |

4.4.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

| Designation | Fuel Flow | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

4.4.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

$APU_{POL}$: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
$EF_{POL}$: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

## 5. Aircraft Time in Mode and Aircraft/APU/AGE Emission Factors For All Aircraft

### Table 1. Time-in-Mode for Aircraft Categories

| Aircraft Type | | Typical Duration by Mode (mins) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Taxi/Idle-out | Take Off | Climb Out | Approach | Taxi/Idle-in | Total |
| Combat | USAF | 18.50 | 0.40 | 0.80 | 3.50 | 11.30 | 34.50 |
| | USAF F-35 | 18.50 | 0.48 | 0.35 | 2.60 | 11.30 | 33.23 |
| | USN | 6.50 | 0.40 | 0.50 | 1.60 | 6.50 | 15.50 |
| Trainer-Turbine | USAF T-38 | 12.80 | 0.40 | 0.90 | 3.80 | 6.40 | 24.30 |
| | USAF General | 6.80 | 0.50 | 1.40 | 4.00 | 4.40 | 17.10 |
| | USN | 6.50 | 0.40 | 0.50 | 1.60 | 6.50 | 15.50 |
| Transport-Turbine | USAF General | 9.20 | 0.40 | 1.20 | 5.10 | 6.70 | 22.60 |
| | USN | 19.00 | 0.50 | 2.50 | 4.50 | 7.00 | 33.50 |
| | USAF B-52 and KC-135 | 32.80 | 0.70 | 1.60 | 5.20 | 14.90 | 55.20 |
| Piston | Piston | 6.50 | 0.60 | 5.00 | 4.60 | 6.50 | 23.20 |
| Helicopter | Helicopter | 8.00 | 2.27 | 4.53 | 6.80 | 7.00 | 28.60 |
| General Aviation | Turboprop | 19.00 | 0.50 | 2.50 | 4.50 | 7.00 | 33.50 |

Reference:
Air Emissions Guide For Air Force Mobile Sources, August 2018, Table 2-4.

## Table 2. Aircraft Emission Factors

| Aircraft | Engine | Number of Engines | Power Setting | Fuel Flow Rate (lb/hr) | Emission Factors (lb/1000lb fuel) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| A-10* | TF34-GE-100A | 2 | Idle(Taxi) | 458 | 1.69 | 1.07 | 90.98 | 17.24 | 8.13 | 3.6 | 3234 |
| | | | Approach | 1201 | 2.98 | 1.07 | 72.08 | 13.51 | 6.21 | 2.12 | 3234 |
| | | | Intermediate | 2686 | 5.57 | 1.07 | 34.29 | 6.05 | 2.66 | 1.68 | 3234 |
| | | | Military | 3800 | 7.51 | 1.07 | 5.95 | 0.45 | 2.66 | 1.68 | 3234 |
| AV-8 | F402-RR-408 | 1 | Idle(Taxi) | 1449 | 2.2 | 1.07 | 39.72 | 2.41 | 0.16 | 0.14 | 3214.59 |
| | | | Approach | 3974 | 5.02 | 1.07 | 16.57 | 0.46 | 0.19 | 0.17 | 3214.59 |
| | | | Intermediate | 7290 | 7.55 | 1.07 | 9.79 | 0.2 | 0.02 | 0.02 | 3214.59 |
| | | | Military | 8494 | 8.38 | 1.07 | 8.58 | 0.2 | 0.21 | 0.19 | 3214.59 |
| EC-130(H)* | T56-A-15 | 4 | Idle(Taxi) | 794 | 3.9 | 1.07 | 32 | 24.15 | 0.83 | 0.75 | 3234 |
| | | | Approach | 1185 | 4.4 | 1.07 | 22.2 | 14.26 | 0.97 | 0.87 | 3234 |
| | | | Intermediate | 1825 | 9.2 | 1.07 | 2.4 | 0.58 | 0.51 | 0.46 | 3234 |
| | | | Military | 2302 | 9.3 | 1.07 | 2.1 | 0.46 | 0.5 | 0.45 | 3234 |
| HC-130* | T56-A-15 | 4 | Idle(Taxi) | 794 | 3.9 | 1.07 | 32 | 24.15 | 0.83 | 0.75 | 3234 |
| | | | Approach | 1185 | 4.4 | 1.07 | 22.2 | 14.26 | 0.97 | 0.87 | 3234 |
| | | | Intermediate | 1825 | 9.2 | 1.07 | 2.4 | 0.58 | 0.51 | 0.46 | 3234 |
| | | | Military | 2302 | 9.3 | 1.07 | 2.1 | 0.46 | 0.5 | 0.45 | 3234 |
| F-15C | F100-PW-229 | 2 | Idle(Taxi) | 1087 | 3.8 | 1.07 | 10.17 | 0.45 | 0.67 | 0.6 | 3214.59 |
| | | | Approach | 3098 | 15.08 | 1.07 | 1.17 | 0.24 | 0.7 | 0.63 | 3214.59 |
| | | | Intermediate | 5838 | 17.54 | 1.07 | 0.15 | 0.35 | 0.7 | 0.63 | 3214.59 |
| | | | Military | 11490 | 29.29 | 1.07 | 0.33 | 0.31 | 0.91 | 0.82 | 3214.59 |
| | | | Afterburner-1 | 20793 | 14.3 | 1.07 | 21.51 | 5.26 | 0.38 | 0.35 | 3214.59 |
| F-15E | F100-PW-229 | 2 | Idle(Taxi) | 1087 | 3.8 | 1.07 | 10.17 | 0.45 | 0.67 | 0.6 | 3214.59 |
| | | | Approach | 3098 | 15.08 | 1.07 | 1.17 | 0.24 | 0.7 | 0.63 | 3214.59 |
| | | | Intermediate | 5838 | 17.54 | 1.07 | 0.15 | 0.35 | 0.7 | 0.63 | 3214.59 |
| | | | Military | 11490 | 29.29 | 1.07 | 0.33 | 0.31 | 0.91 | 0.82 | 3214.59 |
| | | | Afterburner-1 | 20793 | 14.3 | 1.07 | 21.51 | 5.26 | 0.38 | 0.35 | 3214.59 |
| F-16* | F100-PW-100 | 2 | Idle(Taxi) | 1127 | 4.64 | 1.07 | 49.58 | 3.79 | 3.13 | 2.82 | 3234 |
| | | | Approach | 2765 | 12.52 | 1.07 | 3.99 | 1.06 | 1.57 | 1.41 | 3234 |
| | | | Intermediate | 7685 | 27.09 | 1.07 | 0.72 | 0.14 | 0.72 | 0.65 | 3234 |
| | | | Military | 10996 | 35.01 | 1.07 | 0.7 | 0.12 | 1.24 | 1.12 | 3234 |
| | | | Afterburner-1 | 54007 | 6.62 | 1.07 | 9.57 | 0.13 | 0.87 | 0.78 | 3234 |
| F-18 | F404-GE-400 | 2 | Idle(Taxi) | 685 | 1.7 | 1.07 | 110.18 | 3.39 | 4.47 | 3.1 | 3214.59 |
| | | | Approach | 3111 | 7.86 | 1.07 | 2.02 | 0.04 | 0.46 | 0.87 | 3214.59 |
| | | | Intermediate | 6464 | 17.03 | 1.07 | 1.54 | 0.07 | 1.57 | 0.9 | 3214.59 |
| | | | Military | 7739 | 25.83 | 1.07 | 1.48 | 0.02 | 1.61 | 0.89 | 3214.59 |
| | | | Afterburner-3 | 15851 | 5.43 | 1.07 | 50.31 | 1.85 | 3.57 | 3.21 | 3214.59 |

| Aircraft | Engine | Number of Engines | Power Setting | Fuel Flow Rate (lb/hr) | Emission Factors (lb/1000lb fuel) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| F-22 A/B* | F119-PW-100 | 2 | Idle(Taxi) | 1377 | 3.01 | 1.07 | 48.15 | 1.67 | 2.42 | 1.76 | 3234 |
| | | | Approach | 2740 | 6.59 | 1.07 | 7.92 | 0.05 | 1.96 | 1.73 | 3234 |
| | | | Intermediate | 10110 | 12.4 | 1.07 | 2.14 | 0.03 | 1.4 | 1.09 | 3234 |
| | | | Military | 18612 | 19.81 | 1.07 | 0.75 | 0.01 | 1.12 | 0.97 | 3234 |
| | | | Afterburner | 50170 | 7.37 | 1.07 | 16.1 | 0 | 0.85 | 0.75 | 3234 |
| F-35A | F135-PW-100 | 1 | Total LTO | - | 20.83 | 2.32 | 4.86 | 0.24 | 13.32 | 13.32 | 8020 |
| HH-60G | T700_GE-700 | 2 | Ground Idle | 134 | 3.36 | 1.07 | 46.24 | 0.5 | 1.48 | 0.98 | 3214.59 |
| | | | Flight Idle | 469 | 10.95 | 1.07 | 5.12 | 0.02 | 1.26 | 0.07 | 3214.59 |
| | | | Flight Max | 626 | 11.87 | 1.07 | 3.51 | 0.01 | 2.22 | 0.93 | 3214.59 |
| | | | Overspeed | 725 | 11.43 | 1.07 | 2.81 | 0.01 | 2.61 | 1.21 | 3214.59 |
| CV/MV-22* | T406-AD-400 | 2 | Idle | 362 | 4.15 | 1.07 | 8.35 | 0.1 | 1.58 | 1.42 | 3234 |
| | | | Flight Idle | 663 | 6.05 | 1.07 | 3.47 | 0.02 | 1.58 | 1.42 | 3234 |
| | | | Intermediate | 948 | 7.87 | 1.07 | 1.82 | 0.02 | 1.58 | 1.42 | 3234 |
| | | | Max Continuous | 2507 | 18.03 | 1.07 | 0.29 | 0.01 | 1.58 | 1.42 | 3234 |
| MH-60A | T700_GE-700 | 2 | Ground Idle | 134 | 3.36 | 1.07 | 46.24 | 0.5 | 1.48 | 0.98 | 3214.59 |
| | | | Flight Idle | 469 | 10.95 | 1.07 | 5.12 | 0.02 | 1.26 | 0.07 | 3214.59 |
| | | | Flight Max | 626 | 11.87 | 1.07 | 3.51 | 0.01 | 2.22 | 0.93 | 3214.59 |
| | | | Overspeed | 725 | 11.43 | 1.07 | 2.81 | 0.01 | 2.61 | 1.21 | 3214.59 |
| AH/UH-1 | T400-CP-400 | 2 | Ground Idle | 136 | 2.21 | 1.07 | 27.94 | 10.99 | 0.44 | 0.4 | 3214.59 |
| | | | Flight Idle | 141 | 2.84 | 1.07 | 29.08 | 8.97 | 0.41 | 0.37 | 3214.59 |
| | | | Cruise | 279 | 4.66 | 1.07 | 1.79 | 0 | 0.36 | 0.32 | 3214.59 |
| | | | Intermediate | 406 | 5.91 | 1.07 | 0 | 0 | 0.25 | 0.22 | 3214.59 |
| | | | Maximum | 1069 | 11.51 | 1.07 | 0 | 0.22 | 0.28 | 0.25 | 3214.59 |
| KC-10 | F103-GE-100 | 3 | Idle(Taxi) | 1706 | 3.6 | 1.07 | 61.8 | 25.07 | 0.21 | 0.19 | 3214.59 |
| | | | Approach | 5238 | 9.5 | 1.07 | 4.3 | 1.15 | 0.11 | 0.1 | 3214.59 |
| | | | Climb Out | 15675 | 29.7 | 1.07 | 0.5 | 0.81 | 0.1 | 0.09 | 3214.59 |
| | | | Takeoff | 19738 | 36.3 | 1.07 | 0.5 | 0.69 | 0.12 | 0.11 | 3214.59 |
| KC-135* | J57-P-22 | 4 | Idle(Taxi) | 952 | 2.2 | 1.07 | 79 | 88.55 | 0.16 | 0.14 | 3234 |
| | | | Approach | 3333 | 5.8 | 1.07 | 7.9 | 1.61 | 0.93 | 0.84 | 3234 |
| | | | Climb Out | 6508 | 9.5 | 1.07 | 2.4 | 0.23 | 1.92 | 1.73 | 3234 |
| | | | Takeoff | 7460 | 11 | 1.07 | 1.9 | 0.12 | 1.72 | 1.55 | 3234 |
| MC-12W* | PT6A-60 | 2 | Idle(Taxi) | 131.43 | 1.89 | 1.07 | 166.43 | 53.66 | 1.23 | 1.11 | 3234 |
| | | | Approach | 339.89 | 4.59 | 1.07 | 20.86 | 3.31 | 0.74 | 0.67 | 3234 |
| | | | Climb Out | 570.64 | 6.69 | 1.07 | 6.72 | 0.72 | 0.29 | 0.26 | 3234 |
| | | | Takeoff | 633.06 | 7.08 | 1.07 | 5.36 | 0.53 | 0.26 | 0.23 | 3234 |
| CH-47 | T58-GE-16[2] | 2 | Ground Idle | 150 | 3.03 | 1.07 | 139.73 | 47.05 | 0.75 | 0.68 | 3214.59 |
| | | | 60% Normal | 656 | 7.88 | 1.07 | 14.56 | 0.44 | 0.79 | 0.71 | 3214.59 |
| | | | 75% Normal | 779 | 9.47 | 1.07 | 10.89 | 0.72 | 0.79 | 0.71 | 3214.59 |
| | | | 90% Normal | 890 | 10.07 | 1.07 | 9.10 | 0.96 | 0.90 | 0.81 | 3214.59 |

| Aircraft | Engine | Number of Engines | Power Setting | Fuel Flow Rate (lb/hr) | Emission Factors (lb/1000lb fuel) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| | | | Military | 1020 | 11.6 | 1.07 | 7.73 | 1.52 | 0.90 | 0.81 | 3214.59 |
| CH-53A | T64-GE-6B | 2 | Idle | 337 | 3.86 | 1.07 | 48.66 | 15.01 | 0.3 | 0.27 | 3214.59 |
| | | | 75% HP | 1039 | 8.95 | 1.07 | 4.72 | 0.89 | 0.58 | 0.52 | 3214.59 |
| | | | Normal Rated | 1257 | 10.42 | 1.07 | 2.86 | 0.82 | 0.72 | 0.64 | 3214.59 |
| | | | Intermediate | 1390 | 11.15 | 1.07 | 2.3 | 0.74 | 0.79 | 0.71 | 3214.59 |
| MQ-1 | TAE-125-01 | 1 | Idle(Taxi) | 2 | 16.91 | 1.07 | 24.8 | 9.78 | 0.05 | 0.05 | 3214.59 |
| | | | Approach | 20 | 26.96 | 1.07 | 16.06 | 3.29 | 0.04 | 0.04 | 3214.59 |
| | | | Climb Out | 40 | 22.78 | 1.07 | 6.65 | 1.25 | 0.07 | 0.06 | 3214.59 |
| | | | Takeoff | 51 | 20.01 | 1.07 | 7.51 | 1.05 | 0.1 | 0.09 | 3214.59 |
| MQ-9* | TPE331-10GD TPE331-3 | 1 | Idle(Taxi) | 112 | 2.86 | 1.07 | 61.52 | 90.97 | 2.68 | 2.41 | 3234 |
| | | | Approach | 250 | 9.92 | 1.07 | 6.96 | 0.74 | 2.4 | 2.16 | 3234 |
| | | | Climb Out | 409 | 11.86 | 1.07 | 0.98 | 0.17 | 1.47 | 1.32 | 3234 |
| | | | Takeoff | 458 | 12.36 | 1.07 | 0.76 | 0.13 | 1.75 | 1.57 | 3234 |
| F-21 (F-4C)[3,*] | J79-GE-15 | 2 | Idle(Taxi) | 1111 | 2.5 | 1.07 | 57 | 13.8 | 0.5 | 0.45 | 3234 |
| | | | Approach | 3492 | 4.8 | 1.07 | 9.4 | 1.27 | 1.8 | 1.62 | 3234 |
| | | | Intermediate | 5397 | 5.6 | 1.07 | 4.6 | 0.35 | 2.8 | 2.52 | 3234 |
| | | | Military | 8889 | 8.9 | 1.07 | 2.2 | 0.23 | 2.2 | 1.98 | 3234 |
| | | | Afterburner | 32223 | 9.1 | 1.07 | 4 | 0.01 | 0.15 | 0.14 | 3234 |

Notes:
Reference: AFCEC Air Emissions Guide For Air Force Mobile Sources, August 2018
1) F-35A CTOL Standard Departure and Arrival Air Force Emission Factors
2) CH-46E engine T58-GE-16 used as a surrogate
3) Emission factors for F-4C used as a surrogate.
*ACAM data

## Table 3. APU Emission Factors

| Aircraft | APU Model | Number of APU | Hrs Per LTO | Fuel Flow Rate (lb/hr) | Emission Factors (lb/hr of operation) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| A-10* | GTCP 36-50 | 1 | 1 | 135 | 4.25 | 0.15 | 11.65 | 0.05 | | | |
| EC-130(H)* | GTCP 85-180L | 1 | 1 | 272.6 | 1.216 | 0.289 | 3.759 | 0.493 | 0.131 | 0.037 | 910.8 |
| HC-130* | GTCP 85-180L | 1 | 1 | 272.6 | 1.216 | 0.289 | 3.759 | 0.493 | 0.131 | 0.037 | 910.8 |
| F-16* | T-62T-40-8 | 1 | 1 | 272.6 | 1.216 | 0.289 | 3.759 | 0.493 | 0.131 | 0.037 | 910.8 |
| KC-10 | TSCP 700-4B | 1 | 6 | 324 | 2.77 | 0.35 | 0.48 | 0.08 | | | |
| AV-8 | GTCP 36-50 | 1 | 1 | 135 | 4.25 | 0.15 | 11.65 | 0.05 | | | |

Notes:
Reference: AFCEC Air Emissions Guide For Air Force Mobile Sources, August 2018
*ACAM Data

## Table 4. AGE Emission Factors

| Aircraft Model | GSE Type | GSE Model | Operating Time Per LTO (hr) | Fuel Flow Rate (lb/hr) | Emission Factors (lb/hr) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| A-10* | Air Compressor | MC-1A - 18.4hp | 2 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Bomb Lift | MJ-1B | 8 | 0 | 4.78 | 0.219 | 3.04 | 3.04 | 0.8 | 0.776 | 141.2 |
| | Generator Set | A/M32A-86D | 1 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 2 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2A | 2 | 0 | 3.85 | 0.238 | 2.46 | 0.19 | 0.083 | 0.076 | 172 |
| | Light Cart | NF-2 | 2 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 1 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| C-130* | Air Compressor | MC-1A - 18.4hp | 1 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Air Conditioner | MA-3D - 120hp | 1 | 7.1 | 4.167 | 0.05 | 0.317 | 0.053 | 0.109 | 0.105 | 161.7 |
| | Generator Set | A/M32A-86D | 11 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 1 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2A | 3 | 0 | 3.85 | 0.238 | 2.46 | 0.19 | 0.083 | 0.076 | 172 |
| | Light Cart | NF-2 | 10 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.25 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| F-15* | Air Compressor | MC-1A - 18.4hp | 0.33 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Bomb Lift | MJ-1B | 1 | 0 | 4.78 | 0.219 | 3.04 | 3.04 | 0.8 | 0.776 | 141.2 |
| | Generator Set | A/M32A-86D | 0.33 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 0.5 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp | 0.5 | 7.4 | 3.396 | 0.053 | 0.794 | 0.195 | 0.089 | 0.086 | 168.8 |
| | Light Cart | NF-2 | 8 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.33 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| F-16* | Air Compressor | MC-1A - 18.4hp | 0.33 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Bomb Lift | MJ-1B | 1 | 0 | 4.78 | 0.219 | 3.04 | 3.04 | 0.8 | 0.776 | 141.2 |
| | Generator Set | A/M32A-86D | 0.33 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 0.5 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp | 0.5 | 7.4 | 3.396 | 0.053 | 0.794 | 0.195 | 0.089 | 0.086 | 168.8 |
| | Light Cart | NF-2 | 8 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.33 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| KC-10 | - | - | - | | - | - | - | - | - | - | - |
| KC-135* | Air Compressor | MC-1A - 18.4hp | 0.33 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Air Conditioner | MA-3C | 2 | 7.1 | 4.167 | 0.05 | 0.317 | 0.053 | 0.109 | 0.105 | 161.7 |
| | Generator Set | A/M32A-86D | 10 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 5 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Light Cart | NF-2 | 2 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 1 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| MC-12W* | Generator Set | A/M32A-86D | 0.75 | 6.5 | 6.102 | 0.047 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| CH-47 | Generator Set | A/M32A-86D | 5 | 6.47 | 6.102 | 0.047 | 0.457 | 0.294 | 0.091 | 0.089 | 146.08 |

| Aircraft Model | GSE Type | GSE Model | Operating Time Per LTO (hr) | Fuel Flow Rate (lb/hr) | Emission Factors (lb/hr) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| | Start Cart | A/M32A-95 | 0.5 | 0 | 1.47 | 0.264 | 5.86 | 0.074 | 0.11 | 0.107 | 205.14 |
| | Air Conditioner | MA-3D | 2 | 7.12 | 4.167 | 0.052 | 0.317 | 0.053 | 0.167 | 0.162 | 160.76 |
| | Heater | H1 | 2 | 0.39 | 0.16 | 0.003 | 0.18 | 0.105 | 0.006 | 0.006 | 8.81 |
| | Hydraulic Test Stand | MJ-1-1 | 2.5 | 2.52 | 0.757 | 0.018 | 0.043 | 0.026 | 0.167 | 0.162 | 56.9 |
| | | MJ-2A | 1 | 0 | 3.85 | 0.238 | 2.46 | 0.2 | 0.083 | 0.076 | 185.29 |
| | Light Cart | NF-2 | 4 | 0 | 0.11 | 0.031 | 0.08 | 0.011 | 0.01 | 0.01 | 23.82 |
| | Air Compressor | MC-1A | 1 | 1.09 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.61 |
| | | MC-2A | 2.5 | 1.19 | 0.496 | 0.009 | 0.234 | 0.177 | 0.167 | 0.162 | 26.87 |
| CH-53A | Generator Set | A/M32A-86D | 5 | 6.47 | 6.102 | 0.047 | 0.457 | 0.294 | 0.091 | 0.089 | 146.08 |
| | Start Cart | A/M32A-95 | 0.5 | 0 | 1.47 | 0.264 | 5.86 | 0.074 | 0.11 | 0.107 | 205.14 |
| | Air Conditioner | MA-3D | 2 | 7.12 | 4.167 | 0.052 | 0.317 | 0.053 | 0.167 | 0.162 | 160.76 |
| | Heater | H1 | 2 | 0.39 | 0.16 | 0.003 | 0.18 | 0.105 | 0.006 | 0.006 | 8.81 |
| | Hydraulic Test Stand | MJ-1-1 | 2.5 | 2.52 | 0.757 | 0.018 | 0.043 | 0.026 | 0.167 | 0.162 | 56.9 |
| | | MJ-2A | 1 | 0 | 3.85 | 0.238 | 2.46 | 0.2 | 0.083 | 0.076 | 185.29 |
| | Light Cart | NF-2 | 4 | 0 | 0.11 | 0.031 | 0.08 | 0.011 | 0.01 | 0.01 | 23.82 |
| | Air Compressor | MC-1A | 1 | 1.09 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.61 |
| | | MC-2A | 2.5 | 1.19 | 0.496 | 0.009 | 0.234 | 0.177 | 0.167 | 0.162 | 26.87 |
| MQ-1/ MQ-9 | - | - | - | | - | - | - | - | - | - | - |
| F-21 (F-4C)* | Air Compressor | MC-1A - 18.4hp | 0.33 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Bomb Lift | MJ-1B | 1 | 0 | 4.78 | 0.219 | 3.04 | 3.04 | 0.8 | 0.776 | 141.2 |
| | Generator Set | A/M32A-86D | 0.33 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 0.5 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp | 0.5 | 7.4 | 3.396 | 0.053 | 0.794 | 0.195 | 0.089 | 0.086 | 168.8 |
| | Light Cart | NF-2 | 8 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.33 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| F-18* | Air Compressor | MC-1A - 18.4hp | 0.33 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Bomb Lift | MJ-1B | 1 | 0 | 4.78 | 0.219 | 3.04 | 3.04 | 0.8 | 0.776 | 141.2 |
| | Generator Set | A/M32A-86D | 0.33 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 0.5 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp | 0.5 | 7.4 | 3.396 | 0.053 | 0.794 | 0.195 | 0.089 | 0.086 | 168.8 |
| | Light Cart | NF-2 | 8 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.33 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| F-22* | Air Compressor | MC-1A - 18.4hp | 0.33 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Bomb Lift | MJ-1B | 1 | 0 | 4.78 | 0.219 | 3.04 | 3.04 | 0.8 | 0.776 | 141.2 |
| | Generator Set | A/M32A-86D | 0.33 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 0.5 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp | 0.5 | 7.4 | 3.396 | 0.053 | 0.794 | 0.195 | 0.089 | 0.086 | 168.8 |
| | Light Cart | NF-2 | 8 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.33 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |

| Aircraft Model | GSE Type | GSE Model | Operating Time Per LTO (hr) | Fuel Flow Rate (lb/hr) | Emission Factors (lb/hr) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| F-35* | Air Compressor | MC-1A - 18.4hp | 0.33 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Bomb Lift | MJ-1B | 1 | 0 | 4.78 | 0.219 | 3.04 | 3.04 | 0.8 | 0.776 | 141.2 |
| | Generator Set | A/M32A-86D | 0.33 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 0.5 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2/TTU-228 - 130hp | 0.5 | 7.4 | 3.396 | 0.053 | 0.794 | 0.195 | 0.089 | 0.086 | 168.8 |
| | Light Cart | NF-2 | 8 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.33 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| HH-60G | Generator Set | A/M32A-86D | 5 | 6.47 | 6.102 | 0.047 | 0.457 | 0.294 | 0.091 | 0.089 | 146.08 |
| | Start Cart | A/M32A-95 | 0.5 | 0 | 1.47 | 0.264 | 5.86 | 0.074 | 0.11 | 0.107 | 205.14 |
| | Air Conditioner | MA-3D | 2 | 7.12 | 4.167 | 0.052 | 0.317 | 0.053 | 0.167 | 0.162 | 160.76 |
| | Heater | H1 | 2 | 0.39 | 0.16 | 0.003 | 0.18 | 0.105 | 0.006 | 0.006 | 8.81 |
| | Hydraulic Test Stand | MJ-1-1 | 2.5 | 2.52 | 0.757 | 0.018 | 0.043 | 0.026 | 0.167 | 0.162 | 56.9 |
| | | MJ-2A | 1 | 0 | 3.85 | 0.238 | 2.46 | 0.2 | 0.083 | 0.076 | 185.29 |
| | Light Cart | NF-2 | 4 | 0 | 0.11 | 0.031 | 0.08 | 0.011 | 0.01 | 0.01 | 23.82 |
| | Air Compressor | MC-1A | 1 | 1.09 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.61 |
| | | MC-2A | 2.5 | 1.19 | 0.496 | 0.009 | 0.234 | 0.177 | 0.167 | 0.162 | 26.87 |
| CV/MV-22* | Air Compressor | MC-1A - 18.4hp | 10 | 1.1 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.8 |
| | Air Conditioner | MA-3D - 120hp | 1 | 7.1 | 4.167 | 0.05 | 0.317 | 0.053 | 0.109 | 0.105 | 161.7 |
| | Generator Set | A/M32A-86D | 11 | 6.5 | 6.102 | 0.046 | 0.457 | 0.294 | 0.091 | 0.089 | 147 |
| | Heater | H1 | 1 | 0.4 | 0.16 | 0.011 | 0.18 | 0.1 | 0.006 | 0.006 | 8.9 |
| | Hydraulic Test Stand | MJ-2A | 3 | 0 | 3.85 | 0.238 | 2.46 | 0.19 | 0.083 | 0.076 | 172 |
| | Light Cart | NF-2 | 10 | 0 | 0.11 | 0.043 | 0.08 | 0.01 | 0.01 | 0.01 | 22.1 |
| | Start Cart | A/M32A-60A | 0.25 | 0 | 1.82 | 0.306 | 5.48 | 0.27 | 0.211 | 0.205 | 221.1 |
| MH-60A | Generator Set | A/M32A-86D | 5 | 6.47 | 6.102 | 0.047 | 0.457 | 0.294 | 0.091 | 0.089 | 146.08 |
| | Start Cart | A/M32A-95 | 0.5 | 0 | 1.47 | 0.264 | 5.86 | 0.074 | 0.11 | 0.107 | 205.14 |
| | Air Conditioner | MA-3D | 2 | 7.12 | 4.167 | 0.052 | 0.317 | 0.053 | 0.167 | 0.162 | 160.76 |
| | Heater | H1 | 2 | 0.39 | 0.16 | 0.003 | 0.18 | 0.105 | 0.006 | 0.006 | 8.81 |
| | Hydraulic Test Stand | MJ-1-1 | 2.5 | 2.52 | 0.757 | 0.018 | 0.043 | 0.026 | 0.167 | 0.162 | 56.9 |
| | | MJ-2A | 1 | 0 | 3.85 | 0.238 | 2.46 | 0.2 | 0.083 | 0.076 | 185.29 |
| | Light Cart | NF-2 | 4 | 0 | 0.11 | 0.031 | 0.08 | 0.011 | 0.01 | 0.01 | 23.82 |
| | Air Compressor | MC-1A | 1 | 1.09 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.61 |
| | | MC-2A | 2.5 | 1.19 | 0.496 | 0.009 | 0.234 | 0.177 | 0.167 | 0.162 | 26.87 |
| AH/UH-1 | Generator Set | A/M32A-86D | 5 | 6.47 | 6.102 | 0.047 | 0.457 | 0.294 | 0.091 | 0.089 | 146.08 |
| | Start Cart | A/M32A-95 | 0.5 | 0 | 1.47 | 0.264 | 5.86 | 0.074 | 0.11 | 0.107 | 205.14 |
| | Air Conditioner | MA-3D | 2 | 7.12 | 4.167 | 0.052 | 0.317 | 0.053 | 0.167 | 0.162 | 160.76 |
| | Heater | H1 | 2 | 0.39 | 0.16 | 0.003 | 0.18 | 0.105 | 0.006 | 0.006 | 8.81 |
| | Hydraulic Test Stand | MJ-1-1 | 2.5 | 2.52 | 0.757 | 0.018 | 0.043 | 0.026 | 0.167 | 0.162 | 56.9 |
| | | MJ-2A | 1 | 0 | 3.85 | 0.238 | 2.46 | 0.2 | 0.083 | 0.076 | 185.29 |
| | Light Cart | NF-2 | 4 | 0 | 0.11 | 0.031 | 0.08 | 0.011 | 0.01 | 0.01 | 23.82 |

| Aircraft Model | GSE Type | GSE Model | Operating Time Per LTO (hr) | Fuel Flow Rate (lb/hr) | Emission Factors (lb/hr) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| | | MC-1A | 1 | 1.09 | 0.419 | 0.008 | 0.267 | 0.267 | 0.071 | 0.068 | 24.61 |
| | Air Compressor | MC-2A | 2.5 | 1.19 | 0.496 | 0.009 | 0.234 | 0.177 | 0.167 | 0.162 | 26.87 |
| | Notes:<br>Reference: AFCEC Air Emissions Guide For Air Force Mobile Sources, August 2018<br>*ACAM Data | | | | | | | | | | |

## 6. Total Airfield Annual PR Emissions Estimate

**Table 5. Net Change in PR Training Annual Sorties**

| Aircraft | Proposed Sorties | No Action Sorties | Change in Sorties at DM AFB and other Airfields |
|---|---|---|---|
| AV-8 | 80 | - | 80 |
| A-10 | 1,480 | 1,854 | -374 |
| EC-130H | 80 | 0 | 80 |
| HC-130 | 660 | 736 | -76 |
| F-15 | 80 | 156 | 204 |
| F-16 | 80 | | |
| F-18 | 40 | | |
| F-22 | 80 | | |
| F-35 | 80 | | |
| HH-60 | 2,140 | 1,148 | 992 |
| AH-1 | 80 | - | 80 |
| UH-1 | 160 | - | 160 |
| CH-47 | 120 | - | 120 |
| CH-53 | 80 | - | 80 |
| CV/MV-22 | 160 | - | 160 |
| KC-135 | 40 | - | 40 |
| MQ-1 or MQ-9 | 40 | - | 40 |
| MC-12 | 40 | - | 40 |
| F-21 (Columbian Fighter) | 20 | - | 20 |
| TOTAL | 5,540 | 3,894 | 1,646 |

## Table 6. Changes in Airfield Aircraft Annual Emissions

| Aircraft Model | LTO Operation Emissions for each aircraft type (tons/year) | | | | | | |
|---|---|---|---|---|---|---|---|
| | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| A-10* | -10.81 | -0.67 | -17.71 | -6.91 | -2.32 | -1.72 | -868.80 |
| EC-130(H)* | 3.96 | 0.18 | 2.66 | 1.53 | 0.14 | 0.13 | 439.10 |
| HC-130* | -3.77 | -0.17 | -2.55 | -1.46 | -0.14 | -0.12 | -422.70 |
| F-15C | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| F-15E | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| F-16* | 1.59 | 0.13 | 1.87 | 0.27 | 0.19 | 0.17 | 309.20 |
| F-18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| F-22 A/B* | 1.76 | 0.18 | 2.60 | 0.14 | 0.25 | 0.21 | 491.80 |
| F-35A* | 1.87 | 0.17 | 1.41 | 0.14 | 0.25 | 0.23 | 445.00 |
| HH-60G | 2.97 | 0.62 | 25.73 | 4.95 | 1.23 | 1.02 | 1351.1 |
| CV/MV-22* | 1.75 | 0.19 | 1.61 | 0.54 | 0.24 | 0.23 | 362.80 |
| MH-60A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| AH/UH-1 | 0.55 | 0.15 | 6.08 | 1.32 | 0.24 | 0.23 | 312.1 |
| KC-10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| KC-135* | 2.76 | 0.24 | 6.02 | 5.95 | 0.24 | 0.22 | 702.90 |
| MC-12W* | 0.14 | 0.01 | 0.52 | 0.16 | 0.01 | 0.01 | 31.80 |
| CH-47 | 0.42 | 0.08 | 3.72 | 0.83 | 0.14 | 0.13 | 190.5 |
| CH-53A | 0.35 | 0.07 | 2.31 | 0.52 | 0.09 | 0.09 | 157.3 |
| MQ-1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| MQ-9* | 0.03 | 0.00 | 0.04 | 0.05 | 0.01 | 0.01 | 8.90 |
| F-21 (F-4C)* | 0.65 | 0.10 | 1.23 | 0.26 | 0.13 | 0.12 | 278.00 |
| AV-8 | 1.42 | 0.17 | 4.09 | 1.77 | 0.31 | 0.30 | 229.7 |
| *ACAM data | | | | | | | |

## Table 7. Changes in Airfield APU Annual Emissions

| Aircraft Model | APU Emissions for each aircraft type | | | | | | |
|---|---|---|---|---|---|---|---|
| | **NOx** | **SOx** | **CO** | **VOC** | **$PM_{10}$** | **$PM_{2.5}$** | **$CO_2e$** |
| A-10* | -1.42 | -0.05 | -3.90 | -0.02 | 0.00 | 0.00 | 0.00 |
| EC-130(H)* | 0.05 | 0.01 | 0.15 | 0.02 | 0.01 | 0.00 | 36.43 |
| HC-130* | -0.05 | -0.01 | -0.14 | -0.02 | 0.00 | 0.00 | -34.61 |
| F-15C | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F-15E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F-16* | 0.05 | 0.01 | 0.15 | 0.02 | 0.01 | 0.00 | 36.43 |
| F-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F-22 A/B | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F-35A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| HH-60G | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CV/MV-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MH-60A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AH/UH-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KC-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KC-135 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MC-12W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CH-47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CH-53A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MQ-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MQ-9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F-21 (F-4C) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AV-8 | 0.17 | 0.006 | 0.466 | 0.002 | 0 | 0 | 0 |
| *ACAM data | | | | | | | |

## Table 8. Changes in Airfield AGE Annual Emissions

| Aircraft Model | AGE Emission Factors for each aircraft (tons/year) | | | | | | |
|---|---|---|---|---|---|---|---|
| | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| A-10* | -10.33 | -0.51 | -6.77 | -4.87 | -1.32 | -1.28 | -365.3 |
| EC-130(H)* | 3.40 | 0.07 | 0.61 | 0.18 | 0.06 | 0.06 | 104.2 |
| HC-130* | -3.23 | -0.07 | -0.58 | -0.17 | -0.06 | -0.06 | -99.0 |
| F-15C | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| F-15E | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| F-16* | 0.41 | 0.03 | 0.25 | 0.14 | 0.04 | 0.04 | 21.5 |
| F-18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| F-22 A/B* | 0.22 | 0.02 | 0.14 | 0.08 | 0.02 | 0.02 | 11.8 |
| F-35A* | 0.41 | 0.03 | 0.25 | 0.14 | 0.04 | 0.04 | 21.5 |
| HH-60G | 1.41 | 0.45 | 23.68 | 4.93 | 0.93 | 0.91 | 836.6 |
| CV/MV-22* | 1.41 | 0.15 | 1.42 | 0.54 | 0.18 | 0.17 | 226.2 |
| MH-60A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| AH/UH-1 | 0.34 | 0.11 | 5.73 | 1.19 | 0.23 | 0.22 | 202.4 |
| KC-10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| KC-135* | 1.45 | 0.02 | 0.24 | 0.08 | 0.03 | 0.03 | 42.2 |
| MC-12W* | 0.09 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 2.2 |
| CH-47 | 0.17 | 0.05 | 2.86 | 0.60 | 0.11 | 0.11 | 101.2 |
| CH-53A | 0.11 | 0.04 | 1.91 | 0.40 | 0.08 | 0.07 | 67.5 |
| MQ-1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| MQ-9 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 |
| F-21 (F-4C)* | 0.10 | 0.01 | 0.06 | 0.04 | 0.01 | 0.01 | 5.4 |
| AV-8 | 1.10 | 0.12 | 2.29 | 1.70 | 0.31 | 0.30 | 93.9 |
| *ACAM data | | | | | | | |

## 7. Medium and Small Force Training Site Low Altitude Aircraft Annual Emissions Estimate

### Table 9. Total Sorties And Low Altitude Patterns and Overflights

| Aircraft | Sorties | Patterns/Overflights |
|---|---|---|
| A-10 | 1320 | 7 |
| HC-130 | 580 | 2 |
| HH-60G | 2060 | 10 |
| CV/MV-22 | 80 | 10 |
| AH/UH-1 | 80 | 10 |
| CH-47 | 40 | 10 |

### Table 10. Low Altitude Training Aircraft Flight Emissions at HLZs/DZs

| Aircraft | Operation Emissions for Unit Level Sorties (tons/year) | | | | | | |
|---|---|---|---|---|---|---|---|
| | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| A-10* | 2.88 | 0.67 | 3.049 | 5.57 | 2.85 | 1.20 | 2,030.00 |
| HC-130* | 1.30 | 0.23 | 3.18 | 1.98 | 0.17 | 0.15 | 683.10 |
| HH-60G | 23.78 | 2.29 | 12.21 | 0.07 | 3.64 | 1.05 | 6,871.46 |
| CV/MV-22* | 0.46 | 0.05 | 0.12 | 0.00 | 0.08 | 0.07 | 158.40 |
| AH/UH-1 | 0.27 | 0.06 | 0.48 | 0.14 | 0.02 | 0.02 | 182.84 |
| CH-47 | 0.78 | 0.10 | 0.68 | 0.01 | 0.17 | 0.07 | 311.55 |
| Total | 29.47 | 3.40 | 47.15 | 7.77 | 6.93 | 2.56 | 10,237.36 |
| *ACAM data | | | | | | | |

## 8. Red Flag-Rescue Large Force Training Site Low Altitude Aircraft Annual Emissions Estimate

### Table 11. Total Sorties And Low Altitude Patterns and Overflights

| Aircraft | Red Flag-Rescue Sorties | Red Flag-Rescue Patterns/Sortie |
|---|---|---|
| A-10 | 160 | 7 |
| EC-130(H) | 80 | 2 |
| HC-130 | 80 | 2 |
| F-16 | 80 | 7 |
| HH-60G | 80 | 20 |
| CV/MV-22 | 80 | 20 |
| AH/UH-1 | 160 | 20 |
| MC-12W | 40 | 20 |
| CH-47 | 80 | 20 |
| CH-53A | 80 | 20 |
| AV-8 | 80 | 7 |

### Table 12. Low Altitude Training Aircraft Flight Emissions at HLZs/DZs

| Aircraft | Operation Emissions for Red Flag-Rescue Sorties (tons/year) | | | | | | |
|---|---|---|---|---|---|---|---|
| | NOx | SOx | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| A-10* | 0.45 | 0.10 | 4.39 | 0.80 | 0.42 | 0.18 | 307.30 |
| EC-130(H)* | 0.38 | 0.06 | 0.82 | 0.52 | 0.04 | 0.04 | 189.60 |
| HC-130* | 0.38 | 0.06 | 0.82 | 0.52 | 0.04 | 0.04 | 189.60 |
| F-16* | 1.76 | 0.12 | 0.61 | 0.05 | 0.12 | 0.11 | 287.90 |
| HH-60G | 1.85 | 0.18 | 0.95 | 0.01 | 0.28 | 0.08 | 533.71 |
| CV/MV-22* | 0.78 | 0.09 | 0.21 | 0.00 | 0.14 | 0.12 | 277.50 |
| AH/UH-1 | 1.06 | 0.24 | 1.91 | 0.58 | 0.07 | 0.07 | 731.36 |
| MC-12W* | 0.15 | 0.03 | 0.39 | 0.07 | 0.01 | 0.01 | 85.70 |
| CH-47 | 3.12 | 0.41 | 2.70 | 0.03 | 0.69 | 0.28 | 1,246.21 |
| CH-53A | 3.32 | 0.38 | 1.98 | 0.49 | 0.22 | 0.20 | 1,137.10 |
| AV-8 | 0.16 | 0.03 | 0.54 | 0.01 | 0.01 | 0.01 | 104.33 |
| Total | 13.42 | 1.71 | 15.33 | 3.07 | 2.06 | 1.14 | 5,090.30 |
| *ACAM data | | | | | | | |

# Attachment 2 – Vehicle Emission Estimate

## 1. Introduction

The PR training activity involved vehicle operational emissions would include technical training vehicles routinely used both on based and off base. Truck emissions related to Large Force Training were also considered in the estimate.

Truck emissions were calculated by multiplying the equivalent miles travelled (hours multiplied by average travel speed) by the emissions factors per mile.

Training vehicles were calculated by multiplying the horsepower by hours of training, engine load factors, and the emissions factors.

Fugitive dust emissions from vehicle traveling on paved roads were also calculated based on equivalent miles travelled and road surface dust emissions factors.

ACAM was used to calculate vehicular emissions conservatively estimated using non-road vehicle emissions during construction activities to represent both on- or off-road vehicle emissions during training activities.

## 2. ACAM Report for On-base Vehicle Operation Under Medium and Small Force Training

## 2.1. General Information

- Action Location
  Base: DAVIS-MONTHAN AFB
  State: Arizona
  County(s): Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Action Title: Use of Vehicles

- Project Number/s (if applicable): Change in Use of Ground Vehicles

- Projected Action Start Date: 1 / 2020

- Action Purpose and Need:
  Analysis Air Quality for Change in Use of Ground Vehicles

- Action Description:
  Air Quality Analysis

- Point of Contact
  Name: Roger L. Wayson
  Title: Senior Engineer
  Organization: AECOM
  Email: roger.wayson@aecom.com
  Phone Number: 830 265-7687

- Activity List:

| Activity Type | | Activity Title |
|---|---|---|
| 2. | Construction / Demolition | Large HDT Storms Activity |

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 2.2. Construction / Demolition

### 2.2.1 General Information & Timeline Assumptions

- Activity Location
  County: Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Large HDT Storms Activity

- Activity Description:
  Truck Use

- Activity Start Date
  Start Month: 1
  Start Month: 2020

- Activity End Date
  Indefinite: False
  End Month: 12
  End Month: 2020

- Activity Emissions:

| Pollutant | Total Emissions (TONs) |
|---|---|
| VOC | 1.437473 |
| $SO_x$ | 0.023147 |
| $NO_x$ | 7.827810 |
| CO | 9.325981 |
| PM 10 | 0.326267 |

| Pollutant | Total Emissions (TONs) |
|---|---|
| PM 2.5 | 0.325794 |
| Pb | 0.000000 |
| $NH_3$ | 0.011115 |
| $CO_2e$ | 2269.8 |
| | |

### 2.2.2 Building Construction Phase

#### 2.2.2.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
  Start Month: 1
  Start Quarter: 1
  Start Year: 2020

- Phase Duration
  Number of Month: 12
  Number of Days: 0

#### 2.2.2.2 Building Construction Phase Assumptions

- General Building Construction Information
  Building Category: Office or Industrial
  Area of Building ($ft^2$): 1
  Height of Building (ft): 1
  Number of Units: N/A

- Building Construction Default Settings
  Default Settings Used: No
  Average Day(s) worked per week: 5

- Construction Exhaust

| Equipment Name | Number Of Equipment | Hours Per Day |
|---|---|---|
| Off-Highway Trucks Composite | 2 | 19.2 |
| Sweepers/Scrubbers Composite | 4 | 19.2 |

- Vehicle Exhaust
  Average Hauling Truck Round Trip Commute (mile): 220

- Vehicle Exhaust Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 0 | 0 | 0 | 0 | 0 | 100.00 | 0 |

- Worker Trips
  Average Worker Round Trip Commute (mile): 220

- Worker Trips Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 50.00 | 50.00 | 0 | 0 | 0 | 0 | 0 |

- Vendor Trips
  Average Vendor Round Trip Commute (mile): 0

- Vendor Trips Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 0 | 0 | 0 | 0 | 0 | 100.00 | 0 |

### 2.2.2.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

| Off-Highway Trucks Composite | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CH_4$ | $CO_2e$ |
| Emission Factors | 0.1442 | 0.0026 | 0.8306 | 0.5513 | 0.0280 | 0.0280 | 0.0130 | 260.41 |
| **Sweepers/Scrubbers Composite** | | | | | | | | |
| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CH_4$ | $CO_2e$ |
| Emission Factors | 0.0584 | 0.0009 | 0.3563 | 0.4915 | 0.0183 | 0.0183 | 0.0052 | 78.675 |

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | Pb | $NH_3$ | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|
| LDGV | 000.254 | 000.002 | 000.190 | 002.971 | 000.007 | 000.006 | | 000.023 | 00340.675 |
| LDGT | 000.315 | 000.003 | 000.335 | 004.077 | 000.009 | 000.008 | | 000.024 | 00439.030 |
| HDGV | 000.779 | 000.005 | 001.076 | 017.040 | 000.020 | 000.018 | | 000.047 | 00806.186 |
| LDDV | 000.109 | 000.003 | 000.126 | 002.489 | 000.004 | 000.004 | | 000.008 | 00330.514 |
| LDDT | 000.258 | 000.004 | 000.367 | 004.320 | 000.007 | 000.006 | | 000.008 | 00469.489 |
| HDDV | 000.320 | 000.013 | 003.837 | 001.396 | 000.177 | 000.163 | | 000.026 | 01501.720 |
| MC | 002.525 | 000.003 | 000.716 | 012.738 | 000.026 | 000.023 | | 000.051 | 00395.513 |

### 2.2.2.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

  $CEE_{POL}$: Construction Exhaust Emissions (TONs)
  NE: Number of Equipment
  WD: Number of Total Work Days (days)
  H: Hours Worked per Day (hours)
  $EF_{POL}$: Emission Factor for Pollutant (lb/hour)
  2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

  $VMT_{VE}$: Vehicle Exhaust Vehicle Miles Travel (miles)
  BA: Area of Building ($ft^2$)
  BH: Height of Building (ft)
  (0.42 / 1000): Conversion Factor $ft^3$ to trips (0.42 trip / 1000 $ft^3$)
  HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

  $V_{POL}$: Vehicle Emissions (TONs)
  $VMT_{VE}$: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

$VMT_{WT}$: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

$V_{POL}$: Vehicle Emissions (TONs)
$VMT_{WT}$: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

$VMT_{VT}$: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building ($ft^2$)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor $ft^3$ to trips (0.38 trip / 1000 $ft^3$)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

$V_{POL}$: Vehicle Emissions (TONs)
$VMT_{VT}$: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

### 3. ACAM Report for Off-base Vehicle Operation Under Medium and Small Force Training

## 3.1. General Information

- Action Location
  Base: DAVIS-MONTHAN AFB
  State: Arizona
  County(s): Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Action Title: Use of Vehicles

- Project Number/s (if applicable): Change in Use of Ground Vehicles

- Projected Action Start Date: 1 / 2020

- Action Purpose and Need:
  Analysis Air Quality for Change in Use of Ground Vehicles

- Action Description:
  Air Quality Analysis

- Point of Contact
  Name: Roger L. Wayson
  Title: Senior Engineer
  Organization: AECOM
  Email: roger.wayson@aecom.com
  Phone Number: 830 265-7687

- Activity List:

| Activity Type | | Activity Title |
|---|---|---|
| 2. | Construction / Demolition | Large HDT Storms Activity |

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 3.2. Construction / Demolition

### 3.2.1 General Information & Timeline Assumptions

- Activity Location
  County: Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Large HDT Storms Activity

- Activity Description:
  Truck Use

- Activity Start Date
  Start Month: 1
  Start Month: 2020

- Activity End Date
  Indefinite: False
  End Month: 12
  End Month: 2020

- Activity Emissions:

| Pollutant | Total Emissions (TONs) |
|---|---|
| VOC | 0.446717 |
| $SO_x$ | 0.006445 |
| $NO_x$ | 1.969823 |
| CO | 3.501778 |
| PM 10 | 0.081045 |

| Pollutant | Total Emissions (TONs) |
|---|---|
| PM 2.5 | 0.080572 |
| Pb | 0.000000 |
| $NH_3$ | 0.011115 |
| $CO_2e$ | 684.0 |
| | |

### 3.2.2 Building Construction Phase

#### 3.2.2.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
  Start Month: 1
  Start Quarter: 1
  Start Year: 2020

- Phase Duration
  Number of Month: 12
  Number of Days: 0

#### 3.2.2.2 Building Construction Phase Assumptions

- General Building Construction Information
  Building Category: Office or Industrial
  Area of Building ($ft^2$): 1
  Height of Building (ft): 1
  Number of Units: N/A

- Building Construction Default Settings
  Default Settings Used: No
  Average Day(s) worked per week: 5

- Construction Exhaust

| Equipment Name | Number Of Equipment | Hours Per Day |
|---|---|---|
| Off-Highway Trucks Composite | 2 | 4.6 |
| Sweepers/Scrubbers Composite | 4 | 4.6 |

- Vehicle Exhaust
  Average Hauling Truck Round Trip Commute (mile): 220

- Vehicle Exhaust Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 0 | 0 | 0 | 0 | 0 | 100.00 | 0 |

- Worker Trips
  Average Worker Round Trip Commute (mile): 220

- Worker Trips Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 50.00 | 50.00 | 0 | 0 | 0 | 0 | 0 |

- Vendor Trips
  Average Vendor Round Trip Commute (mile): 0

- Vendor Trips Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 0 | 0 | 0 | 0 | 0 | 100.00 | 0 |

### 3.2.2.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

| Off-Highway Trucks Composite | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CH_4$ | $CO_2e$ |
| Emission Factors | 0.1442 | 0.0026 | 0.8306 | 0.5513 | 0.0280 | 0.0280 | 0.0130 | 260.41 |
| **Sweepers/Scrubbers Composite** | | | | | | | | |
| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CH_4$ | $CO_2e$ |
| Emission Factors | 0.0584 | 0.0009 | 0.3563 | 0.4915 | 0.0183 | 0.0183 | 0.0052 | 78.675 |

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | Pb | $NH_3$ | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|
| LDGV | 000.254 | 000.002 | 000.190 | 002.971 | 000.007 | 000.006 | | 000.023 | 00340.675 |
| LDGT | 000.315 | 000.003 | 000.335 | 004.077 | 000.009 | 000.008 | | 000.024 | 00439.030 |
| HDGV | 000.779 | 000.005 | 001.076 | 017.040 | 000.020 | 000.018 | | 000.047 | 00806.186 |
| LDDV | 000.109 | 000.003 | 000.126 | 002.489 | 000.004 | 000.004 | | 000.008 | 00330.514 |
| LDDT | 000.258 | 000.004 | 000.367 | 004.320 | 000.007 | 000.006 | | 000.008 | 00469.489 |
| HDDV | 000.320 | 000.013 | 003.837 | 001.396 | 000.177 | 000.163 | | 000.026 | 01501.720 |
| MC | 002.525 | 000.003 | 000.716 | 012.738 | 000.026 | 000.023 | | 000.051 | 00395.513 |

### 3.2.2.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

  $CEE_{POL}$: Construction Exhaust Emissions (TONs)
  NE: Number of Equipment
  WD: Number of Total Work Days (days)
  H: Hours Worked per Day (hours)
  $EF_{POL}$: Emission Factor for Pollutant (lb/hour)
  2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

  $VMT_{VE}$: Vehicle Exhaust Vehicle Miles Travel (miles)
  BA: Area of Building ($ft^2$)
  BH: Height of Building (ft)
  (0.42 / 1000): Conversion Factor $ft^3$ to trips (0.42 trip / 1000 $ft^3$)
  HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

  $V_{POL}$: Vehicle Emissions (TONs)
  $VMT_{VE}$: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

$VMT_{WT}$: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

$V_{POL}$: Vehicle Emissions (TONs)
$VMT_{WT}$: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

$VMT_{VT}$: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building ($ft^2$)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor $ft^3$ to trips (0.38 trip / 1000 $ft^3$)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

$V_{POL}$: Vehicle Emissions (TONs)
$VMT_{VT}$: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

## 4. ACAM Report for Vehicle Operation under Red Flag-Rescue Large Force Training

## 4.1. General Information

- Action Location
Base: DAVIS-MONTHAN AFB
State: Arizona
County(s): Pima
Regulatory Area(s): Ajo (Pima County), AZ; Tucson, AZ; Rillito, AZ

- Action Title: Use of Vehicles

- Project Number/s (if applicable): Change in Use of Ground Vehicles

- Projected Action Start Date: 1 / 2020

- Action Purpose and Need:
  Analysis Air Quality for Change in Use of Ground Vehicles

- Action Description:
  Air Quality Analysis

- Point of Contact
  Name: Roger L. Wayson
  Title: Senior Engineer
  Organization: AECOM
  Email: roger.wayson@aecom.com
  Phone Number: 830 265-7687

- Activity List:

| Activity Type | | Activity Title |
|---|---|---|
| 2. | Construction / Demolition | Large HDT Storms Activity |

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 4.2. Construction / Demolition

### 4.2.1 General Information & Timeline Assumptions

- Activity Location
  County: Pima
  Regulatory Area(s): Ajo (Pima County), AZ; Ajo (Pima County), AZ; Rillito, AZ; Tucson, AZ

- Activity Title: Large HDT Storms Activity

- Activity Description:
  Truck Use

- Activity Start Date
  Start Month: 1
  Start Month: 2020

- Activity End Date
  Indefinite: False
  End Month: 12
  End Month: 2020

- Activity Emissions:

| Pollutant | Total Emissions (TONs) |
|---|---|
| VOC | 2.240092 |
| $SO_x$ | 0.034873 |
| $NO_x$ | 10.098961 |
| CO | 13.780734 |

| Pollutant | Total Emissions (TONs) |
|---|---|
| PM 2.5 | 0.341884 |
| Pb | 0.000000 |
| $NH_3$ | 0.048164 |
| $CO_2e$ | 3769.1 |

| | | | |
|---|---|---|---|
| PM 10 | 0.343934 | | |

### 4.2.2 Building Construction Phase

#### 4.2.2.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
  - Start Month: 1
  - Start Quarter: 1
  - Start Year: 2020

- Phase Duration
  - Number of Month: 12
  - Number of Days: 0

#### 4.2.2.2 Building Construction Phase Assumptions

- General Building Construction Information
  - Building Category: Office or Industrial
  - Area of Building ($ft^2$): 1
  - Height of Building (ft): 1
  - Number of Units: N/A

- Building Construction Default Settings
  - Default Settings Used: No
  - Average Day(s) worked per week: 5

- Construction Exhaust

| Equipment Name | Number Of Equipment | Hours Per Day |
|---|---|---|
| Off-Highway Trucks Composite | 22 | 3.9 |
| Sweepers/Scrubbers Composite | 4 | 1.6 |

- Vehicle Exhaust
  - Average Hauling Truck Round Trip Commute (mile): 220

- Vehicle Exhaust Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 0 | 0 | 0 | 0 | 0 | 100.00 | 0 |

- Worker Trips
  - Average Worker Round Trip Commute (mile): 220

- Worker Trips Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 50.00 | 50.00 | 0 | 0 | 0 | 0 | 0 |

- Vendor Trips
  - Average Vendor Round Trip Commute (mile): 0

- Vendor Trips Vehicle Mixture (%)

| | LDGV | LDGT | HDGV | LDDV | LDDT | HDDV | MC |
|---|---|---|---|---|---|---|---|
| POVs | 0 | 0 | 0 | 0 | 0 | 100.00 | 0 |

#### 4.2.2.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

| Off-Highway Trucks Composite | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CH_4$ | $CO_2e$ |
| Emission Factors | 0.1442 | 0.0026 | 0.8306 | 0.5513 | 0.0280 | 0.0280 | 0.0130 | 260.41 |
| **Sweepers/Scrubbers Composite** | | | | | | | | |
| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | $CH_4$ | $CO_2e$ |
| Emission Factors | 0.0584 | 0.0009 | 0.3563 | 0.4915 | 0.0183 | 0.0183 | 0.0052 | 78.675 |

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

| | VOC | $SO_x$ | $NO_x$ | CO | PM 10 | PM 2.5 | Pb | $NH_3$ | $CO_2e$ |
|---|---|---|---|---|---|---|---|---|---|
| LDGV | 000.254 | 000.002 | 000.190 | 002.971 | 000.007 | 000.006 | | 000.023 | 00340.675 |
| LDGT | 000.315 | 000.003 | 000.335 | 004.077 | 000.009 | 000.008 | | 000.024 | 00439.030 |
| HDGV | 000.779 | 000.005 | 001.076 | 017.040 | 000.020 | 000.018 | | 000.047 | 00806.186 |
| LDDV | 000.109 | 000.003 | 000.126 | 002.489 | 000.004 | 000.004 | | 000.008 | 00330.514 |
| LDDT | 000.258 | 000.004 | 000.367 | 004.320 | 000.007 | 000.006 | | 000.008 | 00469.489 |
| HDDV | 000.320 | 000.013 | 003.837 | 001.396 | 000.177 | 000.163 | | 000.026 | 01501.720 |
| MC | 002.525 | 000.003 | 000.716 | 012.738 | 000.026 | 000.023 | | 000.051 | 00395.513 |

### 4.2.2.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

$CEE_{POL}$: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
$EF_{POL}$: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

$VMT_{VE}$: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building ($ft^2$)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor $ft^3$ to trips (0.42 trip / 1000 $ft^3$)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

$V_{POL}$: Vehicle Emissions (TONs)
$VMT_{VE}$: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

$VMT_{WT}$: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

$V_{POL}$: Vehicle Emissions (TONs)
$VMT_{WT}$: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

$VMT_{VT}$: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building ($ft^2$)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor $ft^3$ to trips (0.38 trip / 1000 $ft^3$)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

$V_{POL}$: Vehicle Emissions (TONs)
$VMT_{VT}$: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
$EF_{POL}$: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

## 5. Vehicle Emission Factors

### Table 13. Vehicle Emission Factors

| Vehicle Description | Vehicle Type | 2018 Exhaust Emission Factors[1] | | | | | | | | Fugitive Dust Emission Factors[1,2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Load Factor (% Max Power) | NOx | $SO_2$ | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ | $PM_{10}$ | $PM_{2.5}$ |
| | | | lb/1000 hp-hr | | | | | | | g/mi | |
| Large HDT Storms (6000 lb) | Diesel Off-highway Trucks | 59 | 4.09 | 0.01 | 1.21 | 0.45 | 0.12 | 0.12 | 1183.22 | | |
| Small ATVs (1000lb) | 4 Stroke ATV | 100 | 1.02 | 0.00 | 81.74 | 8.32 | 0.15 | 0.14 | 533.13 | 0.069 | 0.017 |
| **Vehicle Description** | **Vehicle Type** | | g/mi | | | | | | | g/mi | |
| Personnel Truck | Heavy Duty Diesel Vehicle | -- | 6.41 | 0.01 | 2.11 | 0.56 | 0.23 | 0.21 | 1580.26 | 0.069 | 0.017 |

Notes
1) AFCEC, AIR EMISSIONS GUIDE FOR AIR FORCE MOBILE SOURCES, Aug 2018
2) GOV, paved road

## 6. Medium and Small Force Training Site Vehicle Annual Emissions Estimate

### Table 14. On-airfield Emissions

| Vehicle Description | Emissions (tons) | | | | | | |
|---|---|---|---|---|---|---|---|
| | NOx | $SO_2$ | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| Large HDT Storm (6000 lb) | 1.11 | 0.00 | 0.33 | 0.12 | 0.041 | 0.034 | 321.12 |
| Small ATV (1000lb) | 0.12 | 0.00 | 9.81 | 1.00 | 0.034 | 0.020 | 63.98 |
| Total | 1.23 | 0.00 | 10.14 | 1.12 | 0.076 | 0.055 | 385.10 |

### Table 15. Off-airfield Emissions

| Vehicle Description | Emissions (tons) | | | | | | |
|---|---|---|---|---|---|---|---|
| | NOx | $SO_2$ | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| Large HDT Storms (6000 lb) | 0.27 | 0.00 | 0.08 | 0.03 | 0.010 | 0.008 | 77.07 |
| Small ATVs (1000lb) | 0.03 | 0.00 | 2.35 | 0.24 | 0.008 | 0.005 | 15.35 |
| Total | 0.30 | 0.00 | 2.43 | 0.27 | 0.018 | 0.013 | 92.42 |

## 7. Large Force Training Site Vehicle Annual Emissions Estimate

### Table 16. Off-airfield (Playas Temporary MOA and/or BMGR Site) Emissions

| Vehicle Description | Emissions (tons) | | | | | | |
|---|---|---|---|---|---|---|---|
| | NOx | $SO_2$ | CO | VOC | $PM_{10}$ | $PM_{2.5}$ | $CO_2e$ |
| Large HDT Storms (6000 lb) | 0.13 | 0.00 | 0.04 | 0.02 | 0.00 | 0.00 | 38.53 |
| Small ATVs (1000lb) | 0.01 | 0.00 | 1.18 | 0.12 | 0.00 | 0.00 | 7.68 |
| Personnel Truck | 0.62 | 0.00 | 0.21 | 0.05 | 0.03 | 0.02 | 153.32 |
| Total | 0.77 | 0.00 | 1.42 | 0.19 | 0.04 | 0.03 | 199.54 |

# Appendix E

# Cultural Resources Supporting Documentation

| Table E-1. Area of Potential Effects (APE) Definitions and Coordinates of Proposed PR Training Sites by State | | | | |
|---|---|---|---|---|
| **Training Site Name** | **Latitude** | **Longitude** | **APE Definition[1]** | **Notes** |
| **Arizona** | | | | |
| Aux 6 | 32.88499281 | -112.8166548 | Direct/indirect APE is a 612-foot radius (9 acres). | Barry M. Goldwater Range (BMGR). |
| Aux 6 Circular | 32.88499281 | -112.8166548 | Direct/indirect APE is the 612-foot radius (9 acres). | BMGR. |
| Aux 6 Rectangular | 32.88499281 | -112.8166548 | Direct/indirect APE is the 612-foot radius (9 acres). | BMGR. |
| Babbitt Ranch 1 | 35.59815063 | -111.6750525 | Direct/indirect APE is a 330-foot radius. | -- |
| Babbitt Ranch 3 | 35.54284644 | -111.6220514 | Direct/indirect APE is a 330-foot radius. | -- |
| Bisbee Douglas International Airport (IAP) (Chang Noi Drop Zone [DZ]) | 31.47192531 | -109.6037669 | Direct APE is the runway pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Black Mountain Reservoir | 32.0613844 | -111.086643 | Direct/indirect APE is a 330-foot radius. | -- |
| Black Mesa - USFS Helitack Base | 34.538513022 | -110.910354832 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Blackhills HLZ/DZ | 31.83301739 | -111.3393063 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Bone Crusher | 35.59644317 | -111.9426812 | Direct/indirect APE is a 330-foot radius. | -- |
| Brooke HLZ/DZ | 32.70826421 | -110.4831022 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Caldwell Meadows | 33.76341457 | -109.3833672 | Direct/indirect APE is a 330-foot radius. | -- |
| Caliente HLZ/DZ | 31.70813356 | -110.9887494 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Camp Navajo Army Base | 35.23265629 | -111.8492269 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| Cattle | 35.28339969 | -111.4829468 | Direct/indirect APE is a 330-foot radius. | -- |
| Cattle LTFW | 35.59642503 | -111.7219412 | Direct/indirect APE is a 330-foot radius. | -- |
| Charouleau Gap | 32.51807023 | -110.8092163 | Direct is the trail; indirect is a 100-foot radius around the trail. | Trail is based on information from the Charouleau Gap website. |
| City of Flagstaff | 35.18676018 | -111.6568363 | Direct/indirect APE (for Military Operations in Urban Terrain/Urban Evasion) is official city boundaries. | -- |
| City of Winslow | 35.02897171 | -110.6965224 | Direct/indirect APE (for Military Operations in Urban Terrain/Urban Evasion) is official city boundaries. | -- |
| Colorado River | 35.11341985 | -114.6369379 | Direct/indirect APE is a 330-foot radius. | PR training site is in both Nevada and Arizona. |
| Comanche | 35.03321958 | -111.6571096 | Direct/indirect APE is a 330-foot radius. | -- |
| Coolidge Airport | 32.93372007 | -111.4251009 | Direct/indirect APE is a 330-foot radius around the runways. | -- |
| Davis-Monthan AFB | 32.16860795 | -110.8751071 | APE is the airport area. In proximity to runways and taxiways the direct APE is the pavements and the indirect APE is a 200-foot radius around the direct APE, elsewhere, the direct/indirect APE are the same. | -- |
| Davis-Monthan AFB Combat Arms Training and Maintenance (CATM) | 32.12788128 | -110.7979718 | Direct/indirect APE is a 330-foot radius. | -- |
| Devon | 31.4665196 | -111.1912754 | Direct/indirect APE is a 330-foot radius. | -- |
| Elk | 35.11155206 | -111.6444158 | Direct/indirect APE is a 330-foot radius. | -- |
| Eloy North | 32.80300784 | -111.5755365 | Direct/indirect APE is a 330-foot radius. | -- |
| Eloy South | 32.795133929 | -111.574595397 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Flagstaff Hotshot – USFS Helitack Base | 35.288739877 | -111.722289939 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Flagstaff Pulliam Airport | 35.1353046 | -111.6756682 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Florence Military Reservation | 33.10666667 | -111.373 | Direct/indirect APE includes Training Areas E North and F, and portions of Training Area C North and the Small Arms Training Complex. | -- |
| Florence Range Helicopter Landing Zone (HLZ) | 33.10666667 | -111.373 | Direct/indirect APE is a 330-foot radius. | -- |
| Fort Tuthill | 35.14093254 | -111.6895928 | Direct/indirect APE is a 330-foot radius. | -- |
| FR 320/311 | 35.83362107 | -111.8835296 | Direct/indirect APE is a 330-foot radius. | -- |
| Froelich HLZ/DZ | 32.44334638 | -110.0502063 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Gerbil | 35.6241621 | -111.8314437 | Direct/indirect APE is a 330-foot radius. | -- |
| Gila Bend Air Force Auxiliary Base | 32.8878374 | -112.7196165 | Direct APE is the airstrip; indirect APE is a 200-foot radius around the direct APE. | -- |

| Table E-1. Area of Potential Effects (APE) Definitions and Coordinates of Proposed PR Training Sites by State | | | | |
|---|---|---|---|---|
| **Training Site Name** | **Latitude** | **Longitude** | **APE Definition[1]** | **Notes** |
| Gila County Sheriff Roosevelt Substation | 33.73274988 | -111.1091857 | Direct/indirect APE is a 660-foot diameter on disturbed soil/parking areas; note: coordinates are off-center to stay within disturbed areas. | -- |
| Grand Canyon National Park Airport | 35.95547659 | -112.1453823 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Grand Canyon Valle Airport | 35.65185005 | -112.1464854 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Grapevine HLZ/DZ | 33.646 | -111.057 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| H. A. Clark Memorial Field | 35.3049373 | -112.194437 | Direct APE is airport pavements; indirect APE is a 200-foot radius around the direct APE. | All PR training activities to occur on pavements. |
| Hannagan Meadow – USFS Helitack Base | 33.632920462 | -109.325965643 | Direct/indirect APE is a 330-foot radius. | SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Helibase Circular | 33.632920462 | -109.325965643 | Direct/indirect APE is a 330-foot radius. | SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Highway 80 Paladins (TW 2 Paladins) | 31.45511003 | -109.1822622 | Direct/indirect APE is a 330-foot radius. | -- |
| HLZ 5 | 35.28544449 | -111.482575 | Direct/indirect APE is a 330-foot radius. | -- |
| HLZ 6 | 35.28436914 | -111.4835388 | Direct/indirect APE is a 330-foot radius. | -- |
| Hubbard | 31.64230045 | -110.2804245 | Direct/indirect APE is a 330-foot radius around runways. | Fort Huachuca. |
| Hubbard (Tombstone) | 31.64230045 | -110.2804245 | Direct/indirect APE is a 330-foot radius around runways. | Fort Huachuca. |
| Humor | 31.66350834 | -110.2646885 | Direct/indirect APE is a 330-foot radius. | -- |
| Jeep HLZ/DZ | 32.41177075 | -110.2319628 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Jenna HLZ/DZ | 32.28934721 | -110.0557555 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Kinder HLZ/DZ | 32.36042671 | -110.3119679 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Kingman Airport | 35.26728486 | -113.9383185 | Direct/indirect APE is a 330-foot radius around the coordinates; Direct APE is the runways and indirect APE is a 200-foot radius around runways. | -- |
| KP Circular | 33.57789877 | -109.3568415 | Direct/indirect APE is a 330-foot radius. | -- |
| KP Tank | 33.57789877 | -109.3568415 | Direct/indirect APE is a 330-foot radius. | -- |
| L Tank | 35.19396714 | -111.8015982 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| GilaLake Havasu Airport | 34.57121532 | -114.3564372 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Lake Patagonia | 31.49236315 | -110.8640865 | Direct/indirect APE is a 330-foot radius. | -- |
| Lake Pleasant | 33.88117973 | -112.279956 | Direct/indirect APE is a 330-foot radius. | -- |
| Lees Ferry | 36.863862008 | -111.600398758 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Libby Army Airfield | 31.58938324 | -110.3500318 | Direct/indirect APE is a 330-foot radius around the coordinates and runways. | Fort Huachuca. |
| Little Outfit | 31.49117965 | -110.5736596 | Direct APE is the airstrip; indirect APE is a 200-foot radius around the direct APE. | PR training activities would occur on disturbed soils at airstrip. |
| Longview – USFS Helitack Base | 34.520051963 | -111.328784111 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Lost Acre HLZ/DZ | 32.30565221 | -111.4308928 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Marana Regional Airport | 32.4111463 | -111.2194762 | Direct/indirect APE is the outdoor shooting range facility and a 330-foot radius around the runway. | -- |
| Mesa | 32.47158437 | -110.3465305 | Direct/indirect APE is a 330-foot radius. | -- |
| Metz Tank | 35.15698268 | -111.824689 | Direct/indirect APE is a 330-foot radius. | -- |
| Mogollon Rim (General Crook) | 34.425784952 | -111.330684115 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Mohawk | 36.0072447 | -112.2478907 | Direct/indirect APE is a 330-foot radius. | -- |
| Mormon Lake – USFS Helitack Base | 34.909187935 | -111.43850419 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there |

| Table E-1. Area of Potential Effects (APE) Definitions and Coordinates of Proposed PR Training Sites by State | | | | |
|---|---|---|---|---|
| **Training Site Name** | **Latitude** | **Longitude** | **APE Definition[1]** | **Notes** |
| | | | | would be no change in use and no improvements needed (Davis 2018). |
| Mount Lemmon (Windy Point) | 32.368066663 | -110.71744654 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| NATO Hill (WPT 74) | 32.65353538 | -112.6322137 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Navajo East | 35.22269216 | -111.8046106 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| Navajo Railroad | 35.22974222 | -111.8175454 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| Navajo West | 35.24289608 | -111.8890272 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| Neill Flat | 35.22228336 | -111.8039199 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| OP Charlie | 32.77144937 | -112.6138203 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Ott Family YMCA of Tucson Pool | 32.21423197 | -110.8319909 | Direct/indirect APE is the pool complex. | -- |
| Overgaard – USFS Helitack Base | 34.398306617 | -110.564521368 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Panda | 35.5988069 | -111.6750287 | Direct/indirect APE is a 330-foot radius. | -- |
| Penitas HLZ/DZ | 31.77303787 | -111.2729044 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Phoenix Sky Harbor IAP | 33.4372686 | -112.0077881 | Direct APE is the runways and pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Pima County Emergency Operations Center | 32.2061585 | -110.9190684 | Direct/indirect APE is the operations center complex. | -- |
| Pima County Regional Training Center | 32.0725129 | -110.8043655 | Direct/indirect APE is the training center complex. | -- |
| Pinal Air Park | 32.51244193 | -111.3287059 | Direct/indirect APE is a 330-foot radius around runways. | -- |
| Pinnacle HLZ/DZ | 32.23367577 | -110.3537448 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Pittman Valley | 35.27763205 | -112.0607839 | Direct APE is the helicopter pads and associated paved/disturbed area. | -- |
| Pond HLZ/DZ | 31.83905939 | -111.3339452 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (Davis-Monthan 2017a: Appendix A). |
| Portal Cabin and CCC Bunkhouse | 31.89865577 | -109.1623547 | Direct/indirect APE is a 330-foot radius. | -- |
| Portal HLZ | 31.90753 | -109.163587 | Direct/indirect APE is a 330-foot radius. | -- |
| Powerline | 35.63166354 | -111.8219936 | Direct/indirect APE is a 330-foot radius. | -- |
| Prescott Airport | 34.65394057 | -112.4213571 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Prieto HLZ/DZ | 31.84540952 | -111.3457735 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Rancho Seco HLZ/DZ | 31.71031857 | -111.3468072 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Range 3 – HLZ 1 | 32.74749489 | -112.706294 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Range 3 – HLZ 2 | 32.74995775 | -112.7152675 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Range 3 – HLZ 3 | 32.75003789 | -112.7133211 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Range 3 – HLZ 4 | 32.74634918 | -112.7163807 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Range 3 – HLZ 5 | 32.73841472 | -112.7153353 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Range 3 – HLZ 6 | 32.7448068 | -112.7182477 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Range 3 – Tower Helipad | 32.75628823 | -112.7155025 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Ranger | 31.765397022 | -109.348614445 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). |
| Redington Pass | 32.30759742 | -110.6003146 | Direct/indirect APE is the established public off-road area. | -- |
| Rogers Lake (Logger Camp) | 35.16662304 | -111.8017072 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| Rogers Napier | 35.19985709 | -111.7732883 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| Rogers Wren | 35.15863697 | -111.8229932 | Direct/indirect APE is a 330-foot radius. | Camp Navajo. |
| Roosevelt Lake | 33.67865681 | -111.1128566 | Direct/indirect APE is a 330-foot radius, existing helipads, and developed boat launch area. | -- |
| Rough Rider | 34.76440891 | -111.844278 | Direct/indirect APE is a 330-foot radius. | -- |
| Ruby Fuzzy Paladins | 31.68828327 | -111.3359485 | Direct/indirect APE is a 330-foot radius. | -- |
| Rucker HLZ | 31.76539702 | -109.3486144 | Direct/indirect APE is a 330-foot radius. | -- |
| Saddle Mountain East | 31.48909004 | -110.6359726 | Direct/indirect APE is a 330-foot radius. | -- |

| Table E-1. Area of Potential Effects (APE) Definitions and Coordinates of Proposed PR Training Sites by State | | | | |
|---|---|---|---|---|
| **Training Site Name** | **Latitude** | **Longitude** | **APE Definition[1]** | **Notes** |
| Saddle Mountain South | 31.48110867 | -110.64747 | Direct/indirect APE is a 330-foot radius. | -- |
| Saddle Mountain West | 31.48714787 | -110.6608917 | Direct/indirect APE is a 330-foot radius. | -- |
| Saguaro Lake Ranch | 33.56352759 | -111.5359273 | Direct/indirect APE is a 330-foot radius. | -- |
| Sahuarita Lake | 31.97221471 | -110.9672424 | Direct/indirect APE is the established paved helipad area and the lake. | -- |
| Salt River High | 33.80613616 | -110.4671576 | Direct/indirect APE is a 330-foot radius. | -- |
| Salt River Low | 33.80237704 | -110.5141744 | Direct/indirect APE is a 330-foot radius. | -- |
| Scottsdale Osborn | 33.48801992 | -111.9223767 | Direct/indirect APE is a 330-foot radius. | -- |
| Sierrita HLZ/DZ | 31.83099268 | -111.3282433 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Silvermine HLZ/DZ | 32.3400135 | -111.4514991 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Sinkhole | 35.74662214 | -111.4804975 | Direct APE is the airstrip; indirect APE is a 50-foot radius around the direct APE. | PR training activities are limited to airstrip disturbed area. |
| South Tactical Range | 32.55061421 | -113.2405588 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Spring Valley Cabin | 35.35733333 | -111.9565222 | Direct/indirect APE is the 3-acre fenced area. | -- |
| Springerville Airport | 34.13002489 | -109.3122707 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Sprucedale Guest Ranch | 33.73958075 | -109.3267261 | Direct/indirect APE is a 330-foot radius. | -- |
| Squirrel | 35.64862298 | -111.8153765 | Direct/indirect APE is a 330-foot radius. | -- |
| St. Johns Industrial Air Park | 34.519128 | -109.3778657 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Target 333 | 32.66499474 | -112.4677499 | Direct/indirect APE is a 612-foot radius (9 acres). | BMGR. |
| Three Points Public Shooting Range | 32.07808542 | -111.3575132 | Direct/indirect APE is the shooting range facility. | -- |
| Titan Missile Museum | 31.90399437 | -110.998871 | Direct/indirect APE is the museum complex. | -- |
| Tombstone 15 HLZ | 31.83526564 | -109.585765 | Direct/indirect APE is a 330-foot radius. | -- |
| Tombstone 18 HLZ | 31.76864392 | -109.6118862 | Direct/indirect APE is a 330-foot radius. | -- |
| Tombstone 19 HLZ | 31.46856218 | -109.2701453 | Direct/indirect APE is a 330-foot radius. | -- |
| Tombstone Circular | 31.64230045 | -110.2804245 | Direct/indirect APE is a 330-foot radius around runways. | Fort Huachuca. |
| Tombstone Paladins | 31.8275708 | -109.5791822 | Direct/indirect APE is a 330-foot radius. | -- |
| Tombstone Rectangular | 31.64230045 | -110.2804245 | Direct/indirect APE is a 330-foot radius around runways. | Fort Huachuca. |
| Tribeland | 35.98283655 | -112.1399991 | Direct/indirect APE is a 330-foot radius. | -- |
| University of Arizona Dive Pool | 32.23049679 | -110.9444482 | Direct/indirect APE is the pool complex. | -- |
| University of Arizona Medical Center | 32.24190835 | -110.9465983 | Direct APE is the helipad on the medical center; indirect APE is a 400-foot radius around direct APE. | -- |
| Verde River | 33.54889463 | -111.6542352 | Direct APE is the river; indirect APE is a 330-foot radius . | -- |
| Waterman HLZ/DZ | 32.3474646 | -111.4421395 | Direct/indirect APE is a 330-foot radius. | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). |
| Winslow-Lindbergh Regional Airport (Wiseman Aviation) | 35.02338411 | -110.7240767 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| Yuma Airport | 32.65102592 | -114.6178288 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| **California** | | | | |
| Camp Pendleton Cartwright Water | 33.21690886 | -117.5308952 | Direct/indirect APE is a 330-foot radius. | Not part of this consultation; if a training event is proposed for these sites, the USMC would engage in the Section 106 consultation related to proposed activities on their property. |
| Camp Pendleton HOLF | 33.43386474 | -117.5310277 | Direct/indirect APE is a 330-foot radius around pavements. | |
| Camp Pendleton NFG | 33.30300616 | -117.3483619 | Direct APE is the airport pavements; indirect APE is a 200-foot radius around the direct APE. | |
| Camp Pendleton PDL and Off Road Trail | 33.35556359 | -117.4009762 | Direct/indirect APE is a 330-foot radius around coordinates and the adjacent MOUT area. | |
| Camp Pendleton Red Beach | 33.28622252 | -117.4577348 | Irregular; includes the helipad and extends northeast and north northwest to existing graded dirt roads, and includes portions of the beach. | |
| El Centro | 32.82325462 | -115.6626522 | Direct/indirect APE is the main installation. | -- |
| Leon | 32.6055 | -117.3236667 | Direct/indirect APE is a 330-foot radius . | The proposed PR training activities at this site was previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS). |
| March Air Reserve Base (ARB) | 33.89214126 | -117.2574312 | Direct APE is the runways and pavements; indirect APE is a 200-foot radius around the direct APE. | -- |
| San Clemente Island Naval Auxiliary Landing Field | 33.0206500744248/ | -118.593852 | Direct APE is the airfield runways and pavements; indirect APE is a 200-foot radius around the direct APE. | The proposed PR training activities at this site was previously addressed under separate undertakings (i.e., U.S. Navy's 2018 Hawaii-Southern California Training and Testing Final EIS/Overseas EIS). |
| San Clemente Island West | 32.9152340664444/ | -118.626011 | Direct/indirect APE is the offshore areas of offshore ranges. | |
| **New Mexico** | | | | |

| Table E-1. Area of Potential Effects (APE) Definitions and Coordinates of Proposed PR Training Sites by State | | | | |
|---|---|---|---|---|
| **Training Site Name** | **Latitude** | **Longitude** | **APE Definition[1]** | **Notes** |
| Catron County Fairgrounds | 33.71644281 | -108.7677831 | Direct/indirect APE is a 330-foot radius. | -- |
| Glenwood Ranger Station | 33.30749516 | -108.8878776 | Direct/indirect APE is a 330-foot radius. | -- |
| Melrose Air Force Range | 34.27789501 | -103.7865715 | Direct/indirect APE is the MOA and the Restricted Area airspace. | -- |
| Negrito Airstrip | 33.51723798 | -108.5405177 | Direct APE is the runways; indirect APE is a 200-foot radius around the direct APE. | -- |
| Negrito Center | 33.52541715 | -108.5423904 | Direct/indirect APE is a 330-foot radius. | -- |
| Negrito Helibase | 33.51785295 | -108.5251319 | Direct/indirect APE is a 330-foot radius. | -- |
| Negrito North | 33.53400422 | -108.5244141 | Direct/indirect APE is a 330-foot radius. | -- |
| Negrito South | 33.50468625 | -108.5389598 | Direct/indirect APE is a 330-foot radius. | -- |
| Playas Training and Research Center | 31.91601999 | -108.5317636 | Direct/indirect APE is the Playas Training and Research Center training areas Zones F, H, and associated living zones (NM Tech and Dept. of Homeland Security 2006). | -- |
| Playas Temporary MOA | 32.17861°<br>32.15556°<br>31.82417°<br>31.84667° | -108.7133°<br>-108.3247°<br>-108.7411°<br>-108.7411° | Direct/indirect APE is the horizontal area defined by the coordinates (20 mile by 20 mile area), and the lands beneath the Temporary MOA. See also Table 2. | The vertical extent of the Temporary MOA is between altitudes of 300 feet AGL up to but not including FL180; note that the map is not at quad scale due to the large area of the Temporary MOA APE. |
| Rainy Mesa | 33.55127947 | -108.6302576 | Direct/indirect APE is a 330-foot radius. | -- |
| Reserve Airport | 33.69452602 | -108.8507048 | Direct APE is the runways and heliport paved/disturbed area; indirect APE is a 200-foot radius around the direct APE. | -- |
| Reserve Ranger Station | 33.71486598 | -108.7780772 | Direct/indirect APE is a 330-foot radius. | -- |
| Tombstone 8 HLZ | 31.6165 | -108.5638333 | Direct/indirect APE is a 330-foot radius. | -- |
| WSMR Otero Maneuver Area | 33.264204 | -106.165672 | Direct/indirect APE is the approximately 56,245-acre maneuver area. | The proposed PR training activities at the five WSMR training sites were addressed under prior studies (e.g., WSMR's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities and 2011 Final EA for Network Integration Evaluation) and the USAF is seeking SHPO concurrence that with the implementation of the mitigation measures and any operational constraints identified in those studies, the WSMR ICRMP, and the 1985 PMOA, no further cultural resources studies are needed and no further consultation is warranted. |
| WSMR Sierra Maneuver Area | 33.427412 | -106.671929 | Direct/indirect APE is the approximately 34,328-acre maneuver area. | |
| WSMR Small Arms Range | 33.788458 | -106.481268 | Direct/indirect APE is the small arms range. | |
| WSMR Stallion Army Airfield | 33.818044 | -106.645286 | Direct APE is the airfield runways and pavements; indirect APE is a 200-foot radius around the direct APE. | |
| WSMR Thurgood West Maneuver Area | 33.4167 | -106.530748 | Direct/indirect APE is the approximately 30,535-acre maneuver area. | |
| **Nevada** | | | | |
| Colorado River | 35.11341985 | -114.6369379 | Direct/indirect APE is a 330-foot radius. | -- |
| Delamar Dry Lake | 37.31606332 | -114.9527853 | Direct/indirect APE is a 330-foot radius around the coordinates and edge of runway. | APE is based on airstrip on 2019 ArcGIS aerial, which differs from the (1972) Delamar Lake USGS topographic map. |
| Nellis AFB | 36.23952389 | -115.0341536 | Direct APE is airport pavements and runways and a 330-foot radius around coordinates; indirect APE is a 200-foot radius around the direct APE. | APE is based on airstrip on 2019 ArcGIS aerial, which differs from the (1984) Las Vegas NE USGS topographic map. |
| **[1] Unless indicated otherwise, the APE radius is centered on the coordinates.**<br>**[2] Please note that at the time of the publication of the Final EA, the area of the Playas Temporary MOA slightly decreased (by approximately 0.4 percent). The boundaries mostly remained the same (just a smaller area and with a negligible shift to the northeast by approximately one foot). The revised coordinates are the following (shown in strikeout/underline for clarity): 32°10'43" N 108°42'48" W to 32°09'20" N 108°19'29" W to 31°49'~~27~~32" N 108°21'~~03~~06" W to 31°50'~~48~~49" N 108°44'~~28~~26" W to the point of beginning. However, in order to present a conservative evaluation of the Proposed Action, this EA analyzed the original boundaries of the Playas Temporary MOA.** | | | | |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| ***Personnel Recovery (PR) Training Sites on Department of Defense Property*** | | | | | | | |
| Aux 6 | Barry M. Goldwater Range (BMGR) (Arizona) | Luke Air Force Base (AFB) | G2, G3, G7, G8<br>F1, F3, F4, F5, F6, F7, F8, F9 | Heilen and Vanderpot 2013; BMGR-1995-J; BMGR-1998-E; BMGR-2014-J; BMGR-2015-E | AZ Z:1:29 (ASM); AZ Z:01:30 (ASM | Existing range; currently approved for use for similar training activities. Training site completely surveyed; surveys adequate. Eligible multicomponent site (prehistoric temporary campsite and WWII-era auxiliary airfield) and prehistoric site are within Area of Potential Effect (APE). Data recovery has been completed for sites AZ Z:01:29 (ASM) and AZ Z:01:30 (ASM). Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation, including no driving off-road. | 36 |
| Aux 6 Circular | BMGR (Arizona) | Luke AFB | G2, G3, G7, G8<br>F1, F3, F4, F5, F6, F7, F8, F9 | Heilen and Vanderpot 2013; BMGR-1995-J; BMGR-1998-E; BMGR-2015-E | AZ Z:1:29 (ASM); AZ Z:01:30 (ASM) | Existing range; currently approved for use for similar training activities. Training site completely surveyed; surveys adequate. Eligible multicomponent site (prehistoric temporary campsite and WWII-era auxiliary airfield) and prehistoric site are within APE. Data recovery has been completed for sites AZ Z:01:29 (ASM), and AZ Z:01:30 (ASM). Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation, including no driving off-road. | 36 |
| Aux 6 Rectangular | BMGR (Arizona) | Luke AFB | G2, G3, G7, G8<br>F1, F3, F4, F5, F6 F7, F8, F9 | Heilen and Vanderpot 2013; BMGR-1995-J; BMGR-1998-E; BMGR-2015-E | AZ Z:1:29 (ASM); AZ Z:1:30 (ASM | Existing range; currently approved for use for similar training activities. Training site completely surveyed; surveys adequate. Eligible multicomponent site (prehistoric temporary campsite and WWII-era auxiliary airfield) and prehistoric site are within APE. Data recovery has been completed for sites AZ Z:01:29 (ASM), and AZ Z:01:30 (ASM). Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation, including no driving off-road. | 36 |
| Camp Navajo Army Base[1] | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F4, F5, F7, F9<br>W1, W2 | Tremblay et al. 2008, 2008-281.ASM | None | Developed area; previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests to Arizona Army National Guard (AZARNG) are currently required prior to training to events to identify operational constraints. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |
| Camp Pendleton Cartwright Water[1] | Marine Corps Base (MCB) Camp Pendleton (California) | MCB Camp Pendleton | F4, F7, F9<br>W1, W2 | Unknown | Unknown | Existing offshore training area currently approved for use for similar training activities. The USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. This proposed PR training site is included for reference purposes only and is not part of this consultation. If a training event is proposed for this site, USMC has indicated that they would engage in Section 106 consultation related to proposed activities on their property. | 28 |
| Camp Pendleton Helicopter Outlying Landing Field | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7, F9 | Apple 1994; Berryman et al 2010; Cooley 1998; King 2000; Reddy 1998a; Shaver 2004; York 2010a | CA-SDI-13659; CA-SDI-14428; CA-SDI-14345 | Existing range; currently approved for use for similar training activities. The USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. This proposed PR training site is included for reference purposes only and is not part of this consultation. If a training event is proposed for this site, USMC has indicated that they would engage in Section 106 consultation related to proposed activities on their property. Cultural resources recommended not eligible; Training activities would have prior coordination with the Base Cultural Resources Section and follow the installation's Range Regulations and maps (Marine Corps 2018a, 2018b) to avoid impacts to historic properties. | 28 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Camp Pendleton NFG | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F6, F7, F9 | Becker 2012a; Cheever 2002; Gallegos 1996; Glenny 2013; Reddy 1999; Strudwick 1984; York 2010a, 2010b,2012, 2013 | CA-SDI-10156/12599H; CA-SDI-1057; CA-SDI-14005H | Existing range; currently approved for use for similar training activities. The USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. This proposed PR training site is included for reference purposes only and is not part of this consultation. If a training event is proposed for this site, USMC has indicated that they would engage in Section 106 consultation related to proposed activities on their property. Buried portion of Listed historic property extends under airfield. Shell scatter not eligible; NRHP-eligible railroad segment unlikely to be impacted. Training activities would have prior coordination with the Base Cultural Resources Section and follow the installation's Range Regulations and Environmental Operations Maps (Marine Corps 2018a, 2018b) to avoid impacts to historic properties. | 28 |
| Camp Pendleton Off-Road Trail | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7 | Becker 2012b; Berryman et al. 2009; Quatch 2018 | CA-SDI-18990; CA-SDI-18991; CA-SDI-18992; CA-SDI-22371; CA-SDI-22372; CA-SDI-22373; CA-SDI-22374 | Existing range; currently approved for use for similar training activities. The USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. This proposed PR training site is included for reference purposes only and is not part of this consultation. If a training event is proposed for this site, USMC has indicated that they would engage in Section 106 consultation related to proposed activities on their property. NRHP-eligible and unevaluated resources are within or adjacent to existing MOUT. Training activities would have prior coordination with the Base Cultural Resources Section and follow the installation's Range Regulations and Environmental Operations Maps (Marine Corps 2018a, 2018b) to avoid impacts to cultural resources. | 28 |
| Camp Pendleton Piedra de Lumbre | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7, F9 | Becker 2012b; Berryman et al. 2009; Quatch 2018 | CA-SDI-18990; CA-SDI-18991; CA-SDI-18992; CA-SDI-22371; CA-SDI-22372; CA-SDI-22373; CA-SDI-22374 | Existing range; currently approved for use for similar training activities. The USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. This proposed PR training site is included for reference purposes only and is not part of this consultation. If a training event is proposed for this site, USMC has indicated that they would engage in Section 106 consultation related to proposed activities on their property. NRHP-eligible and unevaluated resources are within or adjacent to existing MOUT. Training activities would have prior coordination with the Base Cultural Resources Section and follow the installation's Range Regulations and Environmental Operations Maps (Marine Corps 2018a, 2018b) to avoid impacts to cultural resources. | 28 |
| Camp Pendleton Red Beach | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7<br>W1, W2 | Barryman et al. 2009; Bull 1975; Reddy 1998b, 1999; Roth 1982 | CA-SDI-10725; CA-SDI-10726; CA-SDI-15254 | Existing range; currently approved for use for similar training activities. The USAF is considering PR training sites at U.S. Marine Corps (USMC) Base Camp Pendleton as part of the proposed undertaking and is currently coordinating with the USMC. This proposed PR training site is included for reference purposes only and is not part of this consultation. If a training event is proposed for this site, USMC has indicated that they would engage in Section 106 consultation related to proposed activities on their property. One cultural resource not eligible for the National Register of Historic Places (NRHP) is in the training site; two sensitive historic properties are near, but outside of the APE. Training activities would have prior coordination with the Base Cultural Resources Section and follow the installation's Range Regulations and Environmental Operations Maps (Marine Corps 2018a, 2018b) to avoid impacts to historic properties. | 28 |
| Davis-Monthan AFB | Davis-Monthan AFB (Arizona) | Davis-Monthan AFB | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F5, F6, F7, F8, F9 | Miljour et al. 2017 | AZ BB:13:908(ASM); AZ BB:13:913(ASM); AZ BB:13:916(ASM); AZ BB:13:941(ASM); AZ BB:13:948(ASM); AZ BB:13:949(ASM); AZ BB:13:953(ASM); AZ:BB:13:962(ASM) | Existing airfield; currently approved for use for similar training activities. Previously completely surveyed. Five sites within APE; State Historic Preservation Officer (SHPO) has concurred that five are not eligible. Two NRHP-eligible prehistoric sites and an NRHP-eligible homestead are located near, but outside of the APE; use of the runway for training activities would not impact those resources. Activities would undergo environmental review per the installation's Integrated Cultural Resource Management Plan (ICRMP; United States Air Force [USAF] 2018a) prior to initiation. Activities would not impact historic properties. | 40 |
| Davis-Monthan AFB Combat Arms Training and Maintenance | Davis-Monthan AFB (Arizona) | Davis-Monthan AFB | G7, G8 | Miljour et al. 2017; Page 2016 | None | Existing facility currently approved for use for similar training activities. Completely surveyed, no cultural resources. Activities would not impact historic properties. Policies and procedures of the installation's ICRMP (USAF 2018a) would be followed. | 40 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| El Centro | El Centro (California) | Naval Air Facility El Centro | G1, G2, G3, G5, G6, G7 F1, F4, F5, F6, F7, F8, F9 | Apple et al. 1994 | None | Existing facility; currently approved for use for similar training activities. The main installation was previously entirely surveyed (Dietler and Akyüz 2013). Activities would not impact historic properties. Policies and procedures of the installation's ICRMP would be followed. | 33 |
| Florence Military Reservation | Florence (Arizona) | Arizona Army National Guard | G1, G2, G3, G5, G6, G7, G8 F1, F3, F4, F5, F6, F7, F9 | Kirvan and Rogge 2009a | AZ U:15:313(ASM), AZ FF:9:17(ASM), AZ I:3:10(ASM) | Currently approved for use for similar training activities. NRHP eligible prehistoric sites AZ U:15:313 (ASM), and US Highways 80 and 89 (now State Route 79) are in the proposed APE. Training activities are unlikely to impact the highways, which have ongoing use. Coordination with AZARNG would occur to avoid historic properties. Data call requests to the AZARNG are currently required prior to training to support the AZARNG Section 106 requirements. With these operational constraints, no adverse effects to historic properties would occur at this proposed PR training site. | 37 |
| Florence Range Helicopter Landing Zone (HLZ) | Florence (Arizona) | Arizona Army National Guard | G1, G2, G3, G5, G7, G8 F1, F3, F4, F5, F7 | Darrington et al. 1997; Personal communication with NGAZ-FMO-EMO, Arizona Army National Guard 2019a | AZ U:5:318(ASM) | Currently approved for use for similar training activities. Recent survey failed to locate surface evidence of site (Wahoff et al. 2019). The AZARNG has determined that the proposed training activity would have no effect on any National Register listed or National Register eligible properties, however, data call requests the AZARNG are currently required prior to training to support the AZARNG Section 106 requirements. | 37 |
| Fort Tuthill[1] | Flagstaff (Arizona) | Luke AFB | G1, G2, G3, G6 | USAF 2017b | None | Currently approved for use for similar training activities. Ft. Tuthill completely surveyed; no cultural resources were identified (USAF 2017b). Activities would not impact cultural resources. | 9 |
| Gila Bend Air Force Auxiliary Base | Gila Bend (Arizona) | Luke AFB | G1, G2, G3 F1, F3, F4, F5, F6, F7, F8, F9 | Keane et al. 1997, 1998, 1994-499.ASM | Gila Bend Auxiliary Airfield | Existing airfield; currently approved for use for similar training activities. Approximately 50% of airfield surveyed; Gila Bend Auxiliary Airfield evaluated as not eligible. Activities would occur on airport pavements and would not have potential to impact cultural resources. Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Hubbard[1] | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3 F1, F3, F4, F5, F6, F7, F8, F9 | Vanderpot 1994, 2.187.SHPO; Fort Huachuca ca. 1991a, 2.143.SHPO; Fort Huachuca ca. 1991b, 2.144.SHPO | None | Existing airfield; currently approved for use for similar training activities. Previously completely surveyed; adequate survey, no cultural resources identified. Training activities would be coordinated through Range Control and would follow the environmental constraints provided by Environmental and Natural Resources Division (ENRD) (Personal communication Ft. Huachuca 2019) and protocols and procedures in the installation's ICRMP (SWCA 2009) to avoid impacts to cultural resources. Activities would not impact historic properties. | 46 |
| Hubbard (Tombstone) | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3 F1, F3, F4, F5, F6, F7, F8, F9 | Vanderpot 1994, 2.187.SHPO; Fort Huachuca ca. 1991a, 2.143.SHPO; Fort Huachuca ca. 1991b, 2.144.SHPO | None | Existing airfield; currently approved for use for similar training activities. Previously completely surveyed; adequate survey, no cultural resources identified. Activities would not impact historic properties. Training activities would be coordinated through Range Control and would follow the environmental constraints provided by ENRD (Personal communication Ft. Huachuca 2019) and protocols and procedures in the installation's ICRMP (SWCA 2009) to avoid impacts to cultural resources. Vehicles are restricted to existing roads; bivouac and assembly areas and areas for dismounted exercises would be coordinated through Range Control. | 46 |
| Humor | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3 F1, F3, F4, F5, F7, F9 | 2.187.SHPO | None | Currently approved for use for similar training activities. Previously completely surveyed; no cultural resources in APE (SWCA 2009). Activities would not impact historic properties (Personal communication Ft. Huachuca 2019). Vehicles are restricted to existing roads bivouac and assembly areas and areas for dismounted exercises would be coordinated through Range Control. | 46 |
| L Tank | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7 F1, F3, F4, F5, F7, F9 | Tremblay et al. 2008, 2008-281.ASM | None | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests to AZARNG are currently required prior to training to support the AZARNG Section 106 requirements. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Leon (Beiringer Drop Zone [DZ]) [1] | San Diego (California) | NAS (Naval Air Station) North Island | F9<br>W1, W2 | Unknown | Unknown | Offshore training area currently approved for use for similar training activities. Activities would not have the potential to impact historic properties. | 32 |
| Libby Army Airfield | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | Urban and Wilson 1981, Wilson 1982a, 1981-139.ASM; Wilson, 1982b, 1982-208.ASM; Dennis 1988, 1988-259.ASM; Thyse 2007, 2008-522.ASM | AZ EE:7:23; AZ EE:7:24; AZ EE:7:25; AZ EE:7:26 | Existing airfield; currently approved for use for similar training activities. Runway built over parts of AZ EE:7:25(ASM), and parts of AZ EE:7:24 and 26(ASM). Sites AZ EE:7:23 – AZ EE:7:26 have been listed as "destroyed". NRHP-eligible site AZ EE:7:28 is near, but outside of the Proposed PR Training area. Training events would coordinate with range control and would follow the environmental constraints provided by ENRD (Personal communication Ft. Huachuca 2019) and protocols and procedures in the installation's ICRMP (SWCA 2009) to avoid impacts to cultural resources. Vehicles are restricted to existing roads; bivouac and assembly areas and areas for dismounted exercises would be coordinated through Range Control. With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 46 |
| March ARB | March Air Reserve Base (ARB) (California) | March ARB | G1, G2, G3<br>F6, F7, F8 | JRP Historical Consulting 2011 | P-33-009191, March Field Historic District | Existing airfield. Installation has been previously surveyed; adequate survey, no eligible or potentially eligible archaeological sites present. March Field Historic District partially within ARB; activities would not have potential to impact contributing elements of the district. | 18 |
| Melrose Air Force Range | Clovis (New Mexico) | Cannon AFB | F1, F4 | Childers et al. 1983; Lowry 2002 | 66360 | Currently approved for use for similar training activities. Activities would undergo the environmental review process and procedures as identified in the installation's ICRMP (USAF 2018b) prior to initiation; activities would not have potential to impact cultural resources. | 26 |
| Metz Tank | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | Tremblay et al. 2008, 2008-281.ASM | AZ I:13:40 Segment D | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. One site, a historic-period railroad segment, not NRHP eligible. Data call requests to AZARNG are currently required prior to training events to identify operational constraints. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |
| NATO Hill (WPT 74) [1] | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | Heilen and Vanderpot 2013; BMGR-1996-E | Two prehistoric archaeological sites. | Existing facility; currently approved for use for similar training activities. Completely surveyed; survey adequate. Two prehistoric archaeological sites are at the base of the hill; training activities would be limited to the top of the hill and would not impact the sites (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Navajo East | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | Tremblay et al. 2008, 2008-281.ASM; Twilling et al. 2005 | None | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests to AZARNG are currently required prior to training events to identify operational constraints. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |
| Navajo Railroad | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7 | Tremblay et al. 2008, 2008-281.ASM | None | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests to AZARNG are currently required prior to training events to identify operational constraints. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Navajo West | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7, F9 | Tremblay et al. 2008, 2008-281.ASM | None | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests to AZARNG are currently required prior to training events to identify operational constraints. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |
| Neill Flat | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7, F9 | Tremblay et al. 2008, 2008-281.ASM; Twilling et al. 2005 | None | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests to AZARNG are currently required prior to training events to identify operational constraints. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |
| Nellis AFB | Nellis AFB (Nevada) | Nellis AFB | G2, G3<br>F1, F6, F7, F8 | MISC45; 19822; 175 | 222, B13548; 224, B13549; 226, B13550; 228, B13551; 282, B13558; 292, 13561 | Existing airfield; currently approved for use for similar training activities. Completely previously surveyed. Archaeological sites are present off the runways, and Activities would occur on airport pavements and would not have potential to impact cultural resources. | 3 |
| OP Charlie | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-1995-J | None | Existing facility; currently approved for use for similar training activities. Training site ridgetop and lower slopes completely surveyed, upper slopes too steep for survey; survey adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Range 3 – HLZ 1 | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-1995-I | None | Existing facility; currently approved for use for similar training activities. Training site completely surveyed; survey adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Range 3 – HLZ 2 | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-1995-I | None | Existing facility; currently approved for use for similar training activities. Training site completely surveyed; survey adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019, also cited in USAF 2017c). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Range 3 – HLZ 3 | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-1995-I | None | Existing facility; currently approved for use for similar training activities. Training site completely surveyed; survey adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019, also cited in USAF 2017c). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Range 3 – HLZ 4[1] | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-1995-I | None | Existing facility; currently approved for use for similar training activities. Training site completely surveyed; survey adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019, also cited in USAF 2017c). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Range 3 – HLZ 5 | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-1995-I; BMGR-2002-C | None | Existing facility; currently approved for use for similar training activities. Completely surveyed; surveys adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019, also cited in USAF 2017c). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Range 3 – HLZ 6 | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-2002-C; | None | Existing facility; currently approved for use for similar training activities. Training site completely surveyed; survey adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, January 5, 2017, also cited in USAF 2017c). Activities would follow established range regulations and environmental procedures for the installation. | 36 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Range 3 – Tower Helipad | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | BMGR-2002-C | None | Existing facility; currently approved for use for similar training activities. Training site completely surveyed; survey adequate. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Rogers Lake (Logger Camp) | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9<br>W1, W2 | Tremblay et al. 2008, 2008-281.ASM | AZ I:13:40 Segment B | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. One site, a historic railroad segment, is NRHP-eligible. Data call requests to the AZARNG are currently required prior to training events training events to identify operational constraints. All proposed training events on Camp Navajo would require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). | 9 |
| Rogers Napier | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7 | Tremblay et al. 2008, 2008-281.ASM | None | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests are currently required prior to training events training events to identify operational constraints. All proposed training events on Camp Navajo will require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |
| Rogers Wren | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7 | Tremblay et al. 2008, 2008-281.ASM | None | Previously approved for use for similar training activities. Previously completely surveyed; survey may not be adequate. Data call requests are currently required to the AZARNG prior to training events to training events to identify operational constraints. All proposed training events on Camp Navajo will require project specific review/documentation prepared by the AZARNG before the start of the event, which may include Section 106 consultation and/or an ARNG Environmental checklist (Personal communication with Arizona Army National Guard Environmental Office 2019). With these procedures and operational constraints, the proposed PR training activities would not impact historic properties. | 9 |
| San Clemente Island Naval Auxiliary Landing Field (NALF) | San Clemente Island (SCI) (California) | Naval Base Coronado | G2, G3<br>F4, F6, F7, F8 | Axford 1978, 1984; Berryman and Berryman 1988; Byrd and O'Neill 2001; Yatsko and Raab 1997 | Unidentified sites | Previously analyzed under the 2008 Southern California Range Complex Final Environmental Impact Statement (EIS) and 2018 Hawaii-Southern California Training and Testing EIS/Overseas Environmental Impact Statement (OEIS), and therefore will not be further analyzed for the PR Environmental Assessment (EA). The PR training activities would need to comply with the mitigation measures and any operational constraints identified in those documents. Activities would follow established range regulations and the policies and procedures as identified in the installation's ICRMP (Apple and Wahoff 2012) and in NALF SCI Instruction 1700.1to avoid impacts to cultural resources. | 27 |
| San Clemente Island Surrounding Off-Shore Areas | San Clemente Island (California) | Naval Base Coronado | F4, F9<br>W1, W2 | Unknown | Unknown | Previously analyzed under the 2008 Southern California Range Complex FEIS and 2018 Hawaii-Southern California Training and Testing EIS/OEIS, and therefore will not be further analyzed for the PR EA. The PR training activities would need to comply with the mitigation measures and any operational constraints identified in those documents. Activities would follow established range regulations and the policies and procedures as identified in the installation's ICRMP (Apple and Wahoff 2012) and in NALF SCI Instruction 1700.1to avoid impacts to cultural resources. | 27 |
| South Tactical Range | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | Heilen and Vanderpot 2013; BMGR-2000-D | None | Existing facility; currently used for training. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation. | 35 |
| Target 333 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F9, F10 | Heilen and Vanderpot 2013; BMGR-1996-E | None | Existing facility; currently approved for use for similar training activities. Activities would not impact historic properties (Personal communication with AETC 56 RMO/ESMC, Luke AFB, 20 June 2019). Activities would follow established range regulations and environmental procedures for the installation. | 36 |
| Titan Missile Museum[1,2] | Pima County; Near Town of Sahuarita (Arizona) | USAF (leased to Pima County) | G6 | None | Unknown | Concrete missile silo currently used for rope training. Activities would not impact cultural resources. | 43 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Tombstone Circular | Fort Huachuca (Arizona) | Fort Huachuca | G2, G3, G6<br>F1, F3, F4, F5, F6, F7, F9, F10 | Vanderpot 1994, 2.187.SHPO; Fort Huachuca ca. 1991a, 2.143.SHPO; Fort Huachuca ca. 1991b, 2.144.SHPO | None | Existing airstrip; currently approved for use for similar training activities. Previously completely surveyed. Activities would occur in the disturbed area at the airfield and would not have potential to impact cultural resources. Activities would be coordinated through Range Control and would follow the environmental constraints provided by ENRD and protocols and procedures in the installation's ICRMP (SWCA 2009) to avoid impacts to cultural resources. | 46 |
| Tombstone Rectangular | Fort Huachuca (Arizona) | Fort Huachuca | G2, G3, G6<br>F1, F3, F4, F5, F6, F7, F9, F10 | Vanderpot 1994, 2.187.SHPO; Fort Huachuca ca. 1991a, 2.143.SHPO; Fort Huachuca ca. 1991b, 2.144.SHPO | None | Existing airstrip; currently approved for similar training activities. Previously completely surveyed. Activities would not impact historic properties. Activities would be coordinated through Range Control and would follow the environmental constraints provided by ENRD and protocols and procedures in the installation's ICRMP (SWCA 2009) to avoid impacts to cultural resources. | 46 |
| WSMR Small Arms Range | Socorro County (New Mexico) | White Sands Army Garrison | G8<br>F4 | Burleson 2006; Shields 2002; Eidenbach 1990 | None | Currently approved for use for similar training activities. The proposed APE has been previously completely surveyed for cultural resources; none are within the proposed APE although resources have been recorded nearby. Previously analyzed under U.S. Army's 2011 Final EA for Network Integration Evaluation (White Sands Test Center Operations Office 2011). The protocols, procedures, and requirements identified in the Integrated Natural and Cultural Resources Management Plan (INCRMP; U.S. Army Garrison White Sands 2015) would be followed to avoid impacts to historic properties. | 31 |
| WSMR Stallion Army Airfield | Socorro County (New Mexico) | White Sands Army Garrison | F4, F8 | Kirkpatrick 1986; Shields and Wessel 1998 | LA51270 | Previously analyzed under U.S. Army's 2009 Final EIS for Development and Implementation of Range-Wide Mission and Major Capabilities [Range-Wide Mission and Major Capabilities] [White Sands Test Center Operations Office 2009] and 2015-2019 INCRMP EA [U.S. Army Garrison White Sands 2015]). Currently approved for use for similar training activities. The protocols, procedures, and requirements identified in the prior NEPA documents, the 1985 PMOA, and the Integrated Natural and Cultural Resources Management Plan (INCRMP; U.S. Army Garrison White Sands 2015) would be followed. The airstrip was previously completely surveyed; one unevaluated prehistoric lithic scatter is located between existing runways; other resources have been recorded nearby. Use of the runways and paved areas for the PR training activities would not impact cultural resources. | 31 |
| WSMR Sierra Maneuver Area | Sierra County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | Unidentified prior surveys | Unidentified | Previously analyzed under U.S. Army's 2009 Final EIS Range-Wide Mission and Major Capabilities (White Sands Test Center Operations Office 2009). Existing maneuver area currently approved for use for similar training activities, and cultural resources are marked by Seibert stakes (Personal communication with White Sands Army Garrison 2019). Consultation with WSMR Cultural Resource Personnel on the condition of Seibert Stakes would occur prior to proposed PR training activities. The protocols, procedures, and requirements identified in the prior NEPA documents, the 1985 PMOA, and the Integrated Natural and Cultural Resources Management Plan (INCRMP; U.S. Army Garrison White Sands 2015) would be followed to avoid impacts to historic properties. | 31 |
| WSMR Thurgood West Maneuver Area | Sierra County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | Unidentified prior surveys | Unidentified | Previously analyzed under U.S. Army's 2009 Final EIS Range-Wide Mission and Major Capabilities (White Sands Test Center Operations Office 2009). Existing maneuver area currently approved for use for similar training activities, and cultural resources are marked by Seibert stakes (Personal communication with White Sands Army Garrison 2019). Consultation with WSMR Cultural Resource Personnel on the condition of Seibert Stakes would occur prior to proposed PR training activities. The protocols, procedures, and requirements identified in the prior NEPA documents, the 1985 PMOA, and the Integrated Natural and Cultural Resources Management Plan (INCRMP; U.S. Army Garrison White Sands 2015) would be followed to avoid impacts to historic properties. | 31 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| WSMR Otero Maneuver Area | Otero County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | Unidentified prior surveys | Unidentified | Previously analyzed under U.S. Army's 2009 Final EIS Range-Wide Mission and Major Capabilities (White Sands Test Center Operations Office 2009). Existing maneuver area currently approved for use for similar training activities. Cultural resources are marked by Seibert stakes (Personal communication with White Sands Army Garrison 2019). Consultation with WSMR Cultural Resource Personnel on the condition of Seibert Stakes would occur prior to proposed PR training activities. The protocols, procedures, and requirements identified in the Integrated Natural and Cultural Resources Management Plan (INCRMP; U.S. Army Garrison White Sands 2015) would be followed. | 31 |
| ***PR Training Sites on U.S. Forest Service Lands and Federal Lands*** | | | | | | | |
| Black Mesa – United States Forest Service (USFS) Helitack Base | BMGR (Arizona) Apache-Sitgreaves National Forest (NF) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helipad used by the U.S. Forest Service. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 15 |
| Charouleau Gap[2] | Coronado NF (Arizona) | Coronado NF | G2, G3 | 1980-34.CORNF | Unknown | A Special Use permit is required. Prior coordination with the NF would be required. Established public off-road area; largely unsurveyed. Activities would be consistent with public use. Regulations would be followed; driving off-trails is prohibited. | 38 |
| Comanche[3] | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 9, 13 |
| Delamar Dry Lake[2] | Lincoln County, Near Alamo (Nevada) | Bureau of Land Management (BLM) | F1, F8 | 18543 | Unknown | Existing Military Operations Area (MOA); currently approved for similar training activities. Dry lake partially surveyed. Training activities would have little potential to impact historic properties. | 1 |
| Devon[4] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F10 | Miljour and Wegener 2019; Gillespie 2006 | AR-03-05-02-00610, AR-03-05-02-00927, AR-03-05-02-00926 | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Proposed PR training site completely surveyed in 2019; no evidence was found of the non-NRHP-eligible historic-period pipeline segment (Ruby Pipeline) and historic-period artifacts identified during the records search. The survey identified a prehistoric lithic scatter that is not NRHP-eligible, and a NRHP-eligible prehistoric lithic scatter. Training activities would avoid physical disturbance to any areas within or within 50 feet of a historic property. If avoidance would not be feasible, the USAF would not use that training location, until/unless mitigation and Section 106 consultation have been completed and any adverse effect(s) resolved. | 44 |
| Flagstaff Hotshot – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7, F9 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helibase used by the Forest Service. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 9 |
| Glenwood Ranger Station[1] | Gila NF (New Mexico) | Gila NF | G1, G2, G6<br>F1, F3, F5, F7, | 22456; 29731; 43872; 112154 | Unrecorded administrative building/sites | Proposed PR training site previously surveyed, with the most recent survey in 2008. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. The area is currently used for helicopter operations. A Special Use permit is required. Training would not impact the nearby administrative buildings. Prior coordination required for bivouacking/camping and off-road vehicle activities to avoid cultural resources. | 30 |
| Grapevine HLZ/DZ | Tonto NF (Arizona) | Tonto NF | G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | USAF 2013 | None | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 21 |
| Hannagan Meadow – USFS Helitack Base | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | None | Unidentified | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helibase used by the Forest Service. One unidentified site is within APE with unknown NRHP eligibility. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 24 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Helibase Circular | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helipad used by the Forest Service. One unidentified site is within APE with unknown NRHP eligibility. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 24 |
| Kinder HLZ/DZ | Cochise County (Arizona) | Bureau of Land Management | G6<br>F1, F3, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 41 |
| KP Circular[4] | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | Miljour and Wegener 2019 | None | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Proposed PR training site surveyed in 2019; no cultural resources. No impacts to historic properties. | 24 |
| KP Tank[4] | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | Miljour and Wegener 2019 | None | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Proposed PR training site surveyed in 2019; no cultural resources. No impacts to historic properties. | 24 |
| Lees Ferry | Marble Canyon (Arizona) | National Park Service | G1, G2, G3, G4, G6<br>F7, F9 | None | Unknown | A Special Use permit is required. Prior coordination with the NPS would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing parking areas with paved/disturbed surfaces, includes boat ramp. Site is used by the public for same purpose. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 2 |
| Longview – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, Existing helibase used by the Forest Service. Historic-period cabins are present that are unevaluated for NRHP listing. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 14 |
| Mesa[3] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F10 | Miljour and Wegener 2019 | None | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Proposed PR training site surveyed in 2019; no cultural resources. No impacts to historic properties. | 41 |
| Mogollon Rim (General Crook) | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F3, F7 | Unidentified survey | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Natural surface. APE partially surveyed; no information was found regarding the survey's age or intensity. Site used for the public for same purpose. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 14 |
| Mohawk[4] | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6<br>F1, F7 | Culpepper 1997 | None | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Proposed PR training site previously completely surveyed; no cultural resources. No impacts to historic properties. | 4 |
| Mormon Lake – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helibase used by the Forest Service. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 9, 13 |
| Mount Lemmon (Windy Point) | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F5, F7 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Site used by public for same use. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 40 |
| Negrito Airstrip[1] | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F8, F9, F10 | 21941 | None | Existing airfield. A Special Use permit is required. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. Prior coordination with the NF would be required for proposed PR training activities, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Training activities would occur within the airport disturbance area. With these operational constraints, the proposed PR training would not have the potential to impact cultural resources. | 25 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Negrito Center[1] | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | None | Unknown | Existing airfield. A Special Use permit is required. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. Prior coordination with the NF would be required for proposed PR training activities, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Training activities would occur within the airport disturbance area and would not have potential to impact cultural resources. | 25 |
| Negrito Helibase[1] | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F10 | 95797; 63903; 116270 | None | A Special Use permit is required. Area completely surveyed; however, some surveys are of questionable intensity and one survey within the last ten years does not cover the entire APE. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. Prior coordination with the NF would be required for proposed PR training activities, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Therefore, no impacts to cultural resources would occur. | 25 |
| Negrito North[3] | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 25 |
| Negrito South[3] | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 25 |
| Overgaard – USFS Helitack Base | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F3, F5, F7, F9 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helibase used by the Forest Service. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 16 |
| Pittman Valley[1] | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7, F9 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helibase with large paved area containing two helipads. Activities would be contained within the paved area and would not impact cultural resources. | 8 |
| Portal Cabin and Civilian Concentration Corps (CCC) Bunkhouse[2] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G4 | None | Cabin (SHPO Cochise County 114) | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed off-road motorized vehicle activities. Training area that would be used for assembly. No ground disturbance would occur. Cabin is listed on the National Register; suitable for intended use and available for rental. | 47 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Portal HLZ[2] | Coronado NF (Arizona) | Coronado NF | G2, G3, G6<br>F1, F3, F5, F7, F10 | Kirvan and Rogge 2019b | None | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed off-road motorized vehicle activities. Existing Helipad. Proposed PR training site completely surveyed in 2019; no cultural resources. No impacts to historic properties. | 47 |
| Rainy Mesa[1] | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | 21941 | None | A Special Use permit is required. This area has been previously intensively surveyed. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. Prior coordination with the NF would be required for proposed PR training activities, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Therefore, no impacts to cultural resources would occur.. | 25 |
| Ranger | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9 F10 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required. Existing helipad used by the Forest Service. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 47 |
| Redington Pass[2] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G4, G6, G7 | 1996.32.CORNF | Unknown | A Special Use permit is required. Prior coordination with the NF would be required, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Established public off-road area. Small portion of the proposed PR training site previously surveyed; no cultural resources. Activities would be consistent with ongoing use of the area. With these constraints, activities would have little potential to impact cultural resources. | 40 |
| Reserve Airport[1] | Gila NF (New Mexico) | Gila NF | G1, G2, G6<br>F1, F3, F5, F7, F8, F9, F10 | 16530; 21934; 82576; 91183; 94677 | 33974 (6-370); 39977 (6-374); 69064 (6-880); 70194 (3-375); 149438 (6-1287); Reserve Airport | Existing airfield. A Special Use permit is required. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. Prior coordination with the NF would be required for proposed PR training activities, with coordinates provided for any proposed camping, bivouacking/camping activities. Training activities would occur on airport pavements and would not have potential to impact cultural resources. | 25 |
| Reserve Ranger Station[1] | Gila NF (New Mexico) | Gila NF | G1, G2, G6<br>F1, F3, F5, F7 | 21934; 22456; 23972; 58282; 92472; 104118 | 33624 (06-869) | A Special Use permit is required. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. Operational constraints include prior coordination with the NF for proposed PR training activities, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Area completely surveyed. Some surveys are of questionable intensity and one survey within the last ten years does not cover the entire APE. Site 33624 (06-869) encompasses most of the APE and is not eligible. Other eligible sites are nearby but outside the APE. | 25 |
| Roosevelt Lake[1] | Tonto NF (Arizona) | Tonto NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10<br>W1, W2 | None | Unknown | A Special Use permit is required. Prior coordination with the NF would be required. Activities would occur within the water. No disturbance would occur along the shorelines except at dedicated boat launch facilities. Rotary wing activities would occur at existing helipads. | 21 |
| Rough Rider[3] | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 13 |
| Rucker HLZ[2] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G5, G6<br>F1, F3, F4, F5, F7, F10 | None | Unknown | A Special Use permit is required. Same coordinates as Ranger proposed PR training site. Operational constraints include prior coordination with the NF, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Existing helipad with disturbed soils; used by the Forest Service. Proposed PR Training activities would stay within area of prior disturbance. | 47 |
| Saddle Mountain East[3] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 45 |
| Saddle Mountain South[3] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 45 |
| Saddle Mountain West[3] | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 45 |
| Saguaro Lake Ranch[1] | Tonto NF (Arizona) | Tonto N F | W1, W2 | 1972-2.ASM; 7.2045.SHPO; 7.151.SHPO; 1963-5.ASM | AZ U:6:194 (ASM); AZ U:6:195 (ASM) | A Special Use permit is required. Activities would occur within the water. Cultural resources are in the vicinity; however, no disturbance would occur along the shorelines except at dedicated boat launch facilities and established pave helipad. | 20 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Spring Valley Cabin[2] | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4<br>F1, F3, F4 | Personal Communication USFS 2019a.; Weintraub and others 1998 | Spring Valley Cabin | A Special Use permit is required. Operational constraints include prior coordination with the NF, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Proposed PR training site previously completely surveyed; adequate survey. The use of the cabin for PR training would be similar to its ongoing use as a rental recreation cabin and would not adversely affect any characteristics that make the cabin eligible for the NRHP (Personal communication USFS 2019a; see also Wahoff et al. 2019). | 8 |
| Tribeland | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6<br>F1, F7, F9 | Lesko 1991 | None | A Special Use permit is required. Operational constraints include prior coordination with the NF, with coordinates provided for any proposed camping, bivouacking/camping or off-road motorized vehicle activities. Proposed PR training site previously completely surveyed; adequate survey. No cultural resources in proposed training site. No impacts to historic properties. | 4 |
| Verde River[1] | Tonto NF (Arizona) | Tonto N F | W1, W2 | 1972-2.ASM; 7.151.SHPO; 1963-5.ASM | None | A Special Use permit is required. Activities would occur within the water. No disturbance would occur along the shorelines except at dedicated boat launch facilities. | 20 |
| ***PR Training Sites on Other Lands (Municipal, City, County, State Land)*** | | | | | | | |
| Babbitt Ranch 1[3] | Coconino County, North of City of Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 5 |
| Babbitt Ranch 3[3] | Coconino County, North of City of Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 5 |
| Bisbee Douglas International Airport (IAP) (Chang Noi Drop Zone [DZ]) [1] | Douglas (Arizona) | Cochise County | G1, G2, G3, G6<br>F1, F3, F5, F6, F7, F8, F9 | None | Bisbee Douglas IAP | Existing airfield, originally constructed 1941-1943 has not been recorded. Several original hangars and other structures that may be National Register eligible (Armstrong 2014). Activities would occur on airport pavements and would not impact cultural resources. | 47 |
| Blackhills HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F4, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 42 |
| Black Mountain Reservoir[2] | South of Drexel Heights (Arizona) | Town of Sahuarita | W2 | Unknown | Unknown | Activities would occur within the water. No disturbance would occur along the shorelines except at dedicated boat launch facilities. Activities would not impact cultural resources. | 43 |
| Brooke HLZ/DZ | Pinal County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 38 |
| Caldwell Meadows[1] | Alpine (Arizona) | Arizona Game and Fish Department | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10 | 2004-366.ASM | None | Proposed PR training site completely surveyed in 2004; no sites were identified. No historic properties impacted. | 24 |
| Caliente HLZ/DZ | Santa Cruz County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 44 |
| Catron County Fairgrounds[1] | Catron County (New Mexico) | Catron County | G1, G2, G6<br>F1, F3, F5, F7, F10 | 29705; 119254 | None | Proposed PR training site previously completely surveyed in 2010; no known sites. The USAF would reengage with the New Mexico SHPO and the NF and complete any additional surveys that may be required prior to bivouacking. Fairgrounds are previously disturbed. The USAF would coordinate with Catron County in advance of PR training activities. | 25 |
| City of Flagstaff[2] | City of Flagstaff (Arizona) | Arizona Board of Regents (Northern Arizona University) | G5<br>F1, F3 | Unknown | Unknown | Developed urban area. Proposed PR training activities in urban terrain, for urban evasion and flight operations would not impact historic properties. | 9 |
| City of Winslow[2] | City of Winslow (Arizona) | City of Winslow | G5<br>F1, F3 | Unknown | Unknown | Developed urban area. Proposed PR training activities in urban terrain, for urban evasion and flight operations would not impact historic properties. | 10 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Colorado River[1] | Bullhead City (Nevada) | Nevada Division of State Parks | W1, W2 | None | Unknown | Activities would occur within the water. No disturbance would occur along the shorelines except at dedicated boat launch facilities. Activities would not impact cultural resources. APE is partially within State of Arizona. | 6 |
| Coolidge Airport[1] | Pinal County, Southeast of City of Coolidge (Arizona) | City of Coolidge | G1, G3, G6<br>F1, F3, F4, F5, F7, F8, F9 | 1973-13.ASM; 1979-124.ASM; 1982-78.ASM; 1986-70.ASM; 2008-441.ASM; Unknown [d] | Coolidge Airport | Existing airfield constructed in 1940s. Master Plan indicated a potential for cultural resources; surveys of previously undisturbed areas to locate and evaluate any existing cultural resources was recommended (Coffman 2011). Activities would occur on airport pavements and would not impact cultural resources. | 37 |
| Flagstaff Pulliam Airport[1] | Coconino county, South of City of Flagstaff (Arizona) | City of Flagstaff | G1, G2, G3 G6<br>F1, F3, F4, F5, F7, F8 | 1975-13.ASM | NA14166; Flagstaff Pulliam Airport | Existing airfield. Much of airport property was surveyed for Runway extension EA and no cultural resources were found. The airport has not been recorded. Previously recorded quarry and lithic scatter has not been evaluated. Additional surveys may be required for development projects in areas that have not been previously disturbed and have not been previously surveyed (Coffman 2007). Activities would occur on airport pavements and would not have potential to impact cultural resources. | 9 |
| Froelich HLZ/DZ | Graham County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F5, F7 | USAF 2013 | None | Proposed PR training site was addressed under the USAF's 2017 Rescue Group Personnel Recovery Supplemental EA and AZ SHPO concurred with the determination of no effects to historic properties on 12 July 2013 (USAF 2017a: Appendix A). | 41 |
| Gila County Sheriff Roosevelt Substation[1] | Gila County, North of Roosevelt (Arizona) | Gila County Sheriff | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10 | None | Unknown | Existing parking area with paved/ disturbed surfaces. Activities would occur within paved and disturbed areas and would not have potential to impact cultural resources. | 21 |
| Grand Canyon National Park Airport[1] | Coconino County, South of Tusayan (Arizona) | State of Arizona | G1, G2, G3, G6<br>F1, F7, F8 | 1990-176.ASM; 2000-114.ASM; 1999-27.ASM; 1989-210.ASM | Grand Canyon National Park Airport | Existing airfield constructed 1963-1965 (Bucher, Willis & Ratcliff Corporation. n.d.). Activities would occur on airport pavements and would not impact historic properties. | 4 |
| H. A. Clark Memorial Field[1] | Coconino County, North of City of Williams (Arizona) | City of Williams | G1, G2, G3, G6<br>F1, F3, F4, F7, F8, F9 | None; Prior survey | H.A. Clark Memorial Field | Existing airfield, original construction 1935 (Howell 2018). Airport partially surveyed in support of 1997 EA (Stantec and Coffman 2007); three historic-period archaeological sites, one isolated feature and 15 isolated artifacts were found; none were determined eligible for the National Register. Airport is unrecorded. Activities would occur on airport pavements and would have no impacts to historic properties. | 8 |
| Highway 80 Paladins (TW 2 Paladins)[3] | Cochise County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 47 |
| Jeep HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 41 |
| Jenna HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 41 |
| Kingman Airport[1] | Mohave County, Northeast of the City of Kingman (Arizona) | City of Kingman | G1, G2, G3, G6<br>F1, F3, F5, F7, F8, F9 | None | AZ G:9:8 (ASM) | Existing airfield. WWII-era Kingman Army Airfield is NRHP eligible; activities would occur on airport pavements and would not have the potential to impact cultural resources. | 7 |
| Lake Havasu Airport[2] | Mohave County, North of Lake Havasu City (Arizona) | Lake Havasu City | F1, F3, F8 | Unknown | Unknown | Existing airfield; constructed beginning in the late 1980s. Activities would occur on airport pavements and would not have the potential to impact cultural resources. | 11 |
| Lake Patagonia[2] | Santa Cruz County (Arizona) | Arizona State Park | G6<br>F1, F3, F7<br>W1, W2 | Unknown | Unknown | Activities would occur within the water. No disturbance would occur along the shorelines except at dedicated boat launch facilities. Activities would not have the potential to impact cultural resources. | 45 |
| Lake Pleasant[2] | Maricopa County (Arizona) | Maricopa Water District | W2 | Unknown | Unknown | Activities would occur within the water. No disturbance would occur along the shorelines except at dedicated boat launch facilities and would not have the potential to impact cultural resources. | 19 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Lost Acre HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 39 |
| Marana Regional Airport[2] | Pima County, South of Town of Marana (Arizona) | Town of Marana | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F7, F8, F9 | Unidentified 2008 | Marana Airport | Existing airfield; currently approved for use for similar training activities. Originally constructed during WWII. 2008 EA for property acquisition and control tower found no NRHP-eligible sites; not inventoried for historic-period buildings (Armstrong 2017). Activities would occur on airport pavements, cleared/ heavily disturbed dirt landing zone, and nearby shooting range and would not have the potential to impact cultural resources. | 39 |
| Penitas HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 44 |
| Phoenix Sky Harbor IAP[1] | Maricopa County, City of Phoenix (Arizona) | City of Phoenix | F1, F3, F4, F5, F8 | 7.2814. SHPO; 2003-771.ASM; 2005-895.ASM; 2004-1888.ASM; 7.3187. SHPO; 1999-587.ASM; 2004-815.ASM; 2004-1780.ASM; 2005-86.ASM; 2003-675.ASM; 2006-765.ASM; 2011-19.ASM; 2012-9.ASM; 1999-582.ASM; 2012-159.ASM; 2008-36.ASM; 2009-652.ASM; 2013-365.ASM | AZ AA:12:875(ASM); AZ T:12:131 (ASM); P:3:6 (GP); AZ T:12:62 (ASM); AZ T:12:47 (ASM); AZ U:9:237 (ASM); AZ U:9:297 (ASM); AZ T:10:84 (ASM); Phoenix Sky Harbor IAP | Existing airfield. Activities would occur on airport pavements and would not have potential to impact cultural resources. | 29 |
| Pima County Emergency Operations Center[1] | City of Tucson (Arizona) | Pima County Sheriff | G2, G3 | 11-42-5E.BLM; 2008-53.ASM; 1999-147.ASM; 1998-141.ASM | None | Use of an existing building and pavements as an operations center would not have potential to impact cultural resources. | 40 |
| Pima County Regional Training Center[1] | City of Tucson (Arizona) | Pima County Sheriff | G2, G3, G8 | None | Unknown | Graded area. Use of an existing building for classroom and use of existing firing range would not have potential to impact cultural resources. | 40 |
| Pinal Air Park[2] | Pinal County, Northwest of Town of Marana (Arizona) | Pinal County | G2, G3, G6<br>F1, F3, F7, F8, F9 | Unknown | Unknown | Existing airfield; currently approved for use for similar training activities. Activities would occur on airport pavements/cleared dirt landing zone and would not have potential to impact cultural resources. | 39 |
| Pinnacle HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 41 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Playas Training and Research Center[1] | Hidalgo County, Playas (New Mexico) | New Mexico Institute of Mining and Technology | G1, G2, G3, G5, G6, G7, G8<br>F1, F2, F3, F4, F5, F6, F7, F8, F9, F10 | None | Unknown | Existing training facility; PR activities would be consistent with ongoing use of the facility and would occur in previously disturbed, paved, or MOUT areas in designated zones (Zones F, H and associated housing zones; New Mexico Tech and U.S. Department of Homeland Security 2006). Overhead flights, FARP, personnel parachute drops dismounted, mounted (on existing roads), Military Operations in Urban Terrain, survival training, technical rope work from platforms, and pyrotechnics (small arms) activities, and use of existing buildings (billeting, operations, and classrooms) and firing range would not impact cultural resources. In the event that PR training activities are proposed in areas with no prior disturbance, implementation of the measures specified in the PA, including cultural resources survey and treatment, would reduce potential impacts to cultural resources to below a level of significance. | 48 |
| Playas Temporary MOA | Grant County, Hidalgo County, Playas (New Mexico) | State of Arizona (State Trust Land); New Mexico Institute of Mining and Technology | F2 | Ninety-eight; see Table E-4 | Fifty-one sites; see Table E-5 | Temporary MOA is 520 square miles and encompasses the Playas Training and Research Center. Training activities would be flight operations; ground operations would occur at the Playas Training and Research Center (PTRC). Ten previously recorded sites are NRHP-eligible; none are historic-period structures, and none are within the PRTC. Based on the lack of ground disturbance and the negligible vibration, visual, and atmospheric effects associated with the use of the proposed Playas Temporary MOA, and the identified operational constraints, no historic properties would be impacted. | |
| Pond HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 42 |
| Powerline[3] | Coconino County, Northeast of City of Flagstaff (Arizona) | State of Arizona (State Trust Land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 5 |
| Prescott Airport[2] | Yavapai County, North of City of Prescott (Arizona) | City of Prescott | F1, F3, F8 | 1987-11.ASM; 1989-39.ASM; 2002-166.ASM; 2003-205.ASM, SHPO-2002-1656; 2005-78.ASM; 2006-489.ASM; 2010-528.ASM; 2015-439.ASM | Ernest A. Love Field; AZ N:7:353(ASM); AZ N:3:32 (ASM) | Existing airport; constructed in 1928 (The Louis Berger Group, Inc. 2010). Three sites have been recorded within or near the airfield, two are not eligible and the NRHP eligible Chino Valley Irrigation Ditch is no longer extant within the airport. Activities would occur on airport pavements and would not have potential to impact cultural resources. | 12 |
| Prieto HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 43 |
| Rancho Seco HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 42, 44 |
| Ruby Fuzzy Paladins[3] | Pima County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G4, G5, G6<br>F1, F3, F4, F5, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 44 |
| Sahuarita Lake[2] | Town of Sahuarita (Arizona) | Town of Sahuarita | W2 | Unknown | Unknown | Activities would occur within the water. No disturbance would occur along the shorelines except at dedicated boat launch facilities. | 43 |
| Salt River High[1] | White River (Arizona) | White Mountain Apache | G2, G3, G6<br>F1, F3, F5, F7, F10<br>W2 | None | Unknown | The HLZ is within a heavily disturbed quarry. The White Mountain Apache Tribal Historic Preservation Officer (THPO) had no cultural resource concerns related to the use of this site for same activities under the Angel Thunder EA and concurred with the finding of no effect on historic properties (USAF 2017c). | 22 |
| Salt River Low[1] | San Carlos (Arizona) | White Mountain Apache | G2, G3, G6<br>F1, F3, F5, F7, F10<br>W1, W2 | None | Unknown | The White Mountain Apache THPO had no cultural resource concerns related to the use of this site for same activities under the Angel Thunder EA and concurred with the finding of no effect on historic properties (USAF 2017c). | 22 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Sierrita HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F5, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 42 |
| Silvermine HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G6<br>F1, F3, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 39 |
| Springerville Airport[1] | Apache County, West of Town of Springerville (Arizona) | Town of Springerville | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F8, F9 | 1948-1.ASM; 75-011.ASU | Springerville Airport | Existing airfield. Activities would occur on airport pavements and would not have potential to impact cultural resources. | 23 |
| St. Johns Industrial Air Park[1] | Apache County, North of City of St. Johns (Arizona) | City of St. Johns | G1, G2, G3, G4, G6<br>F1, F3, F5, F6, F7, F8, F9 | Unidentified survey | Unknown | Existing airfield. Activities would occur on airport pavements and would not have potential to impact cultural resources. | 17 |
| Tombstone 8 HLZ[2] | Hidalgo county (New Mexico) | State of New Mexico (State Trust Lands) | G2, G3, G6<br>F1, F3, F5, F7, F10 | Kalosky 2019 | None | Proposed PR training site completely surveyed in 2019; no cultural resources. No impacts to historic properties. | 48 |
| Tombstone 15 HLZ[2] | Cochise County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | Kirvan and Rogge 2019a | None | Proposed PR training site completely surveyed in 2019; no cultural resources. No impacts to historic properties. | 47 |
| Tombstone 18 HLZ[2] | Cochise County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | Kirvan and Rogge 2019a | None | Proposed PR training site completely surveyed in 2019; no cultural resources. No impacts to historic properties. | 47 |
| Tombstone 19 HLZ[2] | Cochise County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | Kirvan and Rogge 2019a | Isolated finds | Proposed PR training site completely surveyed in 2019; isolated prehistoric finds. No impacts to historic properties. | 47 |
| Tombstone Paladins[3] | Cochise County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F7, F9, F10 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 47 |
| University of Arizona Dive Pool[2] | City of Tucson (Arizona) | Arizona Board of Regents (University of Arizona) | W2 | None | Unknown | Use of an existing pool would not have potential to impact cultural resources. | 40 |
| University of Arizona Medical Center[1] | City of Tucson (Arizona) | Arizona Board of Regents (University of Arizona) | F7 | 1998-59.ASM | Unknown | Use of an existing helipad at the medical center would not have potential to impact cultural resources. | 40 |
| Waterman HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust Land) | G2, G3, G6<br>F1, F3, F7 | USAF 2013 | None | AZ SHPO concurred with the finding of No Adverse Effect July 12, 2013 (USAF 2017a: Appendix A). | 39 |
| Winslow-Lindbergh Regional Airport (Wiseman Aviation) [1] | Navajo County, West of City of Winslow (Arizona) | City of Winslow | G1, G2, G3, G4, G6<br>F1, F3, F5, F6, F7, F8, F9 | 2010-530.ASM | Winslow-Lindbergh Regional Airport | Existing airfield; built in 1929. Activities would occur on airport pavements and would not have potential to impact cultural resources. | 10 |
| Yuma Airport[2] | Yuma County, South of City of Yuma (Arizona) | City of Yuma | F1, F3, F8 | Unknown | Fly Field | Existing airfield, original construction began in 1928 (Ricondo & Associate, Inc. 2009). Activities would occur on airport pavements and would not have potential to impact cultural resources. | 34 |
| ***PR Training Sites on Private Land*** | | | | | | | |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Bone Crusher[4] | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6 F1, F3, F5, F7 | Miljour and Wegener 2019 | Isolated finds | Proposed PR training site completely surveyed in 2019; prehistoric and historic-period isolated finds not eligible for the NRHP (Miljour and Wegener 2019). No impacts to historic properties. | 4 |
| Cattle[3] | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6 F1, F3, F4, F5, F7, F9 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 9 |
| Cattle LTFW[3] | Coconino County, North of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6 F1, F3, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 5 |
| Elk[3] | Coconino County, South of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6 F1, F3, F4, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 9 |
| Eloy North[1] | Pinal County, North of City of Eloy (Arizona) | Skydive Arizona | G1, G2, G3, G6 F1, F3, F4, F5, F7, F9 | 2003-1076 | AZ AA:12:875 (ASM) | Heavily disturbed field used for Skydive Arizona's skydive operations. Activities would not cause new disturbance. | 37 |
| Eloy South | Pinal County, North of City of Eloy (Arizona) | Skydive Arizona | G1, G2, G3, G6 F1, F3, F4, F5, F7, F9 | None | Unknown | Site used by Skydive Arizona for same use. SHPO concurred that no survey is needed providing there would be no change in use and no improvements needed (Davis 2018). | 37 |
| FR 320/311[1] | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3 F1, F3, F5, F7 | Unidentified Survey | Unknown | Existing airfield; partially surveyed. Activities would occur on airport pavements and would not have potential to impact cultural resources. | 4, 5 |
| Gerbil[3] | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G5, G6, G7, G8F1, F3, F5, F7, F9 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 5 |
| Grand Canyon Valle Airport[1] | Coconino County, East of Valle (Arizona) | Grand Canyon Valle Corp | G1, G2, G3, G6 F1, F3, F7, F8, F9 | 1991-227.ASM | AZ H:8:3(ASM); AZ H:8:4(ASM); AZ H:8:5(ASM); AZ H:8:6(ASM); AZ H:8:7(ASM); Grand Canyon Valle Airport | Existing airfield. Partially surveyed; five eligible prehistoric sites. Grand Valle Airport has not been recorded or evaluated. Activities would occur on airport pavements and would not have potential to impact cultural resources. | 4 |
| HLZ 5[3] | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6 F1, F3, F4, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 9 |
| HLZ 6 | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6 F1, F3, F4, F5, F7 | None | Unknown | Existing sports field with disturbed surface. Activities would occur within the sports field. | 9 |
| Little Outfit[1] | Santa Cruz County, Southwest of Canelo (Arizona) | Pete Robbins | G1, G2, G3, G6 F1, F3, F4, F5, F7, F9 | None | Unknown | Existing airstrip. Training activities would be contained within existing disturbance area. | 45 |
| Ott Family YMCA of Tucson Pool[2] | City of Tucson (Arizona) | YMCA of Tucson | W2 | Unknown | Unknown | Existing facility; activities would occur within the water. No potential to impact cultural resources. | 40 |

| Table E-2 - Cultural Resources Records Search Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **Surveys** | **Identified Cultural Resources** | **Notes** | **Map Book Index #** |
| Panda[3] | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 5 |
| Scottsdale Osborn[1] | City of Scottsdale (Arizona) | HonorHealth | F7 | 2001-284.ASM | None | Developed helipad at the medical center. Use of the helipad would not have potential to impact cultural resources. | 29 |
| Sinkhole[1] | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | 1995-282.ASM;<br>1996-458.ASM | AZ G:9:8 (ASM) | Existing airfield. Activities would occur at the graded airfield area and would have little potential to impact cultural resources. | 4 |
| Sprucedale Guest Ranch[1] | Greenlee County, Southwest of Alpine (Arizona) | Whitney Wiltbank | G1 | None | Unknown | Use of the existing Guest Ranch for billeting and an operations center would have limited potential to impact cultural resources. No ground disturbance would occur. The use of the Guest Ranch would be similar to its ongoing use as rental recreation facilities. | 24 |
| Squirrel[3] | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G6<br>F1, F3, F5, F7, F9 | None | Unknown | Proposed PR training site removed from Section 106 consultation at this time. | 5 |

## Table E-2 - Cultural Resources Records Search Results

| Name | Location | Controlling Agency | Training Activity *(Key below)* | Surveys | Identified Cultural Resources | Notes | Map Book Index # |
|---|---|---|---|---|---|---|---|
| Three Points Public Shooting Range[1] | Pima County, West of Three Points (Arizona) | Tucson Rifle Club, Inc. | G8 | 1973-10.ASM; 1995-339.ASM | AZ AA:16:377 (ASM); AZ Z:14:127 (ASM) | Existing developed shooting range. Use of the existing shooting range for training would not have potential to impact cultural resources. | 42 |

Notes
[1] Includes records search information from Angel Thunder EA (USAF 2017c)
[2] These are new PR training sites.
[3] Please note that a cultural resources survey has not been completed for this PR Training site; therefore, this PR Training site has been removed from the Section 106 consultation process at this time. No PR Training activities would occur at this site until it can be determined through the Section 106 process that the Proposed Action would not result in impacts to cultural resources at this site.
[4] Records search information from Archaeological Inventory of Proposed Helicopter Landing Zones (HLZs) and Drop Zones (DZs) in Arizona in support of the Bi-Annual Angel Thunder Search-and-Rescue Training Headquartered from Davis-Monthan Air Force Base, Tucson, Arizona. (Miljour and Wegener 2019)

Training Activity Key:
G1 = Ground Ops – Camping, Bivouacking, and Assembly Area Use
G2 = Ground Ops – Cross-Country Dismounted (Non-Vehicle) Movements
G3 = Ground Ops – Mounted (Vehicle) Movement/Blackout Driving
G4 = Ground Ops – Survival Training/Natural Resource Consumption
G5 = Ground Ops – Military Operations in Urban Terrain/Urban Evasion
G6 = Ground Ops – Technical Rope Work
G7 = Ground Ops – Pyrotechnic Use
G8 = Ground Ops – Shooting / Firing Range

F1 = Flight Ops – Established MOAs
F2 = Flight Ops – Temporary MOAs
F3 = Flight Ops – LATN Areas
F4 = Flight Ops – Restricted Areas
F5 = Flight Ops – Other Airspace (e.g., Military Training Routes)
F6 = Flight Ops – FARP Operations
F7 = Flight Ops – HLZs
F8 = Flight Ops – Fixed-Wing LZs
F9 = Flight Ops – Parachute Operation/DZs
F10 = Flight Ops - Close Air Support

W1 = Water Ops – HLZs/DZs/Overwater Hoist Operations
W2 = Water Ops – Amphibious Ops

Acronyms, Abbreviations and Symbols:
AFB = Air Force Base
ARB = Air Reserve Base
APE = Area of Potential Effect
ASM = Arizona State Museum.
AZARNG = Arizona Army National Guard
BLM = Bureau of Land Management
BMGR = Barry M. Goldwater Range
DZ = Drop Zone
EA = Environmental Assessment
EIS/OEIS = Environmental Impact Statement/Overseas Environmental Impact Statement
ENRD = Environmental and Natural Resources Division
HLZ = Helicopter Landing Zone
IAP = International Airport
ICRMP = Integrated Cultural Resources Management Plan
INCRMP = Integrated Natural and Cultural Resources Management Plan
LZ = Landing Zone
MCB = Marine Corps Base
MOA = Military Operations Area
NALF = Naval Auxiliary Landing Field
NAS = Naval Air Station
NF = National Forest
R = Restricted
SCI = San Clemente Island
SHPO = State Historic Preservation Officer
SPRR = Southern Pacific Railroad
THPO = Tribal Historic Preservation Officer
USAF = United States Air Force
USFS = United States Forest Service
W = Warning Area

| Table E-3. Available Military Installations' Resource Management Documents Reviewed for Cultural Resources Concerns at Proposed PR Training Sites on DoD Property | | |
|---|---|---|
| **Installation** | **Document** | **Citation** |
| BMGR | 2013 BMGR research design and management plan | Heilen, Michael and Rein Vanderpot, 2013. Pathways to Preservation: A Research Design and Heritage Management Plan for the Barry M. Goldwater Range East, Arizona. Statistical Research, Inc., Tucson, Arizona. Prepared for U.S. Army Corps of Engineers, Los Angeles District. Contract No. W912PL-07-D-0048. |
| MCB Camp Pendleton | 2017 ICRMP update | ASM Affiliates (ASM), 2017. Final Integrated Cultural Resources Management Plan Update for Marine Corps, Base Camp Pendleton. ASM Affiliates, Inc., Carlsbad, California. Prepared for Marine Corps Base Camp Pendleton. |
| | 2018 Range and Training Area Standard Operating Procedures (SOPs) | U.S. Marine Corps (USMC), 2018d. The Range and Training Area Standard Operating Procedures MCI West – Marine Corps Base Camp Pendleton 3500.1a. |
| | 2018 Environmental Operations Map | U.S. Marine Corps (USMC), 2018a. Environmental Operation Map Environmental Security MCI West – Marine Corps Base Camp Pendleton. |
| Davis-Monthan AFB | 2018-2023 ICRMP | U.S. Air Force (USAF), 2018a. Integrated Cultural Resources Management Plan FY2018-2013 Davis-Monthan Air Force Base Arizona May 2018. United States Air Force Civil Engineer Center Nellis Installation Support Team. |
| Fort Huachuca | 2007 ICRMP (revised 2009) | SWCA Environmental Consultants (SWCA), 2009. Integrated Cultural Resources Management Plan for Fort Huachuca Military Reservation, Cochise County, Arizona. December 2007 (Revised March 2009). |
| Fort Tuthill | 2017 Luke AFB, Auxiliary Air Field No. 1, and Fort Tuthill Recreational Area ICRMP | U.S. Air Force (USAF), 2017b. U.S. Air Force Integrated Cultural Resources Management Plan Luke Air force Base, Auxiliary Air Field No. 1, and the Fort Tuthill Recreation area. 56th Fighter Wing, U.S. Air Force. |
| March ARB | 2012 Integrated Natural Resources Management Plan (INRMP) | URS Corporation (URS). 2012. Final Integrated Natural Resources Management Plan March Air Reserve Base, California. Prepared by URS Corporation, Santa Ana, California for 452nd Air Mobility Wing and Headquarters, Air Force Reserve Command, Environmental Division, Robins Air Force Base, Georgia. |
| Melrose AFR | 2018 ICRMP | U.S. Air Force (USAF), 2018b. U.S. Air Force Integrated Cultural Resources Management Plan Cannon Air Force Base (Cannon Main Base and Melrose Air Force Range). 27th Special Operations Wing. August 2018. |

| Table E-3. Available Military Installations' Resource Management Documents Reviewed for Cultural Resources Concerns at Proposed PR Training Sites on DoD Property | | |
|---|---|---|
| **Installation** | **Document** | **Citation** |
| NAF El Centro | 2013 ICRMP | Dietler, John, Linda Akyüz, 2013. Integrated Cultural Resources Management Plan for Naval Air Facility El Centro, Imperial County, California. SWCA Environmental Consultants, Pasadena. Prepared for U.S. Department of the Navy, Naval Facilities Engineering Command Southwest. |
| NAS North Island | 2012 Naval Base Coronado ICRMP | Pumphrey, Michael P., et al., 2012. Integrated Cultural Resources Management Plan for Naval Base Coronado, San Diego, California. ASM Affiliates, Inc. Prepared for Naval Facilities Engineering Command, Southwest. |
| Nellis AFB | 2017 Nellis, Creech, and Nevada Test and Training Range (NTTR) ICRMP | U.S. Air Force (USAF), 2017d. U.S. Air Force Integrated Cultural Resources Management Plan Nellis, Creech, and NTTR. USAF War Fare Center. |
| San Clemente Island | 2012 San Clemente Island Range Complex ICRMP | Apple, Rebecca M., and Tanya Wahoff, 2012. Integrated Cultural Resources Management Plan for San Clemente Island Range Complex, California. AECOM, San Diego, California. Prepared for Navy Region Southwest, Natural/Cultural Resources Program, Navy Region Southwest Environmental Department. |
| White Sands Missile Range | 2015-2019 INCRMP | U.S. Army Garrison White Sands (U.S. Army), 2015. White Sands Missile Range Integrated Natural and Cultural Resources Management Plan and Environmental Assessment 2015-2019. Environmental Stewardship Branch, Environmental Division, White Sands Missile Range and Gene Stour and Associates, Loveland, Colorado. |
| Note: Table E-2 provides a summary of the resource management plans and documents available for applicable military installations that were reviewed for cultural resources concerns at the proposed PR trainings sites on DoD property.<br><br>Acronyms, Abbreviations and Symbols:<br>INRMP = Integrated Natural Resources Management Plan<br>NAF = Naval Air Facility<br>NTTR = Nevada Test and Training Range<br>SOPs = Standard Operation Procedures | | |

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| Table E-4. Surveys in Playas Temporary MOA | | | | |
|---|---|---|---|---|
| **NMCRIS Number** | **Author** | **Report Title** | **Report Date** | **Acreage** |
| 50514 | Michalik, Laura | An Archaeological Clearance Survey of Two Proposed Yard Areas, Three Haul Roads and a Sand Pit on State and Private Land, Grant County, New Mexico | 12/31/1996 | 338.11 |
| 244 | Clifton, Don | Cultural Resource Investigations of NM 9 in Hidalgo and Grant Counties, New Mexico | 12/31/1982 | 305.4 |
| 662 | Hilley, John P., Glenda G. Hilley, Carol J. Hilley, and Bill Bloch | An Archaeological Clearance Survey of Eleven Seismic Testing Transects in Hidalgo, Grant, Luna and Dona Ana Counties | 12/31/1982 | 392.73 |
| 2091 | Kyte, M. | Seismograph Services Corp. Line #7 Black Mountain Draw Segment Line #7 Etc. Duplicate | 12/31/1984 | 69 |
| 2099 | Hankins, David | Seismograph Services Corp. Line #4, Line #5 | 12/31/1984 | 50.79 |
| 2109 | Hankins, David | Seismograph Services Corp. Line #3 | 12/31/1984 | 36.31 |
| 2117 | Hankins, David | Seismograph Services Corp. Line #12 | 12/31/1985 | 29.61 |
| 2118 | Hankins, David | Seismograph Services Corp. Line #13 | 12/31/1985 | 30.64 |
| 2129 | Hankins, David | Seismograph Services Corp. Line #6 | 12/31/1985 | 36.04 |
| 2314 | Hankins, David | Archaeological Clearance Report For Seismograph Services Corporation Line #11 | 12/31/1985 | 48.2 |
| 2315 | Hankins, David | Archaeological Clearance Report For Seismograph Services Corporation Line #14 and Line #17 | 12/31/1985 | 146.91 |
| 3949 | Laumbach, K.W. | Seismic Testing Transects For Deniels Geophysical | 12/31/1982 | 351.52 |
| 7479 | Killam, William R. | Archaeological Clearance Investigations of Three Borrow Pits in Hidalgo County | 12/31/1977 | 8.26 |
| 8483 | Hilley, G. et al. | 2 Drill Pads Access Road and Gravel Pit For Marshall Young Oil | 12/31/1985 | 41.7 |
| 8833 | Mallouf, M.G. | Location For Placement Of New Fencelines Near Hachita For BLM-LCRA | 12/31/1985 | 7.95 |
| 8834 | Coalson, D.L. | Pyramid Tank Exclosures For BLM-LCRA | 12/31/1985 | 2.42 |
| 8880 | Mallouf, M.G. | New Fencelines On Bertoglio-Merrill Ranch Near Lordsburg For LCRA | 12/31/1985 | 13.63 |
| 9753 | Kyte, M. | Line #7 Black Mt, State Segment Cedar Mountain RNG Segment For Seismograph Services Corp. | 12/31/1984 | 69 |
| 10089 | Leftwich, K. et al. | Line 82-912 For Seismograph Services Corp. | 12/31/1982 | 39.85 |
| 10524 | Mallouf, M.G. | Muir Materials Extraction Pit for BLM Las Cruces 030-86-33 | 12/31/1986 | 11 |

| Table E-4. Surveys in Playas Temporary MOA | | | | |
|---|---|---|---|---|
| **NMCRIS Number** | **Author** | **Report Title** | **Report Date** | **Acreage** |
| 11140 | Leftwich, K. et al. | Three Seismic Lines For Pacific West | 12/31/1981 | 0 |
| 11208 | Weyer, J.K. | Six Seismic Testing Transects For Geophysical Service Incorporated | 12/31/1979 | 0 |
| 11568 | Connors, Deborah T. | An Archaeological Survey of Approximately Nine Miles of Proposed Telephone Easement in Hidalgo County Near Animas, New Mexico | 12/31/1977 | 32.72 |
| 11652 | Brethauer, D.P. et al. | Gila Planning Unit Project #YA-512-CT6-60 For BLM | 12/31/1975 | 0 |
| 12784 | Haecker, Charles M. | Cultural Resource Survey of Six Construction and Maintenance Easements near Hacita, New Mexico Project No. 0S-2106(3) | 12/31/1986 | 18.09 |
| 15427 | Koczan, Steven A. | Cultural Resource Investigations near SR 9 and I-10 Grant County, New Mexico, NMSHD Projects SP-2009(200) and IR-010-1(39)34 | 12/31/1983 | 54.3 |
| 15447 | Clifton, Don | A Cultural Resources Survey of Proposed NMSHD Surfacing Pit 54-118-S, Grant County, New Mexico | 12/31/1983 | 20.9 |
| 15973 | Mallouf, M.G. | Four Drill Holes and Access Roads In Little Hatchet Mountains For BLM/Las Cruces | 12/31/1986 | 2.5 |
| 16541 | Hoyt, M.A. | Water Pipe Line, Storage Tank and Trough Linea Divisori Allotment for LC BLM | 12/31/1979 | 6.88 |
| 17097 | Mallouf, M.G. | Andy Peterson Fenceline Near Animas, NM - Las Cruces Office | 12/31/1986 | 9.9 |
| 20419 | Mallouf, M.G. | Peterson Headquarters Fence Near Animas, NM for Las Cruces BLM - Lordsburg RA | 12/31/1988 | 17.9 |
| 20420 | Mallouf, M.G. | Croom Pipe Line Near Animas, NM for Las Cruces BLM - Lordsburg RA | 12/31/1988 | 3.9 |
| 20602 | Rorex, A.S. | Three Proposed Transmission Line R/W's For Columbus Electric Coop | 12/31/1988 | 59.23 |
| 20774 | Mallouf, M.G. | Howell Pipe Line Near Hachita, NM For Las Cruces BLM-Lordsburg RA | 12/31/1988 | 11 |
| 23393 | Mallouf, M.G. | Black Mtn Pipe Line Near Hachita For Las Cruces BLM-Lordsburg RA | 12/31/1988 | 15.9 |
| 24148 | Stuart, T. | Five Air Pollution Monitoring Towers For Phelps Dodge Corp. | 12/31/1988 | 14.6 |
| 24220 | Farmer, T. Reid | A Cultural Resources Survey for the Western States Microwave Tower System in Southern New Mexico Dona Ana, Luna, Grant, and Hidalgo Counties | 12/31/1984 | 61.59 |
| 24700 | Mallouf, M.G. | South Pyramid Fence Line For Las Cruces BLM-Mimbres RA | 12/31/1989 | 13 |
| 25476 | Rorex, A.S. | Telephone Service R/W Near Separ, NM For US West Communications | 12/31/1989 | 20.1 |
| 25795 | Mallouf, M.G. | Croom Pipe Line extension Near Animas, NM For Las Cruces BLM-Mimbres RA | 12/31/1989 | 2.9 |
| 26854 | Mallouf, M.G. | Mayfield Pipe LineNear Lordsburg, NM For Las Cruces BLM-Mimbres RA | 12/31/1989 | 9.9 |
| 26856 | Mallouf, M.G. | Hidalgo County Borrow Pit Near Lordsburg, NM For Las Cruces BLM-Mimbres RA | 12/31/1989 | 25 |
| 26857 | Mallouf, M.G. | Homestead Hill Borrow Pit Near Lordsburg, NM For Las Cruces BLM-Mimbres RA | 12/31/1989 | 10 |
| 26858 | Mallouf, M.G. | Chico Fence Line Near Lordsburg, NM ForLas Cruces BLM-Mimbres RA | 12/31/1989 | 17.9 |

| Table E-4. Surveys in Playas Temporary MOA | | | | |
|---|---|---|---|---|
| **NMCRIS Number** | **Author** | **Report Title** | **Report Date** | **Acreage** |
| 28038 | Michalik, Laura | Three Catchment Ponds and Water Well Near Lordsburg, NM For A and S Construction Co. | 12/31/1989 | 16.1 |
| 28074 | Mallouf, M.G. | Mayfield Access Road Near Lordsburg, NM For Las Cruces BLM-Mimbres RA | 12/31/1989 | 7.9 |
| 28318 | Stuart, T. | 5.60 Acre Gravel Extraction Pit and Crusher Site For Ribble Contracting Inc. | 12/31/1990 | 5.6 |
| 28821 | Mallouf, M.G. | Hurt Pipe Line For Las Cruces BLM-Mimbres RA | 12/31/1989 | 1 |
| 35150 | Koczan, Steven A. | Cultural Resource Investigations at a Proposed Drainage Easement on the Hidalgo County Road South of I-10 Muir Exchange | 12/31/1990 | 3.29 |
| 35198 | Levine, Daisy F. | An Archaeological Survey of a Proposed County Road Near Lordsburg, Hidalgo County, New Mexico | 12/31/1990 | 248.48 |
| 36765 | Michalik, Laura | An Archaeological Clearance Survey of Two Proposed Catchement Ponds and a Borrow Pit in Hidalgo County, New Mexico | 12/31/1990 | 9.6 |
| 36773 | Michalik, Laura | An Archaeological Clearance Survey of Proposed Surfacing Pit/Crusher Site in Grant County, New Mexico | 12/31/1991 | 40 |
| 36774 | Michalik, Laura | Two Segments Of Access Road Near Hachita, NM For Challenger Gold | 12/31/1991 | 0 |
| 38007 | Michalik, Laura | Sand Pit For James Hamilton Construction | 12/31/1991 | 5.7 |
| 38696 | Lowry, C.A. | Pipe Line On Mayfield Ranch For Las Cruces BLM-Mimbres RA | 12/31/1991 | 12.9 |
| 39549 | Nelson, Norman B. | A Cultural Resource Survey of Three Turnouts on State Road 9 near Animas, New Mexico NMSHTD District 1 | 12/31/1992 | 3.4 |
| 39737 | Lowry, C.A. | Hurt Ranch Pipe Line Near Hatchita, NM For Las Cruces BLM-Mimbres RA | 12/31/1992 | 2.78 |
| 39776 | Ojala, C.N. | Pipe Line On Bertoglio and Merrill Allotment For Las Cruces BLM | 12/31/1980 | 23.03 |
| 40239 | Lowry, C.A. | South Pyramid Fence Line Near Playas, NM For Las Cruces BLM-Mimbres RA | 12/31/1992 | 9.94 |
| 41395 | Evans, Laurie G. | A Cultural Resources Survey on NM 113 Southeast of Lordsburg, District 1 Maintenance | 12/31/1992 | 12.12 |
| 41437 | Lowry, Christopher A. | An Archaeological Survey of the Vista Tank Pipeline Near Hachita, Grant County, New Mexico | 12/31/1992 | 29.8 |
| 42543 | Lowry, C.A. | Silicate Mine Near Hachita, NM For Las Cruces BLM-Mimbres RA | 12/31/1993 | 5 |
| 43770 | Michalik, Laura | Five Drilling Areas Near Little Hatchet Mtns For Challenger Gold Inc. | 12/31/1993 | 65.58 |
| 45254 | Michalik, Laura | An Archaeological Clearance Survey of Two Proposed Access Roads and Two New Drill Pads Near the Little Hatchet Mountains, Hidalgo County, New Mexico | 12/31/1993 | 1.4 |

| Table E-4. Surveys in Playas Temporary MOA | | | | |
|---|---|---|---|---|
| **NMCRIS Number** | **Author** | **Report Title** | **Report Date** | **Acreage** |
| 45296 | Sullivan, Richard B. and Philip R. Waite | A Class III Cultural Resources Inventory of Three U.S. Air Force Air Combat Command Temporary Radar Facilities, Hidalgo County, New Mexico | 12/31/1994 | 19.43 |
| 45893 | Duran, Meliha S. | Archaeological Survey of Portions of a Seismic Line in the Playas Valley and Coyote Hills, Hidalgo and Grants County, New Mexico | 12/31/1982 | 140.61 |
| 46058 | Michalik, Laura | An Archaeological Clearance Survey of a Proposed Valley Telephone Cooperative Underground Telephone Cable Right-of-way Between Animas, Playas and Separ in Hidalgo and Grant Counties, New Mexico | 12/31/1994 | 224.4 |
| 48016 | Plum, Michael W. | An Archeological Clearance Survey for the Proposed Uhl Draw Pipeline Reconstruction T. 25S, R. 18W, Sections 1, 11, and 12 Hidalgo County, New Mexico | 12/31/1994 | 21.15 |
| 49376 | Michalik, Laura | An Archaeological Clearance Survey of Three Proposed Borrow Pits, One Crusher/Hot Plant Site and an Access Road near Muir Ranch, Hidalgo and Grant Counties, New Mexico | 12/31/1995 | 74.03 |
| 51868 | Fredine, Jeffrey L. | An Archeological Clearance Survey for the Proposed Croom Pipeline Extension and Water Tank T.28S R.18W Section 21 T.29S R.18W Section 3 Hidalgo County, New Mexico | 12/31/1995 | 2.3 |
| 57535 | Hewitt, Ray J. | South Well Pipe Line | 12/31/1997 | 15.2 |
| 57987 | Michalik, Laura | Cultural Resources Class III Inventory of a Proposed Contel Cellular Tower Site and Electric Line Right-of-Way on Beacon Hill, Hidalgo County, New Mexico | 12/31/1996 | 2.4 |
| 57988 | Michalik, Laura | Cultural Resources Class III Inventory of an Existing Electric Line Right-of-Way on Beacon Hill, Hidalgo County, New Mexico | 12/31/1996 | 0.75 |
| 63296 | Wright, E. | Section 106 Consultation Form (Cultural Resources) CIN - 5 Fence (382) #1 and #2 | 12/31/1998 | 0 |
| 66927 | Ennes, Mark | Cultural Resource Survey for Telephone Cable Replacement Along New Mexico Highway 9, Grant County, New Mexico | 12/31/2000 | 16.06 |
| 67167 | Lone Mountain's Staff | Cultural Resource Survey for a Proposed Fiber Optic Corridor Spanning Hidalgo, Grant, Luna, and Dona Ana Counties, New Mexico | 12/31/2002 | 1567.98 |
| 74348 | Kirkpatrick, David T. | An Archaeological Survey of 27.6 AC (11.4 HA) for the Proposed Drainage Improvement between MP 34 and MP 35.7, New Mexico State Highway 9 (Consultant Task No. 4025-21), Grant County, New Mexico | 12/31/2001 | 27.6 |
| 74685 | Natural Resources Conservation Service | Section 106 Consultation Form (Cultural Resources) Well 642 CIN# 5 for James Mayfield | 12/31/2000 | 0 |
| 77410 | Quaranta, James | A Cultural Resource Survey for Proposed Fence Reconstruction and Limited Highway Re-alignment Along NM 81, MP 28-MP 44, Grant and Hidalgo Counties, New Mexico | 12/31/2002 | 197.11 |

| Table E-4. Surveys in Playas Temporary MOA | | | | |
|---|---|---|---|---|
| **NMCRIS Number** | **Author** | **Report Title** | **Report Date** | **Acreage** |
| 77699 | Riedeman, Jennifer S. | Cultural Resource Survey of 50.3 Acres for a Proposed Fiber Optic Corridor Along Little Hatchet Mountain Road, Grant and Hidalgo Counties, New Mexico | 12/31/2002 | 50.3 |
| 81356 | Doak, David P. | A Class III Cultural Resource Survey of a 1.75 Mile Long, 20-Foot Wide Telephone Line Right-of-Way West of Hachita, in Grant County, New Mexico | 12/31/2003 | 26.5 |
| 98130 | Burleson, Richard | Cultural Resource Survey of 6.77 Acres Along New Mexico State Highway 9 from Milepost 19 to Milepost 19.4, Hidalgo County, New Mexico | 12/31/2006 | 6.77 |
| 101963 | Goar, Toni R., Amador Minjares, and Sarah Matthews | A Cultural Resource Survey for the Proposed Continental Divide Scenic Trail, Bootheel Portion, Hidalgo and Grant Counties, New Mexico | 5/31/2007 | 1192.5 |
| 102685 | Moses, James | A Class III (Intensive) Pedestrian Cultural Resources Assessment Survey of an Approximately 0.65-Mile Road and Two Culvert Placement Areas Located West of Playas in Hidalgo County, New Mexico (FEMA PW# 649) | 12/31/2006 | 8.13 |
| 106674 | Stowe, Michael | Cultural Resource Survey of Approximately Five Miles for the Construction and Replacement of Waterline in Hachita, Grant County, New Mexico | 12/31/2007 | 50 |
| 113226 | Ackerly, Neal W. | Archaeological Inventory of 16 Proposed Exploratory Drill Locations in the Old Hachita Mining District, Grant County, NM. | 3/19/2009 | 3.81 |
| 119805 | Greg Collins | Taylor Well and Pipeline | 2/24/2011 | 23 |
| 120309 | Greg Collins | Hurt Cattle Co - Coyote Well Drilling | 4/11/2011 | 7.3 |
| 121053 | Gibbs, Victor and Leah Markiewitz | Cultural Resources Survey for a Military Trespass Near Playas, Grant, and Hidalgo Counties, New Mexico | 8/2/2011 | 9.74 |
| 125952 | Mark Sechrist | Archaeological Survey of Proposed Pipeline and Fence Corridors on the Hachita Divide Ranch, Grant County, New Mexico | Unknown | 19.75 |
| 126082 | Mastropietro, George, R. Brucker, C. Carlson | A Class III Cultural Resource Survey for Rangeland Management Improvements in Hidalgo, Grant and Otero Counties, New Mexico | 3/17/2013 | 393.39 |
| 126643 | Brown, Emily J., and Mark Sechrist | Archaeological Survey of a Proposed Fence Location on the Hurt Cattle Ranch, Grant County, New Mexico | 3/22/2013 | 27.02 |
| 128941 | Mark Sechrist | Archaeological Survey of Two Proposed Radio Telecommunications Sites in the Big Hatchet and Little Hatchet Mountains, Hidalgo County, New Mexico | 10/29/2013 | 1.6 |

| Table E-4. Surveys in Playas Temporary MOA | | | | |
|---|---|---|---|---|
| **NMCRIS Number** | **Author** | **Report Title** | **Report Date** | **Acreage** |
| 129952 | Mark Sechrist and Patrick M. Graham | Cultural Resources Inventory of Proposed Pipe Line and Fence Line Corridors on the Mayfield Ranch, Hidalgo County, New Mexico | 7/14/2014 | 224 |
| 132010 | Victor Gibbs | A Cultural Resources Survey for Road Access for a Proposed Movie Location, Hidalgo County, New Mexico | 10/31/2014 | 1 |
| 134218 | Mauro Herrera | Pete Peterson- Livestock Water Well and Storage | 9/15/2015 | 1.7 |
| 134735 | Brown, Kenneth L. and Marie E. Brown | A Class I and Class III Cultural Resource Survey for the El Paso Natural Gas Lines 1004 and 1005 from Station 4 to the Arizona Border Near Rodeo, New Mexico, Luna, Grant, and Hidalgo Counties, New Mexico | 12/30/2015 | 807 |
| 136167 | Nichols, Sarah R., and John D. Carter | A Cultural Resource Inventory of Portions of the Peterson Ranch in Hidalgo County, New Mexico | 7/1/2016 | 74.15 |

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| Table E-5. Previously Recorded Archaeological Sites within the Playas Temporary MOA APE | | | | |
|---|---|---|---|---|
| **Site Number, Name** | **Age** | **Description** | **Eligibility** | **NMCRIS Activity Number** |
| 9071, Bobcat Cave | Archaic; Mimbres, 200 to 1400 After Death (AD) | Cave site, artifact scatter | Unevaluated | 127450 |
| 13199 | Undated | Lithic and ceramic artifacts | Unevaluated | None listed |
| 13200 | Undated | Cave site | Unevaluated | None listed |
| 13207 | Undated | Lithic and ceramic artifacts | Unevaluated | None listed |
| 13208 | Pueblo (Mimbres), 1000 to 1400 AD | Lithic, ceramic, and ground stone artifacts | Unevaluated | None listed |
| 13209 | Pueblo (Mimbres), 1000 to 1400 AD | Rockshelter | Unevaluated | None listed |
| 13210 | Undated | Lithic artifacts | Unevaluated | None listed |
| 13211 | Mimbres, 200 to 1400 AD | Lithic and ceramic artifacts | Unevaluated | None listed |
| 20132 | Late Pithouse (Mimbres), 600 to 1000 AD | Lithic and ground stone artifacts | Unevaluated | None listed |
| 20133 | Historic, 1945 to 1993 | None recorded | Unevaluated | None listed |
| 20145 | Undated | Lithic and ground stone artifacts | Unevaluated | None listed |
| 29347 | Historic 1539 to 1993 | None recorded | Unevaluated | None listed |
| 29348 | Undated | Lithic artifacts | Unevaluated | None listed |
| 29349 | Archaic; Late Pithouse (Jornada), 750-1100 AD; historic 1539-1993 | Lithic and ceramic artifacts | Unevaluated | None listed |
| 29350 | Undated | Lithic and ground stone artifacts | Unevaluated | None listed |
| 34392 | Historic, 1912 to 1945 | Undefined | Unevaluated | None listed |
| 34393 | Undated | Lithic scatter, assemblage suggests Archaic affiliation | Determined eligible, Criterion D (Agency, SHPO) | 244, 89197, 67167, 86532 |

| Table E-5. Previously Recorded Archaeological Sites within the Playas Temporary MOA APE | | | | |
|---|---|---|---|---|
| **Site Number, Name** | **Age** | **Description** | **Eligibility** | **NMCRIS Activity Number** |
| 34394 | Undated | Lithic scatter, assemblage suggests Archaic affiliation | Determined eligible, Criterion D (Agency, SHPO) | 244, 89198, 67167, 86532 |
| 37397 | Undated | Undefined | Unevaluated | None listed |
| 37656 | Middle Archaic (Cochise Tradition: Southern NM -- Chiricahua) | Lithic and ceramic artifacts | Unevaluated | None listed |
| 38043 | Mimbres, 200 to 1400 AD; historic, 1945 to 1993 | Lithic and ceramic artifacts | Unevaluated | None listed |
| 38044 | Undated | Lithic artifacts | Unevaluated | None listed |
| 38045 | Undated | Lithic artifacts | Determined not eligible (SHPO) | 134735 |
| 49989, Sylvanite | Historic, 1846 to 1912 | Mine site (Sylvantie Mine?) | Unevaluated | None listed |
| 50085, Old Hachita | Historic, 1846 to 1912 | Mine site (Old Hachita Mine?) | Unevaluated | None listed |
| 52269 | Historic, 1846 to 1912 | Historic residence | Unevaluated | None listed |
| 54043 | Mimbres, 200 to 1400 AD | Lithic and ceramic artifacts | Unevaluated | None listed |
| 55873 | Undated | Lithic artifacts | Unevaluated | None listed |
| 71337 | Undated | Lithic artifacts | Unevaluated | None listed |
| 75284 | Jornada, 200 to 1400 AD | Lithic and ceramic artifacts | Unevaluated | None listed |
| 75285 | Undated | Flaked and ground stone artifacts | Unevaluated | None listed |
| 76414 | Undated | Lithic artifacts | Unevaluated | None listed |
| 78437 | Historic | Undefined | Determined eligible (SHPO) | None listed |
| 83574, West Baker Site | Early Pueblo (Mimbres), 1000 to 1175 AD | Lithic and ceramic artifacts | Unevaluated | 127450 |
| 86075 | Archaic | Lithic scatter | Unevaluated | None listed |
| 88357, Antelope | Historic, 1903 to 1961 | Mine site (Antelope Mine?) | Unevaluated | None listed |

| Table E-5. Previously Recorded Archaeological Sites within the Playas Temporary MOA APE | | | | |
|---|---|---|---|---|
| **Site Number, Name** | **Age** | **Description** | **Eligibility** | **NMCRIS Activity Number** |
| 112020 | Undated | Lithic scatter | Determined eligible, Criterion D (SHPO) | None listed |
| 130159 | Undated | Lithic scatter | Determined not eligible (SHPO) | 67167, 89207, 86532 |
| 130160 | Undated | Lithic scatter | Determined eligible, Criterion D (Agency, SHPO) | 67167 |
| 130161 | Undated | Lithic scatter | Determined eligible, Criterion D (Agency, SHPO) | 67167, 89208, 126643, 86532 |
| 135180 | Undated | Lithic site | Determined eligible, Criterion D (Agency, SHPO) | 77699 |
| 135181 | Undated | Lithic quarry | Determined eligible, Criterion D (Agency, SHPO) | 77699 |
| 152320 | Historic | Archaeological features | Unevaluated | 98661 |
| 154514 | Undetermined | Rock cairn | Unevaluated | 101963 |
| 154523 | Historic | Historic railroad | Determined eligible, Criterion A (SHPO) | 101963 |
| 154524 | Historic | Historic railroad | Determined eligible, Criteria A and D (SHPO) | 101963 |
| 170188 | Prehistoric | Lithic scatter | Determined not eligible (Agency) | 121053 |
| 175548 | Prehistoric | Lithic reduction location | Determined eligible, Criterion D (Agency, SHPO) | 126643 |
| 175549 | Prehistoric | Lithic raw material procurement | Determined not eligible (Agency, SHPO) | 126643 |
| 178611 | Early Pithouse (Mimbres), 200 to 650 AD | Possible buried habitation site | Recommended eligible, Criterion D | 129952 |
| 178613 | Prehistoric | Lithic procurement | Recommended not eligible | 129952 |
| Acronyms and Abbreviations:<br>AD = Anno Domini | | | | |

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# Appendix F

# Supporting Noise Documentation

# Attachment 1 – Helicopter Landing Zone (HLZ)/Drop Zone (DZ) Aircraft Operations

# 1.0 OPERATIONS ASSUMPTIONS

## 1.1 OVERALL OPERATIONS

- Daily operations are calculated based on the number of annual sorties by dividing by 365 days.
- 20% of operations are acoustic night ops after 2200.

## 1.2 RED FLAG – LARGE FORCE TRAINING (2 HOURS PER EVENT)

- Helicopters (HH-60, AH-1, UH-1, CH-47, CH-53 and MV-22)
  - 80 annual sorties each at 2 HLZs
    - Touch & Go: 5 operations per sortie per HLZ.
    - Overhead Circle: 5 operations per sortie per HLZ.
    - Hovering: 15 minutes of hovering per touch & go op.

- Low Altitude Fixed Wing

  - Transport Aircraft (EC-130H and HC-130)
    - 80 annual sorties each at 2 HLZs
      - 2 air drops per sortie per HLZ.

  - Fighter (A-10, F-16, and AV-8)
    - 160 annual sorties for A-10 and 80 annual sorties each for AV-8 and F-16.
      - 7 low altitude passes per sortie per HLZ.

## 1.3 MEDIUM AND SMALL FORCE TRAINING (4 HOURS PER EVENT)

- Helicopters (HH-60, UH-1, CH-47 and MV-22)
  - HH-60: 2060 annual sorties
  - UH-1 and MV-22: 80 annual sorties
  - CH-47: 40 annual sorties
    - Touch & go: 10 operations per sortie per HLZ.
    - Overhead Circle: 10 operations per sortie per HLZ.
    - Hovering: 30 minutes of hovering per touch & go op.

- Low Altitude Fixed Wing

  - Transport Aircraft (HC-130)
    - 580 annual sorties
      - 2 air drops per sortie per HLZ.

  - Fighter (A-10)
    - 1320 annual sorties
      - 7 low altitude passes per sortie.

## 1.4 AIRCRAFT SUBSTITUTIONS

Aircraft were modeled using the following available options in NOISEMAP and/or AAM:

- EC-130H: C-130E
- HC-130: C-130H&N&P
- AV-8: AV-8A
- A-10: A-10A
- F-16: F-16C
- HH-60: UH60A
- AH-1: AH-1G
- UH-1: UH-1N
- CH-47: CH-47C
- CH-53: CH-53E
- CV/MV-22: MV-22

## 2.0 SUMMARY OF AIRCRAFT OPERATIONS

| Table 1. Red Flag Large Force Training Helicopter Operations Per HLZ | | | | | | |
|---|---|---|---|---|---|---|
| Aircraft | Red Flag Annual Sorties | Number of Touch & Goes per sortie | Number of Overhead Circle Patterns per Sortie | Total Annual Touch & Goes Ops | Total Annual Overhead Circle Patterns | Hovering time (min) |
| HH-60 | 80 | 5 | 5 | 400 | 400 | 15 |
| AH-1 | 80 | 5 | 5 | 400 | 400 | 15 |
| UH-1 | 80 | 5 | 5 | 400 | 400 | 15 |
| CH-47 | 80 | 5 | 5 | 400 | 400 | 15 |
| CH-53 | 80 | 5 | 5 | 400 | 400 | 15 |
| CV/MV-22 | 80 | 5 | 5 | 400 | 400 | 15 |

| Table 2. Red Flag Large Force Training Fixed Wing Aircraft Operations Per HLZ | | | | |
|---|---|---|---|---|
| Aircraft | Red Flag Annual Sorties | Number of Air Drops | Number of Low Altitude Passes | Total Annual Air Drops and Passes |
| EC-130H | 80 | 2 | - | 160 |
| HC-130 | 80 | 2 | - | 160 |
| AV-8 | 80 | - | 7 | 560 |
| A-10 | 160 | - | 7 | 1120 |
| F-16 | 80 | - | 7 | 560 |

| Table 3. Medium and Small Force Training Helicopter Operations Per HLZ | | | | | | |
|---|---|---|---|---|---|---|
| Aircraft | Annual Sorties | Number of Touch & Goes per sortie | Number of Overhead Circle Patterns per Sortie | Total Touch & Goes Ops | Total Annual Overhead Circle Patterns | Hovering time (min) |
| HH-60 | 2060 | 10 | 10 | 20600 | 20600 | 30 |
| UH-1 | 80 | 10 | 10 | 800 | 800 | 30 |
| CH-47 | 40 | 10 | 10 | 400 | 400 | 30 |
| CV/MV-22 | 80 | 10 | 10 | 800 | 800 | 30 |

| Table 4. Medium and Small Force Training Fixed Wing Aircraft Operations Per HLZ | | | | |
|---|---|---|---|---|
| Aircraft | Annual Sorties | Number of Air Drops | Number of Low Altitude Passes per Sortie | Total Annual Air Drops or Passes |
| HC-130 | 580 | 2 | - | 1160 |
| A-10 | 1320 | - | 7 | 9240 |

# Attachment 2 – Helicopter Landing Zones (HLZ)/Drop Zone (DZ) Aircraft Flight Tracks and Profiles

# 1.0 FLIGHT TRACK ASSUMPTIONS

## 1.1 HELICOPTERS

- All helicopters (HH-60, AH-1, UH-1, CH-47, CH-53 and MV-22) follow two paths:
  - Touch & go closed pattern that lands and takes off at the HLZ. The track follows a race track format that is 500 meters wide and 1000 meters long before the start of the turn.
  - Circle that is 500 meters away from the HLZ. The track follows the same configuration as touch & go.

- Helicopters will also hover over the HLZ. A static pad was created over the HLZ 50 feet above the ground.

## 1.2 FIXED WING AIRCRAFT

- Transport Aircraft (EC-130H and HC-130)
  - The air drop closed pattern follows a race track to the east of the HLZ that is 10 nautical miles (NM) wide and 10 NM long before the start of the turn. This is considered the typical VFR pattern flight taken from a few past models at other bases.

- Fighter (AV-8, A-10 and F-16)
  - The fighter low pass closed pattern follows a race track to the east of the HLZ that is 0.86 NM wide and 4 NM long before the turn. This is considered the typical VFR pattern flight taken from a few past models at other bases.

# 2.0 FLIGHT PROFILE ASSUMPTIONS

## 2.1 HELICOPTERS (HH-60, AH-1, UH-1, CH-47, CH-53 AND MV-22)

- The touch & go takes off at 0’ AGL at the HLZ at 40 knots with a load, speeds up to 100 knots and climbs to 50’ AGL 92 meters down the track and then climbs to 300’ AGL in the middle of the track. The profile then follows the take off in reverse, dropping to 50’ AGL 92 meters from the HLZ and lands at 40 knots, 0’ AGL.
  - CH-47 can only fly at 100 knots in the model.
  - CH-53 level at 80 knots in take-off and landing, and cruise at 120 knots
  - UH-1N can only fly at 80 knots in the model.
  - MV-22 roll angle, left dispersion width and right dispersion width are zero.

- The overhead circle maintains 300’ AGL at 100 knots (80 knots with the UH-1N) with a load.

- Hovering used IGE (in ground effect) lite (no load) power.

## 2.2 FIXED WING AIRCRAFT

- Transport Aircraft (EC-130H and HC-130)
  - The air drop starts at 500’ AGL over the HLZ at 932 TIT (turbine inlet temperature) at 110 knots. It increases speed to 130 knots 2.2 NM down the track at 977 TIT, but maintains 500 AGL over the drop zone. 6.3 NM down the track it rises to 1000’ AGL at 977 TIT, 170 knots. Halfway around the track it rises to 1500’ AGL, low power at 650 TIT, 170 knots. It maintains these settings until 0.25 NM from the HLZ, dropping to 500’ AGL, 932 TIT, 110 knots. Blanks in power setting and speed were filled based on similar VFR patterns at other bases.

- Fighter (A-10, F-16, and AV-8)
  - The A-10 low altitude pass starts at 100’ AGL over the HLZ, at 5970 NF variable power and 350 knots. 0.75 NM (half of 1.5 NM radius outside of HLZ) it climbs to 1000’ AGL at 6700 NF and 300 knots. At halfway around the track the height increases to 10,000’ AGL, 6200 NF and 300 knots. 0.75 NM from the HLZ the height drops again to 100’ AGL, 5970 NF and 350 knots.
  - The F-16 low altitude pass starts at 1000’ AGL over the HLZ, at 92.6 % NC variable power and 350 knots. 0.75 NM (half of 1.5 NM radius outside of HLZ) it stays at 1000’ AGL at 92.6 % NC and down to 300 knots. At halfway around the track the height increases to 10,000’ AGL, 80 % NC and 300 knots. 0.75 NM from the HLZ the height drops again to 1000’ AGL, 78 % NC and 300 knots. Settings go back to the same crossing the HLZ.
  - The AV-8 low altitude pass starts at 100’ AGL over the HLZ, at 91 % RPM variable power and 350 knots. 0.75 NM (half of 1.5 NM radius outside of HLZ) it climbs to 1000’ AGL at 100 % RPM and down to 300 knots. At halfway around the track the height increases to 10,000’ AGL, 90 % RPM and 300 knots. 0.75 NM from the HLZ the height drops again to 1000’ AGL, 90 % RPM and 300 knots. Settings go back to the same crossing the HLZ.
  - Power settings were based on available VFR patterns for the aircraft at other bases.

# Attachment 3 – Playas Temporary Military Operating Area (MOA) Airspace Noise Modeling Analysis

# Noise Analysis for Playas Temporary Military Operating Area

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## *1.0 Introduction*

The purpose of this Noise Analysis and Report is to supplement the previous noise analysis completed for the Davis-Monthan Personnel Recovery Training Environmental Assessment by performing additional noise modeling to evaluate and summarize the noise results for aircraft operations in the Playas Temporary Military Operating Area (TMOA).

To support the Environmental Assessment for the Davis-Monthan Air Force Base (DMAFB) Personnel Recovery Training, additional noise analysis was performed to determine if the Proposed Action will generate noise levels that meet or exceed the noise screening thresholds established by FAA. Under the FAA noise screening threshold, the following noise scenarios must be evaluated to determine if additional noise analysis should be completed.

- Noise increase of 1.5 dBA DNL or greater when noise levels are 65 dBA DNL or greater
- Noise increase of 3 dBA DNL or greater when noise levels are between 60 to <65 dBA DNL

- Noise increase of 5 dBA DNL or greater when noise levels are between 45 to <60 dBA DNL

This supplemental noise analysis applied the FAA noise impact screening thresholds, evaluated the results and summarized the noise results to meet the FAA noise screening threshold criteria in the Conclusion.

## 2.0 Noise Metrics and Modeling

Sound is expressed in logarithmic units of dB. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall 1995). The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB.

All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second, or hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements usually employ an "A-weighted" scale that filters out very low and very high frequencies to replicate human sensitivity. It is common to add the "A" to the measurement unit to identify that the measurement was made with this filtering process, for instance dBA. In this document, the dB unit refers to A-weighted sound levels. In accordance with DoD guidelines and standard practice for environmental impact analysis documents, the noise analysis herein uses the A-weighted dB unless specified differently.

*Day-Night Average Sound Level (DNL)*

The DNL is a composite noise metric accounting for the A-weighted sound of all noise events in a 24 hour period. To account for increased human sensitivity to noise at night, a 10-dBA penalty is applied to nighttime events occurring between 10:00 p.m. and 7:00 a.m. Noise-sensitive land uses such as housing, schools, and medical facilities are considered acceptable in areas where the DNL is less than 65 dBA. Noise sensitive land uses are discouraged in areas where the DNL is between 65 and 69 dBA, and strongly discouraged where the DNL is between 70 and 74 dBA. At higher levels, i.e. greater than 75 dBA, certain land uses and related structures are not compatible.

Because it is an energy-based quantity, DNL tends to be dominated by the noisier events. As an example, consider a case in which only one daytime aircraft overflight occurs over a 24-hour period, creating a sound level of 100 dBA for 30 seconds. During the remaining 23 hours, 59 minutes and 30 seconds of the day, the ambient sound level is 50 dBA. The resultant DNL would be 66 dBA. In comparison, consider a second example that 10 such 30-second overflights occur during daytime hours instead, with the same ambient sound level of 50 dBA during the remaining 23 hours and 55 minutes. The resultant DNL would be 76 dBA. The energy averaging of noise over a 24-hour period does not ignore the louder single events and tends to emphasize both the sound levels and the number of those events.

*Onset-Rate Adjusted Monthly Day-Night Average Sound Level ($L_{dnmr}$)*

Military aircraft operating in MOAs generate a noise environment that is somewhat different from that associated with airfield operations. As opposed to patterned or continuous noise environments associated with airfields, aircraft noise events in MOAs are highly sporadic and often seasonal, ranging from 10 events per hour to one event every few weeks. Individual military overflight events also differ from typical

community noise events in that noise from a low altitude, high-airspeed flyover can have a rather sudden onset, exhibiting a rate of increase in sound level (onset rate) of up to 150 dBA per second.

To represent these differences, the conventional DNL metric is adjusted to account for the "surprise" effect of the sudden onset of aircraft noise events on humans (Stusnick et al. 1992). This measurement is called the Onset-Rate Adjusted Monthly Day-Night Average Sound Level or $L_{dnmr}$.

*MR_NMAP*

When the aircraft flight tracks are not well defined and are distributed over a wide area, such as in MOAs, the Air Force uses the Military Operating Area and Range Noise Model (MR_NMAP) program (Lucas and Calamia 1996). MR_NMAP is a distributed flight track and area model that allows for entry of airspace information, the distribution of operations, flight profiles (average power settings, altitude distributions, and speeds), and numbers of sorties. "Distribution of operations" refers to the modeling of airspace utilization for broadly distributed operations for modeling of MOA and range events. The core program of MR_NMAP incorporates the number of monthly operations by time, specified distributions, volume of the airspace being modeled, and profiles of the aircraft primarily to calculate average $L_{dnmr}$ (or DNL) for entire airspaces.

In calculating time-average sound levels for airspace, the reliability of the results varies at lower levels (below 55 dBA $L_{dnmr}$). Time-averaged outdoor sound levels less than 45 dBA are well below any currently accepted guidelines for aircraft noise compatibility. In this analysis, time-averaged sound levels less than 45 dBA are denoted as "<45" if applicable.

For modeling noise levels in MOAs, the Air Force uses $L_{dmnr}$ where the operations during the busiest month are averaged over 30 days to get average busy month noise levels. The FAA uses DNL, which is the total annual operations averaged over 365 days. Because $L_{dnmr}$ uses the busiest month's operations, there is a denser concentration of operations in its equation than the DNL average annual day. This results in $L_{dnmr}$ calculating a more conservative, or louder, noise level than the DNL average annual day. For purposes of this analysis both modeling approaches are undertaken in order to maintain compliance with both Air Force and FAA regulations.

The FAA has approved the use of MR_NMAP for detailed noise analysis form subsonic aircraft operations within MOAs (FAA 2015).

## 3.0 Baseline Conditions

The coordinates of the Playas Temporary MOA are as follows:

32d10'43"N 108d42'48"W

32d9'20"N 108d19'29"W

31d49'27"N 108d21'3"W

31d50'48"N 108d44'28"W

These coordinates create a 20 NM by 20 NM box. The floor of the Playas Temporary MOA is 300 ft AGL and the ceiling (including the ATCAA) is FL220. The environment in this area is rural/wilderness with a low population density.

Table 1 details the aircraft, speeds, and number of sorties estimated to take place within the Playas Temporary MOA. The average duration of an airspace sortie was modeled to be approximately two hours long. Due to limitations of the MR_NMAP noise database and the relative quietness of rotorcraft compared against jet fighter aircraft operating in the airspace, all rotorcraft were modeled as the HH-60A.

Potential noise levels resulting from aircraft operations within the Playas Temporary MOA were calculated using the DoD's MR_NMAP Version 3.0 program to compute the DNL and $L_{dnmr}$. FAA has approved MR_NMAP for use for detailed noise analysis.

Taking into account noise generated from baseline airspace sorties and the environmental background noise level in a rural/wilderness environment (ANSI 2013), the baseline noise condition for the Playas Temporary MOA is approximately 46 dBA DNL. Noise levels in $L_{dnmr}$ were found to be negligibly higher than the DNL values; rounded to the nearest dBA, DNL and $L_{dnmr}$ levels were identical.

**Table 1. Baseline and Proposed Sorties In Playas Temporary MOA**

| Aircraft | Modeled Airspeed (knots) | Baseline Sorties | Proposed Sorties |
|---|---|---|---|
| A-10 | 350 | 96 | 160 |
| AH-1 | 100 | - | 80 |
| AV-8 | 350 | - | 80 |
| CH-47 | 100 | - | 80 |
| CH-53 | 100 | - | 80 |
| CV-22 or MV-22 | 100 | - | 80 |
| EC-130H | 200 | - | 80 |
| F-15 | 350 | - | 80 |
| F-16 | 350 | 144 | 80 |
| F-18 | 350 | - | 40 |
| F-21 | 350 | - | 20 |
| F-22 | 350 | - | 80 |
| F-35 | 350 | - | 80 |
| HC-130 | 200 | 36 | 80 |

| | | | |
|---|---|---|---|
| HH-60 | 100 | 50 | 80 |
| KC-135 | 200 | - | 40 |
| MC-12 | 200 | - | 40 |
| MQ-1or MQ-9 | 200 | - | 40 |
| UH-1 | 100 | - | 80 |

## *4.0 Proposed Action*

Using the proposed sorties from Table 1, MR_NMAP was used to compute DNL and $L_{dnmr}$ under the Proposed Action. DNL from proposed airspace sorties is estimated to be 50 dBA DNL. Again, noise levels in $L_{dnmr}$ were found to be negligibly higher than the DNL values for the proposed action; rounded to the nearest dBA, DNL and $L_{dnmr}$ levels were identical.

## *5.0 Conclusion*

The baseline noise level for the Playas Temporary MOA is expected to be approximately 46 dBA DNL. The proposed action noise level is expected to be approximately 50 dBA DNL, a 4 dBA DNL increase over baseline conditions.

The FAA specifically considers noise changes of 5 dBA DNL between 45 to <60 dBA, 3 dBA from 60 to <65 dBA, and 1.5 dBA above 65 dBA as meeting the reportable thresholds. Modeled noise in the Playas Temporary MOA is expected to be within the 45 to <60 dBA DNL range with an increase of <5 dBA. This noise increase does not exceed the FAA reportable threshold level (FAA 2015).

The increase in aircraft operations under the proposed action is expected to be noticeable; however, impacts to the noise environment around the Playas Temporary MOA are anticipated to be less than significant.

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# Appendix G

# Biological Evaluation

# Title: Davis-Monthan Air Force Base Personnel Recovery Training Biological Evaluation

Date: **January 2020**

Prepared for: US Air Force NEPA Division (AFCEC/CZN)

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# GLOSSARY OF ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| 68 RQS | 68th Rescue Squadron |
| 414 CTS | 414th Combat Training Squadron |
| 563 RQG | 563rd Rescue Group |
| 943 RQG | 943rd Rescue Group |
| ACC | Air Combat Command |
| ACP | Airspace Control Plan |
| AFB | Air Force Base |
| AFI | Air Force Instruction |
| AFRC | Air Force Reserve Command |
| AGL | Above Ground Level |
| AMSL | Above Mean Sea Level |
| AP | Area Planning |
| AR | Aerial Refueling |
| ATCAA | Air Traffic Control Assigned Airspace |
| ATV | All Terrain Vehicle |
| AZ | Arizona |
| AZGFD | Arizona Game and Fish Department |
| BE | Biological Evaluation |
| BMGR | Barry M. Goldwater Range |
| CA | California |
| CATM | Combat Arms Training and Maintenance |
| CRRC | Combat Rubber Raiding Craft |
| CRO | Combat Rescue Officer |
| CSAR | Combat Search and Rescue |
| DoD | Department of Defense |
| DZ | Drop Zone |
| ESA | Endangered Species Act |
| FAA | Federal Aviation Administration |
| FARP | Forward Aircraft Refueling Point |
| FL | flight level |
| FR | Federal Register |
| HLZ | Helicopter Landing Zone |
| HOLF | Helicopter Outlying Landing Field |
| IAP | International Airport |
| JP | Joint Publication |
| LATN | Low Altitude Tactical Navigation |
| LZ | Landing Zone |
| MAJCOM | Major Commands |
| mm | millimeter |
| MOA | Military Operations Area |
| MOUT | Military Operations in Urban Terrain |
| MSL | mean sea level |
| NF | National Forest |
| NV | Nevada |

| | |
|---|---|
| MTR | Military Training Route |
| PCE | Primary constituent element |
| PDL | Piedra de Lumbre |
| PR | Personnel Recovery |
| RA | Restricted Area |
| SERE | Survival, Evasion, Resistance, and Escape |
| SPCCP | Spill Prevention Control, and Countermeasure Plan |
| SUA | Special Use Airspace |
| US | United States |
| USAF | United States Air Force |
| USFS | United States Forest Service |
| USFWS | United States Fish and Wildlife Service |
| UTV | Utility Terrain Vehicle |
| VFR | Visual Flight Rules |
| WTA | Water Training Area |

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# 1.0 INTRODUCTION

This Biological Evaluation (BE) has been prepared to evaluate the potential effects to listed or proposed species and designated and proposed critical habitat pursuant to the Federal Endangered Species Act (ESA) as a result of conducting an improved comprehensive Personnel Recovery (PR) training program centered out of Davis-Monthan Air Force Base (AFB), Arizona (Figure 1-1). While the PR training program would be centered out of Davis-Monthan AFB, training activities would be conducted throughout the southwestern United States (US). The BE was developed in compliance with Section 7 of the ESA.

## 1.1 BACKGROUND AND SETTING

In 2002, Davis-Monthan AFB was selected as the location for the west coast beddown[1] of active duty PR, formerly known as Combat Search and Rescue (CSAR), assets. The beddown established the only full complement of active duty PR assets in the western US. PR ground forces include Pararescuemen; Combat Rescue Officers (CROs); Survival, Evasion, Resistance, and Escape (SERE) Specialists; and other uniquely trained support personnel. These ground forces are also known as Guardian Angel, the ground element of the Air Force Rescue triad, with specially configured HH-60 helicopters and HC-130 cargo planes composing the other two parts of the triad. When tasked separately from the triad, Guardian Angel may work autonomously or be integrated with joint or coalition[2] forces, including Special Operations Forces, vertical lift, airdrop, command and control, resupply, close air support, and ground mobility assets. The term PR encompasses the full spectrum of rescue activities, to include CSAR (i.e., all activities associated with both combat and non-combat rescue).

The desired Air Force PR operational effect is to quickly return friendly forces to duty while denying adversaries a source of intelligence and political exploitation. The effect is achieved across the range of military operations. As such, PR forces may engage in CSAR operations in a contested military environment, participate in Building Partnership Capacity and Irregular Warfare before conventional hostilities begin, and conduct humanitarian operations in support of our allies during peacetime as well as rescue operations during natural disasters. Non-combat responsibilities are met by applying strategic intent and the universal desire to conduct operations that mitigate human suffering and save human lives.

This evaluation focuses on proposed PR training activities centered out of Davis-Monthan AFB, AZ that are conducted in Arizona, California, Nevada, and New Mexico. A summary table of the proposed PR training sites is provided in Attachment 1 of this BE and site-specific maps of the proposed PR training sites are provided in Attachment 2.

[1] A beddown is the execution of an approved basing action (Air Force Instruction [AFI] 10-503; USAF 2017a).
[2] Joint refers to operations in which elements of two or more Military Departments participate, whereas coalition refers to an arrangement between two or more nations for common action (Joint Publication [JP] 1-02).

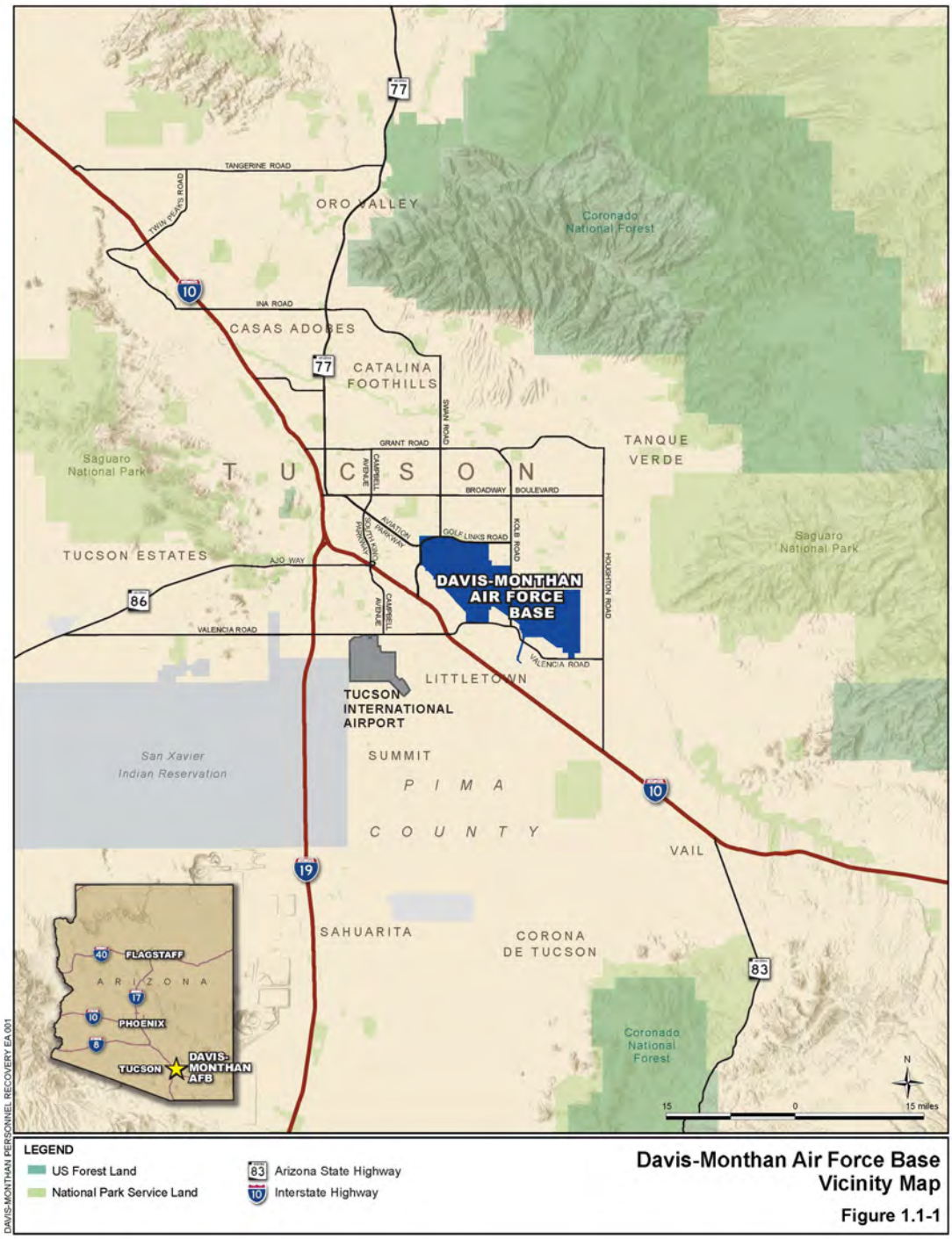


**Figure 1.1-1. Davis-Monthan Air Force Base Vicinity Map**

## 1.2 PURPOSE OF THE ACTION

The purpose of the Proposed Action would be to enhance readiness of PR forces operating out of Davis-Monthan AFB and to strengthen joint military operations; multi-national partnerships; and operations with other Federal, state, and local agencies/organizations.

## 1.3 NEED FOR THE ACTION

Currently, PR forces operating out of Davis-Monthan AFB are limited by the number of available training sites which have the required characteristics for these activities. Commanders face challenges in ensuring that routine and formal training requirements are met so that PR forces are prepared to execute their special mission sets. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due the lack of availability of appropriate training sites. The range of currently available sites does not include all of the types of terrain and vegetation that would realistically be present in real-life PR operations.

In order to address these limitations, Davis-Monthan AFB is proposing to identify additional sites that can be used to support the training activities. The characteristics of sites needed to serve the purpose of the action and allow the Air Force to maintain and enhance Air Force readiness include:

1. ADEQUATE AND AVAILABLE

    - Provide operational utility (i.e., suitable to support all elements of the training scenarios); this may include the size of the site, the type of airspace available, the type of equipment and facilities available, etc.
    - Sufficient number of training sites that are available to accommodate the number of personnel and the number and types of aircraft (e.g., HH-60, A-10, HC-130, etc.) involved in the training scenario.
    - Available to schedule for training events within a reasonable timeframe.

2. REALISTIC

    - Provide a variety of geographical settings/terrain and elevations (e.g., desert and mountain landscapes, forested and vegetated areas, open water, rural, and urban environments, etc.).
    - Sufficient number of training sites that are available to minimize training complacency (i.e., familiarity with a specific training site that results in less realistic training and lowers the value of training at that site).

3. PROXIMATE AND EFFICIENT

    - Must include training sites that are within a reasonable travel timeframe to Davis-Monthan AFB while still providing operational utility in order to optimize use of limited resources (e.g., fuel, time, personnel, etc.).

# 2.0 DESCRIPTION OF THE PROPOSED ACTION

This chapter presents information on the Proposed Action for the proposed PR training activities centered out of Davis-Monthan AFB and conducted throughout the southwestern US.

## 2.1 DESCRIPTION OF TRAINING ACTIVITIES

This section describes all of the features and components of the PR training activities and events that currently occur at Davis-Monthan AFB, except for the specific sites at which the activities and events occur. The section describes:

- General structure of training activities;
- Specific courses and events that are held;
- The manner in which training courses, events, and activities are categorized to facilitate environmental analysis; and
- Specific activities that are performed as part of PR training.

The description of the features and components of the PR training activities in this section is common to both the No-Action Alternative and the Proposed Action. The primary difference between the No-Action Alternative and the Proposed Action is the locations of the sites used for these activities, and the total number of sorties flown. The Proposed Action would authorize additional training sites, and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, under the Proposed Action, there would be no change in the organizations at Davis-Monthan AFB that conduct the training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in the current procedures used to avoid and protect environmental resources. The sites currently used for training and the current number of sorties flown are described in Section 2.2, and the additional sites that would be used and sorties flown under the Proposed Action are described in Section 2.3. Figures 2.1-1 and 2.2-2 show the location of the PR training sites under the Proposed Action. The Map Book index numbers in Attachment 2 of this BE correspond to the Figures 2.1-1 and 2.1-2 index maps with more detailed, site-specific maps of the proposed PR training sites.

### 2.1.1 General Structure of Training Activities

The PR training activities are centered out of Davis-Monthan AFB and hosted by various organizations depending on the training event. Comprehensive training involves ground, water, and flight/airspace activities.

PR forces train through the full spectrum of PR capabilities with ground recovery personnel, air assets, Special Forces teams, and federal agents. Pre-training site surveys are conducted approximately one month prior to events at proposed PR training locations to check the sites for adequacy for training operations as well as to identify any hazards present (e.g., power lines, cactus, etc.). PR training activities comply with Special Use permit stipulations for specific training locations. Based on specific restrictions of use for some training areas (e.g., sensitive habitat, etc.), PR training activities avoid a specific area or move activity to a different location to comply with the restriction. As part of permit stipulations, the USAF restores any potentially damaged roadway/site to its previous condition.

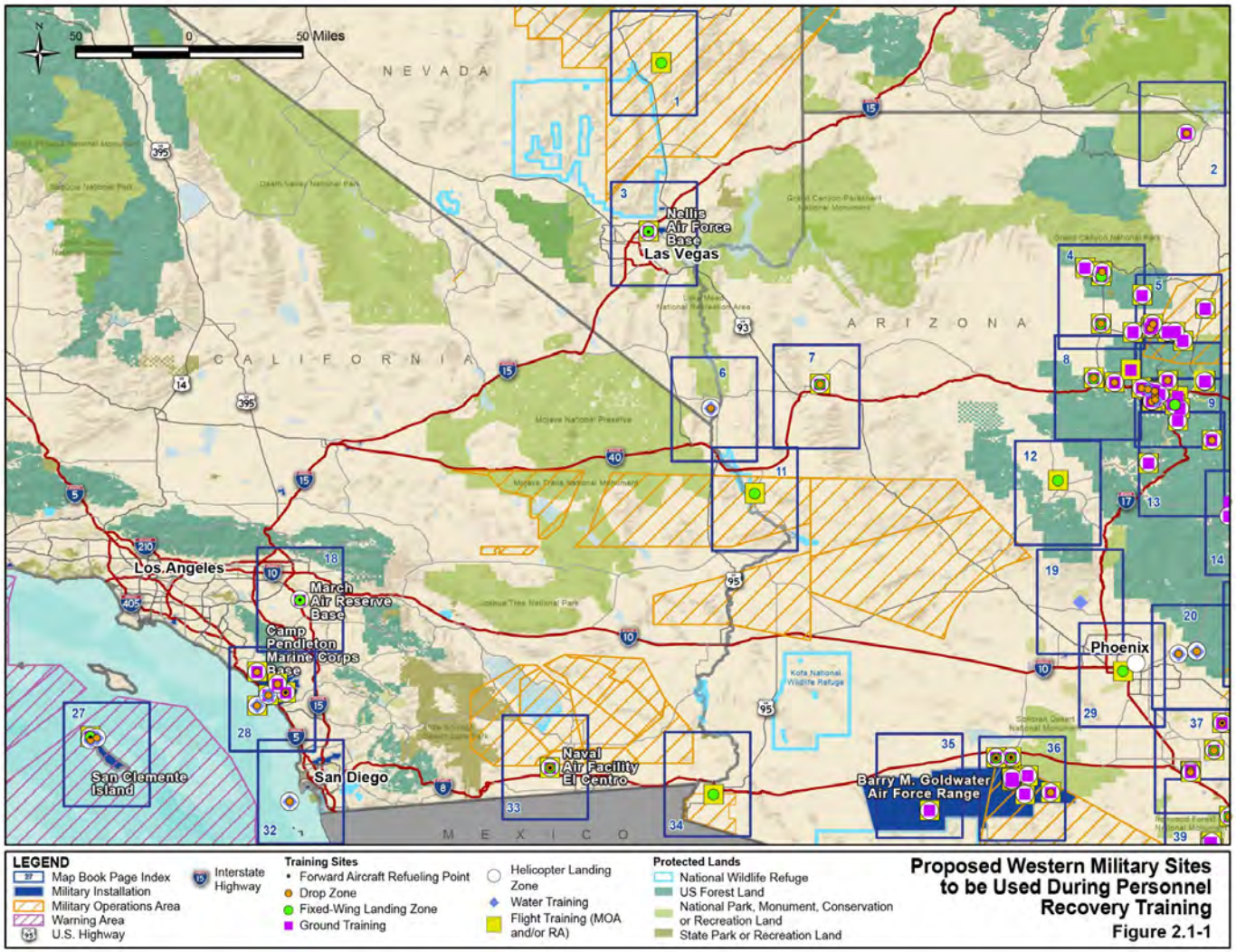


**Figure 2.1-1. Proposed Western Military Sites to be Used During Personnel Recovery Training**

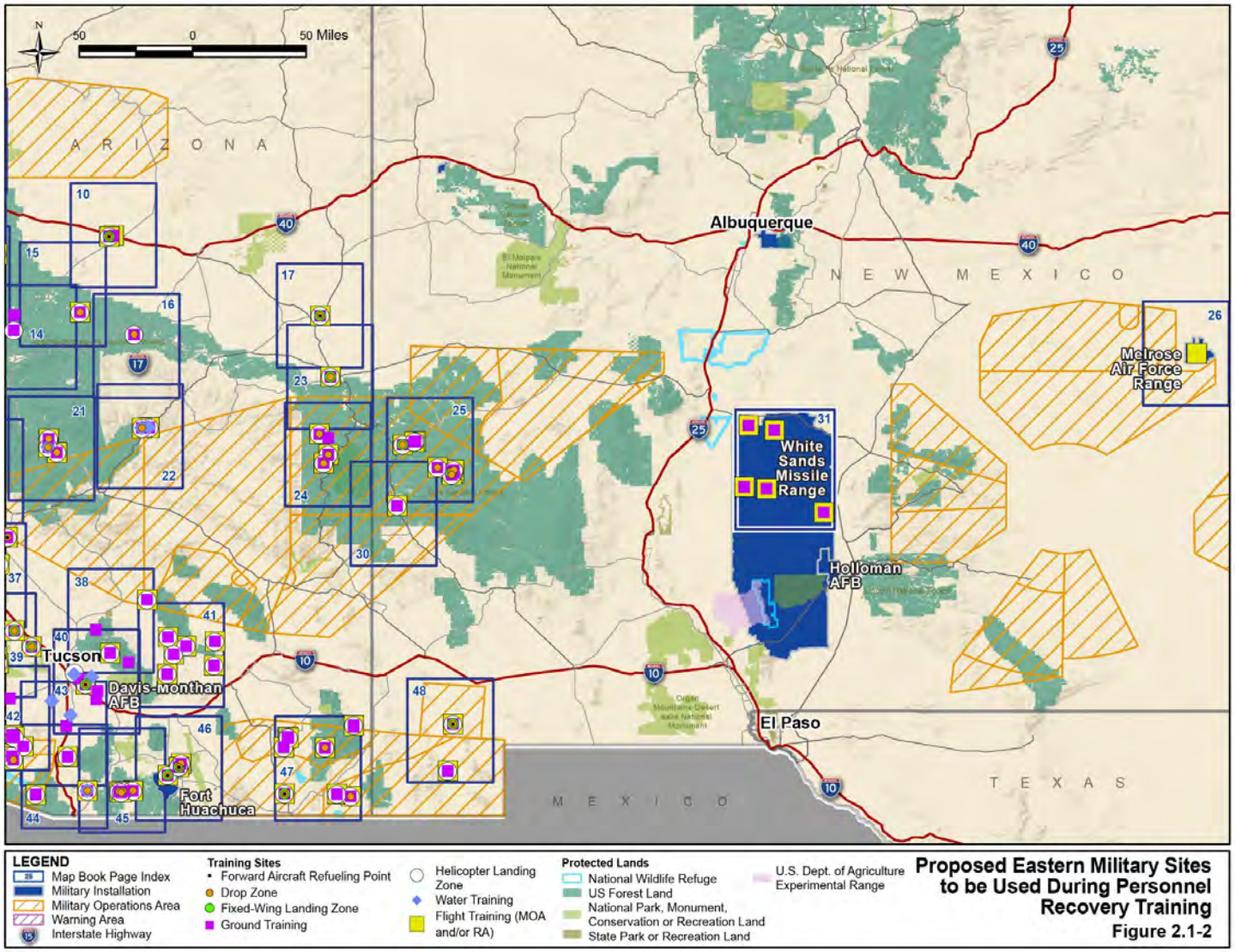


**Figure 2.1-2. Proposed Eastern Military Sites to be Used During Personnel Recovery Training**

During proposed PR training activities, operations centers provide a centralized location for the command and control of training operations and serve as the focal point for planning, executing, and assessing component operations (e.g., logistical and beddown [personnel and equipment staging] locations). Operations centers consist of three to four personnel, serving as the focal point for planning, executing, and assessment of ground operations. For Large Force training events such as Red Flag-Rescue, these centers provide aeromedical evacuation, security, and reconnaissance missions in support of a global contingency scenario (i.e., dismounted ground and water operations and movement). The purpose is to give the combat USAF PR forces increased mobility and strike capability and to emphasize their critical role in the Expeditionary Air Force. The operations center has the minimum essential facilities to house, sustain, and support operations. For Large Force training events, the nucleus of Command and Control/ Communications and Surveillance activities centers on the Air Operations Center at Davis-Monthan AFB with a Forward Operations Center at Camp Navajo, AZ. During Large Force training events, a joint terminal attack controller may be used. This is a one- or two-person team that, from a forward position, directs the action of combat aircraft engaged in close air support and other offensive air operations. Operations centers are set up at one or more forward operating airfields such as Bisbee Douglas International Airport (IAP), Pulliam Airport (Flagstaff), Winslow-Lindbergh Regional Airport, and Fort Huachuca's Libby Army Airfield. For smaller-scale training events, Command and Control/Communications and Surveillance activities are controlled out of Davis-Monthan AFB.

Annual aircraft training sorties on an actual rescue squadron level that support/participate in Davis-Monthan AFB rescue training events are provided in Table 2.1-1.

**Table 2.1-1. Annual Aircraft Sorties Supporting/Participating in Personnel Recovery Training Events**

| Aircraft | Sorties |
|---|---|
| A-10 | 1,854 |
| HC-130 | 736 |
| HH-60 | 1,148 |
| Other* | 156 |
| TOTAL | 3,894 |

* Other aircraft include F-16, F-15, F-18, KC-135, helicopters, and general aviation aircraft.
Source: USAF 2018a.

### 2.1.2 Description of Specific Courses and Events

**Red Flag-Rescue**

Red Flag-Rescue is an ACC-sponsored Large Force training event for Combat Air Force, joint, coalition, and interagency participants that lasts approximately three weeks. Red Flag-Rescue provides the most realistic PR training environment available for up to 1,000 participants to engage in a variety of PR training activities to simulate deployment conditions and contingencies.

The first week of the training event includes in-processing and classroom training (at Davis-Monthan AFB), and familiarization flights (at sites chosen for specific events). The schedule of the training event varies depending on the number of participants, but generally involves

alternating between planning the field scenarios and execution of those scenarios with an average of five planning days and 10 execution days, including five to seven flying days. This is followed by a short de-mobilization period and return to home base. The biannual events normally occur during the spring and fall. Due to the constant evolution of enemy tactics, the training event must evolve in order for participants to be equipped to deal with U.S. adversary tactics downrange. While the Red Flag-Rescue training event is primarily centered out of Davis-Monthan AFB, the overall Red Flag-Rescue training event takes place in California, Arizona, Nevada, and New Mexico. These environments provide the maximum amount of variety for PR training in a fictional country with similar environmental conditions. Recent Large Force training events such as Red Flag-Rescue have involved an average of approximately 30 aircraft; however, because the type and number (potentially up to 45) of aircraft that participate in these events are variable depending on availability, the possible aircraft (or similar types) that may participate during a Red Flag-Rescue training event could include:

***Fighter/Attack Aircraft***

- A/T-6 (Texan II)
- AV-8 (Harrier)
- A-10 (Thunderbolt)
- A-29 (Super Tucano)
- F-15C (Eagle) and F-15E (Strike Eagle)
- F-16 (Fighting Falcon)
- F-18 (Hornet)
- F-22 (Raptor)
- F-35A, F-35B, and F-35C (Lightning II)
- F-21 (Kfir)
- Rafale
- Mirage
- Tornado
- Eurofighter

***Cargo/Refueling/Surveillance Aircraft***

- A400M (Atlas)
- C-130 (Hercules)
- EC-130 and EC-130H (Compass Call)
- HC-130 (Hercules)
- C-208B (Grand Caravan)
- CASA 212 (Aviocar)
- C-23 (Sherpa)
- E-3 (Sentry)
- E-8 (Joint Stars)
- KC-10 (Extender)
- KC-135 (Stratotanker)
- RC-135
- MC-12 (Liberty)
- P-3 (Orion)

- P-8 (Poseidon)
- SC-7 (Skyvan) or C-2 (Greyhound)
- U-28A

### *Helicopters*

- HH-60 (Pave Hawk)
- MH-6 (Little Bird)
- MH/AH-64 (Apache)
- CH/MH-47 (Chinook)
- UH-1 (Iroquois)
- AH-1 (Cobra)
- AW101
- AW139
- UH-72 (Lakota)
- MH/CH-53 (Sea Stallion)
- CV/MV-22 (Osprey)
- MH-60 (Seahawk)
- EC725 (Caracal)
- EC225 (Super Puma)
- EH101 (Merlin)
- NH90
- EC665 (Tiger)
- MI-8/17 (Hip)
- MI-24/35 (Hind)

### *Unmanned Aircraft*

- MQ-1 (Predator)
- MQ-9 (Reaper)

**Courses Offered by 68 RQS**

The 68 RQS conducts formal training courses to include the Combat Team Member Course, Military Freefall Jumpmaster Course, and Combat Leader Course, which are described below.

The Combat Team Member Course purpose is to provide new Pararescuemen with a mastery of the basic skills needed to be a successful team member during any rescue scenario. This course is conducted by the 68 RQS at Davis-Monthan AFB and at Marana Regional Airport in Arizona. A summary of the course includes:

- 11 weeks long; three courses per calendar year
- Graduates up to 72 students annually
- Instruction focuses on advanced medical training, advanced parachute insertion training, baseline shooting and tactics skills, high angle proficiency, combat dive training, and rotary-wing airmanship.

The Military Freefall Jumpmaster Course is designed to provide the USAF with joint accredited Military Freefall Jumpmasters. This course is conducted by the 68 RQS at Davis-Monthan AFB and at Marana Regional Airport. A summary of the course includes:

- Three weeks long; three courses per calendar year
- Graduates up to 36 joint service accredited Military Free Fall Jumpmasters
- Accredited by the U.S. Special Operations Command
- Training is open to students from all U.S. military branches
- Capable of providing units a Mobile Training Team.

The Combat Leader Course is a course intended to sharpen Pararescuemen into mature leaders. This course is conducted by the 68 RQS at Davis-Monthan AFB and Florence Military Reservation in Arizona; and, Vandenberg AFB and U.S. Marine Corps Base Camp Pendleton (Camp Pendleton) in California. Prerequisites for personnel to enter this course include being a qualified Static Line Jumpmaster, a Military Free Fall Jumpmaster, and a Dive Supervisor. A summary of the course includes:

- 60 days long; two courses per calendar year
- Graduates up to 24 students annually

### 2.1.3 Scale of Activities to Facilitate Analysis

Given the complexity of the Proposed Action and No-Action Alternative and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three PR training event levels: Large Force training events; Medium Force training event (group-level training); and Small Force training event (squadron-level training). Table 2.1-2 provides information relating to each category.

**Table 2.1-2. Description of Personnel Recovery Training Events under Proposed Action and No-Action Alternative**

| Category | Description | # of Personnel | Duration | Frequency |
|---|---|---|---|---|
| Large Force | Large Force training events include PR events such as Red Flag-Rescue. An average of 30 aircraft, and potentially up to 45 aircraft, participate in these events. | Up to 1,000 | Up to 21 days | Biannual |
| Medium Force | Medium Force training events include group-level PR training such as Rescue Group Pre-Deployment PR training. Up to 18 aircraft participate in these events. | 50-100 | Up to 14 days | Quarterly |
| Small Force | Small Force training events include squadron-level PR training, including individual PR training activities in support of Guardian Angel Formal Training Unit courses. Up to six aircraft participate in these events. | Up to 50 | Up to 7 days | Daily |
| Source: USAF 2018-2019. | | | | |

### Large Force Training Events

Large Force training events include participation by up to 1,000 individuals. Each biannual Large Force training event consists of a three-week event with multiple training missions (components of the event developed for the training event). The events provide training for PR and supporting forces, to include interagency and international partners. The training events combined have a duration of approximately 21 calendar days and occur twice a year. The first week of a Large Force training event involves planning and classroom training of participating personnel, followed by a two- to three-day mobilization period, 10 to 11 days of field training (including five to seven flying days), one day of de-mobilization, and return to home base. The Large Force training events include ground, water, and flight operations. Given the scale of Large Force training events, all or part of the PR training activities, equipment, airspace, and training locations discussed in this analysis have the potential to be utilized as part of the PR training activities.

Estimated annual aircraft sorties supporting and participating in Large Force training events are provided in Table 2.1-3. It should be noted that the table shows an estimation of what is typically included in Large Force training events as the type and number of aircraft that participate in these events vary depending on availability.

**Table 2.1-3. Estimated Annual Aircraft Sorties Supporting/Participating in Large Force Training Events**

| Maximum Number of Aircraft per Large Force Training Event | Total |
|---|---|
| 4 AV-8 | 80 |
| 4 A-10 | 160 |
| 2 EC-130H | 80 |
| 2 HC-130 | 80 |
| 2 F-15 | 80 |
| 2 F-16 | 80 |
| 2 F-18 | 40 |
| 2 F-22 | 80 |
| 2 F-35 | 80 |
| 8 HH-60 | 80 |
| 2 AH-1 | 80 |
| 2 UH-1 | 80 |
| 2 CH-47 | 80 |
| 2 CH-53 | 80 |
| 2 CV/MV-22 | 80 |
| 1 KC-135 | 40 |
| 1 MQ-1 or MQ-9 | 40 |
| 1 MC-12 | 40 |
| 2 F-21 (Columbian Fighter) | 20 |
| Average of 30 aircraft but up to 45 aircraft | 1,380 |

Notes: Sortie Day/Night split is 80/20.
Total sorties represent operations with the maximum number of aircraft (45). Actual number of annual sorties is likely to be lower as the average number of aircraft participating in Large Force events is 30. Note that Large Force training has a duration of approximately 21 calendar days and occurs twice a year; only five to seven days of the 21-day period are flying days.
Source: USAF 2018-2019.

### Medium Force Training Events

Medium Force training events are typically conducted at the group level. As defined, this effort involves 50 to 100 rescue personnel. The training events have a duration of approximately 14 calendar days and occur quarterly. Typically, the first week of a Medium Force training event involves planning and classroom training of participating personnel, then up to five days of field training, one day of de-mobilization, and then debrief on results of training. Medium Force training events include ground, water, and flight operations. Events may include all or part of the training activities, equipment, airspace, and training locations discussed in this analysis.

An example of a Medium Force training event includes pre-deployment PR training events to integrate deploying personnel to train and fight together in a realistic training environment prior to deployment into combat operations. The intent is to establish and build relationships between personnel and organizations scheduled to deploy together to ensure that the first time relationships are established is not on Day One after arriving in their deployed locations. Routine Medium Force training events are mainly focused on maintaining currency (e.g., basic aircraft skills and weapons qualification) and meeting specific mission qualification requirements.

Estimated annual aircraft sorties that support/participate in Medium Force training events are provided in Table 2.1-4.

**Table 2.1-4. Estimated Annual Aircraft Sorties Supporting/Participating in Medium Force Training Events**

| Maximum Number of Aircraft per Medium Force Training Event | Total |
|---|---|
| 6 A-10 | 240 |
| 2 HC-130 | 80 |
| 6 HH-60 | 240 |
| 2 UH-1/AH-1 | 80 |
| 2 CH-47 | 40 |
| 2 CV/MV-22 | 80 |
| 20 aircraft | 760 |

Notes: Sortie Day/Night split is 80/20.
Note that Medium Force training totals 56 calendar days annually, divided into 14-day quarterly event periods; only seven days of the 14-day event period are flying days.
Source: USAF 2018-2019.

### Small Force Training Events

Small Force training events are typically conducted at the squadron level and involve less than 50 personnel. The training events occur several days a week throughout the year. Small Force training events include a combination of ground, water, and flight operations. Events may include all or part of the training activities, equipment, airspace, and training locations discussed in this analysis. Formal Small Force training courses for Pararescuemen and CROs are conducted by the Guardian Angel Formal Training Unit (68 RQS) and focus on providing advanced skill upgrades and proficiency training.

Estimated annual aircraft sorties that support/participate in Small Force training events are provided in Table 2.1-5.

**Table 2.1-5. Estimated Annual Aircraft Sorties Supporting/Participating in Small Force Training Events**

| Maximum Number of Aircraft per Small Force Training Event | Total |
|---|---|
| 2 A-10 | 1,080 |
| 1 HC-130 (or similar aircraft) | 500 |
| 3 HH-60 | 1,820 |
| 6 aircraft | 3,400 |

Notes: Sortie Day/Night split is 80/20.
Note that Small Force training occurs several days a week throughout the year; flying occurs up to eight hours per day.
Source: USAF 2018-2019.

### 2.1.4 Description of Specific Training Activities

The following subsections provide a brief description of the types of proposed PR training activities that currently occur, and would continue to occur as part of the Proposed Action and No-Action Alternative.

#### 2.1.4.1 Ground Operations – Camping, Bivouacking, and Assembly Area Use (G1)

Personnel utilize existing hardened camp facilities (e.g., established camp grounds) for bivouacking and assembly, including buildings and infrastructure, for both logistical and training activities. This activity occurs on DoD property, U.S. Forest Service (USFS) land or other federal land, and private property. Bivouacking/Assembly usage consists of existing billeting structures, trailers, tent cabins, or tents where personnel eat and rest overnight in support of PR training activities.

The mission objective is to leave sites in the same condition they were in prior to the event. Appropriate coordination is completed with the specific location prior to execution.

The ground surface may be slightly disturbed, within 6 inches of ground surface, from placement of tent stakes in areas already disturbed for this purpose. Stakes are recovered at the completion of the training event.

Table 2.1-6 provides a summary of bivouacking and assembly area use activities that occur during PR training events.

| Table 2.1-6. Camping, Bivouacking, and Assembly Area Use (G1) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of vehicles:<br>Humvees<br>ATVs<br>van<br>light trucks<br>2.5-ton trucks | Up to 1,000 | Tents, stakes | 21 days/ biannual | Per Special Use permit |
| Medium Force | Variable number of vehicles:<br>Humvees<br>ATVs<br>van<br>light trucks<br>2.5-ton trucks | 50-100 | Tents, stakes | 14 days/ quarterly | Per Special Use permit |
| Small Force | Variable number of vehicles:<br>Humvees<br>ATVs<br>van<br>light trucks<br>2.5-ton trucks | Up to 50 | Tents, stakes | Up to 72 hours/ 4 per year | Per Special Use permit |
| Note: Vehicle operations are analyzed under activity type G3 (see Table 2.1-8) and any associated dismounted movements are analyzed under activity type G2 (see Table 2.1-7).<br>ATV – All Terrain Vehicle<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.2 Ground Operations – Cross-Country Dismounted (Non-Vehicle) Movements (G2)

Cross-country dismounted movements involve rescue personnel walking across land areas from one location to another as part of simulated training activities. Opposing forces may compete to locate the target personnel. Cross-country dismounted movement may occur on or off roads or on unimproved trails. Personnel may carry different configurations of equipment based on current conditions and the individual missions.

During dismounted movements, forces may engage each other using a range of pyrotechnics in various PR training scenarios. Pyrotechnic use is further discussed in Section 2.1.4.7. For purposes of this activity, the pyrotechnics used on approved sites would be limited to those listed in Table 2.1-7.

| Table 2.1-7. Cross-Country Dismounted Movements (Non-Vehicle) (G2) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | NA | Up to 1,000 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares and smoke | 21 days/ biannual | Per Special Use permit |
| Medium Force | NA | 50–100 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares and smoke | 14 days/ quarterly | Per Special Use permit |
| Small Force | NA | Up to 50 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares and smoke | 12 hours/ daily | Per Special Use permit |
| NA – Not applicable.<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.3 Ground Operations – Mounted Movements/Blackout Driving (G3)

Mounted ground movements involve the use of personnel vehicles, all-terrain vehicles, motorcycles/bicycles, horses, and public transportation such as buses and trains, which are shown in Table 2.1-8. Other mounted movements could include bicycles, motorcycles, and horses. Most mounted movements occur across established roads and trails from one location to another in support of PR training activities, logistics, and personnel transport. Less frequently used transport includes bicycles, motorcycles, horses, and public transportation. All Terrain Vehicle/Utility Terrain Vehicle (ATV/UTV) use is conducted using existing unpaved roads and established trails. ATVs/UTVs may also be used on trails in support of cross-country dismounted movement activities. Occasionally, off- road driving is conducted during PR training activities to pick up isolated personnel that may be located just outside a Helicopter Landing Zone (HLZ); this is typically conducted within 200 feet of the HLZ and occurs approximately five percent of the time. However, it should be noted that no off-road driving would occur at the Barry M. Goldwater Range (BMGR) or Fort Huachuca. Also, for any PR training sites located on USFS land, motor vehicle use off designated roads and trails and outside designated areas would be prohibited in compliance with 36 CFR 212.50.

During opposing forces vehicle operations, the teams compete to locate isolated personnel (e.g., downed pilot) using established roads and trails as discussed above. Personnel may exit their vehicles to conduct search activities.

Blackout Driving involves nighttime driving of UTV-type and high-mobility multipurpose wheeled vehicles without full headlights. Headlights are diminished to "cats eyes," which are essentially small slits placed over the headlights. This modification of the headlights provides enough light to utilize night vision goggles while driving. Roads used for this activity are temporarily closed to the public to prevent safety mishaps.

During mounted movements, PR forces may engage each other using a range of pyrotechnics in various PR training scenarios. Pyrotechnic use is further discussed in Section 2.1.4.7. For the proposed activity, the pyrotechnics used on approved sites would be limited to those listed in Table 2.1-8.

**Table 2.1-8. Mounted Movements/Blackout Driving (G3) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of vehicles:<br>Buses<br>Vans<br>Repurposed civilian vehicles<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Humvees<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | Up to 1,000 | airsoft pellets<br>sim-munitions<br>ground burst simulators<br>simulated 50 cal.<br>Smokey Sam<br>burn barrel | 21 days/ biannual | Limited off-road vehicular activity to within 200 feet of PR training sites |
| Medium Force | Variable number of vehicles:<br>Buses<br>Vans<br>Repurposed civilian vehicles<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Humvees<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | 50-100 | airsoft pellets<br>sim-munitions<br>ground burst simulators<br>simulated 50 cal.<br>Smokey Sam<br>burn barrel | 14 days/ quarterly | Limited off-road vehicular activity to within 200 feet of PR training sites |

| Table 2.1-8. Mounted Movements/Blackout Driving (G3) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | Variable number of vehicles:<br>Buses<br>Vans<br>Repurposed civilian vehicles<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Humvees<br>Light trucks<br>2.5-ton trucks<br>ATVs/UTVs<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | Up to 50 | airsoft pellets<br>sim-munitions<br>ground burst simulators<br>simulated 50 cal.<br>Smokey Sam<br>burn barrel | 3 hours/<br>3x week | Limited off-road vehicular activity to within 200 feet of PR training sites |
| ATV – All Terrain Vehicle<br>cal. – caliber<br>UTV – Utility Terrain Vehicle<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.4 Ground Operations – Survival Training/Natural Resources Consumption (G4)

Survival training is a critical component of military readiness and PR training (e.g., SERE). Survival training takes place on Davis-Monthan AFB and other areas known to contain a variety of edible plants. UTVs are used to travel via maintained road to desert areas where personnel are educated on edible plants. Flares and smoke are used only on bare ground or paved surfaces on approved sites, which are cleared of any vegetation within a 3-foot by 3-foot area prior to use of flares and smoke. Extra water is brought to the site to wet down the area after use to minimize wildfire risk. Flares/smoke would only be used when fire danger is low. Survival training during Large Force and Medium Force training events consists primarily of classroom training and field familiarity of edible plants.

Approximately 90 percent of SERE training is performed on Davis-Monthan AFB, typically on the southeastern portion of the base in the vicinity of the Combat Arms Training and Maintenance (CATM) facility. On occasion, SERE training is be conducted off base under the Ruby Fuzzy Military Operations Area (MOA). Personnel travel by vehicle or aircraft to the training area for their training events. During SERE training, forces engage each other using a range of pyrotechnics in various PR training scenarios while recovering an isolated individual. Pyrotechnics include airsoft rifles, sim-munitions, hand flares/smoke, simulated 50 cal. machine gun, and ground burst simulators. Flares/smoke could be used at any PR training site where survival training activities are proposed, as well as in association with other ground, flight, and

water operations (i.e., cross-country dismounted movement [G2], mounted vehicle movement [G3], pyrotechnic use [G7], established MOAs [F1], restricted areas [F4], and amphibious activities [W1]), unless prohibited by the installation-specific range protocols or conditions of a Special Use permit. Hand flares and smoke are only used when fire danger is low. Pyrotechnic use is further discussed in Section 2.1.4.7.

During survival training, plants are used for friction fire demonstrations, edible fruit, bean pod, leaves, and fiddle head demonstrations; whole plant edibility demonstrations; and medical demonstrations. Typically, edible vegetation is simply pointed out and verbal instruction is provided on procurement/consumption. Locations of avoidance areas (e.g., areas that contain sensitive habitats and sensitive species) is communicated to participants prior to the activity. Survival training does not involve substantial consumption of natural resources. Snaring and trapping of animals is rarely conducted; however, if this activity occurs, it is conducted in accordance with applicable laws/regulations including obtaining appropriate hunting and fishing licenses and the activity is conducted using the same approved methods used by the public.

Table 2.1-9 provides a summary of natural resources consumption activities that occur during PR training events.

**Table 2.1-9. Survival Training/Natural Resources Consumption Activity (G4) Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | HC-130<br>HH-60<br>2.5-ton trucks<br>ATVs/UTVs | Up to 1,000 | Individual Combat Equipment<br>airsoft pellets<br>machine gun<br>ground burst simulators<br>hand flares/smoke | 2 days/ biannual | Per Special Use permit<br>Avoid protected wildlife and plants |
| Medium Force | HC-130<br>HH-60<br>2.5-ton trucks<br>ATVs/UTVs | 50-100 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions<br>ground burst simulators<br>hand flares/smoke | 1 day/ quarterly | Per Special Use permit<br>Avoid protected wildlife and plants |
| Small Force | HC-130<br>HH-60<br>2.5-ton trucks<br>ATVs/UTVs | Up to 50 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions simulated 50 cal. machine gun<br>ground burst simulators<br>hand flares/smoke | 3 hours/ quarterly | Per Special Use permit<br>Avoid protected wildlife and plants |

ATV – All Terrain Vehicle
cal. – caliber
UTV – Utility Terrain Vehicle
Source: USAF 2018-2019.

### 2.1.4.5 Ground Operations – Military Operations in Urban Terrain/Urban Evasion (G5)

Military Operations in Urban Terrain (MOUT) training locations provide rescue personnel the opportunity to master combat and maneuvering skills required to successfully conduct rescue missions in urban environments. Opposing forces compete to locate the target personnel. In these approved urban-type areas, three- to six-person teams move throughout urban environments on paved roads in four-wheel drive vehicles, SUVs, or motorcycles. Ground activities may also include the use of bicycles, horses, public transportation, and Amtrak trains by small teams of two personnel. When the teams are within 1,640 feet of the approved site, personnel dismount on foot carrying small 20-pound backpacks to accomplish PR training missions. No off-road driving would occur at the BMGR or Fort Huachuca, and for any PR training sites located on USFS land, motor vehicle use off designated roads and trails and outside designated areas would be prohibited in compliance with 36 CFR 212.50

The PR training activities utilize city-type environments to achieve urban evasion training objectives. Personnel carry different configurations of equipment based on current conditions and individual missions. Depending on scenarios and the roles involved, personnel may be carrying a variety of survival/camping equipment. Activities are conducted in accordance with the normal everyday use of the existing businesses/facilities and with prior coordination with local officials and law enforcement. Local law enforcement may also participate in the training event. These activities consist of the personnel moving on foot and blending in with the existing environments.

During MOUT training, forces engage each other using a range of pyrotechnics in various PR training scenarios at DoD properties and the Playas Training and Research Center. Pyrotechnics may include airsoft rifles and sim-munitions. Within civilian city environments, pyrotechnic use does not occur. Pyrotechnic use is further discussed in Section 2.1.4.7.

Table 2.1-10 provides a summary of MOUT operations that occur during PR training events.

**Table 2.1-10. Military Operations in Urban Terrain (G5) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of vehicles:<br>Light trucks<br>2.5-ton trucks<br>ATVs<br>SUVs<br>Motorcycles<br>Bicycles<br>Horses<br>Public transportation<br>Trains | Up to 1,000 | Individual Combat Equipment<br>airsoft pellets<br>sim-munitions | 2 days/ biannual | Limited off-road vehicular activity to within 200 feet of PR training sites |

| Table 2.1-10. Military Operations in Urban Terrain (G5) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Medium Force | Variable number of vehicles:<br>Light trucks<br>2.5-ton trucks<br>ATVs<br>SUVs<br>Motorcycles | 50-100 | Individual Combat Equipment sim-munitions airsoft pellets | 1 day/ quarterly | Limited off-road vehicular activity to within 200 feet of PR training sites |
| Small Force | Variable number of vehicles:<br>Light trucks<br>2.5-ton trucks<br>ATVs<br>SUVs<br>Motorcycles | Up to 50 | Individual Combat Equipment sim-munitions airsoft pellets | 12 hours/ quarterly | Limited off-road vehicular activity to within 200 feet of PR training sites |
| ATV – All Terrain Vehicle<br>SUV – Sport Utility Vehicle<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.6 Ground Operations – Technical Rope Work (G6)

Rescue missions require use of roped access equipment to recover isolated or injured personnel in high and low angle environments to include mountainous, urban environments, and confined spaces. Technical rope work involves the insertion and extraction of rescue personnel via fast rope, rappel, or rope ladder. The training may utilize stationary objects or helicopters to achieve training objectives. Stationary objects may consist of cliffs, ravines, buildings, and other natural and man-made features. PR training sites where technical rope work is conducted from stationary platforms include Davis-Monthan AFB, Mount Lemmon, Mogollon Rim, and Titan Missile Museum.

**Fast Rope** is a technique for descending a thick rope used for deploying troops from a helicopter in places and situations where it is difficult for the helicopter to touch down. It is much quicker and easier than rappelling, although more dangerous as a descender simply holds onto the rope with his gloved hands and feet and slides down it without any security (not attached to the rope).

**Rappelling** is a technique for descending from a stationary position or a hovering helicopter where an individual wears a safety harness attached to a rope and uses a descender control device to control their descent.

**Rope Ladder** is a technique for extracting personnel to a helicopter where it is difficult to touch down. Typically, one person holds the rope ladder tight as the other person ascends the ladder.

Table 2.1-11 provides a summary of technical rope work activities that occur during PR training events.

| Table 2.1-11. Ground-Based Technical Rope Work (G6) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of vehicles:<br>HC-130<br>HH-60<br>light trucks<br>van | Up to 1,000 | No expendables<br>Rope, safety harness | 21 days/ biannual | NA |
| Medium Force | Variable number of vehicles:<br>HC-130<br>HH-60<br>light trucks<br>van | 50-100 | No expendables<br>Rope, safety harness | 14 days/ quarterly | NA |
| Small Force | Variable number of vehicles:<br>HC-130<br>HH-60<br>light truck<br>van | Up to 50 | No expendables<br>Rope, safety harness | 12 hours/ bimonthly | NA |
| NA – Not applicable<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.7 Ground Operations – Pyrotechnic Use (G7)

During mounted and dismounted movements and many of the ground PR training activity types, forces engage each other using a range of pyrotechnics in various training scenarios. Pyrotechnics include airsoft rifles, which shoot a 6 mm biodegradable pellet; sim-munitions (realistic, non-lethal munitions); ground burst simulators (simulates battle noise); simulated 50 cal. machine gun (propane gun to simulate loud burst of gun fire), signal flares (e.g., MK-124 or MK-13), Smokey Sams, and burn barrels.

Smokey Sams and burn barrels are only used on DoD properties and when fire danger is low. The Smokey Sam is a small unguided rocket used as a threat simulator. When launched, the model rocket motor produces a white plume, providing a realistic simulation of the launch of a surface-to-air missile. It is constructed from phenolic paper and Styrofoam so that, in the event of accidentally striking low-flying aircraft, no or minimal damage results. A burn barrel is simply a cut-off metal barrel that is lit to simulate a burning target.

Hand flares and smoke are only used on approved sites. Flares and smoke are used only on bare ground or paved surfaces, which are cleared of any vegetation within a 3-foot by 3-foot area prior to use of flares and smoke. Extra water is brought to the site to wet down the area after use to minimize wildfire risk. Aircraft use of flares and chaff is discussed in Section 2.1.4.9.

Table 2.1-12 provides a summary of pyrotechnics use activities that occur during PR training events.

| Table 2.1-12. Pyrotechnic Use (G7) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Vehicle use as described in activity type G2, G3, G4, and G5 | Up to 1,000 | Airsoft pellets, sim-munitions, ground burst simulators hand flares/smoke simulated 50 cal. Smokey Sam burn barrel | 21 days/ biannual | Sim-munitions, ground burst simulators, hand flares/smoke, simulated 50 cal., Smokey Sam, and burn barrel to only be used on military lands |
| Medium Force | Vehicle use as described in activity type G2, G3, G4, and G5 | 50-100 | Airsoft pellets, sim-munitions, ground burst simulators hand flares/smoke simulated 50 cal. Smokey Sam burn barrel | 14 days/ quarterly | Sim-munitions, ground burst simulators, hand flares/smoke, simulated 50 cal., Smokey Sam, and burn barrel to only be used on military lands |
| Small Force | Vehicle use as described in activity type G2, G3, G4, and G5 | Up to 50 | Airsoft pellets, sim-munitions, ground burst simulators hand flares/smoke simulated 50 cal. Smokey Sam burn barrel | 4 hours/ bimonthly (twice a month) | Sim-munitions, ground burst simulators, hand flares/smoke, simulated 50 cal., Smokey Sam, and burn barrel to only be used on military lands |
| cal. – caliber<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.8 Ground Operations – Small Arms Firing Range (G8)

PR training activities involve the use of existing DoD and private small arms firing ranges to enhance weapons training skills. The caliber of the weapons used for the training and subsequent events does not exceed the design, capacity, or certification of the facilities. Small arms training occurs during normal operating hours of the facilities. Small arms firing ranges are located at the Davis-Monthan AFB CATM facility, Florence Military Reservation, and Three Points Public Shooting Range. These locations are situated on DoD properties with the exception of the Three Points Public Shooting Range, which is a public range.

Table 2.1-13 provides a summary of small arms firing range activities that occur during PR training events.

| Table 2.1-13. Small Arms Firing Range (G8) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | NA | NA | NA | NA | NA |
| Medium Force | light trucks and buses | 50-100 | 5.56 mm<br>7.62 mm<br>9 mm<br>.50 cal. (some incendiary/explosive)<br>30 mm<br>40 mm (some incendiary/explosive) | 14 days/ quarterly | Not to exceed the design, capacity, or certification of the facilities |
| Small Force | light trucks and buses | Up to 50 | 5.56 mm<br>7.62 mm<br>9 mm<br>.50 cal. (some incendiary/explosive)<br>30 mm<br>40 mm (some incendiary/explosive) | 4 hours/ weekly | Not to exceed the design, capacity, or certification of the facilities |

cal. – caliber
mm – millimeter
NA – Not applicable
Source: USAF 2018-2019.

### 2.1.4.9 Flight Operations – Established Military Operations Areas (F1)

The established MOAs (Figure 2.1-3) associated with the effort support nonhazardous military flight activities, including but not limited to tactical combat maneuvering by fighters; transport and rotary-wing aircraft formation flights; air intercepts; low altitude tactics rescue escort maneuvering above participating rotary-wing aircraft; close air support; freefall and static line parachute operations; and Visual Flight Rules (VFR) aerial helicopter refueling. Aircraft operations associated with the PR activities occur in several established MOAs, including:

- Desert
- Dome
- Fuzzy
- Outlaw
- Reserve
- Ruby 1
- Sells 1
- Sells Low
- Sunny
- Tombstone A/C
- Tombstone B/C

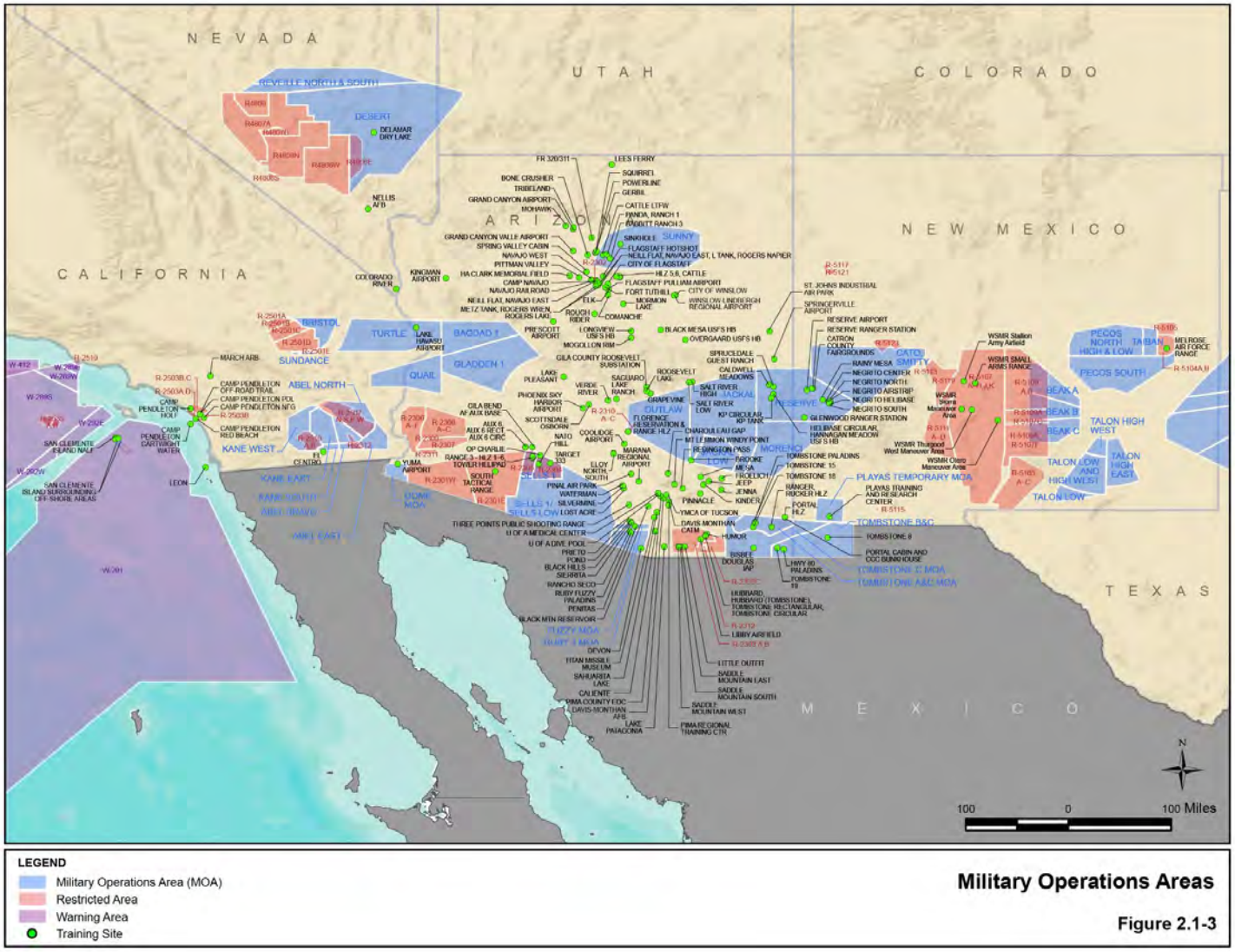


**Figure 2.1-3. Military Operations Areas (MOAs)**

- Tombstone C
- Turtle

Aerial refueling (AR) operations between fixed-wing and rotary-wing aircraft occur in all MOAs as well as on published AR tracks (e.g., AR135V, AR136V, AR137V, AR230V, etc.).

Airspace utilized during PR activities is governed by the associated Airspace Control Plan (ACP). The ACP outlines procedures and designates airspace for the PR training operations within the MOAs/Air Traffic Control Assigned Airspace (ATCAA), BMGR East (the "Exercise Area"), and other identified restricted airspace. Responsibilities and procedures described in the ACP are applicable to participating aircraft and are adhered to unless prior coordination was conducted. The document is supplementary to the procedures in Federal Aviation Administration (FAA) Orders 7110.65, Air Traffic Control, and 7610.4, Special Military Operations, and is consistent with Air Force Manual (AFMAN) 13-212, Volume 1, Range Planning and Operations, for all activities on the BMGR East (USAF 2018b). The ACP does not replace airfield or airspace local operating procedures, DoD Flight Information Publications, or service and national flight operations regulations.

Chaff and flares are defensive countermeasures dispensed by military aircraft to avoid detection or attack by the enemy's air defense systems and prevent targeting by certain weapons. Aircraft participating in PR training event may utilize RR-188 training chaff, which consists of bundles of approximately 5 to 5.6 million fibers (the thickness of a human hair). When dispensed, these fibers form a cloud that reflects radar signals and temporarily obscures the aircraft from radar detection. Chaff does not emit any heat.

Flares ejected from aircraft provide high-temperature heat sources that mislead heat-sensitive or heat-seeking targeting systems. Aircraft participating in PR training events may utilize M211, M212, and LUU-19 flares. These flares are infrared flares designed to meet advanced threats in current and future operational environments. The M211 uses a special high surface area metal foil, which rapidly oxidizes when exposed to oxygen. When the flare is dispensed from the aircraft, the material reacts with air to emit intense infrared radiation that is not visible to the naked eye. The infrared radiation diverts heat-seeking missiles away from the aircraft. The M211 is used together with the M212, a spectrally matched flare, to provide protection against a wide range of surface to air threats. The LUU-19 flare provides infrared illumination of a target area for night vision goggle-capable aircraft.

Air-deployed LUU-2 and LUU-4 flares are high-intensity illumination flares used to illuminate targets. The flare is housed in a canister and is deployed by ejection. The mechanism has a timer on it that deploys the parachute and ignites the flare candle. The flare burns magnesium, which burns at high temperature emitting an intense bright white light and has a burn time of approximately five minutes while suspended from a parachute. The flare enhances a pilot's ability to see targets while using night vision goggles.

Chaff and flares are only used over the BMGR and Ruby Fuzzy MOAs. To minimize the potential for flares to ignite vegetation, flares are employed at an altitude that prevents the flares from impacting the ground or structures. Chaff and flares are used in compliance with the 355 WG Inflight Guide.

PR training participants conduct required mission planning through the use of (1) the ACP; (2) DoD's Flight Information Publications, including Area Planning (AP)/1A, Special Use Airspace, North and South America, and AP/1B, Military Training Routes (Defense Logistics Agency 2019); (3) applicable Letters of Agreement and regulations; (4) Air Tasking Order, as discussed in Section 3.0 of this EA; (5) Airspace Control Order; and (6) Special Instructions. Table 2.1-14 provides a summary of aircraft and activities that occur during PR training events within established MOAs.

**Table 2.1-14. Established Military Operations Areas (F1) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of aircraft:<br>A-10<br>EC-130 and EC-130H<br>HC-130<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B<br>HH-60<br>CV/MV-22<br><br>Foreign Fighter Aircraft and Helicopters<br>MH-60<br>AH-1/UH-1<br>KC-10<br>KC-135<br>MC-12 | Up to 1,000 | Self-protection flares/chaff | 21 days/ biannual | In accordance with designated altitude restrictions and SUA times-of-use published in FAA JO 7400.2M |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22<br>SC-7 | 50-100 | Self-protection flares/chaff | 14 days/ quarterly | In accordance with designated altitude restrictions and SUA times-of-use published in FAA JO 7400.2M |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | Self-protection flares/chaff | weekly | In accordance with designated altitude restrictions and SUA times-of-use published in FAA JO 7400.2M |

| Table 2.1-14. Established Military Operations Areas (F1) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| FAA – Federal Aviation Administration<br>SUA – Special Use Airspace<br>Source: FAA 2019b; USAF 2018-2019. | | | | | |

### 2.1.4.10 Flight Operations – Temporary Military Operations Area (F2)

Aircraft operations associated with PR training activities occur above the Playas Training and Research Center (Figure 2.1-3) in conjunction with a wide range of ground training that takes place at this facility. The Playas Training and Research Center offers a unique, adaptive, urban/suburban training environment ideal for integration with combat search and rescue aircraft training. The Playas Temporary MOA is a 20 nautical mile by 20 nautical mile square-shaped area from 300 feet above ground level (AGL) up to but not including Flight Level (FL) 180.[3] The proposed boundary is 32°10'43" N 108°42'48" W to 32°09'20" N 108°19'29" W to 31°49'27" N 108°21'03" W to 31°50'48" N 108°44'28" W to the point of beginning.[4] Overlying the Playas Temporary MOA is the Playas Temporary ATCAA. The Playas Temporary ATCAA would have the same lateral dimensions as the Temporary MOA but the vertical dimensions would extend from FL 180 up to FL 220. For more information related to the times and details the Playas Temporary MOA is proposed to be activated, see Section 3.1.2.3.1 of this EA.

Most PR training does not require establishment of a Temporary MOA above the Playas Training and Research Center, but when aircraft operations involve combat maneuvering or flying at high speeds, a request to establish a Temporary MOA must be submitted to the FAA for approval. Requests to establish a Temporary MOA are submitted on an as-needed basis, typically to support Large Force training events such as Red Flag-Rescue. The Temporary MOA is only used during a specified timeframe (five to seven flying days during each Red Flag-Rescue/Large Force training event) with specific times of use announced via Notice to Airmen.[5] Times of use vary from continuous to day-night windows scheduled to meet training requirements. The Temporary MOA with associated flight restrictions supports nonhazardous military flight activities including, but not limited to, tactical combat maneuvering by fighter, transport, and rotary wing aircraft; non-standard formation flights; rescue escort maneuvering above participating rotary wing aircraft; close air support; freefall and static line parachute

[3] Flight Level means a level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet (e.g., FL 250 represents a barometric altimeter indication of 25,000 feet; FL 255, an indication of 25,500 feet (14 CFR 1.1).

[4] Please note that at the time of the publication of the Final EA, the area of the Playas Temporary MOA slightly decreased (by approximately 0.4 percent). The boundaries mostly remained the same (just a smaller area and with a negligible shift to the northeast by approximately one foot). The revised coordinates are the following (shown in strikeout/underline for clarity): 32°10'43" N 108°42'48" W to 32°09'20" N 108°19'29" W to 31°49'~~27~~32" N 108°21'~~03~~06" W to 31°50'~~48~~49" N 108°44'~~28~~26" W to the point of beginning. However, in order to present a conservative evaluation of the Proposed Action, this BE analyzed the original boundaries of the Playas Temporary MOA.

[5] A Notice Airmen is a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of the flight.

operations; and VFR aerial helicopter refueling. The Playas Temporary MOA training activities include night extracts and night ground infiltration/evasion/exfiltration scenarios at the Playas training facility.

Variable types and numbers of aircraft operate in the Playas Temporary MOA depending on the agenda for each training event (see Table 2.1-15 below). Aircraft could include other similar aircraft depending on outside agency/organization participation. Specific aircraft expected to participate in each training event involving establishment of the Playas Temporary MOA are included in each individual request submitted to the FAA.

If establishment of a Temporary MOA occurs on a regular basis for a prolonged period, the establishment of a Permanent MOA may be required. Any plans for establishing a Permanent MOA over the Playas Training and Research Center would be coordinated with the FAA and addressed in a future analysis.

The ACP outlines procedures and designates airspace for PR operations within the Playas Temporary MOA. As previously discussed, responsibilities and procedures described in the ACP are applicable to participating aircraft and are adhered to unless prior coordination was conducted. Table 2.1-15 provides details for PR training events within the Playas Temporary MOA.

**Table 2.1-15. Temporary MOA (F2) Details per Event**

| Category[1] | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of aircraft:<br>A-4<br>A-10<br>AV-8<br>A-29<br>A/T-6<br>C-130 (all variants)<br>C-17<br>C-208<br>CASA-212<br>EC-130 and EC-130H<br>F-15 (all variants)<br>F-16<br>F-18<br>F-21<br>F-22<br>F-35 (all variants)<br>MH/HH-60<br>P-3 (all variants)<br>P-8<br>CV/MV-22<br>AW139<br>UH-72<br>AH-1/UH-1 | Up to 1,000 | NA | Up to 45 days/as needed | In accordance with FAA approved terms and conditions specified in the Special Use Airspace Proposals required by FAA JO 7400.2M, Part 5, Section 3. |

| Table 2.1-15. Temporary MOA (F2) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category[1]** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force (continued) | AH-64<br>MH/AH-6<br>MH/CH-47<br>MH/CH-53<br>KC-135<br>KC-10<br>MQ-1 or MQ-9<br>MC-12<br>U-28<br><br>Foreign Fighter Aircraft and Helicopters<br>Rafale<br>Mirage<br>Tornado<br>EurofighterA400M<br>EC725 (all variants)<br>AW101 (all variants)<br>NH90 (all variants)<br>EC665 (all variants)<br>MI-8/17 (all variants)<br>MI-24/35 (all variants) | | | | |
| Medium Force | None | 50-100 | NA | NA | NA |
| Small Force | None | Up to 50 | NA | NA | NA |

MOA – Military Operations Area
NA – Not applicable.
[1] The Playas Temporary MOA would only be established for Red Flag-Rescue/Large Force training events.
Source: FAA 2019b; USAF 2018-2019.

### 2.1.4.11 Flight Operations – Low Altitude Tactical Navigation Area (F3)

Low Altitude Tactical Navigation (LATN) areas are large geographic areas where random low altitude operations are conducted at airspeeds below 250 Knots Indicated Airspeed. PR personnel use LATN areas to accomplish low-level PR training objectives. LATN areas allow the USAF to perform random tactical navigation, generally below 3,000 feet AGL. The LATN to be used by this effort is CSAR LATN (Figure 2.1-4) per Davis-Monthan Air Force Base Instruction (DMAFBI) 11-250 (USAF 2016b).

PR aircraft typically use the LATN area to transit to/from Davis-Monthan AFB and PR training areas. Helicopters traveling to HLZs to conduct PR training activities as well as the specific activities occurring at the HLZ typically occur at altitudes below 3,000 feet AGL. Aircraft using this LATN must follow the rules described in DMAFBI 11-250 (USAF 2016b).

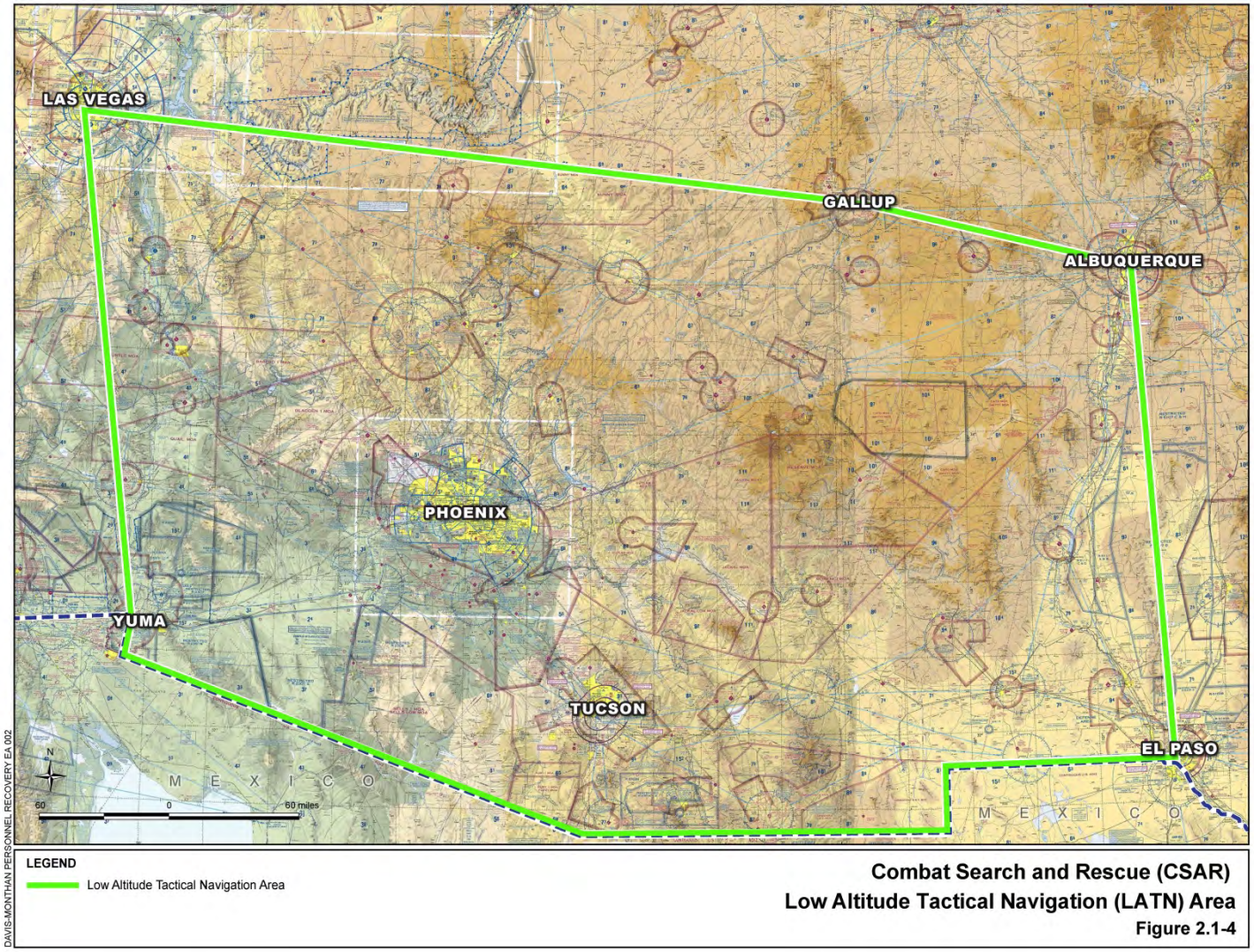


**Figure 2.1-4. Combat Search and Rescue (CSAR) Low Altitude Tactical Navigation (LATN) Area**

In combat, many aircraft operate at altitudes as low as 100 feet to defeat ground missile radars and avoid sophisticated surface-to-air missiles, anti-aircraft artillery, and enemy fighters. Pilots must have long hours of realistic training to become skilled at low-altitude flight; and then must have many more hours of the same training to remain proficient. Low-altitude flying training provides this realism and is considered one of the USAF's highest training priorities.

The FAA does not consider an LATN area SUA; therefore, formal airspace designation is not required and LATN airspace is not included on FAA VFR Sectional maps. Military aircraft are required to follow existing Federal Aviation Regulations while flying within an LATN area.

Military and civilian pilots must use the "see and avoid" technique while operating in an LATN area. Table 2.1-16 provides a summary of aircraft and activities that occur during PR training events within LATN areas.

**Table 2.1-16. Low Altitude Tactical Navigation (F3) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of aircraft:<br>A-10<br>HC-130<br>HH-60<br>CV/MV-22<br>Foreign Fighter Aircraft and Helicopters<br>AH-1/UH-1<br>MC-12 | Up to 1,000 | NA | 21 days/ biannual | IAW AFI 11-2MDS V3 and AFI 11-214 |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | NA | 14 days/ quarterly | IAW AFI 11-2MDS V3 and AFI 11-214 |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | NA | weekly | IAW AFI 11-2MDS V3 and AFI 11-214 |

AFI – Air Force Instruction
IAW – In accordance with
NA – Not applicable
Sources: USAF 2016a, 2018d, 2018-2019.

### 2.1.4.12 Flight Operations – Restricted Areas (F4)

Restricted Area (RA) confines or segregates activities considered hazardous to non-participating aircraft. Warning Areas are similar to RAs but are located offshore over domestic and

international waters and typically begin 3 miles from the shoreline. Potential hazards include bombs, artillery, mortars, gunfire, rockets, missiles, lasers, lights out, unmanned aerial systems, etc. Flight operations for PR training activities use several different established RAs and Warning Areas across the region (Figure 2.1-3) to include:

- R-2301E, R-2304, and R-2305 (BMGR)
- R-2303 A&B (Fort Huachuca)
- R-2303 A&B (Little Outfit, Saddle Mountain East, South, and West)
- R2310A (Florence Military Reservation and Florence Range HLZ)
- R 2503 B&C (Camp Pendleton Helicopter Outlying Landing Field [HOLF])
- R-2503 A&D (Camp Pendleton NFG and Camp Pendleton Red Beach)
- R-2503 B&C (Camp Pendleton Off-Road Trail and Camp Pendleton Piedra de Lumbre [PDL])
- R-5104 A&B (Melrose Air Force Range)
- R-5107 B&F (White Sands Missile Range)
- W-291 (San Clemente Island Naval Auxiliary Landing Field and San Clemente Island Surrounding Off-Shore Areas)

Yuma Tactical Aircrew sortie operations occur within R-2301W and typically consist of rotary-wing assets [variants of HH-60 (e.g., UH-60, SH-60), AH-64, and CH-47], fixed-winged aircraft (e.g., HC-130, A-10, F-16, F-18, F-35, CV/MV-22, and KC-135), and unmanned aerial systems (e.g., MQ-1 Predator or MQ-9 Reaper). PR training activities that involve aircraft live weapon firing or use of unmanned aerial systems (e.g., MQ-1 or MQ-9) occur at training areas that are within an RA.

RAs and Warning Areas are airspace designated for hazardous military activities, which may include live-firing of weapons. Restrictions are placed on all non-participating air traffic. Table 2.1-17 provides a summary of aircraft and activities that occur during PR training events within restricted areas.

| Table 2.1-17. Restricted Areas (F4) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>A-10<br>AV-8<br>EC-130 and EC-130H<br>HC-130<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B<br>HH-60<br>MH-60<br>CV/MV-22<br>Foreign Fighter Aircraft and Helicopters<br>AH-1/UH-1<br>E-3<br>MC-12<br>KC-10<br>KC-135<br>MQ-1<br>MQ-9 | Up to 1,000 | Chaff<br>Flares<br>7.62 mm<br>50 cal.<br>30 mm<br>20 mm<br>25mm | 21 days/biannual | IAW AFI 11-2MDS V3 and AFI 11-214, and Range Guidance/Safety restrictions on Chaff/Flare usage by range based on fire hazard |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | Chaff<br>Flares<br>7.62 mm<br>50 cal.<br>30 mm | quarterly | IAW AFI 11-2MDS V3 and AFI 11-214, and Range Guidance/ Safety restrictions on Chaff/Flare usage by range based on fire hazard |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | Chaff<br>Flares<br>7.62 mm<br>50 cal.<br>30 mm | daily | IAW AFI 11-2MDS V3 and AFI 11-214, and Range Guidance/ Safety restrictions on Chaff/Flare usage by range based on fire hazard |

AFI – Air Force Instruction
cal. – caliber
IAW – In accordance with
mm – millimeter
Note that chaff use is only approved in BMGR and Ruby Fuzzy MOAs.
Sources: USAF 2016a, 2018d, 2018-2019.

### 2.1.4.13 Flight Operations – Other Airspace (F5)

Military missions may also use airspace that is not categorized as Special Use Airspace (SUA). Military Training Routes (MTRs) are military corridors designated by FAA to support low altitude, high-speed military operations below 10,000 feet mean sea level (MSL) outside SUA. MTRs are designated as either VFR Routes (Visual Routes) or IFR Routes (Instrument Routes). AR tracks/anchors are designated areas to conduct AR. LATN areas are uncharted, unscheduled areas used to conduct random, VFR, low altitude navigation in accordance with Federal Aviation Regulation Section 91.117. ATCAA is airspace above 18,000 feet MSL that is usually associated with an underlying MOA per Letter of Agreement with the controlling agency. Table 2.1-18 provides a listing of other airspace that could be utilized during proposed PR training activities. Table 2.1-19 provides a summary of aircraft and activities that could occur during proposed PR training activities within other airspace for each event.

**Table 2.1-18. Other Airspace (F5)**

| Type | Vertical Limits | Notes |
|---|---|---|
| MTRs | Generally below 10,000 feet MSL | • Operations are to be conducted at the minimum speed required to accomplish the mission<br>• Unless otherwise delineated in an MTR special operating procedure, aircrew are to avoid charted, uncontrolled airports by 3 nautical miles laterally or 1,500 feet AGL vertically<br>• Aircrew are to avoid Class B, C, and D airspace<br>• Route entries are to be accomplished at published entry/alternate entry points only<br>• Route exits are to be accomplished at published exit/alternate exit points only |
| Visual Routes | Visual Routes (VRs) with one or more segments above 1,500 AGL are identified by three numbers, e.g. VR-123. Routes with no segment above 1,500 AGL have four numbers, e.g. VR-4321. | • Are MTRs<br>• Can be utilized for flight training and entry into MOAs and RAs<br>• Coordinates, vertical and lateral limits, and scheduling agencies are listed in the DoD Flight Information Publication AP/1B |
| Instrument Routes | Instrument Routes (IRs) with one or more segments above 1,500 AGL are identified by three numbers, e.g. IR-123. Routes with no segment above 1,500 AGL have four numbers, e.g. IR-4321. | • Are MTRs<br>• ATC entry clearance is required<br>• Coordinates, vertical and lateral limits, and controlling agencies are listed in the DoD Flight Information Publication AP/1B |

| Table 2.1-18. Other Airspace (F5) | | |
|---|---|---|
| **Type** | **Vertical Limits** | **Notes** |
| Slow Routes | at or below 1,500 feet AGL | • At speeds of 250 knots (288 miles per hour) or less<br>• Not included on FAA VFR Sectional maps<br>• Coordinates, vertical and lateral limits, and controlling agencies are listed in the DoD Flight Information Publication AP/1B |
| AR Tracks | Per AP/1B | • Are not MTRs<br>• Not included on FAA VFR Sectional maps<br>• Coordinates, vertical and lateral limits, and controlling agencies are listed in the DoD Flight Information Publication AP/1B |

AGL – above ground level
AP – Area Planning
AR – aerial refueling
ATC – Air Traffic Control
DoD – Department of Defense
FAA – Federal Aviation Administration
IR – Instrument Route
MOA – Military Operations Area
MSL – mean sea level
MTR – Military Training Route
VFR – Visual Flight Rules
VR – Visual Route
Source: USAF 2018-2019.

| Table 2.1-19. Other Airspace (F5) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>A-10<br>AV-8<br>EC-130 and EC-130H<br>HC-130<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B<br>HH-60<br>MH-60<br>CV/MV-22<br>Foreign Fighter Aircraft and Helicopters<br>AH-1/UH-1<br>E-3<br>MC-12<br>KC-10<br>KC-135 | Up to 1,000 | NA | 21 days/ biannual | Per AP/1B |

| Table 2.1-19. Other Airspace (F5) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | NA | 14 days/ quarterly | Per AP/1B |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | NA | 8 hours/daily | Per AP/1B |
| NA – Not applicable<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.14 Flight Operations – Forward Aircraft Refueling Point Operations (F6)

Ground refueling of fixed- and rotary-wing aircraft to support PR training activities occurs within designated areas of the airfields and in accordance with airfield policies and procedures. Hot refueling (fueling an aircraft with the engines on) and aircraft-to aircraft ground refueling operations are limited to existing approved locations on DoD properties. Military airfields and the Bisbee Douglas IAP have been used as Forward Aircraft Refueling Points (FARPs) in the past and are proposed for use during proposed PR training activities. Airfields used for refueling activities have appropriate fuel storage on site, and are managed in accordance with facility Spill Prevention Control, and Countermeasure Plan (SPCCP).

Table 2.1-20 provides a summary of aircraft that could participate and FARP activities that occur during PR training events.

| Table 2.1-20. Forward Aircraft Refueling Point Operations (F6) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>MH-6<br>AH-64<br>CH/MH-47<br>CV/MV-22<br>AH-1/UH-1 | Up to 1,000 | No expendables/ Refueling equipment | 21 days/ biannual | SPCCP and appropriate containment required |

| Table 2.1-20. Forward Aircraft Refueling Point Operations (F6) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Medium Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10<br>CV/MV-22 | 50-100 | No expendables/ Refueling equipment | 14 Days/ quarterly | SPCCP and appropriate containment required |
| Small Force | Variable number of aircraft:<br>HC-130<br>HH-60<br>A-10 | Up to 50 | No expendables/ Refueling equipment | 1 hour/ weekly | SPCCP and appropriate containment required |
| SPCCP – Spill Prevention, Control, and Countermeasure Plan<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.15 Flight Operations – Helicopter Landing Zones (F7)

HLZs are utilized as landing sites for rescue personnel during PR training activities. These PR training sites are located on DoD, federal, state, and local government lands as well as privately-owned lands. The HLZ PR training sites are naturally open areas or are open areas that have been cleared of vegetation by the land owners through regular land management activities.

Low-level helicopter insertions/extractions involve flying helicopter(s) near treetop level to an HLZ and inserting or extracting rescue personnel. Insertion/extraction of personnel is conducted via helicopter landing, fast rope, rappel, rope ladder, or hoist. Approximately 50 percent of helicopter/HLZ operations occur at night. Aircraft travel to the HLZ and spend thirty minutes to four hours conducting training activities before returning to the installation. Patterns are typically flown between 0.25 and 1 mile from the HLZ at 1,000 feet AGL and below. Approximately 40 percent of the aircraft's time is spent flying patterns around the HLZ with the remaining time being spent at the HLZ. When at the HLZ, approximately 60 percent of the aircraft's time is spent hovering with actual landing for pick-up of personnel typically completed within two minutes or less. Helicopters typically hover between 10 and 70 feet above the ground to support hoist and rappel activities, fast ropes, and rope ladders.

CV/MV-22 aircraft utilize specific HLZs that meet their landing requirements. The landing area required for CV/MV-22 aircraft (approximately 200- by 200-foot area) is four times the area required for a helicopter (approximately 100-foot by 100-foot area). As a result, most CV/MV-22 landings occur at HLZs within the BMGR and at the Playas Training and Research Center.

**Hoist** extraction is a method for retrieving an injured person with use of a basket and hoist. The hoist assembly is normally housed in a fairing above the cabin door and contains a spool of steel cable—often around 300 feet in length—with a hook attached to the end. Typically, the on-the-hook lift limit is 600 pounds. A basket or rescue harness is lowered, the injured individual is helped into the harness or basket, and they are hoisted into the helicopter.

HH-60 mission equipment includes an 8,000-pound capacity cargo hook and rescue hoist capable of lifting a 600-pound load from a hover height of 200 feet. For definitions of Rappelling, Fast Rope, and Rope Ladder techniques, refer to Section 2.1.4.6

Close air support/escort activities, as described in Section 2.1.4.18, may participate in HLZ operations providing military air support against hostile targets that are in proximity to friendly forces to ensure successful rescue activities. Close Air Support only occurs within MOAs where aircraft combat maneuvering is permitted.

Table 2.1-21 provides a summary of aircraft and activities that use HLZs during PR training events.

**Table 2.1-21. Helicopter Landing Zones (F7) Activity Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Variable number of aircraft:<br>HH-60<br>AH-64<br>CH/MH-47<br>MH-6<br>CV/MV-22 | Up to 1,000 | No expendables/ hoist, rope ladder, fast rope, stokes litter | 21 days/biannually | IAW AFI 11-2MDS V3 |
| Medium Force | HH-60<br>CV/MV-22 | 50-100 | No expendables/ hoist, rope ladder, fast rope, stokes litter | 14 days/ quarterly | IAW AFI 11-2MDS V3 |
| Small Force | HH-60 | Up to 50 | No expendables/ hoist, rope ladder, fast rope, stokes litter | weekly | IAW AFI 11-2MDS V3 |

IAW – In accordance with
Source: USAF 2018c, 2018-2019.

### 2.1.4.16 Flight Operations – Fixed-Wing Landing Zones (F8)

Established landing zones (LZs) are utilized as part of PR training activities. LZs are located on DoD, federal, state, and local government lands as well as one privately-owned air park. The LZ sites include paved runways or unpaved runways that have been graded and cleared of vegetation by the land owners through regular land management activities. Of the 32 LZs, 27 are paved LZs and five are unpaved LZs.

Table 2.1-22 provides a summary of aircraft and activities that utilize LZs during PR training events.

| Table 2.1-22. Fixed-Wing Landing Zones (F8) Activity Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Variable number of aircraft, including all variants of the following:<br>A-10<br>A-29<br>A/T-6<br>A400M<br>C-130<br>C-12<br>C-17<br>C-208<br>CASA-212<br>U-28 | Up to 1,000 | NA | 21 days/ biannual | NA |
| Medium Force | HC-130 | 50-100 | NA | 14 days/ quarterly | NA |
| Small Force | HC-130 | Up to 50 | NA | 1 hour/ weekly | NA |
| NA – Not applicable<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.17 Flight Operations – Parachute Operations and Drop Zones (F9)

PR training encompasses parachute operations. Parachute operations include day and night extractions and day and night infiltration, evasion, and exfiltration activities. These training activities involve:

- Pararescuemen parachute into a remote location to rescue simulated injured personnel. Once secured, arrange for retrieval of the injured and Pararescuemen by ground vehicle or via helicopter at an approved HLZ.
- Pararescuemen by parachute that must then proceed to a designated location for extraction by vehicle or helicopter while avoiding detection by an opposing force.
- Equipment by parachute that is recovered by parachutists or ground party personnel.
- Conduct similar types of operations in an urban setting modifying insertion and extraction to vehicular use or designated HLZs or LZs, if available.

During parachute training, airdrops of personnel and equipment include freefall- and static line-parachute operations from various altitudes landing on unimproved surfaces. Ground and parachute training for rescue personnel occur within previously approved ranges and drop zones (DZs). During parachute training, personnel deploy from the airdrop platforms typically between altitudes of 800 feet AGL and 25,000 feet MSL into the designated area, and equipment between altitudes of 150 feet and 6,000 feet AGL.

The sites are located on DoD, federal, state, and local government lands as well as privately owned lands, although the primary DZs utilized include Aux 6, Bisbee Douglas IAP, Playas Training and Research Center, and Camp Navajo. The DZ sites are naturally open areas or are open areas that have been cleared of vegetation by the land owners through regular land management activities. DZs are typically used for the insertion of Pararescuemen in small squads, normally around eight to 12 personnel. HC-130s conduct bundle drops for training. These drops typically include 500-pound water barrels (over land), training equipment (over land) weighing up to 3,000 pounds, or zodiac boats (over water).

Parachute training occurs over land as well as water training areas. Guardian Angel parachute training typically occurs at Marana Regional Airport or Pinal Air Park with support from a commercial carrier to provide the jump aircraft.

Table 2.1-23 provides a summary of aircraft and activities that occurs during parachute operations.

**Table 2.1-23. Parachute Operations and Drop Zones (F9) Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables / Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Up to four Airdrop Platforms:<br>HH-60<br>AH-64<br>CH/MH-47<br>MH-6<br>CV/MV22<br>C-17<br>HC-130<br>SC-7<br>Light Trucks | Up to 1,000 | No expendables/ Parachutes water barrels rubber bands | 21 days / biannual | No person may make a parachute jump, and no pilot-in-command can allow a parachute jump to be made from the aircraft, in or into Class A, B, C, or D airspace without, or in violation of, the terms of an ATC authorization issued by the ATC facility with jurisdiction over that airspace (14 CFR 105) (FAA 2015). |
| Medium Force | Up to two Airdrop Platforms:<br>HC-130<br>HH-60<br>CH/MH-47<br>SC-7, or<br>CV/MV22<br>Light Trucks | 50-100 | No expendables/ Parachutes water barrels rubber bands | 14 days / quarterly | No person may make a parachute jump, and no pilot-in-command can allow a parachute jump to be made from the aircraft, in or into Class A, B, C, or D airspace without, or in violation of, the terms of an ATC authorization issued by the ATC facility with jurisdiction over that airspace (14 CFR 105) (FAA 2015). |

| Table 2.1-23. Parachute Operations and Drop Zones (F9) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables / Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | One Airdrop Platform:<br>HC-130<br>HH-60<br>CH/MH-47<br>C-23<br>SC-7, or<br>CV/MV22<br>Light Trucks | Up to 50 | No expendables/ Parachutes water barrels rubber bands | 4 hours/ daily | No person may make a parachute jump, and no pilot-in-command can allow a parachute jump to be made from the aircraft, in or into Class A, B, C, or D airspace without, or in violation of, the terms of an ATC authorization issued by the ATC facility with jurisdiction over that airspace (14 CFR 105) (FAA 2015). |
| ATC – Air Traffic Control<br>CFR – Code of Federal Regulations<br>FAA – Federal Aviation Administration<br>Sources: FAA 2015; USAF 2018-2019. | | | | | |

### 2.1.4.18 Flight Operations – Close Air Support/Escort (F10)

For PR training activities, close air support consists of fixed- and/or rotary-wing aircraft providing military air support against hostile targets that are in close proximity to friendly forces to ensure successful rescue activities. Aircraft make multiple passes to simulate close air support within the established airspace boundaries. As part of PR training activities, threat emitters (e.g., emitter that simulates a radar tracking location) are set up in general proximity to the event area on the side of roads, rights-of-way, or other approved areas. Threat emitters are set up at approved locations by BMGR, at the Playas Training and Research Center, and within the Tombstone MOA and Fuzzy MOA. Threat emitters are placed in remote locations, away from human activity, and are continuously manned and secured to prevent civilians from accessing the emitter site and to maintain required radiofrequency energy hazard safety distance from the emitter. Threat emitters placed at Playas Training and Research Center are within the fenced area of the facility that is controlled by security staff. Close air support conducts maneuvers to simulate elimination of those threats in support of the PR training activity. Close air support activities occur within existing military ranges, MOAs, LATN areas, and within designated MTRs.

When aircraft such as the A-10 provide air support for PR training missions, they act as escorts and provide close air support to PR forces. The A-10 is ideally suited for this mission as it can fly slowly at lower altitude and, as such, can provide oversight of the operations occurring below it. Table 2.1-24 provides a summary of aircraft and activities that occur during close air support.

| Table 2.1-24. Close Air Support/Escort Activity (F10) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | HH-60<br>AH-64<br>UH-1<br>AH-1<br>A-10<br>AV-8<br>F-15C and F-15E<br>F-16<br>F-18<br>F-22<br>F-35A and F-35B | Up to 1,000 | NA | 21 days/ biannual | NA |
| Medium Force | HH-60<br>A-10 | 50-100 | NA | 14 Days/ quarterly | NA |
| Small Force | HH-60<br>A-10 | Up to 50 | NA | 8 Hours/ weekly | NA |
| NA – Not applicable<br>Source: USAF 2018-2019. | | | | | |

### 2.1.4.19 Water Operations – HLZs/DZs/Overwater Hoist Operations (W1)

PR activities at water HLZs and DZs involve hoist recovery of personnel and watercraft over water. Low-level helicopter insertions/extractions involve water-based helicopter training sites and drop sites for the deployment of rescue personnel and equipment. Insertion and extraction of personnel is conducted via fast rope, rappel, ladder, hoist, or other means (e.g., parachute). Aircraft fly between just above the surface to 3,000 feet AGL. Water operations routinely take two to six hours to complete and occur during the day and night.

A main surface support safety boat (up to 40 feet long with two outboard engines) is positioned at the water training location to be used for medical emergencies/support as well as recovery of parachutes, packing debris, and personnel. Typical boat operations utilize three to six personnel per boat.

The Combat Rubber Raiding Craft (CRRC) (inflatable Zodiac boat approximately 15 feet in length with single outboard engine) is deployed from helicopters and fixed-wing aircraft using Tethered Duck (T-Duck), Kangaroo Duck (K-Duck), or Rigging Alternate Method Boat (RAMB).

- T-Duck method: this method of deployment involves the CRRC (with motor mounted) being deflated, rolled up, and stored inside the HH-60. Once at the Water Training Area (WTA) (and usually at 30 feet above the water or less), the team lowers the boat into the water using a controlled belay. When the boat is in the water, the team deploys out the other door using a fast-rope, swims to the boat, inflates it (using compressed air), starts the engine, and is underway.

- K-Duck or Hard Duck method: this method of deployment involves the inflated CCRC (with motor unmounted) being secured to the underside of the HH-60. Once at the WTA (and usually at 10 feet above the water or less) the CRRC is released and allowed to "free fall" from the HH-60 to the water. The team jumps in the water, swims to the boat, mounts and starts the engine, and is underway.
- RAMB: this method of deployment involves the CRRC (with motor unmounted) being packed in a container for low-velocity airdrop from a HC-130. The boat is deflated and rigged for rapid inflation and deployment once in the water. The team parachutes into the water, swims to the container and inflates the boat, mounts and starts the engine, and is underway.

Marine flares are dropped during PR training events within marine WTAs. Smoke from the marine flares is used to check wind direction. Daytime PR training at a marine WTA involves the use of sea dye markers dropped from the helicopter to mark the location of a survivor. The markers also provide a navigational aid for the helicopter aircrew. During PR training events after dark, HH-60 aircrews also use lightsticks. Since lightsticks float and are not biodegradable, every practicable effort is made to retrieve them at the completion of PR training activities in the WTA.

Table 2.1-25 provides a summary of aircraft/watercraft and activities that occur during water HLZ/DZ PR training activity.

**Table 2.1-25. Water HLZs/DZs Activity (W1) Details per Event**

| Category | Types of Vehicles/Aircraft | Number of Personnel | Expendables/ Equipment | Duration/ Frequency | Restrictions |
|---|---|---|---|---|---|
| Large Force | Up to four airdrop platforms:<br>HH-60<br>AH-64<br>CH/MH-47<br>MH-6<br>CV/MV-22<br>C-17<br>HC-130<br>Light Trucks | Up to 1,000 | Cotton webbing, cardboard<br>CRRC packing container, marine flares, sea dye packets, lightsticks/ Parachutes, hoist, rope ladder, fast rope, stokes litter<br>Safety Boat, CRRC | 21 days/ biannual | IAW AFI 11-2MDS V3 |
| Medium Force | Up to two airdrop platforms:<br>C-17<br>HC-130<br>HH-60<br>Light Trucks | 50-100 | Cotton webbing, cardboard<br>CRRC packing container, marine flares, sea dye packets, lightsticks/ Parachutes, hoist, rope ladder, fast rope, stokes litter<br>Safety Boat, CRRC | 14 days/ quarterly | IAW AFI 11-2MDS V3 |

| Table 2.1-25. Water HLZs/DZs Activity (W1) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Small Force | 1 airdrop platform:<br>C-17<br>HC-130<br>HH-60<br>Light Trucks | Up to 50 | Cotton webbing, cardboard<br>Marine flares, sea dye packets, lightsticks/<br>Hoist, rope ladder, fast rope, stokes litter<br>Safety Boat, CRRC | 4 hours/ weekly | IAW AFI 11-2MDS V3 |
| CRRC – Combat Rubber Raiding Craft<br>DZ – Drop Zone<br>HLZ – Helicopter Landing Zone<br>IAW – In accordance with<br>Sources: USAF 2018c, 2018-2019. | | | | | |

### 2.1.4.20 Water Operations – Amphibious Operations (W2)

Amphibious operations involve PR training activities in a water environment; loading/unloading of personnel to and from boats; and movement in streams, rivers, and lakes as part of egress/ingress operations. Amphibious activities avoid those waterways used extensively for recreational purposes and sensitive habitats and mostly utilize larger bodies of water given the size requirements for the amphibious watercraft. Watercraft that may participate in amphibious operations include a safety boat up to 40 feet in length, CRRCs, wave runners, and customized jet skis. Should recreational users and military trainees be present on the same body of water, training activities do not impede canoers, kayakers, or tubers/skiers.

Amphibious operations involve PR training activities in a water environment, loading/unloading teams of five to six personnel (carrying backpacks weighing approximately 50 pounds) to and from boats, and movement in training pools, streams, rivers, and lakes as part of egress/ingress operations. Open circuit (i.e., Self-Contained Underwater Breathing Apparatus [SCUBA]) dive operations of personnel/equipment using commercial lifting techniques are conducted. Divers perform simulated search and rescue operations while in the water. Sonar is used to locate subsurface items such as submerged ammo cans, human dummy, or other objects to be retrieved.

Table 2.1-26 provides a summary of aircraft/watercraft and PR activities that occur during amphibious operations.

| Table 2.1-26. Amphibious Operations (W2) Details per Event | | | | | |
|---|---|---|---|---|---|
| **Category** | **Types of Vehicles/ Aircraft** | **Number of Personnel** | **Expendables/ Equipment** | **Duration/ Frequency** | **Restrictions** |
| Large Force | Light Trucks | Up to 1,000 | No expendables/ Boats up to 40 feet in length, CRRC, personal watercraft | 21 days / biannual | Avoid sensitive habitats and areas with species of concern. Avoid public boaters; not to impede recreational use. |
| Medium Force | Light Trucks | 50-100 | No expendables/ Boats up to 40 feet in length, CRRC, personal watercraft | 14 days / quarterly | Avoid sensitive habitats and areas with species of concern. Avoid public boaters; not to impede recreational use. |
| Small Force | Light Trucks | Up to 50 | No expendables/ Boats up to 40 feet in length, CRRC, personal watercraft | 4 hours/ quarterly | Avoid sensitive habitats and areas with species of concern. Avoid public boaters; not to impede recreational use. |
| CRRC – Combat Rubber Raiding Craft<br>Source: USAF 2018-2019. | | | | | |

## 2.2 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, existing PR training activities, equipment, personnel, airspace, and training locations currently used by the individual rescue units would continue. USAF PR Forces would continue to:

- Conduct overwater training operations at existing WTAs off the coast of San Diego, California (utilizing sea dye markers, lightsticks, and marine flares) and also other WTAs in Arizona (lakes, rivers, and pools);
- Conduct sortie-operations by HH-60 and HC-130 aircraft within the Sells Low MOA, Jackal Low MOA, 305 East and West LATN areas, BMGR and associated Restricted Areas (R-2301E, R-2305, and R-2304), and the Yuma Tactical Aircrew Combat Training System Range (R-2301W);
- Conduct HH-60 weapons training operations within previously approved target areas at the BMGR involving smoke grenades, aircraft-mounted 7.62 mm, and .50 cal. machine guns;
- Conduct AR operations between HH-60 and HC-130 aircraft in the Sells Low and Jackal Low MOAs; and

- Conduct ground and parachute training for PR personnel within previously approved ranges, HLZs, DZs, LZs, and small arms training ranges.
- Conduct sortie-operations within approved areas;
- Conduct AR operations between HH-60 and HC-130;
- Conduct ground and parachute training; and
- Conduct small arms training at approved target areas.

In addition to the above training events, the USAF would conduct limited biannual Large Force rescue events using pre-approved training sites throughout the southwestern U.S.

Site-specific maps of the current training sites are provided in Appendix A. The PR training centered out of Davis-Monthan AFB utilizes unique training environments across four states: Arizona, California, Nevada, and New Mexico. The PR training sites are located on federal, state, municipal, or private property, on sites that have been previously disturbed or are currently or were previously used for activities similar to those defined under the Proposed Action and the No-Action Alternative. Under the No-Action Alternative, 151 are currently authorized for PR training, and have been evaluated for their environmental impacts under the Final Environmental Assessment Addressing the Angel Thunder Personnel Recovery/Rescue Training Exercise in the Southwestern United States (USAF 2017a), the Environmental Baseline Survey: Lease of 20 HLZ/DZs on State Lands, BLM Lands, and Lands Controlled by the USFS (USAF 2015) and other environmental analysis documents. Of the 151 existing sites, 54 are on DoD land, 38 on land managed by other federal agencies, 41 on land managed by state, county, municipal, or local agencies or tribes, and 18 on private land.

Annual aircraft training sorties on an actual rescue squadron-level under the baseline/No-Action Alternative condition that support/participate in Davis-Monthan AFB PR training events are provided in Table 2.2-1.

**Table 2.2-1. Annual Aircraft Sorties Supporting/Participating in Personnel Recovery Training Events**

| Aircraft | Sorties |
|---|---|
| A-10 | 1,854 |
| HC-130 | 736 |
| HH-60 | 1,148 |
| Other* | 156 |
| TOTAL | 3,894 |

* Other aircraft include F-16, F-15, F-18, KC-135, helicopters, and general aviation aircraft.
Source: Personal communication with AFCEC and Leidos 2018.

Under the No-Action Alternative, PR forces would continue existing training activities, utilizing the same equipment, personnel, airspace, and training locations. Limited resources would continue to be over utilized. Less realistic training scenarios would minimize the ability of PR forces to keep pace with changes in the global operating environment. The lack of adequate and available training sites would continue to present challenges in meeting training requirements and sustaining readiness.

## 2.3 PROPOSED ACTION

Under the Proposed Action, the USAF is proposing to improve PR training conducted throughout the southwestern U.S. This includes routine and specialized formal training for PR forces as a well as Large Force joint/multi-national events. Improvements would involve increasing suitable training site access and expanding training activities at some sites.

Overall, there are 175 proposed PR training sites that may be utilized during PR training. As discussed in Section 2.2 of this EA, 151 of these sites are already authorized and used for PR training. Under the Proposed Action, 24 additional sites would be authorized for use. In addition, the range of authorized PR training activities on some current sites would be expanded to include additional activities. Overall, the Proposed Action would include 55 proposed PR training sites on DoD property; 44 on USFS or other federal land; 19 on private property; and 57 on other land (e.g., municipal, city, county, state, or tribal).

Although there are a large number of proposed PR training sites across a large area of the southwest U.S., the proposed PR training activities are typically conducted at a select number of sites that are secure, well maintained, and conveniently located within a reasonable travel timeframe to Davis-Monthan AFB. Specific locations for these proposed PR training sites are detailed in Appendix A.

When planning each PR training event, locations would be selected based on the specific requirements of each training event and in consultation with the appropriate agencies and land managers. Initial planning would begin to identify proposed PR training activities, dates, and sites for use approximately six months prior to the PR training event. A list of sites would generally be finalized approximately three months prior to the PR training event, at which time consultation with the State Historic Preservation Officers, land managers, and other necessary agencies would be conducted if not already completed. No PR training activity would occur unless SHPO and other necessary agency concurrence is received.

For the proposed PR training sites on non-DoD property, Special Use permits would be required from the affected land managers for use of the proposed sites. The proponent would ensure that the appropriate permits are current. No training activity would occur unless the appropriate current permit is obtained. The use of PR training sites on private property would be subject to terms and agreements prepared between the USAF and the property land owner.

The proposed PR training sites may be used for multiple training activities. For example, a HLZ/Fixed-Wing LZ may support both helicopter and fixed-wing landings as well as support FARP operations. An accounting of the types of proposed PR training sites and setting in which they are located (e.g., on a DoD property or USFS land) is provided in Table 2.3-1.

| Table 2.3-1. Accounting of Proposed PR Training Site Types | | | | | |
|---|---|---|---|---|---|
| **Training Site Type** | **Total** | **DoD Property** | **USFS or Other Federal Land** | **Other Land (Municipal, City, County, State, or Tribal)** | **Private** |
| HLZ | 144 | 45 | 38 | 43 | 16 |
| DZ | 79 | 29 | 25 | 18 | 7 |
| LZ | 33 | 13 | 3 | 16 | 1 |
| FARP | 20 | 16 | 0 | 4 | 0 |
| MOUT | 22 | 15 | 1 | 5 | 1 |
| Mounted (Vehicle) Movement/Blackout Driving | 130 | 45 | 36 | 34 | 15 |
| Firing Range | 24 | 19 | 0 | 3 | 2 |
| Camping/Assembly | 97 | 27 | 37 | 17 | 16 |
| Technical Rope | 127 | 33 | 37 | 43 | 14 |
| Water | 18 | 6 | 3 | 9 | 0 |

DZ – Drop Zone
FARP – Forward Aircraft Refueling Point
HLZ – Helicopter Landing Zone
LZ – Fixed-Wing Landing Zone
MOUT – Military Operations in Urban Terrain
USFS – U.S. Forest Service
Source: USAF 2018-2019.

Appendix A details the proposed PR training sites and types of proposed PR training activities, as well as any MOAs or other SUA that may be associated with the training location. The Map Book index numbers in Appendix A correspond to the Figure 2.1-1 and Figure 2.1-2 index maps with more detailed, site-specific maps of the proposed training sites provided in Appendix A.

In addition to the above PR training events, the USAF would continue to conduct limited biannual Large Force training events throughout the southwestern U.S. These events would include using DoD and non-DoD properties. Training would involve related DoD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft based at Davis-Monthan AFB. Non-DoD properties include USFS land as well as properties under various federal, state, local, municipal, and private control.

A summary of the estimated annual aircraft sorties that would support/participate in Davis-Monthan AFB rescue training events for the three scenarios is provided in Table 2.3-2 below.

| Table 2.3-2. Estimated Annual Aircraft Sorties Supporting/Participating in Proposed Action Personnel Recovery Training Events (All Training Events) | |
|---|---|
| **Aircraft** | **Sorties** |
| AV-8 | 80 |
| A-10 | 1,480 |
| EC-130H | 80 |
| HC-130 | 660 |

| Table 2.3-2. Estimated Annual Aircraft Sorties Supporting/Participating in Proposed Action Personnel Recovery Training Events (All Training Events) | |
|---|---|
| **Aircraft** | **Sorties** |
| F-15 | 80 |
| F-16 | 80 |
| F-18 | 40 |
| F-22 | 80 |
| F-35 | 80 |
| HH-60 | 2,140 |
| AH-1 | 80 |
| UH-1 | 160 |
| CH-47 | 120 |
| CH-53 | 80 |
| CV/MV-22 | 160 |
| KC-135 | 40 |
| MQ-1 or MQ-9 | 40 |
| MC-12 | 40 |
| F-21 (Columbian Fighter) | 20 |
| TOTAL | 5,540 |
| Source: USAF 2018-2019. | |

Compared to the annual baseline sorties (Table 2.1-3), the annual sorties under the Proposed Action could increase up to 1,646 sorties. The majority of these sorties would be associated with the Large Force PR training event Red Flag-Rescue. This training event would have a 21-day duration (where only five to seven of those days would be flying days) that would occur twice a year.

## 3.0 CONSULTATION

The USAF has consulted with the United States Fish and Wildlife Service (USFWS), Arizona Ecological Services, regarding the presence of threatened and endangered species in the geographic area of the Proposed Action pursuant to the requirements of Section 7(a) of ESA (16 US Code § 1536). Along with this BE, a consultation letter requesting concurrence from USFWS that the Proposed Action would "not likely adversely affect" listed species has been prepared and submitted to USFWS. The USFWS concurred that the Proposed Action would "not likely adversely affect" listed species on 17 December 2019 (see Attachment 3 of this BE). No further Section 7 consultation is required for the Proposed Action at this time.

# 4.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The proposed PR training sites are located on military, federal, tribal, state, municipal, city, county, and private land in areas of Arizona, California, New Mexico, and Nevada, including sites within the Apache-Sitgreaves, Coconino, Coronado, Gila, Kaibab, and Tonto National Forests (NFs) of Arizona and New Mexico. The proposed PR training sites have been previously disturbed, or they are currently or were previously used for the activities conducted under the Proposed Action. The PR training activities that would occur at each of the proposed PR training sites are included in the sections below. Numerous sites could serve multiple training purposes and not all of the proposed sites would be used every year. The nature and location of sites would vary from training cycle to training cycle depending on the activities developed for the event. Through the use of varying training events, overuse of specific sites would be avoided. Described below are the sites that are not in urban environments.

An assessment of vegetation communities at each of the sites was undertaken using a combination of the Arizona Game and Fish Department (AZGFD) online HabiMap tool, the Biological Evaluation for Angel Thunder Personnel Recovery/Rescue Training Exercise in Arizona, Data Basin, and the Final Joint Integrated Natural Resources Management Plan for Marine Corps Base and Marine Corps Air Station Camp Pendleton, CA (AZGFD 2019; CBI 2019; USAF 2017b; USMC 2018). Vegetation communities were assigned based on broad-scale descriptions of vegetation at the proposed sites; however, in some cases, vegetation communities were mapped on a more fine-scale level and, in those cases, a more specific community description is provided (e.g., Arizona upland subdivision of Sonoran Desertscrub).

## 4.1 TRAINING SITES LOCATED ON DOD PROPERTY

There are 55 proposed PR training sites located within existing DoD property (Attachment 1). These sites occur in Cochise, Coconino, Maricopa, and Pima Counties in Arizona; Los Angeles and San Diego Counties in California; Clark and Lincoln Counties in Nevada; and Roosevelt County in New Mexico. The following 16 training sites were eliminated from further analysis in this BE since they are located on developed land: Camp Pendleton Helicopter Outlying Landing Field, Camp Pendleton NFG, Camp Pendleton Red Beach, Davis-Monthan AFB, El Centro, Gila Bend Air Force Auxiliary Base, Libby Army Airfield, March ARB, Nellis AFB, San Clemente Island Naval Auxiliary Landing Field, Titan Missile Museum, and White Sands Missile Range (WSMR) Otero Maneuver Area, WSMR Small Arms Range, WSMR Stallion Army Airfield, and WSMR Thurgood West Maneuver Area.

A desktop analysis was conducted of all federally listed species to determine if they have the potential to occur within or near proposed training sites based on habitat at the site, elevation, and the known range and distribution of the species. Previous reconnaissance-level survey data and aerial imagery were used to assess habitat at the sites. Seventeen proposed PR training sites were eliminated from further analysis in this BE due to the lack of habitat for listed species: Aux 6, Aux 6 Circular, Aux 6 Rectangular, Camp Navajo Army Base, Camp Pendleton Cartwright Water, Davis-Monthan AFB Combat Arms Training and Maintenance, Florence Military Reservation, Florence Range HLZ, Hubbard, Hubbard [Tombstone], Humor, Leon Beiringer DZ, Melrose Air Force Range, Navajo Railroad, San Clemente Island Surrounding Off-Shore Areas, Tombstone Circular, and Tombstone Rectangular. The remaining 22 proposed PR training sites

are carried forward in the analysis (Table 4-1). There are no designated critical habitats for federally listed species surrounding or near these 22 proposed PR training sites on DoD Property.

**Table 4-1. Training Sites Located on DoD Property**

| Site | Location | Training Activity | Elevation (Feet) | Vegetation Community |
|---|---|---|---|---|
| Camp Pendleton Off-Road Trail | San Diego County, CA | F4, F7, G1, G2, G3, G5, G6 | 290 | Grassland |
| Camp Pendleton Piedra de Lumbre (PDL) | San Diego County, CA | F4, F7, F9, G1, G2, G3, G5, G6 | 290 | Grassland |
| Fort Tuthill | Coconino County, AZ | G1, G2, G3, G6 | 7,000 | Petran Montane Conifer Forest |
| L Tank | Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G5, G6, G7 | 7,380 | Petran Montane Conifer Forest |
| Metz Tank | Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G5, G6, G7 | 7,220 | Plains and Great Basin Grassland |
| NATO Hill (WPT 74) | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,765 | Arizona Upland Division of Sonoran Desertscrub |
| Navajo East | Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G5, G6, G7 | 7,125 | Plains and Great Basin Grassland |
| Navajo West | Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G6, G7 | 7,185 | Plains and Great Basin Grassland |
| Neill Flat | Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G6, G7 | 7,125 | Plains and Great Basin Grassland |
| OP Charlie | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,550 | Arizona Upland Division of Sonoran Desertscrub |
| Range 3 – HLZ 1 | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,175 | Mohave Desertscrub |
| Range 3 – HLZ 2 | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,175 | Mohave Desertscrub |
| Range 3 – HLZ 3 | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,175 | Mohave Desertscrub |
| Range 3 – HLZ 4 | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,175 | Mohave Desertscrub |
| Range 3 – HLZ 5 | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,175 | Mohave Desertscrub |
| Range 3 – HLZ 6 | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,175 | Mohave Desertscrub |

| Table 4-1. Training Sites Located on DoD Property | | | | |
|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** |
| Range 3 – Tower Helipad | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 1,175 | Mohave Desertscrub |
| Rogers Lake (Logger Camp) | Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G5, G6, G7, W1, W2 | 7,270 | Plains and Great Basin Grassland |
| Rogers Napier | Coconino County, AZ | F1, F3, F4, F5, F7, G1, G2, G3, G4, G6, G7 | 7,260 | Plains and Great Basin Grassland |
| Rogers Wren | Coconino County, AZ | F1, F3, F4, F5, F7, G1, G2, G3, G4, G5, G6, G7 | 7,225 | Plains and Great Basin Grassland |
| South Tactical Range | Maricopa County, AZ | F1, F3, F4, F5, F7, F10, G2, G3, G6, G7, G8 | 750 | Mohave Desertscrub |
| Target 333 | Maricopa County, AZ | F1, F3, F4, F5, F7, F9, F10, G2, G3, G6, G7, G8 | 2,125 | Mohave Desertscrub |

Acronyms and Abbreviations Used:
AZ – Arizona
CA – California
HLZ – Helicopter Landing Zone
PDL – Piedra de Lumbre

Legend:
Training Activities:

Flight Ops
F1 Established MOAs
F2 Temporary MOAs
F3 LATN Areas
F4 Restricted Areas
F5 Other Airspace (e.g., MTRs)
F6 FARP Operations
F7 HLZs/DZs
F8 Fixed Wing LZs
F9 Parachute Operations
F10 Close Air Support

Ground Ops
G1 Camping, Bivouacking, and Assembly Area Use
G2 Cross-Country Dismounted (Non-Vehicle) Movements
G3 Mounted (Vehicle) Movement/Blackout Driving
G4 Survival Training/Natural Resource Consumption
G5 Military Operations in Urban Terrain/Urban Evasion
G6 Technical Rope Work
G7 Pyrotechnic Use
G8 Shooting / Firing Range

Water Ops
W1 HLZs/DZs/Overwater Hoist Operations
W2 Amphibious Ops

### 4.1.1 Vegetation Communities at Training Sites

Based upon this assessment, five vegetation communities were identified within the proposed PR training sites on DoD property, including Arizona Upland Division of Sonoran Desertscrub, Sonoran/Mohave Desertscrub, Petran Montane Conifer Forest, Plains and Great Basin Grassland, and Grasslands (AZGFD 2019; USAF 2017b; USMC 2018). The vegetation community for each site is provided in Table 4-1 and the descriptions of each of those communities are below.

Arizona Upland Subdivision of Sonoran Desertscrub. Arizona Upland Subdivision of Sonoran Desertscrub is located in south-central Arizona and northern Sonora, Mexico. It is one of two subdivisions of Sonoran Desertscrub, the other being the Lower Colorado Valley Subdivision. The terrain of Arizona Upland Subdivision of Sonoran Desertscrub contains numerous mountain ranges, and valleys that are narrower than those of the Lower Colorado River Valley Subdivision

(Dimmitt 2015). The Arizona Upland Sonoran Desertscrub vegetation is at times referred to as the Arizona Desert or Paloverde-Cacti Desert and occurs at elevations ranging from 980 to 3,300 feet. Cacti are characteristic of this desertscrub community and include buckhorn cholla (*Cylindropuntia acanthocarpa*), cane cholla (*C. imbricata*), chain fruit cholla (*C. fulgida*), teddy bear cholla (*Opuntia bigelovii*), fishhook pincushion (*Mammillaria grahamii microcarpa*), fishhook barrel cactus (*Ferocactus wislizeni*), and saguaro (*Carnegiea gigantea*). Dominant non-cactus woody plants include blue paloverde (*Parkinsonia florida*), foothill paloverde (*P. microphylla*), creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), and whitethorn acacia (*Acacia constricta*) (Brown 1994).

Mohave Desertscrub. Mohave Desertscrub vegetation occurs at an elevation range between 2,000 and 6,000 feet. The Mohave Desertscrub vegetation mixture is intermediate between Great Basin Desertscrub and Sonoran Desertscrub. The characteristic shrubs include creosote bush, Joshua tree (*Yucca brevifolia*), all-scale (*Atriplex polycarpa*), brittlebush (*Encelia farinosa*), desert holly (*A. hymenelytra*), white burrobrush (*Ambrosia salsola*), shadscale (*Atriplex confertifolia*), and blackbrush (*Coleogyne ramosissima*). Cacti are well represented and include Engelmann hedgehog (*Echinocereus engelmannii*), silver cholla (*Cylindropuntia echinocarpa*), Mohave pricklypear (*Opuntia erinacea*), beavertail cactus (*O. basilaris*), and many-headed barrel cactus (*Echinocactus polycephalus*) (Brown 1994).

Petran Montane Conifer Forest. The Petran Montane Conifer Forest is a cold-temperate forest occurring at an elevation range of 6,560 to 9,840 feet on mountain slopes and ridge tops. Ponderosa pine (*Pinus ponderosa*) forest is located at the lower elevations and Douglas fir (*Pseudotsuga menziesii*), white pine (*P. monticola*), limber pine (*P. flexilis*), and aspen (*Populus tremuloides*) grow at the higher elevations in canyons and north-facing slopes. Gambel oak (*Quercus gambelii*) and New Mexico locust (*Robinia neomexicana*) are common and may dominate rocky lower locations. At the lower limit, this vegetation is associated with Madrean Evergreen Woodland and Great Basin Pinyon-Juniper Woodland vegetation. Understory shrubs are few, rarely dense, and uncommon but may include Fendler's ceanothus (*Ceanothus fendleri*), creeping barberry (*Mahonia repens*), currants (*Ribes* spp.), and Arizona rose (*Rosa arizonica*). Under more open stands, grasses and grass-like plants might be dominant. Some grass species that may be present include mountain muhly (*Muhlenbergia montana*), pine dropseed (*Blepharneuron tricholepis*), Arizona fescue (*Festuca arizonica*), and bluegrasses (*Poa* spp.) (Brown 1994).

Plains and Great Basin Grassland. The Plains and Great Basin Grassland vegetation occurs mainly in eastern Arizona at 4,900 to 7,500 feet in elevation and is associated with Great Basin Pinyon-Juniper Woodland vegetation at higher elevations and Semi-desert Grasslands or Great Basin Desertscrub at lower elevations. These grasslands are altered now but were once a continuous cover, dominated by various grass species and interspersed with shrubs and forbs. The Plains Grassland vegetation can be divided into tall, medium, and short grassland fractions depending on general grass height. Tall grasses occur on sandy hills and are dominated by big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), galleta (*Pleuraphis jamesii*), and sand dropseed (*Sporobolus cryptandrus*). The short grass areas are dominated by blue grama (*Bouteloua gracilis*), Indian ricegrass (*Achnatherum hymenoides*), galleta, plains lovegrass (*Eragrostis intermedia*), and alkali sacaton (*Sporobolus airoides*). Associated shrubs in both the tall and short grass vegetation may include fourwing saltbush (*Atriplex canescens*), big

sagebrush (*Artemisia tridentata*), and snakeweed (*Gutierrezia* spp.) depending on the degree of past grazing and other disturbances (Brown 1994).

Grasslands. Two types of grasslands occur on Camp Pendleton, the purple needlegrass perennial grasslands and nonnative annual grasslands, and both are important features. At Camp Pendleton, fine-textured soils of coastal terraces are largely covered with grassland, as are the rolling hills with deeper soils at higher elevations. Like most of southern California, introduced grasses and forbs are now major components of the vegetation found in grasslands, resulting in an increasing amount of nonnative grasslands occupying Camp Pendleton (USMC 2018).

### 4.1.2 Federally Listed Species Potentially Occurring at Training Sites

#### Camp Pendleton Off-Road Trail Site

The Camp Pendleton Off-Road Trail site (Attachment 2, Figure C-30) is a designated off-roading area used for four-wheel drive training. The site is located on Camp Pendleton in San Diego County, CA, at an elevation of approximately 290 feet. The site is within grassland with riparian vegetation located east of the site (within 500 feet of the site). The site provides suitable habitat for the federally endangered Stephens' kangaroo rat (*Dipodomys stephensi*) and the federally threatened thread-leaved brodiaea (*Brodiaea filifolia*). The riparian vegetation east of the site (within 500 feet of the site) provides suitable habitat for the federally endangered arroyo toad (*Anaxyrus californicus*) and suitable nesting habitat for the federally endangered Least Bell's vireo (*Vireo bellii pusillus*).

#### Camp Pendleton PDL Site

The Camp Pendleton PDL site (Attachment 2, Figure C-30) is an HLZ/DZ including MOUT training located on Camp Pendleton in San Diego County, CA, at an elevation of approximately 290 feet. The site is within grassland with riparian vegetation located east of the site (within 500 feet of the site). The site provides suitable habitat for the federally endangered Stephens' kangaroo rat and the federally threatened thread-leaved brodiaea. The riparian vegetation east of the site (within 500 feet of the site) provides suitable habitat for the federally endangered arroyo toad and suitable nesting habitat for the federally endangered Least Bell's vireo.

#### Fort Tuthill Site

The Fort Tuthill site (Attachment 2, Figure C-11) is an area used for billeting and as an operations center during training located at Fort Tuthill Fairgrounds in Coconino County, AZ at an elevation of approximately 7,000 feet. The site is within Petran Montane Conifer Forest. The Fort Tuthill site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl (*Strix occidentalis lucida*).

#### L Tank Site

The L Tank site (Attachment 2, Figure C-11) is an HLZ/DZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,380 feet. The site is in Petran Montane Conifer Forest. The site and surrounding area provide suitable nesting habitat for the federally threatened Mexican spotted owl.

### Metz Tank Site

The Metz Tank site (Attachment 2, Figure C-11) is an HLZ/DZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,220 feet. The site is in Plains and Great Basin Grassland surrounded by Petran Montane Conifer Forest. The area surrounding the site (within 500 feet of the site) provides suitable habitat for the federally threatened northern Mexican gartersnake (*Thamnophis eques megalops*) and suitable nesting habitat for the federally threatened Mexican spotted owl.

### NATO Hill (WPT 74) Site

The NATO Hill (WPT 74) site (Attachment 2, Figure C-38) is an HLZ training area located within the BMGR in Maricopa County, AZ at an elevation of approximately 1,765 feet. The site is on a hilltop in Arizona Upland Division of Sonoran Desertscrub. The site and surrounding area provide suitable habitat for the federally endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*).

### Navajo East Site

The Navajo East site (Attachment 2, Figure C-11) is an HLZ/DZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,125 feet. The site is in Plains and Great Basin Grassland with Petran Montane Conifer Forest to the south and Old Highway 66 to the north. The forested area south of the site (within 500 feet of the site) provides suitable nesting habitat for the federally threatened Mexican spotted owl.

### Navajo West Site

The Navajo West site (Attachment 2, Figure C-11) is an HLZ/DZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,185 feet. The site is in Plains and Great Basin Grassland with an area where water pools to the east of the site (within 500 feet of the site). The area to the east of the site (within 500 feet of the site) provides suitable habitat for the federally threatened northern Mexican gartersnake.

### Neill Flat Site

The Neill Flat site (Attachment 2, Figure C-11) is an HLZ/DZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,125 feet. The site is in Plains and Great Basin Grassland with Petran Montane Conifer Forest to the south and Old Highway 66 to the north. The forested area south of the site (within 500 feet of the site) provides suitable nesting habitat for the federally threatened Mexican spotted owl.

### OP Charlie Site

The OP Charlie site (Attachment 2, Figure C-38) is an HLZ training area located within the BMGR in Maricopa County, AZ at an elevation of approximately 1,550 feet. The site is on a hilltop in Arizona Upland Division of Sonoran Desertscrub. The site and surrounding area provide suitable habitat for a non-essential experimental population of Sonoran pronghorn.

### Range 3 – HLZ 1 Site

The Range 3 – HLZ 1 site (Attachment 2, Figure C-38) is an HLZ training area located within the BMGR in Maricopa County, AZ at an elevation of approximately 1,175 feet. The site is in

Mohave Desertscrub. The site and surrounding area provide suitable habitat for the endangered and a non-essential experimental population of Sonoran pronghorn.

### Range 3 – HLZ 2 Site

The Range 3 – HLZ 2 site (Attachment 2, Figure C-38) is an HLZ training area located in Maricopa County, AZ at an elevation of approximately 1,175 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the endangered and a non-essential experimental population of Sonoran pronghorn.

### Range 3 – HLZ 3 Site

The Range 3 – HLZ 3 site (Attachment 2, Figure C-38) is an HLZ training area located in Maricopa County, AZ at an elevation of approximately 1,175 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the endangered and a non-essential experimental population of Sonoran pronghorn.

### Range 3 – HLZ 4 Site

The Range 3 – HLZ 4 site (Attachment 2, Figure C-38) is an HLZ training area located in Maricopa County, AZ at an elevation of approximately 1,175 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the endangered and a non-essential experimental population of Sonoran pronghorn.

### Range 3 – HLZ 5 Site

The Range 3 – HLZ 5 site (Attachment 2, Figure C-38) is an HLZ training area located in Maricopa County, AZ at an elevation of approximately 1,175 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the endangered and a non-essential experimental population of Sonoran pronghorn.

### Range 3 – HLZ 6 Site

The Range 3 – HLZ 6 site (Attachment 2, Figure C-38) is an HLZ training area located in Maricopa County, AZ at an elevation of approximately 1,175 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the endangered and a non-essential experimental population of Sonoran pronghorn.

### Range 3 – Tower Helipad Site

The Range 3 – Tower Helipad site (Attachment 2, Figure C-38) is an HLZ training area located in Maricopa County, AZ at an elevation of approximately 1,175 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the endangered and a non-essential experimental population of Sonoran pronghorn.

### Rogers Lake (Logger Camp) Site

The Rogers Lake (Logger Camp) site (Attachment 2, Figure C-11) is an HLZ/DZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,270 feet. The site is in Plains and Great Basin Grassland surrounded by Petran Montane Conifer Forest. The area surrounding the site (within 500 feet of the site) provides suitable nesting habitat for the federally threatened Mexican spotted owl.

### Rogers Napier Site

The Rogers Napier site (Attachment 2, Figure C-11) is an HLZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,260 feet. The site is in Plains and Great Basin Grassland with Petran Montane Conifer Forest to the west and south (within 500 feet of the site). The area to the west and south of the site (within 500 feet of the site) provides suitable nesting habitat for the federally threatened Mexican spotted owl.

### Rogers Wren Site

The Rogers Wren site (Attachment 2, Figure C-11) is an HLZ training area located on Camp Navajo in Coconino County, AZ at an elevation of approximately 7,225 feet. The site is in Plains and Great Basin Grassland surrounded by Petran Montane Conifer Forest. The area surrounding the site (within 500 feet of the site) provides suitable nesting habitat for the federally threatened Mexican spotted owl.

### South Tactical Range Site

The South Tactical Range site (Attachment 2, Figure C-37) is an HLZ/DZ training area located in Maricopa County, AZ at an elevation of approximately 750 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the federally endangered Sonoran pronghorn.

### Target 333 Site

The Target 333 site (Attachment 2, Figure C-38) is an HLZ/DZ training area located in Maricopa County, AZ at an elevation of approximately 2,125 feet. The site is in Mohave Desertscrub. The site and surrounding area provide suitable habitat for the federally endangered Sonoran pronghorn and Acuna cactus (*Echinomastus erectocentrus* var. *acunensis*).

## 4.2 TRAINING SITES LOCATED ON US FOREST SERVICE OR OTHER FEDERAL LAND

There are 44 proposed training sites located within USFS or other federal land (Attachment 1). The proposed PR training sites occur in six USFS NFs, including the Apaches-Sitgreaves, Coconino, Coronado, Kaibab, and Tonto in Cochise, Coconino, Gila, Graham, Greenlee, Hidalgo, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai Counties in Arizona. The following three proposed PR training sites were eliminated from further analysis in this BE since they are located on developed land: Grapevine HLZ/DZ, Mount Lemmon, and Reserve Airport.

A desktop analysis was conducted of all federally listed species to determine if they have the potential to occur within or near proposed PR training sites based on habitat at the site, elevation, and the known range and distribution of the species. Previous reconnaissance-level survey data and aerial imagery were used to assess habitat at the sites. Six proposed PR training sites were eliminated from further analysis in this BE due to the lack of habitat for listed species (Delamar Dry Lake, Kinder HLZ/DZ, Mohawk, Pittman Valley, Portal HLZ, and Rough Rider) and the remaining 35 proposed PR training sites are carried forward in the analysis (Table 4-2). Table 4-2 also identifies designated critical habitats for federally listed species surrounding or near these 35 proposed PR training sites on US Forest Service Land or other Federal land.

| Table 4-2. Training Sites Located on US Forest Service or Other Federal Land | | | | | |
|---|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** | **Critical Habitat** |
| Black Mesa – USFS Helitack Base | Apache-Sitgreaves NF, Coconino County, AZ | F1, F3, F5, F7, F9, G1, G2, G3, G4, G6 | 7,000 | Petran Montane Conifer Forest | Within 0.5 mile of Mexican Spotted Owl Critical Habitat |
| Charouleau Gap | Coronado NF, Pinal County, AZ | G2, G3 | 5,000 | Madrean Evergreen Woodland | Mexican Spotted Owl Critical Habitat |
| Comanche | Coconino NF, Coconino County, AZ | F1, F3, F4, F5, F7, G1, G2, G3, G4, G6 | 7,017 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Devon | Coronado NF, Santa Cruz County, AZ | F1, F3, F4, F5, F7, F10, G1, G2, G3, G6 | 4,233 | Madrean Evergreen Woodland | Within 0.5 mile of Mexican Spotted Owl Critical Habitat |
| Flagstaff Hotshot – USFS Helitack Base | Coconino NF, Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G6 | 7,483 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Glenwood Ranger Station | Gila NF, Catron County, NM | F1, F3, F5, F7, G1, G2, G6 | 4,800 | Great Basin Conifer Woodland | Within 0.5 mile of Southwestern Willow Flycatcher Critical Habitat, Narrow-headed Gartersnake Proposed Critical Habitat, and Yellow-billed Cuckoo Proposed Critical Habitat |
| Hannagan Meadow – USFS Helitack Base | Apache-Sitgreaves NF, Greenlee County, AZ | F1, F3, F5, F7, F9, G1, G2, G3, G4, G6 | 9,100 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Helibase Circular | Apache-Sitgreaves NF, Greenlee County, AZ | F1, F3, F5, F7, F9, G1, G2, G3, G4, G6 | 9,100 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| KP Circular | Apache-Sitgreaves NF, Greenlee County, AZ | F1, F3, F5, F7, F9, G1, G2, G3, G4, G6 | 8,896 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| KP Tank | Apache-Sitgreaves NF, Greenlee County, AZ | F1, F3, F5, F7, F9, G1, G2, G3, G4, G6 | 8,896 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Lees Ferry | Marble Canyon, Coconino County, AZ | F7, F9, G1, G2, G3, G4, G6 | 3,257 | Great Basin Desertscrub | Within 0.5 mile of Razorback Sucker Critical Habitat |
| Longview – USFS Helitack Base | Coconino NF, Coconino County, AZ | G1 | 7,185 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |

| Table 4-2. Training Sites Located on US Forest Service or Other Federal Land | | | | | |
|---|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** | **Critical Habitat** |
| Mesa | Coronado NF, Graham County, AZ | F1, F3, F5, F7, F10, G1, G2, G3, G6 | 4,750 | Semi-desert Grassland | Mexican Spotted Owl Critical Habitat |
| Mogollon Rim (General Crook) | Coconino NF, Coconino County, AZ | F3, F7, G1, G2, G3, G4, G6 | 7,610 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Mormon Lake – USFS Helitack Base | Coconino NF, Coconino County, AZ | F1, F3, F5, F7, F9, G1, G2, G3, G4, G6 | 7,129 | Petran Montane Conifer Forest | Within 0.5 mile of Mexican Spotted Owl Critical Habitat |
| Negrito Airstrip | Gila NF, Catron County, NM | F1, F3, F5, F7, F8, F9, F10, G1, G2, G3, G6 | 8,087 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Negrito Center | Gila NF, Catron County, NM | F1, F3, F5, F7, F9, F10, G1, G2, G3, G6 | 7,850 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Negrito Helibase | Gila NF, Catron County, NM | F1, F3, F5, F7, F10, G1, G2, G3, G6 | 8,026 | Petran Montane Conifer Forest | Within 0.5 mile of Mexican Spotted Owl Critical Habitat |
| Negrito North | Gila NF, Catron County, NM | F1, F3, F5, F7, F9, F10, G1, G2, G3, G6 | 7,847 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Negrito South | Gila NF, Catron County, NM | F1, F3, F5, F7, F9, F10, G1, G2, G3, G6 | 7,973 | Petran Montane Conifer Forest | Within 0.5 mile of Mexican Spotted Owl Critical Habitat |
| Overgaard – USFS Helitack Base | Apache-Sitgreaves NF, Navajo County, AZ | F3, F5, F7, F9, G1, G2, G3, G4, G6 | 6,640 | Plains and Great Basin Grassland | None |
| Portal Cabin and CCC Bunkhouse | Coronado NF, Cochise County, AZ | G1, G2, G3, G4 | 4,960 | Madrean Evergreen Woodland | None |
| Rainy Mesa | Gila NF, Catron County, NM | F1, F3, F5, F7, F9, F10, G1, G2, G3, G6 | 7,450 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Ranger | Coronado NF, Cochise County, AZ | F1, F3, F4, F5, F7, F9, F10, G1, G2, G3, G6 | 5,781 | Madrean Evergreen Woodland | Mexican Spotted Owl Critical Habitat |
| Redington Pass | Coronado NF, Pima County, AZ | G2, G3, G6 | 4,300 | Semi-desert Grassland | Mexican Spotted Owl Critical Habitat |
| Reserve Ranger Station | Gila NF, Catron County, NM | F1, F3, F5, F7, G1, G2, G6 | 5,900 | Great Basin Conifer Woodland | None |
| Roosevelt Lake | Tonto NF, Gila County, AZ | F1, F3, F5, F7, F9, F10, G1, G2, G3, G4, G6, W1, W2 | 2,077 | Arizona Upland Division of Sonoran Desertscrub | Within 0.5 mile of Southwestern Willow Flycatcher Critical Habitat and Yellow-billed Cuckoo Proposed Critical Habitat |

| Table 4-2. Training Sites Located on US Forest Service or Other Federal Land | | | | | |
|---|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** | **Critical Habitat** |
| Rucker HLZ | Coronado NF, Cochise County, AZ | F1, F3, F4, F5, F7, F10, G1, G2, G3, G5, G6 | 5,781 | Madrean Evergreen Woodland | Mexican Spotted Owl Critical Habitat |
| Saddle Mountain East | Coronado NF, Santa Cruz County, AZ | F1, F3, F4, F5, F7, F9, F10, G1, G2, G3, G6 | 5,078 | Plains and Great Basin Grassland | Jaguar Critical Habitat and Northern Mexican Gartersnake Proposed Critical Habitat |
| Saddle Mountain South | Coronado NF, Santa Cruz County, AZ | F1, F3, F4, F5, F7, F9, F10, G1, G2, G3, G6 | 5,146 | Plains and Great Basin Grassland | Jaguar Critical Habitat and Northern Mexican Gartersnake Proposed Critical Habitat |
| Saddle Mountain West | Coronado NF, Santa Cruz County, AZ | F1, F3, F4, F5, F7, F9, F10, G1, G2, G3, G6 | 5,460 | Madrean Evergreen Woodland | Jaguar Critical Habitat, Northern Mexican Gartersnake Proposed Critical Habitat, and within 0.5 mile of Mexican Spotted Owl Critical Habitat |
| Saguaro Lake Ranch | Tonto NF, Maricopa County, AZ | W1, W2 | 1,401 | Arizona Upland Division of Sonoran Desertscrub | None |
| Spring Valley Cabin | Kaibab NF, Coconino County, AZ | F1, F3, F4, G1, G2, G3, G4 | 7,380 | Plains and Great Basin Grassland | None |
| Tribeland | Kaibab NF, Coconino County, AZ | F1, F7, F9, G1, G2, G3, G4, G6 | 6,598 | Great Basin Desertscrub | None |
| Verde River | Tonto NF, Maricopa County, AZ | W1, W2 | 1,328 | Arizona Upland Division of Sonoran Desertscrub | None |

| Table 4-2. Training Sites Located on US Forest Service or Other Federal Land | | | | | |
|---|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** | **Critical Habitat** |

Acronyms and Abbreviations Used:
AZ – Arizona
CCC – Needs definition
HLZ – Helicopter Landing Zone
KP – Needs definition
NF – National Forest
NM – New Mexico
USFS – United States Forest Service

Legend:
Training Activities:

Flight Ops
F1 Established MOAs
F2 Temporary MOAs
F3 LATN Areas
F4 Restricted Areas
F5 Other Airspace (e.g., MTRs)
F6 FARP Operations
F7 HLZs/DZs
F8 Fixed Wing LZs
F9 Parachute Operations
F10 Close Air Support

Ground Ops
G1 Camping, Bivouacking, and Assembly Area Use
G2 Cross-Country Dismounted (Non-Vehicle) Movements
G3 Mounted (Vehicle) Movement/Blackout Driving
G4 Survival Training/Natural Resource Consumption
G5 Military Operations in Urban Terrain/Urban Evasion
G6 Technical Rope Work
G7 Pyrotechnic Use
G8 Shooting / Firing Range

Water Ops
W1 HLZs/DZs/Overwater Hoist Operations
W2 Amphibious Ops

### 4.2.1 Vegetation Communities at Training Sites

Based upon this assessment, eight vegetation communities were identified within the proposed PR training sites on USFS lands: Arizona Upland Subdivision of the Sonoran Desertscrub, Great Basin Conifer Woodland, Great Basin Desertscrub, Interior Chaparral, Madrean Evergreen Woodland, Petran Montane Conifer Forest, Plains and Great Basin Grasslands, and Semi-desert Grasslands (AZGFD 2019). The vegetation community for each site is provided in Table 4-2 and the descriptions of each of those communities are below.

The vegetation associated with the Arizona Upland Subdivision of the Sonoran Desertscrub, Petran Montane Conifer Forest, and Plains and Great Basin Grasslands is described above in Section 4.1 of this BE. Great Basin Conifer Woodland, Great Basin Desertscrub, Interior Chaparral, Madrean Evergreen Woodland, and Semi-desert Grassland communities are described below.

Great Basin Conifer Woodland. Great Basin Conifer Woodland occurs at elevations ranging from 4,920 to 7,550 feet and is characterized by the unequal dominance of two conifers, juniper (*Juniperus* spp.), and pinyon (*Pinus* spp.). These trees rarely exceed 40 feet in height and are typically openly spaced. In northwestern New Mexico, western Colorado, Utah, and northern Arizona, Utah juniper (*J. osteosperma*) and one-seed juniper (*J. monosperma*) may be more common. In the central and eastern areas of the southwest, the principal contact with Great Basin Conifer Woodland is grassland, and extensive landscapes that are characterized by parkland and savanna-like mosaics. The understory is typically composed of grasses and shrubs; shrubs include mountain mahoganies (*Cercocarpus* spp.), cliffrose (*Purshia* spp.), apache plume (*Fallugia paradoxa*), fourwing saltbush, small soapweed (*Yucca glauca*), and antelope

bitterbrush (*Purshia tridentata*). Common grasses include galleta grass, Indian ricegrass, western wheatgrass (*Pascopyrum smithii*), several muhly species (*Muhlenbergia* spp.), dropseeds (*Sporobolus* spp.), and junegrass (*Koeleria cristata*). Several cacti are well represented in Great Basin Conifer Woodland, such as red hedgehog cactus (*Echinocereus triglochidiatus* var. *melanacanthus*), prickly pears (*Opuntia* spp.), and various cholla species (Brown 1994).

Great Basin Desertscrub. Great Basin Desertscrub occurs at an elevation range between 3,930 and 7,220 feet and is associated with Arizona Upland Sonoran Desertscrub and Great Basin Pinyon-Juniper Woodland vegetation. Species diversity is low with dominant shrubs occupying vast tracts of land. Characteristic vegetation is low-growing, widely space hemispherical, non-sprouting shrubs with widely spaced bunchgrasses. Dominant shrubs include big sagebrush, black sagebrush (*Artemisia nova*), Bigelow sagebrush (*A. bigelovii*), shadscale, fourwing saltbush, rabbitbrush (*Chrysothamnus* spp.), winterfat (*Krascheninnikovia lanata*), hopsage (*Grayia* spp.), horsebrush (*Tetradymia* spp.), and greasewood (*Sarcobatus vermiculatus*). Associated grasses may include blue grama, galleta grass, Indian ricegrass, western wheatgrass, Junegrass, and several muhleys or dropseeds (Brown 1994).

Interior Chaparral. Interior Chaparral occurs mainly in western Arizona at elevations ranging from 3,445 to 6,070 feet. It is associated with Upland Sonoran Desertscrub, Lower Sonoran Desertscrub, Mohave Desertscrub, and Great Basin Pinyon-Juniper Woodland vegetation. The vegetation is dominated by shrubs with small, thick, evergreen leaves and wide-spreading, deep root systems. The dominant plant in this community is shrub live oak (*Quercus turbinella*); other shrubs include birchleaf mountain mahogany (*Cercocarpus betuloides*), skunkbush sumac (*Rhus trilobata*), silktassel (*Garrya* spp.), desert ceanothus (*Ceanothus greggii*), cliffrose, and Arizona rosewood (*Vauquelinia californica*). Grasses such as sideoats grama (*Bouteloua curtipendula*), hairy grama (*B. hirsuta*), cane bluestem (*Bothriochloa barbinodis*), plains lovegrass, and threeawn (*Aristida* spp.) grow in the interstitial space between shrubs. Occasionally, one-seed juniper, Emory oak (*Quercus emoryi*), or pinyon pine (*Pinus edulis*) may occur (Brown 1994).

Madrean Evergreen Woodland. Madrean Evergreen Woodland is a warm-temperate forest located in southeast and west-central Arizona. This vegetation type is associated with Semi-desert Grassland and interior chaparral at low elevations and Montane Conifer Forests at higher elevations. Elevations for this vegetation community range from 3,940 to 7,220 feet. Trees at lower elevations include Emory oak, Arizona white oak (*Q. arizonica*), alligator bark juniper (*Juniperus deppeana*), one-seeded juniper, and Mexican pinyon (*Pinus cembroides*). At the higher elevations Apache pine (*P. engelmannii*), Arizona pine (*P. arizonica*), and Durango pine (*P. durangensis*) become prevalent along with the oaks. The grasses present include several muhly species, cane bluestem, little bluestem, plains lovegrass, blue grama, sideoats grama, hairy grama, and green sprangletop (*Leptochloa dubia*). The common shrubs are indigobush (*Dalea* spp.), buckwheats (*Eriogonum* spp.), and Louisiana sage (*Artemisia ludoviciana*) (Brown 1994).

Semi-desert Grassland. Semi-desert Grassland is located mainly in east-central and southeast Arizona and occurs at elevations from 3,600 to 6,200 feet. This vegetation type is associated with Plains and Great Basin Grassland, Madrean Evergreen Woodland, and Chihuahuan Desertscrub. Tobosagrass (*Pleuraphis mutica*) and black grama (*Bouteloua eriopoda*) are the most dominant species in Semi-desert Grasslands. The other grasses are numerous and include sideoats grama, blue grama, slender grama (*B. repens*), bush muhly (*Muhlenbergia porteri*),

threeawn species, Arizona cottontop (*Digitaria californica*), plains lovegrass, and little bluestem. The assorted shrubs that are intermixed among the grasses include mesquite (*Prosopis* spp.), one-seed juniper, Mormon tea (*Ephedra* spp.), false mesquite (*Calliandra conferta*), catclaw acacia (*Acacia greggii)*, and ocotillo (*Fouquieria splendens*). Cacti and other succulents are important in this vegetation type, they include several yucca species (*Yucca* spp.), sotol (*Dasylirion wheeleri*), beargrass (*Nolina microcarpa*), several agave species (*Agave* spp.), barrel cactus (*Ferocactus* spp.), and several prickly pear and hedgehog species (*Echinocereus* spp.) (Brown 1994).

### 4.2.2 Federally Listed Species Potentially Occurring at Training Sites

#### Black Mesa – USFS Helitack Base Site

The Black Mesa – USFS Helitack Base site (Attachment 2, Figure C-17) is an HLZ/DZ training area located within Apache-Sitgreaves NF in Navajo County, AZ at an elevation of approximately 7,000 feet. The Black Mesa site occurs in a previously disturbed montane meadow surrounded by Petran Montane Conifer Forest. The site also contains cement helicopter landing pads. The site is east of Wallace Road, along a USFS dirt road (USAF 2017b). The site falls within 0.5 mile of Mexican spotted owl critical habitat. The Black Mesa – USFS Helitack Base site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

#### Charouleau Gap Site

The Charouleau Gap site (Attachment 2, Figure C-40) is a designated off-roading area used for four-wheel drive training. The site is located within Coronado NF in Pinal County, AZ at an elevation of approximately 5,000 feet. The site is in Madrean Evergreen Woodland. The site falls within Mexican spotted owl critical habitat. The Charouleau Gap site provides potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

#### Comanche Site

The Comanche site (Attachment 2, Figures C-11 and C-15) is a DZ training area located within Coronado NF in Coconino County, AZ at an elevation of approximately 7,017 feet. The Comanche site occurs in a previously disturbed montane meadow area along USFS Road 700 (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The Comanche site provides potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

#### Devon Site

The Devon site (Attachment 2, Figure C-46) is an HLZ training area located within Coronado NF in Santa Cruz County, AZ at an elevation of approximately 4,233 feet. The Devon site occurs along USFS Road 4186. This site is upland from an ephemeral drainage that runs in a southwest-to-northeast direction. Rocky outcrops appear to the west of the Devon site (USAF 2017b). The site falls within 0.5 mile of Mexican spotted owl critical habitat. The Devon site provides suitable habitat for the federally endangered jaguar (*Panthera onca*), is within 500 feet of potentially suitable habitat for the federally threatened Chiricahua leopard frog (*Rana chiricahuensis*), and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Flagstaff Hotshot – USFS Helitack Base Site

The Flagstaff Hotshot – USFS Helitack Base site (Attachment 2, Figure C-11) is an HLZ/DZ training area located within Coconino NF in Coconino County, AZ at an elevation of approximately 7,483 feet. The Flagstaff Hotshot site occurs in a montane meadow area surrounded by Petran Montane Conifer Forest off of North Snow Bowl Road. There are ranch buildings approximately 400 feet to the west of the proposed site (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The Flagstaff Hotshot – USFS Helitack Base site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Glenwood Ranger Station Site

The Glenwood Ranger Station site (Attachment 2, Figure C-32) is an HLZ training area located within Gila NF in Catron County, NM at an elevation of approximately 4,800 feet. The site is within a disturbed area with Great Basin Conifer Woodland to the south and Old Forest Road to the North. The site contains a concrete helicopter landing pad. The site falls within 0.5 mile of loach minnow and spikedace (*Meda fulgida*) occupied critical habitat, southwestern willow flycatcher (*Empidonax traillii extimus*) critical habitat, narrow-headed gartersnake (*Thamnophis rufipunctatus*) proposed critical habitat, and yellow-billed cuckoo (*Coccyzus americanus*) proposed critical habitat. The Glenwood Ranger Station site provides suitable habitat for an experimental population of non-essential Mexican wolf (*Canis lupus baileyi*).

### Hannagan Meadow – USFS Helitack Base Site

The Hannagan Meadow – USFS Helitack Base site (Attachment 2, Figure C-26) is an HLZ/DZ training area located within Apache-Sitgreaves NF in Greenlee County, AZ at an elevation of approximately 9,100 feet. The Hannagan Meadow – USFS Helitack Base site occurs along the eastern side of Highway 191 in a previously disturbed montane meadow surrounded by Petran Montane Conifer Forest. The site contains a concrete helicopter landing pad and is in proximity to some minimal development. Ponderosa pine is likely the dominant upper canopy species in this area, with montane grass species dominating the herbaceous layer (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The Hannagan Meadow – USFS Helitack Base site provides suitable habitat for the federally endangered Mexican wolf, a proposed experimental population of non-essential gray wolf (*Canis lupus*), and potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Helibase Circular Site

The Helibase Circular site (Attachment 2, Figure C-26) is an HLZ/DZ training area located within Apache-Sitgreaves NF in Greenlee County, AZ at an elevation of approximately 9,100 feet. The Helibase Circular site occurs along the eastern side of Highway 191 in a previously disturbed montane meadow surrounded by Petran Montane Conifer Forest. It is in the same area as the Hannagan Meadow – USFS Helitack Base site. The site contains a concrete helicopter landing pad and is close to some minimal development. Ponderosa pine is likely the dominant upper canopy species in this area, with montane grass species dominating the herbaceous layer (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The Helibase Circular site provides suitable habitat for the federally endangered Mexican wolf, a proposed experimental population of non-essential gray wolf, and potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### KP Circular Site

The KP Circular site (Attachment 2, Figure C-26) is a DZ training area located within Apache-Sitgreaves NF in Apache County, AZ at an elevation of approximately 8,896 feet. The KP Circular site occurs along the eastern side of Highway 191 in a previously disturbed montane meadow surrounded by Petran Montane Conifer Forest. Ponderosa pine is likely the dominant upper canopy species in this area, with montane grass species dominating the herbaceous layer (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The KP Circular site provides suitable habitat for the federally endangered Mexican wolf, a proposed experimental population of non-essential gray wolf, and within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### KP Tank Site

The KP Tank site (Attachment 2, Figure C-26) is an HLZ/DZ training area located within Apache-Sitgreaves NF in Apache County, AZ at an elevation of approximately 8,896 feet. The KP Tank site occurs along the eastern side of Highway 191 in a previously disturbed montane meadow surrounded by Petran Montane Conifer Forest. It is in the same area as the KP Circular site. Ponderosa pine is likely the dominant upper canopy species in this area, with montane grass species dominating the herbaceous layer (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The KP Tank site provides suitable habitat for the federally endangered Mexican wolf, a proposed experimental population of non-essential gray wolf, and within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Lees Ferry Site

The Lees Ferry site (Attachment 2, Figure C-4) is an HLZ/LZ/DZ training area located within National Parks Service land in Coconino County, AZ at an elevation of approximately 3,257 feet. The Lees Ferry site occurs on previously disturbed Great Basin Desertscrub vegetation. The site is over 1,500 feet upland, north of the Colorado River (USAF 2017b). The site falls within 0.5 mile of razorback sucker (*Xyrauchen texanus*) critical habitat.

### Longview – USFS Helitack Base Site

The Longview – USFS Helitack Base site (Attachment 2, Figure C-16) is a camping, bivouacking, and assembly area use training area located within Coconino NF in Coconino County, AZ at an elevation of approximately 7,185 feet. The Longview – USFS Helitack Base site is a campground that occurs in a montane meadow area surrounded by Petran Montane Conifer Forest east of Highway 87 off of USFS Road 147E. There are residential buildings approximately 430 feet to the west and northwest of the proposed site. There are also unnamed stock ponds approximately 400 feet south of the site. This site likely contains montane grass species (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The Longview – USFS Helitack Base site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Mesa Site

The Mesa site (Attachment 2, Figure C-43) is an HLZ training area located within Coronado NF in Graham County, AZ at an elevation of approximately 4,750 feet. The site is located on a mesa top in Semi-desert Grassland, surrounded by Madrean Evergreen Woodland. The HLZ site is along the western portion of the Galiuro Wilderness Area. The surrounding cliffs north, east,

and west of the HLZ site provide unique habitat for roosting bats, due to various caves throughout the canyons, and cliff nesting habitat for peregrine falcons (*Falco peregrinus*) and other cliff dependent species (USAF 2017b). Because the site is within the Galiuro Wilderness Area, there is almost no human disturbance in the area. The dirt access road is over a mile away from the site with limited use by the rancher leasing the property and recreational users for camping. The only access to the HLZ site is by foot (USAF 2017b). The site falls within the Mexican spotted owl critical habitat. The Mesa site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Mogollon Rim (General Crook) Site

The Mogollon Rim (General Crook) site (Attachment 2, Figure C-16) is an HLZ including an area where technical rope work is conducted within Coconino NF in Coconino County, AZ at an elevation of approximately 7,610 feet. This site occurs along the rim of the Mogollon Rim in an opening within the Petran Montane Conifer Forest. This site occurs along an unnamed dirt track road off of USFS Road 300, or Rim Road (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The Mogollon Rim (General Crook) site provides suitable habitat for a proposed experimental population of non-essential gray wolf and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Mormon Lake – USFS Helitack Base Site

The Mormon Lake – USFS Helitack Base site (Attachment 2, Figures C-11 and C-15) is an HLZ/DZ training area located within Coconino NF in Coconino County, AZ at an elevation of approximately 7,129 feet. The Mormon Lake site occurs in a montane meadow surrounded on the west, south, and east by Petran Montane Conifer Forest and to the north by Mormon Lake. There are residential or commercial buildings approximately 100 feet to the west of the proposed site. The site contains a concrete helicopter landing pad. This site likely contains montane grass species (USAF 2017b). The site falls within 0.5 mile of Mexican spotted owl critical habitat. The Mormon Lake – USFS Helitack Base site provides potentially suitable habitat for the federally threatened northern Mexican gartersnake and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Negrito Airstrip Site

The Negrito Airstrip site (Attachment 2, Figure C-27) is an HLZ/LZ/DZ training area located within Gila NF in Catron County, NM at an elevation of approximately 8,087 feet. The site occurs within a montane meadow surrounded by Petran Montane Conifer Forest. The site falls within Mexican spotted owl critical habitat. The Negrito Airstrip site provides suitable habitat for an experimental population of non-essential Mexican wolf and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Negrito Center Site

The Negrito Center site (Attachment 2, Figure C-27) is an HLZ/DZ training area located within Gila NF in Catron County, NM at an elevation of approximately 7,850 feet. The site occurs within a montane meadow surrounded by Petran Montane Conifer Forest. The site falls within Mexican spotted owl critical habitat. The Negrito Center site provides suitable habitat for an experimental population of non-essential Mexican wolf.

### Negrito Helibase Site

The Negrito Helibase site (Attachment 2, Figure C-27) is an HLZ training area located within Gila NF in Catron County, NM at an elevation of approximately 8,026 feet. The site occurs within a montane meadow surrounded by Petran Montane Conifer Forest. The site falls within 0.5 mile of Mexican spotted owl critical habitat. The Negrito Helibase site provides suitable habitat for an experimental population of non-essential Mexican wolf.

### Negrito North Site

The Negrito North site (Attachment 2, Figure C-27) is an HLZ/DZ training area located within Gila NF in Catron County, NM at an elevation of approximately 7,847 feet. The site occurs within a montane meadow surrounded by Petran Montane Conifer Forest northeast of Reserve Beaverhead Road. An ephemeral stream runs southeast to northwest through the site pooling in the western edge of the meadow. The site falls within Mexican spotted owl critical habitat. The site provides suitable habitat for an experimental population of non-essential Mexican wolf. The pooling water west of the Negrito North site provides potentially suitable habitat for Gila trout.

### Negrito South Site

The Negrito South site (Attachment 2, Figure C-27) is an HLZ/DZ training area located within Gila NF in Catron County, NM at an elevation of approximately 7,973 feet. The site occurs within a montane meadow with Petran Montane Conifer Forest to the west. The site falls within 0.5 mile of Mexican spotted owl critical habitat. The Negrito South site provides suitable habitat for an experimental population of non-essential Mexican wolf.

### Overgaard – USFS Helitack Base Site

The Overgaard – USFS Helitack Base site (Attachment 2, Figure C-18) is an HLZ/DZ training area located within Apache-Sitgreaves NF in Navajo County, AZ at an elevation of approximately 6,640 feet. The site occurs within Plains and Great Basin Grassland and contains a concrete helicopter landing pad. The Overgaard – USFS Helitack Base site provides suitable habitat for a proposed non-essential experimental population of gray wolf and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Portal Cabin and CCC Bunkhouse Site

The Portal Cabin and CCC Bunkhouse site (Attachment 2, Figure C-49) is a training area that would be used for bivouacking and assembly. The site is located within Coronado NF in Cochise County, AZ at an elevation of approximately 4,960 feet. The site is west of 42 Forest Road within Madrean Evergreen Woodland. The Portal Cabin and CCC Bunkhouse site provides suitable habitat for the federally endangered jaguar, potentially suitable habitat for the federally threatened yellow-billed cuckoo, potentially suitable nesting habitat for the federally threatened Mexican spotted owl and a non-essential experimental population of northern Aplomado falcon (*Falco femoralis septentrionalis*), and is within 500 feet of potentially suitable habitat for the federally threatened Chiricahua leopard frog and northern Mexican gartersnake.

### Rainy Mesa Site

The Rainy Mesa site (Attachment 2, Figure C-27) is an HLZ training area located within Gila NF in Catron County, NM at an elevation of approximately 7,450 feet. The site occurs at the edge of Petran Montane Conifer Forest northwest of Reserve Beaverhead Road. The site falls within

Mexican spotted owl critical habitat. The Rainy Mesa site provides suitable habitat for an experimental population of non-essential Mexican wolf and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Ranger Site

The Ranger site (Attachment 2, Figure C-49) is an HLZ/DZ training area located within Coronado NF in Cochise County, AZ at an elevation of approximately 5,781 feet. The Ranger HLZ is located within Madrean Evergreen Woodland. A site survey documented the vegetation composition to consist of 40 percent tree cover with species including oak, alligator juniper (*Juniperus deppeana*), and pinyon pine; 10 percent shrub cover with sotol, yucca, and other shrubs present; and 75 percent grass cover with little bluestem, sideoats grama, and Rothrock's grama (*Boutelous rothrockii*) present. The HLZ site is approximately 164 feet north of the Rucker USFS Fire Station. Human disturbance at this site includes the USFS access road along the western edge of the HLZ site, the USFS Fire Station 164 feet to the south, livestock grazing, and recreational activity (USAF 2017b). The site falls within the Mexican spotted owl critical habitat. The Ranger site provides suitable habitat for the federally endangered jaguar and potentially suitable nesting habitat for the federally threatened Mexican spotted owl and an experimental population of non-essential northern Aplomado falcon.

### Redington Pass Site

The Redington Pass site (Attachment 2, Figures C-40 and C-42) is a designated off-roading area used for four-wheel drive training. The site is located within Coronado NF in Pima County, AZ at an elevation of approximately 4,300 feet. The site is located in Semi-desert Grassland. The site falls within Mexican spotted owl critical habitat. The Redington Pass site provides suitable habitat for the federally endangered jaguar.

### Reserve Ranger Station Site

The Reserve Ranger Station site (Attachment 2, Figure C-27) is an HLZ/DZ training area located within Gila NF in Catron County, NM at an elevation of approximately 5,900 feet. The site occurs in a grassland area surrounded by Great Basin Conifer Woodland. The site is south of Smokey Bear Circle. The Reserve Ranger Station site provides suitable habitat for an experimental population of non-essential Mexican wolf.

### Roosevelt Lake Site

The Roosevelt Lake site (Attachment 2, Figure C-23) is a water HLZ/DZ training area located within Tonto NF in Gila County, AZ at an elevation of approximately 2,077 feet. The Roosevelt Lake site, which is a water training area, occurs in the open water area of Roosevelt Lake (USAF 2017b). Although this site occurs in open water, there is Arizona Upland Division of Sonoran Desertscrub and Riparian vegetation along the banks of the lake. The site falls within 0.5 mile of southwestern willow flycatcher critical habitat and yellow-billed cuckoo proposed critical habitat. The lake provides potentially suitable habitat for the federally endangered spikedace, Gila topminnow (*Poeciliopsis occidentalis*), razorback sucker, and a non-essential experimental population of Colorado pikeminnow (*Ptychocheilus lucius*). The Riparian vegetation is dense enough to provide suitable habitat for the federally endangered southwestern willow flycatcher, Yuma clapper rail (*Rallus longirostris yumanensis*), the federally threatened northern Mexican gartersnake, and the federally threatened yellow-billed cuckoo.

### Rucker HLZ Site

The Rucker site (Attachment 2, Figure C-49) is an HLZ/DZ training area located within Coronado NF in Cochise County, AZ at an elevation of approximately 5,781 feet. The Rucker HLZ is located within Madrean Evergreen Woodland. The site falls within Mexican spotted owl critical habitat. The Rucker site provides suitable habitat for the federally endangered jaguar and potentially suitable nesting habitat for the federally threatened Mexican spotted owl and an experimental population of non-essential northern Aplomado falcon.

### Saddle Mountain East Site

The Saddle Mountain East site (Attachment 2, Figure C-47) is an HLZ/DZ training area located within the Coronado NF in Santa Cruz County, AZ at an elevation of approximately 5,078 feet. This site is located in the Plains and Great Basin Grassland community. A site visit noted about 97 percent grass cover of species including alkali sacaton, plains lovegrass, and burrograss (*Scleropogon brevifolius*). There was also about 5 percent cover of shrub-sized willows (*Salix* spp.) and mesquite. A creek runs east-west along the southern edge of the HLZ site with a definitive bed and bank. Willow saplings occur within the creek and, during the time of the site visit, standing water was present (USAF 2017b). There is evidence of very little human activity at the Saddle Mountain East HLZ site. The USFS access road runs right through the site, with low off-highway vehicle activity, mostly four wheelers and recreationists using the access road for camping (USAF 2017b). The site falls within jaguar critical habitat and northern Mexican gartersnake proposed critical habitat.

### Saddle Mountain South Site

The Saddle Mountain South site (Attachment 2, Figure C-47) is an HLZ/DZ training area located within the Coronado NF in Santa Cruz County, AZ at an elevation of approximately 5,146 feet. This site is within the same habitat as Saddle Mountain East. There is evidence of very little human activity at the Saddle Mountain South HLZ site. The USFS access road runs right through the site, with low off-highway vehicle activity, mostly four wheelers and recreationists using the access road for camping (USAF 2017b). The site falls within jaguar critical habitat and northern Mexican gartersnake proposed critical habitat.

### Saddle Mountain West Site

The Saddle Mountain West site (Attachment 2, Figure C-47) is an HLZ/DZ training area located within the Coronado NF in Santa Cruz County, AZ at an elevation of approximately 5,460 feet. This site is located in a mix of Interior Chaparral and Madrean Evergreen Woodland. The vegetation composition of the site included 25 percent tree cover by species such as alligator bark juniper, mesquite, and oak; 20 percent shrub cover with species such as sotol, century plant (*Agave americana*), yucca, and manzanita (*Arctostaphylos pungens*); and 80 percent grass cover with species such as alkali sacaton, spidergrass (*Aristida ternipes*), vine mesquite (*Panicum obtusum*), sideoats grama, and little bluestem. The site survey of the area documented rock outcrops southeast of the HLZ site on the hilltop that could provide roosting habitat for bats, or unique habitat for other wildlife (USAF 2017b). Human disturbance observed at the Saddle Mountain West HLZ site includes the gravel USFS access road, an existing mine on the hilltop to the southeast of the site that looks like it has been abandoned, livestock grazing, and fencing. This HLZ site appears to be one of the least disturbed proposed HLZ sites, with very minimal human activity in the area. Bats and birds are likely to utilize this area due to protection and

multiple optimal foraging and nesting sites (USAF 2017b). The site falls within jaguar critical habitat and northern Mexican gartersnake proposed critical habitat and is within 0.5 mile of Mexican spotted owl critical habitat. The Saddle Mountain West site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Saguaro Lake Ranch Site

The Saguaro Lake Ranch site (Attachment 2, Figure C-22) is a water training area located within Tanto NF in Maricopa County, AZ at an elevation of approximately 1,401 feet. The Saguaro Lake Ranch site occurs approximately 1,300 feet south (downstream) of the Stewart Mountain Dam for Saguaro Lake. There is dense riparian vegetation and under thicket vegetation as well as Arizona Upland Division of Sonoran Desertscrub. This site is close to human development, associated with dam maintenance as well as for recreational purposes (USAF 2017b). The Saguaro Lake Ranch site is within 500 feet of potentially suitable habitat for the federally endangered Yuma clapper rail and the federally threatened yellow-billed cuckoo.

### Spring Valley Cabin Site

The Spring Valley Cabin site (Attachment 2, Figure C-10) is an area used for bivouacking and assembly within Kaibab NF in Coconino County, AZ at an elevation of approximately 7,380 feet. The site occurs within Plains and Great Basin Grassland east of Fire Road 76. The Spring Valley Cabin site provides suitable habitat for the federally threatened northern Mexican gartersnake and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Tribeland Site

The Tribeland site (Attachment 2, Figure C-6) is a DZ training area within Kaibab NF in Coconino County, AZ at an elevation of approximately 6,598 feet. The site occurs within Great Basin Desertscrub. The Tribeland site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Verde River Site

The Verde River site (Attachment 2, Figure C-22) is a water training area located within Tanto NF in Maricopa County, AZ at an elevation of approximately 1,328 feet. The Verde River site occurs upstream along the Salt River from where the Verde River and Salt River converge. This site contains dense riparian vegetation along the banks. Potentially riparian vegetation includes mesquite, saltcedar, and giant reed (*Arundo donax*). Beyond the riparian vegetation is Arizona Upland Division of Sonoran Desertscrub. This site is near a parking lot and Phon D Sutton Road. This site likely experiences high human activity, due to easy access and proximity to the road (USAF 2017b). The Verde River site provides potentially suitable habitat for the federally endangered southwestern willow flycatcher and Yuma clapper rail, and the federally threatened yellow-billed cuckoo.

## 4.3 TRAINING SITES LOCATED ON OTHER LAND (MUNICIPAL, CITY, COUNTY, STATE, TRIBAL)

There are 57 proposed PR training sites on other lands (Attachment 1). The proposed PR training sites occur in Apache, Cochise, Coconino, Gila, Graham, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, and Yuma Counties in Arizona, and Catron and Hidalgo

Counties in New Mexico. Of the 57 proposed PR training sites on other land, 21 of the proposed PR training sites are within city limits or are considered developed urban areas, including Bisbee Douglas IAP, City of Flagstaff, City of Winslow, Coolidge Airport, Flagstaff Pulliam Airport, Grand Canyon National Park Airport, H. A. Clark Memorial Field, Kingman Airport, Lake Havasu Airport, Marana Regional Airport, Phoenix Sky Harbor IAP, Pima County Emergency Operations Center, Pinal Air Park, Prescott Airport, Sahuarita Lake, Springerville Airport, St. Johns Industrial Air Park, University of Arizona Dive Pool, University of Arizona Medical Center, Winslow-Lindbergh Regional Airport (Wiseman Aviation), and Yuma Airport. Since these proposed PR training sites do not contain native or naturalized vegetation, and naturalized habitats (e.g., grasslands, forests, and wetlands), they are not analyzed further for an impact on listed species.

A desktop analysis was conducted of all federally listed species to determine if they have the potential to occur within or near proposed training sites based on habitat at the site, elevation, and the known range and distribution of the species. Previous reconnaissance-level survey data and aerial imagery were used to assess habitat at the sites. Ten proposed PR training sites were eliminated from further analysis in this BE due to the lack of habitat for listed species (Babbitt Ranch 3, Froelich HLZ/DZ, Jeep HLZ/DZ, Pima County Regional Training Center, Pinnacle HLZ/DZ, Powerline, Tombstone 15 HLZ, Tombstone 18 HLZ, Tombstone 19 HLZ, and Tombstone Paladins) and the remaining 26 are carried forward in the analysis (Table 4-3). Table 4-3 also identifies designated critical habitats for federally listed species surrounding or near these 26 proposed training sites on Other Lands.

### 4.3.1 Vegetation Communities at Training Sites

There are 11 vegetation communities that occur in the region at the proposed sites (Table 4-3). The vegetation associated with Arizona Upland Division of Sonoran Desertscrub, Mohave Desertscrub, Petran Montane Conifer Forest, and Plains and Great Basin Grassland is described in Section 4.1 of this BE; also, the vegetation associated with Great Basin Conifer Woodland, Interior Chaparral, and Semi-desert Grassland is described in Section 4.2 of this BE. The Riparian, Chihuahuan Desertscrub, Open Water – River, and Open Water – Lake vegetation communities are described below.

Riparian. Riparian vegetation is found in association with open water such as streams and rivers. The area occupied by riparian vegetation is relatively small in relationship with other vegetation types, but their biological and ecological importance is larger than their limited geographic occurrence. Riparian vegetation is important to wildlife as forage, cover, breeding, and migration corridors. The nature and species composition of the riparian vegetation changes depending on elevation and associated upland vegetation community. For example, at high elevations, stream gradients are steep with relatively high precipitation and cool temperatures, while at low elevations, stream gradients are gentle, with lower precipitation and warmer temperatures. At the higher elevations, Pacific willow (*Salix lucida*), bigtooth maple (*Acer grandidentatum*), narrowleaf cottonwood (*Populus angustifolia*), box elder (*Acer negundo*), sycamore (*Platanus* spp.), Arizona walnut (*Juglans major*), velvet ash (*Fraxinus velutina*), and western soapberry (*Sapindus saponaria* var. *drummondii*) are the woody plants present. At lower elevations, mesquite, Goodding's willow (*Salix gooddingii*), netleaf hackberry (*Celtis reticulata*), western soapberry, velvet ash, and Wright's sycamore (*Platanus wrightii*) characterize the riparian vegetation. Russian olive (*Elaeagnus angustifolia*) and saltcedar

(*Tamarix* spp.) are two invasive woody plants that have colonized large expanses of low- to mid-elevation riparian corridors (Brown 1994).

**Table 4-3. Training Sites Located on Other Land (Municipal, City, County, State, Tribal)**

| Site | Location | Training Activity | Elevation (Feet) | Vegetation Community | Critical Habitat |
|---|---|---|---|---|---|
| Babbitt Ranch 1 | Coconino County, AZ | F1, F3, F5, F7, G1, G2, G3, G4, G6 | 6,014 | Plains and Great Basin Grassland | None |
| Blackhills HLZ/DZ | Pima County, AZ | F1, F3, F4, F5, F7, G6 | 3,315 | Arizona Upland Division of Sonoran Desertscrub | None |
| Black Mountain Reservoir | Pima County, AZ | W2 | 2,860 | Arizona Upland Division of Sonoran Desertscrub | None |
| Brooke HLZ/DZ | Pinal County, AZ | F1, F3, F5, F7, F10, G2, G3, G6 | 5,590 | Semi-desert Grassland | None |
| Caldwell Meadows | Apache County, AZ | F1, F3, F5, F7, F9, F10, G1, G2, G3, G4, G6 | 7,610 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat and New Mexico Meadow Jumping Mouse Critical Habitat |
| Caliente HLZ/DZ | Santa Cruz County, AZ | F1, F3, F7, G6 | 3,590 | Semi-desert Grassland | Within 0.5 mile of Jaguar Critical Habitat |
| Catron County Fairgrounds | Catron County, NM | F1, F3, F5, F7, F10, G1, G2, G6 | 5,800 | Great Basin Conifer Woodland | None |
| Colorado River | Mohave County, AZ | W1, W2 | 496 | Riparian and Open Water – River | None |
| Gila County Sheriff Roosevelt Substation | Gila County, AZ | F1, F3, F5, F7, F9, F10, G1, G2, G3, G4, G6 | 2,078 | Semi-desert Grassland | None |
| Highway 80 Paladins (TW 2 Paladins) | Cochise County, AZ | F1, F3, F5, F7, F9, F10, G2, G3, G6 | 4,330 | Chihuahuan Desertscrub | None |
| Jenna HLZ/DZ | Cochise County, AZ | F1, F3, F5, F7, G6 | 6,230 | Great Basin Conifer Woodland | None |
| Lake Patagonia | Santa Cruz County, AZ | F1, F3, F7, G6, W1, W2 | 3,775 | Riparian, Semi-desert Grassland, and Open Water - Lake | Yellow-billed Cuckoo Proposed Critical Habitat |
| Lake Pleasant | Maricopa and Yavapai County, AZ | W2 | 1,700 | Riparian, Arizona Upland Division of Sonoran Desertscrub, and Open Water - Lake | None |
| Lost Acre HLZ/DZ | Pima County, AZ | F1, F3, F7, G6 | 2,240 | Arizona Upland Division of Sonoran Desertscrub | None |

| Table 4-3. Training Sites Located on Other Land (Municipal, City, County, State, Tribal) | | | | | |
|---|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** | **Critical Habitat** |
| Penitas HLZ/DZ | Pima County, AZ | F1, F3, F5, F7, G2, G3, G6 | 3,575 | Semi-desert Grassland | None |
| Playas Training and Research Center | Hidalgo County, NM | F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, G1, G2, G3, G5, G6, G7, G8 | 4,520 | Semi-desert Grassland | None |
| Pond HLZ/DZ | Pima County, AZ | F1, F3, F7, G6 | 3,340 | Mohave Desertscrub | None |
| Prieto HLZ/DZ | Pima County, AZ | F1, F3, F5, F7, G6 | 3,250 | Mohave Desertscrub | None |
| Rancho Seco HLZ/DZ | Pima County, AZ | F1, F3, F5, F7, F10, G2, G3, G6 | 3,430 | Mohave Desertscrub | None |
| Ruby Fuzzy Paladins | Pima County, AZ | F1, F3, F4, F5, F7, F9, F10, G2, G3, G4, G5, G6 | 3,952 | Semi-desert Grassland | None |
| Salt River High | Gila County, AZ | F1, F3, F5, F7, F10, G2, G3, G6 | 4,367 | Interior Chaparral | Narrow-headed Gartersnake Proposed Critical Habitat |
| Salt River Low | Gila County, AZ | F1, F3, F5, F7, F10, G2, G3, G6, W1, W2 | 3,364 | Riparian and Open Water - River | Razorback Sucker Critical Habitat and Narrow-headed Gartersnake Proposed Critical Habitat |
| Sierrita HLZ/DZ | Pima County, AZ | F1, F3, F5, F7, G6 | 3,390 | Mohave Desertscrub | None |
| Silvermine HLZ/DZ | Pima County, AZ | F1, F3, F7, G6 | 2,450 | Arizona Upland Division of Sonoran Desertscrub | None |
| Tombstone 8 HLZ | Hidalgo County, NM | F1, F3, F5, F7, F10, G2, G3, G6 | 4,630 | Semi-desert Grassland | None |
| Waterman HLZ/DZ | Pima County, AZ | F1, F3, F7, G2, G3, G6 | 2,340 | Arizona Upland Division of Sonoran Desertscrub | None |

| Table 4-3. Training Sites Located on Other Land (Municipal, City, County, State, Tribal) | | | | | |
|---|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** | **Critical Habitat** |
| Legend:<br>Training Activities:<br>Flight Ops<br>F1 Established MOAs<br>F2 Temporary MOAs<br>F3 LATN Areas<br>F4 Restricted Areas<br>F5 Other Airspace (e.g., MTRs)<br>F6 FARP Operations<br>F7 HLZs/DZs<br>F8 Fixed Wing LZs<br>F9 Parachute Operations<br>F10 Close Air Support<br>Water Ops<br>W1 HLZs/DZs/Overwater Hoist Operations<br>W2 Amphibious Ops | | | Ground Ops<br>G1 Camping, Bivouacking, and Assembly Area Use<br>G2 Cross-Country Dismounted (Non-Vehicle) Movements<br>G3 Mounted (Vehicle) Movement/Blackout Driving<br>G4 Survival Training/Natural Resource Consumption<br>G5 Military Operations in Urban Terrain/Urban Evasion<br>G6 Technical Rope Work<br>G7 Pyrotechnic Use<br>G8 Shooting / Firing Range<br><br>Acronyms and Abbreviations Used:<br>AZ – Arizona<br>DZ – Drop Zone<br>HLZ – Helicopter Landing Zone<br>NM – New Mexico | | |

Chihuahuan Desertscrub. The Chihuahuan Desertscrub occurs at elevations from 3,280 to 6,560 feet. This Chihuahuan Desertscrub has a moderate to sparse xeromorphic shrub layer frequently dominated by whitethorn acacia, varnish acacia (*Acacia neovernicosa*), American tartwort (*Flourensia cernua*), creosote bush, honey mesquite, or velvet mesquite (*Prosopis velutina*). Stands may be dominated by a single species or be mixed and composed of a variety of desertscrub, thornscrub, stem rosette, and succulent species present as codominants. Characteristic species may include catclaw acacia, lechuguilla (*Agave lechuguilla*), Wright's beebrush (*Aloysia wrightii*), sand sagebrush (*Artemisia filifolia*), fourwing saltbush, Yerba de pasmo (*Baccharis pteronioides*), desert mertlecroton (*Bernardia obovate*), green stool (*Dasylirion leiophyllum*), candelilla (*Euphorbia antisyphilitica*), Torrey's Mormon tea (Ephedra torreyana), Mexican tea (*E. trifurca*), barrel cactus, Ocotillo, leatherstem (*Jatropha dioica*), crucifixion thorn (*Koeberlinia spinose*), Pima rhatany (*Krameria erecta*), Big Bend silverleaf (*Leucophyllum minus*), box-thorn (*Lycium* spp.), catclaw mimosa (*Mimosa aculeaticarpa* var. *biuncifera*), Rio Grande saddlebush (*Mortonia scabrella*), Engleman prickly pear (*Opuntia engelmannii*), tree cholla (*O. imbricate*), Big Bend prickly pear (*O. schottii*), cane cholla, New Mexico rubber plant (*Parthenium incanum*), frosted mint (*Poliomintha incana*), littleleaf sumac (*Rhus microphylla*), resinbush (*Viguiera stenoloba*), soaptree yucca (*Yucca elata*), and Torrey yucca (*Y. torreyi*). Many stands lack an herbaceous understory layer and develop a pebbly desert pavement on the soil surface sometimes with scattered grasses and forbs. Grasses are common but generally have lower cover than shrubs. Forb species are often present but have low cover. Stands occur in the broad desert basins and plains extending up onto dissected gravelly alluvial fans and piedmonts (bajadas), and foothills in the Chihuahuan Desert below the chaparral zone (Brown et al. 1979).

### 4.3.2 Federally Listed Species Potentially Occurring at Training Sites

#### Babbitt Ranch 1 Site

The Babbitt Ranch 1 site (Attachment 2, Figure C-7) is an HLZ training area located in Coconino County, AZ at an elevation of approximately 6,014 feet. The site is next to the Panda site within Plains and Great Basin Grassland. The Babbitt Ranch 1 site provides potentially suitable habitat for the federally endangered Fickeisen plains cactus (*Pediocactus peeblesianus fickeiseniae*).

#### Blackhills HLZ/DZ Site

The Blackhills HLZ/DZ site (Attachment 2, Figure C-44) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 3,315 feet. The site occurs within Arizona Upland Division of Sonoran Desertscrub. The Blackhills HLZ/DZ site provides potentially suitable habitat for the federally endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) and a non-essential experimental population of Sonoran pronghorn.

#### Black Mountain Reservoir

The Black Mountain Reservoir site (Attachment 2, Figure C-45) is a water training area located in Pima County, AZ at an elevation of approximately 2,860 feet. The site occurs within Arizona Upland Division of Sonoran Desertscrub. The Black Mountain Reservoir site is within 500 feet of potentially suitable habitat for the federally endangered jaguar, the federally endangered Pima pineapple cactus, and a non-essential experimental population of Sonoran pronghorn.

#### Brooke HLZ/DZ Site

The Brooke HLZ/DZ site (Attachment 2, Figure C-40) is an HLZ/DZ training area located in Pinal County, AZ at an elevation of approximately 5,590 feet. The site is on top of a mesa within Semi-desert Grassland. The Brooke HLZ/DZ site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

#### Caldwell Meadows Site

The Caldwell Meadows site (Attachment 2, Figure C-26) is an HLZ/DZ training area located in Apache County, AZ at an elevation of approximately 7,610 feet. The Caldwell Meadows site occurs in a montane meadow area surrounded by Petran Montane Conifer Forest north of Route 25. This site likely contains montane grass species. A small stream runs west to east through the site. The site falls within Mexican spotted owl critical habitat and New Mexico meadow jumping mouse (*Zapus hudsonius luteus*) critical habitat. The Caldwell Meadows site provides potentially suitable habitat for the federally endangered Three Forks springsnail (*Pyrgulopsis trivialis*) and Mexican wolf, the federally threatened Chiricahua leopard frog and northern Mexican gartersnake, and a proposed non-essential experimental population of gray wolf.

#### Caliente HLZ/DZ Site

The Caliente site (Attachment 2, Figures C-45 and C-46) is an HLZ/DZ training area located in Santa Cruz County, AZ at an elevation of approximately 3,590 feet. The site occurs within Semi-desert Grassland. The site falls within 0.5 mile of jaguar critical habitat. The Caliente site provides potentially suitable habitat for the federally endangered Pima pineapple cactus.

### Catron County Fairgrounds Site

The Catron County Fairgrounds site (Attachment 2, Figure C-27) is an HLZ training area located within Gila NF in Catron County, NM at an elevation of approximately 5,800 feet. The site occurs within a disturbed area with Great Basin Conifer Woodland to the north and The Lane to the south. An ephemeral stream is south of the site and provides potentially suitable habitat for the federally endangered loach minnow (*Tiaroga cobitis*) and the federally threatened Gila trout (*Oncorhynchus gilae*). The Catron County Fairgrounds site provides suitable habitat for an experimental population of non-essential Mexican wolf.

### Colorado River Site

The Colorado River site (Attachment 2, Figure C-8) is a water training area located in Mohave County, AZ at an elevation of approximately 496 feet. The site is within open water on the Colorado River with riparian vegetation along the banks of the river. The Colorado River site provides potentially suitable habitat for the federally endangered bonytail chub (*Gila elegans*), razorback sucker, southwestern willow flycatcher, Yuma clapper rail, the federally threatened northern Mexican gartersnake, and yellow-billed cuckoo.

### Gila County Sheriff Roosevelt Substation Site

The Gila County Sheriff Roosevelt Substation site (Attachment 2, Figure C-23) is an HLZ training area located in Gila County, AZ at an elevation of approximately 2,078 feet. The site is within Semi-desert Grassland. The Gila County Sheriff Roosevelt Substation site provides suitable habitat for a proposed non-essential experimental population of gray wolf.

### Highway 80 Paladins (TW 2 Paladins) Site

The Highway 80 Paladins (TW 2 Paladins) site (Attachment 2, Figure C-49) is an HLZ/DZ training area located in Cochise County, AZ at an elevation of approximately 4,330 feet. The site occurs within Chihuahuan Desertscrub. The Highway 80 Paladins (TW 2 Paladins) site provides potentially suitable habitat for the federally threatened Cochise pincushion cactus (*Coryphantha robbinsiorum*).

### Jenna HLZ/DZ Site

The Jenna HLZ/DZ site (Attachment 2, Figure C-43) is an HLZ/DZ training area located in Cochise County, AZ at an elevation of approximately 6,230 feet. The site is located on a hilltop within Great Basin Conifer Woodland. The Jenna HLZ/DZ site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Lake Patagonia Site

The Lake Patagonia site (Attachment 2, Figures C-46 and C-47) is a water training area located within the Patagonia Lake State Park in Santa Cruz County, AZ at an elevation of approximately 3,775 feet. The site is within Open Water – Lake habitat; however, the banks of the lake contain Riparian, Semi-desert Grassland, and Petran Montane Conifer Forest vegetation communities. The site falls within yellow-billed cuckoo proposed critical habitat. The Lake Patagonia site provides potentially suitable habitat for the federally endangered Gila topminnow, the federally threatened Chiricahua leopard frog, northern Mexican gartersnake, and yellow-billed cuckoo, and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Lake Pleasant Site

The Lake Pleasant site (Attachment 2, Figure C-21) is a water training area located within Lake Pleasant Regional Park in Yavapai County, AZ at an elevation of approximately 1,700 feet. The site occurs within Open Water – Lake habitat; however, the banks contain Riparian and Arizona Upland Division of Sonoran Desertscrub vegetation communities. The Lake Pleasant site provides potentially suitable habitat for the federally endangered Gila topminnow and the federally threatened northern Mexican gartersnake.

### Lost Acre HLZ/DZ Site

The Lost Acre HLZ/DZ site (Attachment 2, Figure C-41) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 2,240 feet. The site is located within Arizona Upland Division of Sonoran Desertscrub. The Lost Acre HLZ/DZ site provides potentially suitable habitat for the federally endangered Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*) and a non-essential experimental population of Sonoran pronghorn.

### Penitas HLZ/DZ Site

The Penitas HLZ/DZ site (Attachment 2, Figures C-44, C-45, and C-46) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 3,575 feet. The site is located within Semi-desert Grassland. The Penitas HLZ/DZ site provides potentially suitable habitat for the federally endangered Pima pineapple cactus and a non-essential experimental population of Sonoran pronghorn.

### Playas Training and Research Center Site

The Playas Training and Research Center site (Attachment 2, Figure C-50) is an HLZ/LZ/DZ including MOUT training, billeting, and driver training. The training area is located in Hidalgo County, NM at an elevation of approximately 4,520 feet. The site is within Semi-desert Grassland. The Playas Training and Research Center site provides potentially suitable roosting habitat for the federally endangered Mexican long-nosed bat (*Leptonycteris nivalis*) and potentially suitable habitat for a non-essential experimental population of Mexican wolf.

### Pond HLZ/DZ Site

The Pond HLZ/DZ site (Attachment 2, Figure C-44) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 3,340 feet. The site is in an area where water pools during rain events and is adjacent to a desert wash within Mohave Desertscrub. The Pond HLZ/DZ site provides suitable habitat for a non-essential experimental population of Sonoran pronghorn.

### Prieto HLZ/DZ Site

The Prieto HLZ/DZ site (Attachment 2, Figure C-44) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 3,250 feet. The site is within Mohave Desertscrub. The Prieto HLZ/DZ site provides suitable habitat for a non-essential experimental population of Sonoran pronghorn.

### Rancho Seco HLZ/DZ Site

The Rancho Seco HLZ/DZ site (Attachment 2, Figure C-44) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 3,430 feet. The site is within Mohave Desertscrub, 500 feet from an area where water pools. The Rancho Seco HLZ/DZ site provides suitable habitat for a non-essential experimental population of Sonoran pronghorn and is within 500 feet of potentially suitable habitat for the federally endangered Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*), and the federally threatened Chiricahua leopard frog and northern Mexican gartersnake.

### Ruby Fuzzy Paladins Site

The Ruby Fuzzy Paladins site (Attachment 2, Figure C-44) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 3,952 feet. The site occurs within Semi-desert Grassland. The Ruby Fuzzy Paladins site provides potentially suitable habitat for the federally endangered Pima pineapple cactus and a non-essential experimental population of Sonoran pronghorn.

### Salt River High Site

The Salt River High site (Attachment 2, Figure C-24) is an HLZ water training area located in Gila County, AZ at an elevation of approximately 4,367 feet. The Salt River High site occurs along the southern edge of Highway 60 along the Salt River Canyon. The site occurs within a deep canyon in Interior Chaparral. The site falls within narrow-headed gartersnake proposed critical habitat. The Salt River High site provides potentially suitable habitat for the federally endangered razorback sucker and Mexican wolf, the federally threatened Chiricahua leopard frog and northern Mexican gartersnake, a non-essential experimental population of Colorado pikeminnow, and a proposed non-essential experimental population of gray wolf, and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Salt River Low Site

The Salt River Low site (Attachment 2, Figure C-24) is an HLZ training area located in Gila County, AZ at an elevation of approximately 3,364 feet. The Salt River Low site, which is a water training area, occurs along the Salt River. The bank along the Salt River Low site is relatively void of vegetation. This site is highly disturbed as many human recreational activities occur in this area, due to easy access and proximity to Highway 60 (USAF 2017b). The site falls within razorback sucker critical habitat and narrow-headed gartersnake proposed critical habitat. The Salt River Low site provides potentially suitable habitat for the federally endangered razorback sucker and Mexican wolf, the federally threatened Chiricahua leopard frog and northern Mexican gartersnake, a non-essential experimental population of Colorado pikeminnow, and a proposed non-essential experimental population of gray wolf, and is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

### Sierrita HLZ/DZ Site

The Sierrita HLZ/DZ site (Attachment 2, Figure C-44) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 3,390 feet. The site is within Mohave desertscrub. The Sierrita HLZ/DZ site provides potentially suitable habitat for the federally endangered Pima pineapple cactus and a non-essential experimental population of Sonoran pronghorn.

### Silvermine HLZ/DZ Site

The Silvermine HLZ/DZ site (Attachment 2, Figure C-41) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 2,450 feet. The site is within Arizona Upland Division of Sonoran Desertscrub. The Silvermine HLZ/DZ site provides potentially suitable habitat for the federally endangered Nichol's Turk's head cactus and a non-essential experimental population of Sonoran pronghorn.

### Tombstone 8 HLZ Site

The Tombstone 8 HLZ site (Attachment 2, Figure C-50) is an HLZ located in Hidalgo County, NM at an elevation of approximately 4,630 feet. The site is within Semi-desert Grassland. The Tombstone 8 HLZ site provides potentially suitable habitat for a non-essential experimental population of Mexican wolf.

### Waterman HLZ/DZ Site

The Waterman HLZ/DZ site (Attachment 2, Figure C-41) is an HLZ/DZ training area located in Pima County, AZ at an elevation of approximately 2,340 feet. The site is within Arizona Upland Division of Sonoran Desertscrub, 500 feet from an area where water pools during rain events. The Waterman HLZ/DZ site provides potentially suitable habitat for the federally endangered Nichol's Turk's head cactus and a non-essential experimental population of Sonoran pronghorn.

## 4.4 TRAINING SITES LOCATED ON PRIVATE PROPERTY

There are 19 proposed PR training sites on private property (Attachment 1). The proposed PR training sites occur in Coconino, Greenlee, Pima, Pinal, and Santa Cruz Counties in Arizona. Of the 19 proposed PR training sites on private property, three of the proposed PR training sites are within city limits or considered developed urban areas, including Grand Canyon Valle Airport, Ott Family YMCA of Tucson Pool, and Scottsdale Osborn. Since these proposed PR training sites do not contain native or naturalized vegetation, and naturalized habitats (e.g., grasslands, forests, and wetlands), they are not analyzed further for an impact on listed species.

A desktop analysis was conducted of all federally listed species to determine if they have the potential to occur within or near proposed PR training sites based on habitat at the site, elevation, and the known range and distribution of the species. Previous reconnaissance-level survey data and aerial imagery were used to assess habitat at the sites. Nine proposed PR training sites were eliminated from further analysis in this BE due to the lack of habitat for listed species (Bone Crusher, Cattle LTFW, Elk, Eloy North, Eloy South, FR 320/311, Gerbil, HLZ 6, and Squirrel) and the remaining seven proposed PR training sites are carried forward in the analysis (Table 4-4). Table 4-4 also identifies designated critical habitats for federally listed species surrounding or near these seven proposed training sites on private property.

| Table 4-4. Training Sites Located on Private Property | | | | | |
|---|---|---|---|---|---|
| **Site** | **Location** | **Training Activity** | **Elevation (Feet)** | **Vegetation Community** | **Critical Habitat** |
| Cattle | Coconino County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G4, G6 | 6,558 | Plains and Great Basin Grassland | None |
| HLZ 5 | Coconino County, AZ | F1, F3, F4, F5, F7, G1, G2, G3, G4, G6 | 6,558 | Plains and Great Basin Grassland | None |
| Little Outfit | Santa Cruz County, AZ | F1, F3, F4, F5, F7, F9, G1, G2, G3, G6 | 5,105 | Plains and Great Basin Grassland | Jaguar Critical Habitat and Northern Mexican Gartersnake Proposed Critical Habitat |
| Panda | Coconino County, AZ | F1, F3, F5, F7, G1, G2, G3, G4, G6 | 6,015 | Plains and Great Basin Grassland | None |
| Sinkhole | Coconino County, AZ | F1, F3, F5, F7, G1, G2, G3, G4, G6 | 5,027 | Great Basin Desertscrub | Fickeisen Plains Cactus Critical Habitat |
| Sprucedale Guest Ranch | Greenlee County, AZ | G1 | 7,547 | Petran Montane Conifer Forest | Mexican Spotted Owl Critical Habitat |
| Three Points Public Shooting Range | Pima County, AZ | G8 | 2,563 | Arizona Upland Division of Sonoran Desertscrub | None |

Acronyms and Abbreviations Used:
AZ – Arizona
HLZ – Helicopter Landing Zone

Legend:
Training Activities:
Flight Ops
F1 Established MOAs
F3 LATN Areas
F4 Restricted Areas
F5 Other Airspace (e.g., MTRs)
F7 HLZs/DZs
F9 Parachute Operations
F10 Close Air Support

Ground Ops
G1 Camping, Bivouacking, and Assembly Area Use
G2 Cross-Country Dismounted (Non-Vehicle) Movements
G3 Mounted (Vehicle) Movement/Blackout Driving
G4 Survival Training/Natural Resource Consumption
G6 Technical Rope Work
G7 Pyrotechnic Use
G8 Shooting / Firing Range

### 4.4.1 Vegetation Communities at Training Sites

Six vegetation communities occur in the region at the proposed PR training sites (Table 4-4). The vegetation associated with Arizona Upland Division of Sonoran Desertscrub, Petran Montane Conifer Forest, and Plains and Great Basin Grassland is described previously in Section 4.1 of this BE; also, the vegetation associated with Great Basin Conifer Woodland, Great Basin Desertscrub, and Madrean Evergreen Woodland is described previously in Section 4.2 of this BE.

### 4.4.2 Federally Listed Species Potentially Occurring at Training Sites

#### Cattle Site

The Cattle site (Attachment 2, Figure C-11) is an HLZ/DZ training area located in Coconino County, AZ at an elevation of approximately 6,558 feet. The site is south of the HLZ 5 site, east of East McGee Road, within Plains and Great Basin Grassland. The Cattle site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

#### HLZ 5 Site

The HLZ 5 site (Attachment 2, Figure C-11) is an HLZ training area located in Coconino County, AZ at an elevation of approximately 6,558 feet. The site is north of the Cattle site and east of East McGee Road, within Plains and Great Basin Grassland. The HLZ 5 site is within 500 feet of potentially suitable nesting habitat for the federally threatened Mexican spotted owl.

#### Little Outfit Site

The Little Outfit site (Attachment 2, Figure C-47) is an HLZ/DZ training area located in Santa Cruz County, AZ at an elevation of approximately 5,105 feet. The site is within Plains and Great Basin Grassland surrounded by Interior Chaparral in the San Rafael Valley west of Little Outfit Ranch Road. The HLZ site is located on pasture land on private property. The vegetation observed at the HLZ site includes spidergrass, little bluestem, blue grama, vine mesquite, sideoats grama, alkali sacaton, and a small annual Astragalus species. There is about 80 percent grass cover and 20 percent bare ground. There is a stock pond 328 feet southeast of the site with permanent standing water (USAF 2017b). The site falls within jaguar critical habitat and northern Mexican gartersnake proposed critical habitat. The Little Outfit site is within 500 feet of potentially suitable habitat for the federally endangered Gila chub, Gila topminnow, Sonoran tiger salamander, and the federally threatened Chiricahua leopard frog and northern Mexican gartersnake.

#### Panda Site

The Panda site (Attachment 2, Figure C-7) is an HLZ training area located in Coconino County, AZ at an elevation of approximately 6,015 feet. The site is next to the Babbitt Ranch 1 site within Plains and Great Basin Grassland. The Panda site provides potentially suitable habitat for the federally endangered Fickeisen plains cactus.

#### Sinkhole Site

The Sinkhole site (Attachment 2, Figure C-7) is an HLZ training area located in Coconino County, AZ at an elevation of approximately 5,027 feet. The Sinkhole site occurs on the western outskirts of the Gray Mountain town in open Great Basin Desertscrub vegetation. The site is west of Highway 89. The site falls within Fickeisen plains cactus critical habitat. The Sinkhole site provides potentially suitable habitat for the federally endangered Fickeisen plains cactus.

#### Sprucedale Guest Ranch Site

The Sprucedale Guest Ranch site (Attachment 2, Figure C-26) is an area used for billeting and as an operations center during training located in Apache County, AZ at an elevation of approximately 7,547 feet. The Sprucedale Guest Ranch occurs in a montane meadow that has been previously developed for residential and ranching purposes and is surrounded by Petran Montane Conifer Forest. There is a tributary to the Black River that runs approximately 280 feet

south of the proposed site (USAF 2017b). The site falls within Mexican spotted owl critical habitat. The Sprucedale Guest Ranch site provides potentially suitable habitat for the federally endangered Mexican wolf, a proposed non-essential experimental population of gray wolf, and is within 500 feet of potentially suitable habitat for the federally threatened Gila trout, Chiricahua leopard frog, and northern Mexican gartersnake.

### Three Points Public Shooting Range Site

The Three Points Public Shooting Range site (Attachment 2, Figure C-44) is an established small arms firing range located in Pima County, AZ at an elevation of approximately 2,563 feet. The site is located north of Tucson Rifle Club Road and is surrounded by Arizona Upland Division of Sonoran Desertscrub. The Three Points Public Shooting Range site is within 500 feet of potentially suitable habitat for a non-essential experimental population of Sonoran pronghorn.

# 5.0 METHODOLOGY AND SPECIES COVERED

Species federally listed as endangered, threatened, candidate, or proposed, and nonessential experimental populations that may occur within the training sites were compiled by generating an Information for Planning and Conservation Trust Resources Report obtained online through the USFWS website (USFWS 2018).

A desktop analysis was conducted of all federally listed species to determine if they have the potential to occur within or near proposed PR training sites based on habitat at the site, elevation, and the species' known range and distribution. Aerial imagery was used to assess habitat at the proposed sites. Species were excluded from analysis if the habitat, range, or occurrences of individuals did not occur near or at the proposed PR training sites. Those species for which potential habitat occurs on the proposed PR training sites are listed in Table 5-1.

Under the ESA, critical habitat is designated if USFWS determines that the habitat is essential to the conservation of a federally threatened or endangered species. In consultation for those species with critical habitat, Federal agencies must ensure that their activities do not adversely modify critical habitat to the point that it would no longer aid in the species' recovery. For the purposes of this BE, it was conservatively assumed that all potential direct and indirect impacts at each training area would be confined to a 0.5-mile radius. This impact area is much larger than the size of the sites and the direct effects associated with the Proposed Action training activities that would occur within approximately 0.3 to 2.7 acres at each proposed site. Therefore, all habitat and critical habitat more than 0.5 mile from the proposed sites were eliminated from consideration.

Species listed by USFWS as endangered or threatened, and designated critical habitats were assigned to one of three categories of possible effect, following USFWS recommendations. The effects determinations recommended by USFWS are the following:

*May affect, is likely to adversely affect* – This effect determination means that the action would have an adverse effect on the species or its habitat. Any action that would result in take of an endangered or threatened species is considered an adverse effect. A combination of beneficial and adverse effects is still considered likely to adversely affect, even if the net effect is neutral or positive. Adverse effects are not considered discountable because they are expected to occur. In addition, the probability of occurrence must be extremely small to qualify as discountable effects. Likewise, an effect that can be detected in any way or that can be meaningfully articulated in a discussion of the results of the analysis is not insignificant; it is an adverse effect.

*May affect, is not likely to adversely affect* – Under this effect determination, all effects to the species and its critical habitat are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without adverse effects to the species (for example, effects cannot be "balancing," so that the benefits of the action would outweigh adverse effects). Insignificant effects relate to the size of the impact and should not reach the scale where take occurs. Discountable effects are considered extremely unlikely to occur. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects, or (2) expect discountable effects to occur. Determinations of "not likely to adversely affect, due to beneficial, insignificant, or discountable effects" require written concurrence from USFWS.

*No effect* – a determination of no effect means there are absolutely no effects to the species and its critical habitat, either positive or negative. It does not include small effects or effects that are unlikely to occur.

**Table 5-1. Special-Status Species Potentially Occurring on Proposed PR Training Sites**

| Common Name (*Scientific Name*) | Status | Proposed Training Sites Occurring within Critical Habitat | Proposed Training Sites with Potential Species Occurrence |
|---|---|---|---|
| **Fish** | | | |
| Bonytail Chub (*Gila elegans*) | E | None | Colorado River |
| Gila Chub (*Gila intermedia*) | E | None | *Sites within 500 feet of Potentially Suitable Habitat:* Little Outfit |
| Spikedace (*Meda fulgida*) | E | None | Roosevelt Lake |
| Gila Trout (*Oncorhynchus gilae*) | T | None | *Sites within 500 feet of Potentially Suitable Habitat:* Negrito North, Catron County Fairgrounds, and Sprucedale Guest Ranch |
| Gila Topminnow (*Poeciliopsis occidentalis*) | E | None | Roosevelt Lake, Lake Patagonia, and Lake Pleasant<br>*Sites within 500 feet of Potentially Suitable Habitat:* Little Outfit |
| Colorado Pikeminnow (*Ptychocheilus lucius*) | EXPN | None | Roosevelt Lake, Salt River High, and Salt River Low |
| Loach Minnow (*Tiaroga cobitis*) | E | None | *Sites within 500 feet of Potentially Suitable Habitat:* Catron County Fairgrounds |
| Razorback Sucker (*Xyrauchen texanus*) | E | Salt River Low<br>*Sites within 0.5 mile of Critical Habitat:* Lees Ferry | Roosevelt Lake, Salt River High, Salt River Low, and Colorado River |
| **Snails** | | | |
| Three Forks Springsnail (*Pyrgulopsis trivialis*) | E | None | Caldwell Meadows |
| **Amphibians** | | | |
| Sonoran Tiger Salamander (*Ambystoma tigrinum stebbinsi*) | E | None | *Sites within 500 feet of Potentially Suitable Habitat:* Little Outfit |
| Arroyo Toad (*Anaxyrus californicus*) | E | None | *Sites within 500 feet of Potentially Suitable Habitat:* Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| Chiricahua Leopard Frog (*Rana chiricahuensis*) | T | None | Salt River High, Salt River Low, Lake Patagonia, and Caldwell Meadows<br>*Sites within 500 feet of Potentially Suitable Habitat:* Devon, Portal Cabin and CCC Bunkhouse, Rancho Seco HLZ/DZ, Little Outfit, and Sprucedale Guest Ranch |
| **Reptiles** | | | |
| Sonoyta Mud Turtle (*Kinosternon sonoriense longifemorale*) | E | None | *Sites within 500 feet of Potentially Suitable Habitat:* Rancho Seco HLZ/DZ |

| Table 5-1. Special-Status Species Potentially Occurring on Proposed PR Training Sites | | | |
|---|---|---|---|
| **Common Name (*Scientific Name*)** | **Status** | **Proposed Training Sites Occurring within Critical Habitat** | **Proposed Training Sites with Potential Species Occurrence** |
| Northern Mexican Gartersnake (*Thamnophis eques megalops*) | T | Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Little Outfit | Spring Valley Cabin, Mormon Lake – USFS Helitack Base, Roosevelt Lake, Salt River High, Salt River Low, Lake Patagonia, Caldwell Meadows, Lake Pleasant, and Colorado River<br>*Sites within 500 feet of Potentially Suitable Habitat:* Metz Tank, Navajo West, Portal Cabin and CCC Bunkhouse, Rancho Seco HLZ/DZ, Little Outfit, and Sprucedale Guest Ranch |
| Narrow-headed Gartersnake (*Thamnophis rufipunctatus*) | T | Salt River High and Salt River Low<br>*Sites within 0.5 mile of Proposed Critical Habitat:* Glenwood Ranger Station | Salt River High and Salt River Low |
| **Birds** | | | |
| Yellow-billed Cuckoo (*Coccyzus americanus*) | T | Lake Patagonia<br>*Sites within 0.5 mile of Proposed Critical Habitat:* Roosevelt Lake and Glenwood Ranger Station | Roosevelt Lake, Portal Cabin and CCC Bunkhouse, Lake Patagonia, Verde River, and Colorado River<br>*Sites within 500 feet of Potentially Suitable Habitat:* Saguaro Lake Ranch |
| Southwestern Willow Flycatcher (*Empidonax traillii extimus*) | E | *Sites within 0.5 mile of Critical Habitat:* Roosevelt Lake and Glenwood Ranger Station | Roosevelt Lake, Verde River, and Colorado River |
| Northern Aplomado Falcon (*Falco femoralis septentrionalis*) | EXPN | None | Ranger, Rucker HLZ, and Portal Cabin and CCC Bunkhouse |
| Yuma Clapper Rail (*Rallus longirostris yumanensis*) | E | None | Roosevelt Lake, Verde River, and Colorado River<br>*Sites within 500 feet of Potentially Suitable Habitat:* Saguaro Lake Ranch |

| Table 5-1. Special-Status Species Potentially Occurring on Proposed PR Training Sites | | | |
|---|---|---|---|
| **Common Name (*Scientific Name*)** | **Status** | **Proposed Training Sites Occurring within Critical Habitat** | **Proposed Training Sites with Potential Species Occurrence** |
| Mexican Spotted Owl (*Strix occidentalis lucida*) | T | Mesa, Ranger, Redington Pass, Rucker HLZ, Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito North, Rainy Mesa, Caldwell Meadows, and Sprucedale Guest Ranch<br>*Sites within 0.5 mile of Critical Habitat:* Saddle Mountain West, Devon, Black Mesa – USFS Helitack Base, Mormon Lake – USFS Helitack Base, Negrito Helibase, and Negrito South | L Tank, Ranger, Rucker HLZ, Charouleau Gap, Comanche, Hannagan Meadow – USFS Helitack Base, Helibase Circular, Portal Cabin and CCC Bunkhouse, and Lake Patagonia<br>*Sites within 500 feet of Potentially Suitable Nesting Habitat:* Metz Tank, Navajo East, Neill Flat, Rogers Lake (Logger Camp), Rogers Napier, Rogers Wren, Mesa, Saddle Mountain West, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Spring Valley Cabin, Negrito Airstrip, Rainy Mesa, Devon, Black Mesa – USFS Helitack Base, Mormon Lake – USFS Helitack Base, Overgaard – USFS Helitack Base, Tribeland, Salt River High, Salt River Low, Brooke HLZ/DZ, Jenna HLZ/DZ, Fort Tuthill, Cattle, and HLZ 5 |
| Least Bell's Vireo (*Vireo bellii pusillus*) | E | None | *Sites within 500 feet of Potentially Suitable Habitat:* Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| **Mammals** | | | |
| Sonoran Pronghorn (*Antilocapra americana sonoriensis*) | E | None | NATO Hill (WPT 74), Range 3 – HLZ 1, Range 3 – HLZ 2, Range 3 – HLZ 3, Range 3 – HLZ 4, Range 3 – HLZ 5, Range 3 – HLZ 6, Range 3 – Tower Helipad, South Tactical Range, and Target 333 |
| Sonoran Pronghorn (*Antilocapra americana sonoriensis*) | EXPN | None | OP Charlie, Range 3 – HLZ 1, Range 3 – HLZ 2, Range 3 – HLZ 3, Range 3 – HLZ 4, Range 3 – HLZ 5, Range 3 – HLZ 6, Range 3 – Tower Helipad, Ruby Fuzzy Paladins, Blackhills HLZ/DZ, Lost Acre HLZ/DZ, Penitas HLZ/DZ, Pond HLZ/DZ, Prieto HLZ/DZ, Rancho Seco HLZ/DZ, Sierrita HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ<br>*Sites within 500 feet of Potentially Suitable Habitat:* Black Mountain Reservoir and Three Points Public Shooting Range |

| Table 5-1. Special-Status Species Potentially Occurring on Proposed PR Training Sites | | | |
|---|---|---|---|
| **Common Name (*Scientific Name*)** | **Status** | **Proposed Training Sites Occurring within Critical Habitat** | **Proposed Training Sites with Potential Species Occurrence** |
| Mexican Wolf (*Canis lupus baileyi*) | EXPN | None | Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito North, Rainy Mesa, Glenwood Ranger Station, Negrito Helibase, Negrito South, Overgaard – USFS Helitack Base, Reserve Ranger Station, Catron County Fairgrounds, Salt River High, Salt River Low, Caldwell Meadows, Gila County Sheriff Roosevelt Substation, Playas Training and Research Center, Tombstone 8 HLZ, and Sprucedale Guest Ranch |
| Stephens' Kangaroo Rat (*Dipodomys stephensi*) | E | None | Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| Mexican Long-nosed Bat (*Leptonycteris nivalis*) | E | None | Playas Training and Research Center |
| Jaguar (*Panthera onca*) | E | Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Little Outfit<br>*Sites within 0.5 mile of Critical Habitat:* Caliente HLZ/DZ | Ranger, Redington Pass, Rucker HLZ, Devon, and Portal Cabin and CCC Bunkhouse<br>*Sites within 500 feet of Potentially Suitable Habitat:* Black Mountain Reservoir |
| New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*) | E | Caldwell Meadows | None |
| **Plants** | | | |
| Thread-leaved Brodiaea (*Brodiaea filifolia*) | T | None | Camp Pendleton Off-Road Trail and Camp Pendleton PDL |
| Cochise Pincushion Cactus (*Coryphantha robbinsiorum*) | T | None | Highway 80 Paladins (TW 2 Paladins) |
| Pima Pineapple Cactus (*Coryphantha scheeri* var. *robustispina*) | E | None | Caliente HLZ/DZ, Ruby Fuzzy Paladins, Blackhills HLZ/DZ, Penitas HLZ/DZ, and Sierrita HLZ/DZ<br>*Sites within 500 feet of Potentially Suitable Habitat:* Black Mountain Reservoir |
| Nichol's Turk's Head Cactus (*Echinocactus horizonthalonius* var. *nicholii*) | E | None | Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ |
| Acuna Cactus (*Echinomastus erectocentrus* var. *acunensis*) | E | None | Target 333 |
| Fickeisen Plains Cactus (*Pediocactus peeblesianus fickeiseniae*) | E | Sinkhole | Sinkhole, Babbitt Ranch 1, and Panda |

| Table 5-1. Special-Status Species Potentially Occurring on Proposed PR Training Sites | | | |
|---|---|---|---|
| **Common Name (*Scientific Name*)** | **Status** | **Proposed Training Sites Occurring within Critical Habitat** | **Proposed Training Sites with Potential Species Occurrence** |
| Acronyms and Abbreviations Used:<br>DZ – Drop Zone<br>HLZ – Helicopter Landing Zone<br>PDL – Piedra de Lumbra<br>USFS – United States Forest Service<br><br>Legend:<br>E Endangered<br>T Threatened<br>EXPN Experimental Population, Non-Essential | | | |

# 6.0 ANALYSIS OF POTENTIAL EFFECTS

Effects determinations are discussed below for each species listed in Table 5-1.

## 6.1 BONYTAIL CHUB

### 6.1.1 Habitat Requirements and Current Status

The bonytail chub was listed as federally endangered on 23 April 1980 (45 Federal Register [FR] 27710) and the final rule for determination of critical habitat was published on 21 March 1994 (59 FR 13374), and the final designation became effective on 20 April 1994. A bonytail chub can grow to over 2 feet long. Like many other desert fishes, its coloring tends to be darker above and lighter below, serving as a camouflage. Breeding males have red fin bases. They have a streamlined body and a terminal mouth. Bonytail chubs have bodies that sometimes arch into a smooth, predorsal hump (in adults). While their skull is quite concave, their caudal peduncle is thin. The coloration of Bonytail chubs is usually dark dorsally and lighter ventrally; however, in very clear waters, they appear almost black all over. During breeding season, males and females have distinct coloration as well. Mature males have bright red-orange lateral bands between their paired fins; while females have a more subdued coloration than is described with the males (USFWS 2014).

The bonytail chub is found throughout the large turbid mainstream rivers of the Colorado River basin. This habitat alternated between swift water canyons characterized by torrential rapids and slow, meandering, sand bottomed stretches. Within the large turbid mainstream rivers, the bonytail chub's habitat preference appears to be eddies adjacent to fairly swift current (45 FR 27710).

Threats to the bonytail chub include streamflow regulation and habitat modification (including cold-water dam releases, habitat loss, and blockage of migration corridors); competition with and predation by nonnative fish species; hybridization; and pesticides and pollutants (USFWS 2002a).

Critical habitat was designated on 20 April 1994. As presented in 59 FR 13374-13400, the primary constituent elements (PCEs) of critical habitat for bonytail chub include the habitat components that provide the following:

- **Water** – This includes a quantity of water of sufficient quality (i.e., temperature, dissolved oxygen, lack of contaminants, nutrients, turbidity, etc.) that is delivered to a specific location in accordance with a hydrologic regime that is required for the particular life stage for each species.
- **Physical Habitat** - This includes areas of the Colorado River system that are inhabited or potentially habitable by fish for use in spawning, nursery, feeding, and rearing, or corridors between these areas. In addition to river channels, these areas also include bottom lands, side channels, secondary channels, oxbows, backwaters, and other areas in the 100-year flood plain, which when inundated provide spawning, nursery, feeding and rearing habitats, or access to these habitats.
- **Biological Environment** - Food supply, predation, and competition are important elements of the biological environment and are considered components of this constituent

element. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components of this environment, are out of balance due to introduced nonnative fish species in many areas.

Critical habitat areas were designated to provide for the conservation of the bonytail chub throughout the remaining portion of its geographic range in the US Several areas of critical habitat have been proposed in Arizona; however, none of these areas are located near proposed PR training sites.

### 6.1.2 Habitat Evaluation and Suitability

The bonytail chub has the potential to occur within the Colorado River site.

### 6.1.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the bonytail chub may occur as a result of the Proposed Action at the Colorado River site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Colorado River site, including HLZ/DZ/overwater hoist operations and amphibious operations.

Water operations occurring along the banks of the Colorado River may cause temporary increase in sediment runoff into the river, potentially impacting water quality. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by the bonytail chub. Amphibious operations could trample individuals. However, fish are highly mobile species that flush from disturbances in their immediate vicinity; thus, this adverse effect is not anticipated. Due to the brief nature of the training activities the Proposed Action may affect but is not likely to adversely affect this species.

No impacts on bonytail chub critical habitat are expected to occur as a result of the Proposed Action. The bonytail chub designated critical habitat does not occur near any of the proposed sites.

## 6.2 GILA CHUB

### 6.2.1 Habitat Requirements and Current Status

The Gila chub was listed as federally endangered with designated critical habitat on 02 November 2005 (70 FR 66664). The Gila chub is small finned, deep-bodied, chunky, and darkly colored. Adult males average approximately 6 inches in total length; females can exceed 8 inches. Their scales are coarse, thick, and broadly overlapped, and radiate out from the base (70 FR 66665).

Gila chub commonly inhabit pools in smaller streams, springs, and cienegas (a desert wetland), and can survive in small artificial impoundments, such as manmade ponds. This species is highly secretive, preferring quiet, deeper waters, especially pools, or remaining near cover including terrestrial vegetation, boulders, and fallen logs (70 FR 66665).

Threats to the Gila chub include predation by and competition with nonnative organisms, including fish in the family Centrarchidae (*Micropterus* spp., *Lepomis* spp.), other fish species, bullfrogs (*Rana catesbeiana*), and crayfish (*Orconectes virilis*); habitat degradation from surface

water diversions and ground water withdrawals; and habitat alteration, destruction, and fragmentation (70 FR 66664).

Critical habitat was designated on 02 November 2005. As presented in 70 FR 66664-66721, the PCEs of critical habitat for Gila chub include the habitat components that provide the following:

- Perennial pools, areas of higher velocity between pool areas, and areas of shallow water among plants or eddies all found in small segments of headwaters, springs, or cienegas of smaller tributaries.
- Water temperatures for spawning ranging from 62.6 to 75.2 degrees Fahrenheit and seasonally appropriate temperatures for all life states, from 50 to 86 degrees Fahrenheit.
- Water quality with reduced levels of contaminants or any other water quality characteristics, including excessive levels of sediments, adverse to Gila chub health, and adequate levels of pH (6.5 to 9.5), dissolved oxygen (3.0 to 10.0 mg/L), and conductivity (100 to 1,000 milliohms).
- Food base consisting of invertebrates, filamentous (threadlike) algae, aquatic plants, and insects.
- Sufficient cover consisting of downed logs in the water channel, submerged aquatic vegetation, submerged large tree root wads, undercut banks with sufficient overhanging vegetation, large rocks and boulders with overhangs, and a high degree of streambank stability and healthy, intact, riparian vegetation community.
- Habitat devoid of nonnative aquatic species detrimental to Gila chub or habitat in which detrimental nonnatives are kept at a level that allows Gila chub to continue to survive and reproduce.
- Streams that maintain a natural unregulated flow pattern including periodic natural flooding.

Critical habitat areas were designated to provide for the conservation of the Gila chub throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona; however, only one of these areas is located near proposed training sites, Turkey Creek, and a buffer zone adjacent to those reaches.

### 6.2.2 Habitat Evaluation and Suitability

The Gila chub has the potential to occur within 500 feet of the Little Outfit site in an unnamed creek east of the site. The Little Outfit site does not contain suitable habitat for the Gila chub.

### 6.2.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Gila chub may occur as a result of the Proposed Action at the Little Outfit site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Little Outfit site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

If parachute or ground operations occur near Turkey Creek or the unnamed creek at the Little Outfit site, a temporary increase in sediment runoff into the creeks may occur, potentially

impacting water quality. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by the Gila chub. However, with the exception of light foot-traffic, training would be restricted to already disturbed areas, and foot-traffic would not occur in the creek. The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on Gila chub critical habitat are expected to occur as a result of the Proposed Action.

## 6.3 SPIKEDACE

### 6.3.1 Habitat Requirements and Current Status

The spikedace was listed as federally endangered on 01 July 1986 (51 FR 23769). It is a small (less than 3 inches), slim fish, characterized by very silvery sides, and by spines in the dorsal and pelvic fins. Breeding males develop a brassy golden color (51 FR 23769).

The spikedace is found in moderate to large perennial streams, where it inhabits shallow riffles with gravel and rubble substrates and moderate to swift currents, and swift pools over sand or gravel substrates. Recurrent flooding is very important in the life history of *Meda* and helps to maintain its competitive edge over invading exotic fish species in its remaining habitat. The spikedace was once common throughout much of the Verde, Aqua Fria, Salt, San Pedro, San Francisco, and Gila (upstream from Phoenix) River systems, occupying suitable habitat in both the mainstreams and moderate gradient perennial tributaries, up to 5,900 to 6,200 feet in elevation (51 FR 23769).

Threats to the spikedace include habitat destruction, and competition and predation by exotic fish species (51 FR 23769).

Critical habitat was originally designated on 08 March 1994. A revised final rule for designation of critical habitat was published on 23 February 2012 (77 FR 10810-10932). As presented in 77 FR 10810-10932, the PCEs of critical habitat for spikedace include the habitat components that provide the following:

- Habitat to support all egg, larval, juvenile, and adult spikedace, which includes:
  - Perennial flows with a stream depth generally less than 1 m (3.3 ft), and with slow to swift flow velocities between 5 and 80 cm per second (1.9 and 31.5 inches per second).
  - Appropriate stream microhabitat types including glides, runs, riffles, the margins of pools and eddies, and backwater components over sand, gravel, and cobble substrates with low or moderate amounts of fine sediment and substrate embeddedness;
  - Appropriate stream habitat with a low gradient of less than approximately 1.0 percent, at elevations below 2,100 m (6,890 ft); and
  - Water temperatures in the general range of 8.0 to 28.0 degrees Centigrade (46.4 to 82.4 degrees Fahrenheit).
- An abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddisflies, stoneflies, and dragonflies.
- Streams with no or no more than low levels of pollutants.

- Perennial flows, or interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.
- No nonnative aquatic species, or levels of nonnative aquatic species that are sufficiently low as to allow persistence of spikedace.
- Streams with a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of transporting sediments.

Critical habitat areas were designated to provide for the conservation of the spikedace throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona. Occupied critical habitat is present within 0.5 mile of the Glenwood Range Station site.

### 6.3.2 Habitat Evaluation and Suitability

The spikedace has the potential to occur within the Roosevelt Lake site.

### 6.3.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the spikedace may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

If parachute or ground operations occur near the banks of the lake, a temporary increase in sediment runoff into the lake may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by the spikedace. However, with the exception of light foot-traffic, training would be restricted to already disturbed areas. Amphibious operations could trample individuals. However, fish are highly mobile species that flush from disturbances in their immediate vicinity; thus, this adverse effect is not anticipated. The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on spikedace critical habitat are expected to occur as a result of the Proposed Action. The spikedace designated critical habitat does not occur near any of the proposed sites.

## 6.4 GILA TROUT

### 6.4.1 Habitat Requirements and Current Status

The Gila trout was listed as federally endangered on 11 March 1967 (32 FR 4001) and was reclassified to threatened on 11 May 2005 (70 FR 24750-24764). The Gila trout is readily identified by its iridescent gold sides that blend to a darker shade of copper on the opercles. Spots on the body are small and profuse, generally occurring above the lateral line and extending onto the head, dorsal fin, and caudal fin. Spots are irregularly shaped on the sides and increase in size on the back. On the dorsal surface of the body, spots may be as large as the pupil of the

fish eye and are rounded. A few scattered spots are sometimes present on the anal fin, and the adipose fin is typically large and well-spotted. Dorsal, pelvic, and anal fins have a white to yellowish tip that may extend along the leading edge of the pelvic fins. A faint, salmon-pink band is present on adults, particularly during spawning season when the normally white belly may be streaked yellow or reddish orange. A yellow cutthroat mark is present on most mature specimens. Parr marks are commonly retained by adults, although they may be faint or absent (70 FR 24751).

The Gila trout habitat includes clear, cold mountain streams in arid regions; streams are largely intermittent, clear runs in mountain streams that are typically narrow and shallow. Trout may be confined to pools during prolonged drought. Usually, these fishes congregate in deeper pools and in shallow water only where there is protective debris or plant beds (NatureServe 2018).

Threats to the Gila trout include competition by nonnative fish species, drought, wildfires, and floods (70 FR 24759).

### 6.4.2 Habitat Evaluation and Suitability

The Negrito North, Catron County Fairgrounds, and Sprucedale Guest Ranch sites are within 500 feet of potentially suitable habitat for the Gila trout. The Gwynn Cienega runs southwest of the Negrito North site with standing water west of the site. Although the Gwynn Tank was stocked with Gila trout in the past, the species is not established and all fish in Gwynn Tank are considered a put and take fishery A small intermittent creek is located south of the Catron County Fairgrounds site; this ephemeral drainage drains to the San Francisco River, where Gila trout are not present. Beaver Creek is located south of the Sprucedale Guest Ranch site.

### 6.4.3 Determination of Effects

No adverse impacts on the Gila trout as a result of the Proposed Action are anticipated at the Negrito North site as the nearest population to this site is located in Willow Creek, which is more than 5 miles from the training site.

No adverse impacts on the Gila trout as a result of the Proposed Action are anticipated at the Catron County Fairgrounds site as the nearest population is more than 20 miles away.

Short-term, negligible, direct adverse impacts on the Gila trout may occur as a result of the Proposed Action at the Sprucedale Guest Ranch site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Sprucedale Guest Ranch site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

If parachute or ground operations occur near the banks of Beaver Creek a temporary increase in sediment runoff may occur, potentially impacting water quality in the immediate area, when water is present. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by the Gila trout. However, with the exception of light foot-traffic, training would be restricted to already disturbed areas. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.5 GILA TOPMINNOW

### 6.5.1 Habitat Requirements and Current Status

The Gila topminnow was listed as federally endangered on 11 March 1967 (32 FR 4001). The Gila topminnow is a small (2.5–5 centimeters), silvery, live-bearing, guppy-like fish without dark spots on the fins. Males in breeding color are black with yellow fins (USFWS 2019f).

The Gila topminnow prefers shallow, warm, fairly quiet waters in ponds, cienegas, tanks, pools, springs, small streams, and the margins of larger streams. Dense mats of algae and debris along the margins of the habitats are an important component for cover and foraging. Substrates of organic muds and detritus also provide foraging areas (USFWS 2019f).

Threats to the Gila topminnow are from continued habitat loss due to water development, habitat degradation due to erosion from roads and damaged watersheds, and introduction of nonnative aquatic species (fish, bullfrogs, and crayfish, but especially western mosquitofish [*Gambusia affinis*]) that prey on and compete with the Gila topminnow into the remaining habitats (USFWS 2019f).

### 6.5.2 Habitat Evaluation and Suitability

The Roosevelt Lake, Lake Patagonia, and Lake Pleasant sites provide potentially suitable habitat for the Gila topminnow and the Little Outfit site is within 500 feet of potentially suitable habitat for the Gila topminnow. An unnamed creek is located east of the Little Outfit site. All three of the lake sites and the unnamed creek provide potentially suitable habitat for the Gila topminnow. The Little Outfit site does not contain suitable habitat for the Gila topminnow.

### 6.5.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Gila topminnow may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Gila topminnow may occur as a result of the Proposed Action at the Lake Patagonia site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Lake Patagonia site including HLZs/DZs, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Gila topminnow may occur as a result of the Proposed Action at the Lake Pleasant site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Lake Pleasant site including amphibious operations.

Short-term, negligible, direct adverse impacts on the Gila topminnow may occur as a result of the Proposed Action at the Little Outfit site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Little Outfit site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

If parachute or ground/water operations occur near the banks of Roosevelt Lake, Lake Patagonia, Lake Pleasant, or the unnamed creek at the Little Outfit site; a temporary increase in sediment runoff may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by the Gila topminnow. However, with the exception of light foot-traffic, training would be restricted to already disturbed areas and open water. Amphibious operations could trample individuals. However, fish are highly mobile species that flush from disturbances in their immediate vicinity; thus, this adverse effect is not anticipated. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.6 COLORADO PIKEMINNOW

### 6.6.1 Habitat Requirements and Current Status

The Colorado pikeminnow was listed as federally endangered on 11 March 1967 (32 FR 4001). It is a small (less than 3 inches), slim fish, characterized by very silvery sides, and by spines in the dorsal and pelvic fins. Breeding males develop a brassy golden color (51 FR 23769).

The Colorado pikeminnow is a long-distance migrator; moving hundreds of kilometers to and from spawning areas. Adults require pools, deep runs, and eddy habitats maintained by high spring flows. These high spring flows maintain channel and habitat diversity, flush sediments from spawning areas, rejuvenate food production, form gravel and cobble deposits used for spawning, and rejuvenate backwater nursery habitats. Spawning occurs after spring runoff at water temperatures typically between 18 and 23 degrees Centigrade. After hatching and emerging from spawning substrate, larvae drift downstream to nursery backwaters that are restructured by high spring flows and maintained by relatively stable base flows (USFWS 2002b).

Threats to the Colorado pikeminnow include streamflow regulation, habitat modification, competition with and predation by nonnative fish species, and pesticides and pollutants (USFWS 2002b).

Critical habitat was designated on 20 April 1994. As presented in 59 FR 13374–13400, the PCEs of critical habitat for Colorado pikeminnow include the habitat components that provide the following:

- **Water** – This includes a quantity of water of sufficient quality (i.e., temperature, dissolved oxygen, lack of contaminants, nutrients, turbidity, etc.) that is delivered to a specific location in accordance with a hydrologic regime that is required for the particular life stage for each species.
- **Physical Habitat** - This includes areas of the Colorado River system that are inhabited or potentially habitable by fish for use in spawning, nursery, feeding, and rearing, or corridors between these areas. In addition to river channels, these areas also include bottom lands, side channels, secondary channels, oxbows, backwaters, and other areas in the 100-year flood plain, which when inundated provide spawning, nursery, feeding and rearing habitats, or access to these habitats.
- **Biological Environment** - Food supply, predation, and competition are important elements of the biological environment and are considered components of this constituent

element. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components of this environment, are out of balance due to introduced nonnative fish species in many areas.

Critical habitat areas were designated to provide for the conservation of the Colorado pikeminnow throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona; however, none of these areas are located near proposed training sites.

### 6.6.2 Habitat Evaluation and Suitability

The Colorado pikeminnow has the potential to occur within the Roosevelt Lake, Salt River High, and Salt River Low sites.

### 6.6.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Colorado pikeminnow may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Colorado pikeminnow may occur as a result of the Proposed Action at the Salt River High site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River High site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Colorado pikeminnow may occur as a result of the Proposed Action at the Salt River Low site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River Low site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

If parachute or ground/water operations occur near the banks of Roosevelt Lake or the Salt River, a temporary increase in sediment runoff may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by the Colorado pikeminnow. However, with the exception of light foot-traffic, training would be restricted to already disturbed areas and open water. Amphibious operations could trample individuals. However, fish are highly mobile species that flush from disturbances in their immediate vicinity; thus, this adverse effect is not anticipated. The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on Colorado pikeminnow critical habitat are expected to occur as a result of the Proposed Action. The Colorado pikeminnow designated critical habitat does not occur near any of the proposed sites.

## 6.7 LOACH MINNOW

### 6.7.1 Habitat Requirements and Current Status

The loach minnow was listed as federally threatened on 28 October 1986 (51 FR 39468) and reclassified as endangered on 23 February 2012 (77 FR 10810). The loach minnow is a small member of the minnow family with an elongated body that is flattened ventrally. There are eight rays in the dorsal fin and seven in the anal fin. The lateral line has approximately 65 scales. Coloration tends to be olivaceous background, with a lot of blotches in darker pigments. There are whitish spots at the origin and insertion of the dorsal fin and dorsal and ventral portions of the caudal fin base. A black, basicaudal spot is usually present. Breeding males have bright red-orange coloration at the bases of the paired fins and on the adjacent body, on the base of the caudal lobe, about the mouth, near the upper portion of the gill opening, and often on the abdomen. Females in the breeding season become yellowish on the fins and lower body. (USFWS 2019i).

The loach minnow is found in turbulent, rocky riffles of mainstream rivers and tributaries at or less than 7,200 feet in elevation. Habitat that is occupied is relatively shallow, has a moderate to swift current, with gravel to cobble-dominated substrates. The depth, velocity, and substrate of occupied habitats can, and are expected to, vary seasonally and geographically (USFWS 2019i).

Threats to the loach minnow are predominantly water use based, and the alterations to stream habitat. These include impoundments, dewatering, nonnative species, and livestock grazing (USFWS 2019i).

Critical habitat was designated on 23 February 2012. As presented in 77 FR 10810-10932, the PCEs of critical habitat for loach minnow include the habitat components that provide the following:

- Habitat to support all egg, larval, juvenile, and adult loach minnow, which includes:
    - Perennial flows with a stream depth of generally less than 3.3 feet, and with slow to swift flow velocities between 0.0 and 31.5 inches per second;
    - Appropriate microhabitat types including pools, runs, riffles, and rapids over sand, gravel, cobble, and rubble substrates with low or moderate amounts of fine sediment and substrate embeddedness;
    - Appropriate stream habitats with a low stream gradient of less than 2.5 percent and are at elevations below 8,202 feet; and
    - Water temperatures in the general range of 46.4 to 77 degrees Fahrenheit.
- An abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddisflies, stoneflies, and dragonflies (*Odonata*).
- Streams with no or no more than low levels of pollutants.
- Perennial flows, or interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.

- No nonnative aquatic species, or levels of nonnative aquatic species, that are sufficiently low to allow persistence of loach minnow.
- Streams with a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of transporting sediments.

Critical habitat areas were designated to provide for the conservation of the loach minnow throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been designated in Arizona and New Mexico; however, none of these areas are located near proposed training sites.

### 6.7.2 Habitat Evaluation and Suitability

The loach minnow has the potential to occur within 500 feet of the Catron County Fairgrounds site in the intermittent unnamed creek located south of the site. However, the San Francisco River, where the species occurs, is approximately 0.5 mile downstream from the training site.

### 6.7.3 Determination of Effects

No direct adverse impacts on the loach minnow are anticipated as a result of the Proposed Action at the Catron County Fairgrounds site as the site is approximately 0.5 mile from the San Francisco River, where the species occurs.

The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Catron County Fairgrounds site including HLZ/DZ, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, and technical rope work.

Because the stream bank of the ephemeral drainage has been previously disturbed and modified, and light-foot traffic is the only ground disturbance activity that would take place near the drainage, no adverse effects are anticipated on loach minnow critical habitat, which is approximately 0.5 mile downstream from the training site.

## 6.8 RAZORBACK SUCKER

### 6.8.1 Habitat Requirements and Current Status

The razorback sucker was listed as federally endangered on 23 October 1991 (56 FR 54957), with critical habitat designated on 21 March 1994 (59 FR 13374). The razorback sucker is readily identifiable by the abrupt sharp-edged dorsal keel behind its head and a large fleshy subterminal mouth that is typical of most suckers. Adult fish are relatively robust, often exceeding 6 pounds in weight and 2 feet in length (56 FR 54958).

Razorback sucker habitats required by adults in rivers include deep runs, eddies, backwaters, and flooded off-channel environments in spring; runs and pools often in shallow water associated with submerged sandbars in summer; and low-velocity runs, pools, and eddies in winter. Spawning in rivers occurs over bars of cobble, gravel, and sand substrates during spring runoff at widely ranging flows and water temperatures (typically greater than 14 degrees Centigrade). Spawning also occurs in reservoirs over rocky shoals and shorelines. Young require nursery environments with quiet, warm, shallow water such as tributary mouths, backwaters, or inundated floodplain habitats in rivers, and coves or shorelines in reservoirs (USFWS 2002c).

Threats to the razorback sucker include streamflow regulation, habitat modification, competition with and predation by nonnative fish species, and pesticides and pollutants (USFWS 2002c).

Critical habitat was designated for the razorback sucker on 21 March 1994 (59 FR 13374). The PCEs for critical habitat include:

- **Water** – This includes a quantity of water of sufficient quality (i.e., temperature, dissolved oxygen, lack of contaminants, nutrients, turbidity, etc.) that is delivered to a specific location in accordance with a hydrologic regime that is required for the particular life stage for each species.
- **Physical Habitat** - This includes areas of the Colorado River system that are inhabited or potentially habitable by fish for use in spawning, nursery, feeding, and rearing, or corridors between these areas. In addition to river channels, these areas also include bottom lands, side channels, secondary channels, oxbows, backwaters, and other areas in the 100-year flood plain, which when inundated provide spawning, nursery, feeding and rearing habitats, or access to these habitats.
- **Biological Environment** - Food supply, predation, and competition are important elements of the biological environment and are considered components of this constituent element. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components of this environment, are out of balance due to introduced nonnative fish species in many areas
- **Additional Selection Criteria -** Additional selection criteria were developed to assist the Service in making a determination of areas to propose as critical habitat. Adult razorback suckers have displayed a degree of versatility in their ability to survive and spawn in different habitats. However, razorback sucker populations continue to decline and are considered below the survival level. Thus, as versatile as the adult life stage of razorback sucker appears to be in selecting spawning habitat, there has been little or no recruitment of young to the adult population. Therefore, special consideration was given to habitats required for reproduction and recruitment.
    1) Presence of known or suspected wild spawning populations, although recruitment may be limited or nonexistent.
    2) Areas where juvenile razorback suckers have been collected or which could provide suitable nursery habitat (backwaters, flooded bottom lands, or coves)
    3) Areas presently occupied or that were historically occupied that are considered necessary for recovery and that have the potential for reestablishment of razorback suckers.
    4) Areas and water required to maintain rangewide fish distribution and diversity under a variety of physical, chemical, and biological conditions.
    5) Areas that need special management or protection to insure razorback survival and recovery. These areas once met the habitat needs of the razorback sucker and may be recoverable with additional protection and management.

Critical habitat areas were designated to provide for the conservation of the razorback sucker throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona, California, and New Mexico; however, only two of these areas are located near proposed training sites. The Salt River Low site is located within razorback sucker critical habitat along the Salt River and contains potentially suitable habitat within the site. The Lees Ferry proposed site is within 0.5 mile of razorback sucker critical habitat along the Colorado River; however, no suitable habitat is present within the site.

### 6.8.2 Habitat Evaluation and Suitability

The razorback sucker has the potential to occur at the Salt River Low, Roosevelt Lake, Salt River High, and Colorado River sites.

### 6.8.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the razorback sucker may occur as a result of the Proposed Action at the Salt River Low site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River Low site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the razorback sucker may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the razorback sucker may occur as a result of the Proposed Action at the Salt River High site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River High site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the razorback sucker may occur as a result of the Proposed Action at the Colorado River site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Colorado River site including HLZ/DZ/overwater hoist operations and amphibious operations

If parachute or ground/water operations occur near the banks of the Salt River, Roosevelt Lake, or the Colorado River; a temporary increase in sediment runoff into the water may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in aquatic vegetation used for cover and foraging by the razorback sucker. However, with the exception of light foot-traffic, training would be restricted to already disturbed areas and open water. Amphibious operations could trample individuals. However, fish are highly mobile species that flush from disturbances in their immediate vicinity; thus, this adverse effect is not anticipated. The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on razorback sucker critical habitat are expected to occur as a result of the Proposed Action. The razorback sucker designated critical habitat at the Salt River Low site would not be impacted due to the low impact and short duration of the training activities proposed for the site.

## 6.9 THREE FORKS SPRINGSNAIL

### 6.9.1 Habitat Requirements and Current Status

The Three Forks springsnail was listed as federally endangered with critical habitat on 17 May 2012 (77 FR 23060). The Three Forks springsnail is a variably sized species, with a shell height of 0.06 to 0.19 inches. The Three Forks springsnail is strictly aquatic, and respiration occurs through an internal gill (USFWS 2019t).

The presence of Three Forks springsnail is associated with gravel and pebble substrates, shallow water up to 2.4 inches deep, high conductivity, alkaline waters of pH 8, and the presence of pond snails (*Physa gyrina*) (USFWS 2019t).

Predation by nonnative crayfish is currently threatening the Three Forks springsnail across its entire range. In addition to the current threats, the Three Forks springsnail is also at a high risk of extinction due to threats that could affect the species in the foreseeable future, such as the use of fire retardant chemicals during future wildfires, the potential spread and competition with New Zealand mudsnails (*Potamopyrgus antipodarum*), and the potential for climate change and drought to dry its springhead habitat (USFWS 2019t).

Critical habitat was designated for the Three Forks springsnail on 17 May 17 (77 FR 23060-23092). The PCEs for critical habitat include:

- Adequately clean spring water (free from contamination) emerging from the ground and flowing on the surface.
- Periphyton (attached algae), bacteria, and decaying organic material for food.
- Substrates that include cobble, gravel, pebble, sand, silt, and aquatic vegetation, for egg laying, maturing, feeding, and escape from predators.
- Either an absence of nonnative predators (crayfish) and competitors (snails) or their presence at low population levels.

Critical habitat areas were designated to provide for the conservation of the Three Forks springsnail throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona; however, none of these areas are located near proposed training sites.

### 6.9.2 Habitat Evaluation and Suitability

The Three Forks springsnail has the potential to occur at the Caldwell Meadows site within the Black River.

### 6.9.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Three Forks springsnail may occur as a result of the Proposed Action at the Caldwell Meadows site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Caldwell Meadows site including HLZ/DZ,

parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, and technical rope work.

If parachute or ground operations occur near the banks of the Black River, a temporary increase in sediment runoff into the river may occur, potentially impacting water quality in the immediate area. A decrease in water quality can potentially impact the Three Forks springsnail as clean water is a PCE for this species. Training activities will avoid the banks of the Black River at this site. The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on Three Forks springsnail critical habitat are expected to occur as a result of the Proposed Action. The Three Forks springsnail designated critical habitat does not occur near any of the proposed sites.

## 6.10 SONORAN TIGER SALAMANDER

### 6.10.1 Habitat Requirements and Current Status

The Sonoran tiger salamander was listed as federally endangered without critical habitat on 06 January 1997 (62 FR 665). Sonoran tiger salamanders are large and stocky, 3.0–6.5 inches, with small eyes, broad rounded snout, no parotid glands, and tubercles on the underside of front and hind feet. The dorsum has yellow to dark olive spots and blotches, often with irregular edges between front and hind limbs. Aquatic larvae are uniform dark-colored with plume-like gills and developed tail fins (USFWS 2019q).

The most commonly available habitats for the Sonoran tiger salamander are cattle tanks that were developed over the last century and replaced the natural pools, cienegas, and springs in the San Rafael Valley; rodent burrows; rotted logs; and other moist cover sites that are near water sources. Aquatic habitats are needed from January through June for breeding. Permanent water sites are suitable and will maintain populations of branchiate adults. Terrestrial adults are found in the grassland/oak-juniper woodlands and make extensive use of mammal burrows or loose soils to shelter from extreme temperatures (USFWS 2019q).

The Sonoran tiger salamander faces a number of threats, including loss of the remaining aquatic habitats. Cattle tanks may dry during drought, wash out during floods, or be abandoned and not maintained. Watershed conditions that result in erosion (low vegetation density) can cause the berms forming the tanks to erode out, or, if sediments are high in the flood water, fill in the tank and require maintenance. Sonoran tiger salamanders are also at risk from fragmentation between aquatic habitats by roads, buildings, or other developments. Transmission of a viral disease specific to Sonoran tiger salamanders from one pond to another by livestock, vehicles carrying mud or water, or by people is a risk to the local population (USFWS 2019q).

### 6.10.2 Habitat Evaluation and Suitability

Suitable habitat for the Sonoran tiger salamander is within 500 feet of the Little Outfit site within the ephemeral stream east of the site.

### 6.10.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Sonoran tiger salamander may occur as a result of the Proposed Action at the Little Outfit site. The Proposed Action would consist of a

training area of 0.3 to 2.7 acres at the proposed Little Outfit site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Training could disturb daily activities and movements of salamanders. Salamanders within the path of equipment and vehicles could be crushed, and pedestrian traffic could trample individuals. If parachute or ground operations occur near water, a temporary increase in sediment runoff may occur, potentially impacting water quality. A decrease in water quality can lead to a decrease in riparian habitat quality for the Sonoran tiger salamander over time. To avoid these impacts, foot-traffic and training activities would avoid riparian areas. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.11 ARROYO TOAD

### 6.11.1 Habitat Requirements and Current Status

The arroyo toad was listed as federally endangered on 16 December 1994 (59 FR 64859). Critical habitat for the arroyo toad was designated on 07 February 2001 (66 FR 9414-9474). The arroyo toad is a relatively small (2–3 inches snout-vent length) toad. Its coloration ranges from olive green or gray to light brown. It can be distinguished from other toads by non-paired, symmetrical dorsal blotches, bicolored parotid glands that are dark posteriorly and light anteriorly as well as a light spot on the sacral humps. A prominent white "v-shaped" stripe crosses the top of the head between the eyes. It lacks a middorsal stripe. The belly is buff-white and often lacks spots. Locomotion is generally in the form of hopping as opposed to walking or taking large jumps (USFWS 2019b).

The presence of arroyo toad is associated with washes, streams, arroyos, and adjacent uplands (desert, shrubland). It is found on sandy banks in riparian woodlands (willow, cottonwood, sycamore, and/or coast live oak) in California along rivers that have shallow gravelly pools adjacent to sandy terraces. Adults obtain shelter by burrowing into sandy soil (NatureServe 2018).

Threats to the arroyo toad include sand and gravel mining, improper livestock management practices, suction dredge mining, the invasion of nonnative plant species, human recreational activities, and nonnative predators, combined with the losses of habitat (66 FR 9442-9443).

Critical habitat was designated for the arroyo toad on 07 February 2001 (66 FR 9414-9474). The PCEs for critical habitat include:

- Rivers or streams with a hydrologic regime that supplies sufficient flowing water of suitable quality and sufficient quantity and at the appropriate times to provide space, food, and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads.
- Low-gradient stream segments (typically less than 4 percent) with sandy or fine gravel substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles.
- A natural flooding regime or one sufficiently corresponding to a natural regime that will periodically scour riparian vegetation, rework stream channels and terraces, and

redistribute sands and sediments, such that adequate numbers and sizes of breeding pools and sufficient terrace habitats with appropriate vegetation are maintained.

- Upland habitats (particularly alluvial streamside terraces and adjacent valley bottomlands that include areas of loose soil and dependable subsurface moisture where toads can burrow underground and avoid desiccation) of sufficient width and quality to provide foraging and living areas for subadult and adult arroyo toads.
- Few or no nonnative species that prey upon or compete with arroyo toads, or degrade their habitat.
- Stream channels and upland habitats where manmade barriers do not completely or substantially impede migration to overwintering sites, dispersal between populations, or recolonization of areas that contain suitable habitat.
- Habitats with limited human-related disturbance.

Critical habitat areas were designated to provide for the conservation of the arroyo toad throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in California; however, none of these areas are located near proposed training sites.

### 6.11.2 Habitat Evaluation and Suitability

The arroyo toad has the potential to occur within 500 feet of the Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites within the Las Flores Creek riparian vegetation.

### 6.11.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the arroyo toad may occur as a result of the Proposed Action at the Camp Pendleton Off-Road Trail site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton Off-Road Trail site including HLZ/DZ, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, military operations in urban terrain/urban evasion, and technical rope work.

Short-term, negligible, direct adverse impacts on the arroyo toad may occur as a result of the Proposed Action at the Camp Pendleton PDL site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton PDL site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, military operations in urban terrain/urban evasion, and technical rope work.

Impacts to the species at these sites may occur if toads are injured or killed due to crushing by equipment and vehicles, trampled by pedestrian traffic, and if training groups moving through riparian areas disturb egg masses and adult toads. If parachute or ground operations occur near the Las Flores Creek, a temporary increase in sediment runoff into the creek may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in riparian habitat quality for the arroyo toad over time. To avoid these impacts, foot-traffic and training activities would avoid riparian areas. The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on arroyo toad critical habitat are expected to occur as a result of the Proposed Action. The arroyo toad designated critical habitat does not occur near any of the proposed sites.

## 6.12 CHIRICAHUA LEOPARD FROG

### 6.12.1 Habitat Requirements and Current Status

The Chiricahua leopard frog was listed as federally threatened on 13 June 2002 (67 FR 40790), with critical habitat designated on 20 March 2012 (77 FR 16324-16424). The Chiricahua leopard frog has a distinctive color pattern of small, raised, cream-colored spots on the thigh against a dark background with relatively rough skin on the back and sides, dorsolateral folds that are interrupted and deflected medially, and often green on the head and back. A distinctive call (a snore of 1 to 2 seconds duration) also separates this species from other leopard frogs (USFWS 2019c).

Chiricahua leopard frogs are found near permanent waters in ponds, tanks, cienegas, and small streams. Where water is not permanent, adult frogs may persist but reproduction is likely not successful. Habitats with a variety of plants, depths, in-water structure, and other complexities are preferred by the Chiricahua leopard frog. They are currently restricted to springs, livestock tanks, and streams in upper portions of watersheds that are free from nonnative predators or where marginal habitat for nonnative predators exists (USFWS 2019c).

The Chiricahua leopard frog is particularly vulnerable to predation and competition by nonnative fish, bullfrogs, and crayfish in their habitats. The spread of a chytridomycete skin fungi to Chiricahua leopard frog habitats has also decimated populations. The fungi can be spread by animals like bullfrogs moving between waters, by equipment that can transport infected water between sites, or by vehicles moving between sites with mud or plant material from infected sites on the vehicle. Habitats are at risk from watershed erosion causing sedimentation that reduces forage opportunities, smothers egg mases, or fills in the small tanks where most frog populations remain (USFWS 2019c).

Critical habitat was designated for the Chiricahua leopard frog on 20 March 2012 (77 FR 16324-16424). The PCEs for critical habitat include:

- Aquatic breeding habitat and immediately adjacent uplands exhibiting the following characteristics:
    - Standing bodies of fresh water (with salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present), including natural and man-made (e.g., stock) ponds, slow-moving streams or pools within streams, off-channel pools, and other ephemeral or permanent water bodies that typically hold water or are rarely dry for more than a month. During periods of drought, or less than average rainfall, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but they would still be considered essential breeding habitat in non-drought years.
    - Emergent and/or submerged vegetation, root masses, undercut banks, fractured rock substrates, or some combination thereof, but emergent vegetation does not completely cover the surface of water bodies.

- Nonnative predators (e.g., crayfish, bullfrogs, nonnative fish) absent or occurring at levels that do not preclude presence of the Chiricahua leopard frog.
- Absence of chytridiomycosis, or if present, then environmental, physiological, and genetic conditions are such that allow persistence of Chiricahua leopard frogs.
- Upland habitats that provide opportunities for foraging and basking that are immediately adjacent to or surrounding breeding aquatic and riparian habitat.

- Dispersal and nonbreeding habitat, consisting of areas with ephemeral (present for only a short time), intermittent, or perennial water that are generally not suitable for breeding, and associated upland or riparian habitat that provides corridors (overland movement or along wetted drainages) for frogs among breeding sites in a metapopulation with the following characteristics:
  - Are not more than 1.0 mile overland, 3.0 miles along ephemeral or intermittent drainages, 5.0 miles along perennial drainages, or some combination thereof not to exceed 5.0 miles.
  - In overland and nonwetted corridors, provide some vegetation cover or structural features (e.g., boulders, rocks, organic debris such as downed trees or logs, small mammal burrows, or leaf litter) for shelter, forage, and protection from predators; in wetted corridors, provide some ephemeral, intermittent, or perennial aquatic habitat.
  - Are free of barriers that block movement by Chiricahua leopard frogs, including, but not limited to, urban, industrial, or agricultural development; reservoirs that are 50 acres or more in size and contain nonnative predatory fish, bullfrogs, or crayfish; highways that do not include frog fencing and culverts; and walls, major dams, or other structures that physically block movement.

Critical habitat areas were designated to provide for the conservation of the Chiricahua leopard frog throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona and New Mexico. The Salt River High, Salt River Low, Lake Patagonia, and Caldwell Meadows sites are not near critical habitat but provide potentially suitable habitat for the Chiricahua leopard frog.

### 6.12.2 Habitat Evaluation and Suitability

The Salt River High and Salt River Low sites are along the Salt River, the Lake Patagonia site contains riparian vegetation along some of the shoreline, and the Caldwell Meadows site is just north of the Black River. The Salt River, riparian vegetation along Lake Patagonia, and the Black River and associated vegetation all provide potentially suitable habitat for the Chiricahua leopard frog.

The intermittent stream south of the Devon site, the Cave Creek and associated riparian vegetation southeast of the Portal Cabin and CCC Bunkhouse site, the Rancho Seco Tank southeast of the Rancho Seco HLZ/DZ site, the intermittent stream east of the Little Outfit site, and Beaver Creek south of the Sprucedale Guest Ranch site, may all provide suitable habitat for the Chiricahua leopard frog. Suitable habitat does not occur at these sites but occurs within 500 feet of them.

### 6.12.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Salt River High site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River High site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Salt River Low site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River Low site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Lake Patagonia site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Lake Patagonia site including HLZs/DZs, technical rope work, HLZ/DZ/overwater hoist operations and amphibious operations.

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Caldwell Meadows site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Caldwell Meadows site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, and technical rope work.

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Devon site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Devon site including HLZ/DZ, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Portal Cabin and CCC Bunkhouse site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Portal Cabin and CCC Bunkhouse site including camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and survival training/natural resource consumption.

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Ranch Seco HLZ/DZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Ranch Seco HLZ/DZ site including HLZ/DZ.

Short-term, negligible, direct adverse impacts on the Chiricahua leopard frog may occur as a result of the Proposed Action at the Little Outfit site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Little Outfit site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Impacts to the species at these sites may occur if training groups move through riparian areas potentially disturbing egg masses and adult frogs, and if frogs within the path of equipment and vehicles are crushed or pedestrian traffic tramples individuals. If parachute or ground/water operations occur near the banks of the Salt River, Lake Patagonia, the Black River, the intermittent stream at the Devon site, Cave Creek, the Rancho Seco Tank, or the intermittent stream at the Little Outfit site; a temporary increase in sediment runoff into the water may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in habitat quality for the Chiricahua leopard frog over time. To avoid adverse impacts on the Chiricahua leopard frog, personnel would limit their training activities at these sites to areas where human activity is more prevalent, avoid riparian habitat, as well as avoid this species' breeding season, when possible. Eggs are typically laid March through June at elevations below 5,900 feet (USFWS 2019c). The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on Chiricahua leopard frog habitat are expected to occur as a result of the Proposed Action. The Chiricahua leopard frog designated critical habitat does not occur near any of the proposed sites.

## 6.13 SONOYTA MUD TURTLE

### 6.13.1 Habitat Requirements and Current Status

The Sonoyta mud turtle was listed as federally endangered without critical habitat on 20 October 2017 (82 FR 43897). The Sonoyta mud turtle is a dark, medium-sized aquatic turtle, 7 in long (shell), with a mottled pattern on the head, neck, and limbs. Its head and neck are brown or olive on top, contrasting with plain yellow or cream color below. The throat has nipple-like projections. The upper shell is olive brown to dark brown with dark seams; the lower shell is hinged, front and rear, and is yellow to brown. The shell contains 23 marginal shields. Long barbells are typically present on the chin, and all four feet are webbed (USFWS 2019r).

The Sonoyta mud turtle inhabits spring-fed pools, ponds, and stream courses with perennial or near-perennial water (NatureServe 2018).

The primary negative factor affecting the future viability of the Sonoyta mud turtle is continued loss of water that supports aquatic and riparian habitat. The sources of water loss affecting Sonoyta mud turtles include groundwater pumping, drought, changes to wastewater infrastructure, consumption by livestock, surface water diversion, and habitat manipulation (82 FR 43900).

### 6.13.2 Habitat Evaluation and Suitability

The Sonoyta mud turtle has the potential to occur within 500 feet of the Rancho Seco HLZ/DZ site within the Rancho Seco Tank east of the site.

### 6.13.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Sonoyta mud turtle may occur as a result of the Proposed Action at the Rancho Seco HLZ/DZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rancho Seco HLZ/DZ site including HLZ/DZ.

Individuals within the path of equipment and vehicles could be crushed. If drop zone operations occur near the Rancho Seco Tank, a temporary increase in sediment runoff may occur, potentially impacting water quality. A decrease in water quality can lead to a decrease in riparian habitat quality for the Sonoyta mud turtle over time. To avoid these impacts, equipment, vehicle and foot-traffic, and training activities would avoid riparian areas. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.14 NORTHERN MEXICAN GARTERSNAKE

### 6.14.1 Habitat Requirements and Current Status

The northern Mexican gartersnake was listed as federally threatened on 08 July 2014 (79 FR 38677), with critical habitat proposed on 10 July 2013 (78 FR 41549). The northern Mexican gartersnake may occur with other native gartersnake species and can be difficult for people without herpetological expertise to identify. With a maximum known length of 44 inches, it ranges in background color from olive to olive-brown to olive-gray with three stripes that run the length of the body. The middle dorsal stripe is yellow and darkens toward the tail. The pale yellow to light-tan lateral stripes distinguish the Mexican gartersnake from other sympatric gartersnake species because a portion of the lateral stripe is found on the fourth scale row, while it is confined to lower scale rows for other species (USFWS 2019o).

Throughout its rangewide distribution, the northern Mexican gartersnake occurs at elevations from 130 to 8,497 feet. The northern Mexican gartersnake is considered a riparian obligate (restricted to riparian areas when not engaged in dispersal behavior) and occurs chiefly in the following general habitat types: (1) source-area wetlands [e.g., cienegas (mid-elevation wetlands with highly organic, reducing (basic, or alkaline) soils), stock tanks (small earthen impoundment), etc.]; (2) large river riparian woodlands and forests; and (3) streamside gallery forests (as defined by well-developed broadleaf deciduous riparian forests with limited, if any, herbaceous ground cover or dense grass) (USFWS 2019o).

The most significant threat affecting the northern Mexican gartersnake across their range is predation from and competition with nonnative species such as bass (*Micropterus* spp.), flathead catfish (*Pylodictis* spp.), channel catfish (*Ictalurus* spp.), Chihuahuan catfish (*I. chihuahua*), bullheads (*Ameiurus* spp.), sunfish (*Lepomis* spp.), crappie (*Pomoxis* spp.), brown trout (*Salmo trutta*), American bullfrog (*Lithobates catesbeiana*), and crayfish (northern [virile] crayfish [*Orconectes virilis]* and red swamp crayfish [*Procambarus clarkia]*). Large-scale wildfires and land uses that divert, dry up, or significantly pollute aquatic habitat have also been found to be significant threats to the northern Mexican gartersnake (79 FR 38678).

Critical habitat for the northern Mexican gartersnake was proposed on 10 July 2013 (78 FR 41549). The PCEs specific to northern Mexican gartersnakes are as follows:

- Aquatic or riparian habitat that includes:
    - Perennial or spatially intermittent streams of low to moderate gradient that possess appropriate amounts of in-channel pools, off-channel pools, or backwater habitat, and that possess a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads; or

- Lentic wetlands such as livestock tanks, springs, and cienegas; and
- Shoreline habitat with adequate organic and inorganic structural complexity to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities (e.g., boulders, rocks, organic debris such as downed trees or logs, debris jams, small mammal burrows, or leaf litter); and
- Aquatic habitat with characteristics that support a native amphibian prey base, such as salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present at levels that do not affect survival of any age class of the northern Mexican gartersnake or the maintenance of prey populations.

- Adequate terrestrial space (600 feet lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation (extended inactivity).
- A prey base consisting of viable populations of native amphibian and native fish species.
- An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs, and crayfish, or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) are still occurring.

Critical habitat areas were proposed to provide for the conservation of the northern Mexican gartersnake throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona and New Mexico. Four proposed PR training sites occur within northern Mexican gartersnake proposed critical habitat: Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Little Outfit.

### 6.14.2 Habitat Evaluation and Suitability

The Saddle Mountain East, Saddle Mountain South, Saddle Mountain West, and Little outfit sites, within proposed critical habitat, do not contain suitable habitat for the northern Mexican gartersnake; however, the Little Outfit site is within 500 feet of potentially suitable habitat along the intermittent stream east of the site.

The Mormon Lake – USFS Helitack Base, Roosevelt Lake, Lake Patagonia, and Lake Pleasant sites all have potentially suitable habitat for the northern Mexican gartersnake on the banks of their respective lakes. The Salt, Black, and Colorado Rivers also have potentially suitable habitat for this species within the Salt River High, Salt River Low, Caldwell Meadows, and Colorado River sites, respectively.

The vegetation associated with the unnamed intermittent stream east of the Spring Valley Cabin site, the vegetation associated with the Metz Tank northwest of the Metz Tank site, the pooled water east and southwest of the Navajo West site, Cave Creek east of the Portal Cabin and CCC Bunkhouse site, Rancho Seco Tank southeast of the Rancho Seco HLZ/DZ site, and Beaver Creek south of the Sprucedale Guest Ranch site all provide potentially suitable habitat for the northern Mexican gartersnake.

### 6.14.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Little Outfit site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Little Outfit site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Mormon Lake – USFS Helitack Base and Caldwell Meadows sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Mormon Lake – USFS Helitack Base and Caldwell Meadows sites including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, and technical rope work.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Navajo West site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Navajo West site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, and pyrotechnic use.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Salt River High site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River High site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Salt River Low site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River Low site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Lake Patagonia site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Lake Patagonia site including HLZs/DZs, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Colorado River site. The Proposed Action would consist

of a training area of 0.3 to 2.7 acres at the proposed Colorado River site including HLZ/DZ/overwater hoist operations and amphibious operations.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Lake Pleasant site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Lake Pleasant site including amphibious operations.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Metz Tank site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Metz Tank site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, military operations in urban terrain/urban evasion, technical rope work, and pyrotechnic use.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Portal Cabin and CCC Bunkhouse and Spring Valley Cabin sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Portal Cabin and CCC Bunkhouse and Spring Valley Cabin sites including camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and survival training/natural resource consumption.

Short-term, negligible, direct adverse impacts on the northern Mexican gartersnake may occur as a result of the Proposed Action at the Rancho Seco HLZ/DZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rancho Seco HLZ/DZ site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Foot-traffic or training activities would not occur in streams or riparian areas and the training activities would occur within 0.3 to 2.7 acres around the proposed sites in previously disturbed areas. If parachute or ground/water operations occur near the banks of Roosevelt Lake, the Salt River, Lake Patagonia, the Colorado River, Lake Pleasant, or the Rancho Seco Tank; a temporary increase in sediment runoff may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in riparian habitat quality and prey abundance for the northern Mexican gartersnake over time. Equipment and vehicle traffic could crush individuals in their path. To avoid these impacts, equipment, vehicle and foot-traffic, and training activities would avoid riparian areas. The Proposed Action may affect but is not likely to adversely affect this species.

No impacts on northern Mexican gartersnake proposed critical habitat are expected to occur as a result of the Proposed Action. Four proposed PR training sites are within the northern Mexican gartersnake proposed critical habitat. The Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West sites do not provide suitable habitat for the northern Mexican gartersnake. The Little Outfit site is within 500 feet of suitable habitat for the northern Mexican gartersnake within the proposed critical habitat. Foot-traffic would not occur in streams or riparian areas and the training activities would occur within 0.3 to 2.7 acres around the Little Outfit site in previously disturbed areas; therefore, it was determined that the Proposed Action would not adversely modify proposed critical habitat of the northern Mexican gartersnake.

## 6.15 NARROW-HEADED GARTERSNAKE

### 6.15.1 Habitat Requirements and Current Status

The narrow-headed gartersnake was listed as federally threatened on 08 July 2014 (79 FR 38677) with critical habitat proposed on 10 July 2013 (78 FR 41549). The narrow-headed gartersnake is a small to medium-sized gartersnake with a maximum total length of 44 inches. Its eyes are set high on its unusually elongated head, which narrows to the snout, and it lacks striping on the dorsum and sides, which distinguishes its appearance from other gartersnake species with which it could co-occur. The base color is usually tan or grey- brown (but may darken) with conspicuous brown, black, or reddish spots that become indistinct toward the tail (79 FR 38683).

The narrow-headed gartersnake is considered one of the most aquatic of the gartersnakes. This species is strongly associated with clear, rocky streams, using predominantly pool and riffle habitat that includes cobbles and boulders. The species has been observed using lake shoreline habitat in New Mexico. Narrow-headed gartersnakes occur at elevations from approximately 2,300 to 8,000 feet, inhabiting Petran Montane Conifer Forest, Great Basin Conifer Woodland, Interior Chaparral, and the Arizona Upland subdivision of Sonoran Desertscrub communities (79 FR 38684).

The most significant threat affecting the narrow-headed gartersnakes is predation from and competition with nonnative species such as bass, flathead catfish, channel catfish, Chihuahuan catfish, bullheads, sunfish, crappie, brown trout, American bullfrogs, and crayfish (northern (virile) crayfish and red swamp crayfish). Large-scale wildfires and land uses which divert, dry up, or significantly pollute aquatic habitat have also been found to be significant threats (79 FR 38678).

Critical habitat for the narrow-headed gartersnake was proposed on 10 July 2013 (78 FR 41549). The PCEs specific to narrow-headed gartersnakes are as follows:

- Stream habitat, which includes:
    - Perennial or spatially intermittent streams with sand, cobble, and boulder substrate and low or moderate amounts of fine sediment and substrate embeddedness, and that possess appropriate amounts of pool, riffle, and run habitat to sustain native fish populations;
    - A natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads;
    - Shoreline habitat with adequate organic and inorganic structural complexity (e.g., boulders, cobble bars, vegetation, and organic debris such as downed trees or logs, debris jams), with appropriate amounts of shrub- and sapling-sized plants to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities; and
    - Aquatic habitat with no pollutants or, if pollutants are present, levels that do not affect survival of any age class of the narrow-headed gartersnake or the maintenance of prey populations.

- Adequate terrestrial space (600 feet lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation.
- A prey base consisting of viable populations of native fish species or soft-rayed, nonnative fish species.
- An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs, and/or crayfish, or occurrence of these nonnative species at low enough levels such that recruitment of narrow-headed gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) is still occurring.

Critical habitat areas were proposed to provide for the conservation of the narrow-headed gartersnake throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been proposed in Arizona and New Mexico. Two proposed PR training sites occur within narrow-headed gartersnake proposed critical habitat: Salt River High and Salt River Low. The Glenwood Ranger Station site is within 0.5 mile of narrow-headed gartersnake proposed critical habitat.

### 6.15.2 Habitat Evaluation and Suitability

The Salt River High and Salt River Low sites, within proposed critical habitat, contain potentially suitable habitat for the narrow-headed gartersnake. The Glenwood Ranger Station does not contain suitable habitat for the narrow-headed gartersnake.

### 6.15.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the narrow-headed gartersnake may occur as a result of the Proposed Action at the Salt River High site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River High site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the narrow-headed gartersnake may occur as a result of the Proposed Action at the Salt River Low site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River Low site including HLZ/DZ, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

If ground/water operations occur near the banks of the Verde or Salt Rivers, a temporary increase in sediment runoff may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in riparian habitat quality and prey abundance for the narrow-headed gartersnake over time. Equipment and vehicle traffic could crush individuals in their path. To avoid these impacts, equipment, vehicle and foot-traffic, and training activities would avoid riparian areas. The Proposed Action may affect but is not likely to adversely affect this species.

Short-term, negligible, direct adverse impacts on narrow-headed gartersnake proposed critical habitat may occur as a result of the Proposed Action. This species has proposed critical habitat in the Salt River. Due to location and distance from the stream channel, and because no training activity would occur in or near the river, no impact on critical habitat would be expected to occur

at the Salt River High site. During water training, personnel movement could result in the trampling of aquatic vegetation and increased stream sedimentation at the Salt River Low site. To avoid impacts on this proposed critical habitat, personnel involved in the training activities would avoid entering the Salt River Low in riparian areas with heavy vegetation and unstable stream banks. The proposed training activities would not adversely modify proposed critical habitat (USAF 2017b).

## 6.16 YELLOW-BILLED CUCKOO

### 6.16.1 Habitat Requirements and Current Status

The yellow-billed cuckoo was listed as federally threatened on 03 November 2014 (79 FR 59991) with critical habitat proposed on 15 August 2014 (79 FR 48547). Yellow-billed cuckoos are fairly large, long, and slim birds. The mostly yellow bill is almost as long as the head, thick and slightly downcurved. They have a flat head, thin body, and very long tail. Wings appear pointed and swept back in flight. Yellow-billed cuckoos are warm brown above and clean whitish below. Their blackish face mask is accompanied by a yellow eyering. In flight, the outer part of the wings flash rufous. From below, the tail has wide white bands and narrower black ones (USFWS 2019u).

The yellow-billed cuckoo uses wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. In the West, nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites (USFWS 2019u).

In the West, much of the yellow-billed cuckoo riparian habitat has been converted to farmland and housing, leading to population declines and the possible extirpation of cuckoos from British Columbia, Washington, Oregon, and Nevada. Once common in the California Central Valley, coastal valleys, and riparian habitats east of the Sierra Nevada, habitat loss now constrains the California breeding population to small numbers of birds. As long-distance, nocturnal migrants, yellow-billed cuckoos are also vulnerable to collisions with tall buildings, cell towers, radio antennas, wind turbines, and other structures (USFWS 2019u).

Critical habitat for the yellow-billed cuckoo was proposed on 15 August 2014 (79 FR 48547). The PCEs specific to yellow-billed cuckoo are as follows:

- Riparian woodlands with mixed willow-cottonwood vegetation, mesquite-thorn-forest vegetation, or a combination of these that contain habitat for nesting and foraging in contiguous or nearly contiguous patches that are greater than 325 feet in width and 200 acres or more in extent. These habitat patches contain one or more nesting groves, which are generally willow-dominated, have above average canopy closure (greater than 70 percent), and have a cooler, more humid environment than the surrounding riparian and upland habitats.
- Presence of a prey base consisting of large insect fauna (for example, cicadas, caterpillars, katydids, grasshoppers, large beetles, dragonflies) and tree frogs for adults and young in breeding areas during the nesting season and in post-breeding dispersal areas.

- River systems that are dynamic and provide hydrologic processes that encourage sediment movement and deposits that allow seedling germination and promote plant growth, maintenance, health, and vigor (e.g., lower gradient streams and broad floodplains, elevated subsurface groundwater table, and perennial rivers and streams). This allows habitat to regenerate at regular intervals, leading to riparian vegetation with variously aged patches from young to old.

Critical habitat areas were proposed to provide for the conservation of the yellow-billed cuckoo throughout the remaining portion of its geographic range in the U.S. Several areas of critical habitat have been proposed in Arizona, California, Nevada, and New Mexico. One proposed PR training site, Lake Patagonia, occurs within yellow-billed cuckoo proposed critical habitat. The Roosevelt Lake and Glenwood Ranger Station sites are within 0.5 mile of yellow-billed cuckoo proposed critical habitat.

### 6.16.2 Habitat Evaluation and Suitability

The Lake Patagonia site, within proposed critical habitat, and the Roosevelt Lake site, within 0.5 mile of proposed critical habitat, contain potentially suitable habitat for the yellow-billed cuckoo. The Glenwood Ranger Station Site is within 0.5 mile of proposed critical habitat; however, this site does not contain suitable habitat for the yellow-billed cuckoo.

The Portal Cabin and CCC Bunkhouse, Verde River, and Colorado River sites all have potentially suitable habitat for the yellow-billed cuckoo in the riparian vegetation along their respective rivers.

The riparian vegetation associated with the Salt River east of the Saguaro Lake Ranch site provide potentially suitable habitat for the yellow-billed cuckoo.

### 6.16.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the yellow-billed cuckoo may occur as a result of the Proposed Action at the Lake Patagonia site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Lake Patagonia site including HLZs/DZs, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the yellow-billed cuckoo may occur as a result of the Proposed Action at the Colorado River site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Colorado River site including HLZ/DZ/overwater hoist operations and amphibious operations.

Short-term, negligible, direct adverse impacts on the yellow-billed cuckoo may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the yellow-billed cuckoo may occur as a result of the Proposed Action at the Portal Cabin and CCC Bunkhouse site. The Proposed Action

would consist of a training area of 0.3 to 2.7 acres at the proposed Portal Cabin and CCC Bunkhouse site including camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and survival training/natural resource consumption.

Short-term, negligible, direct adverse impacts on the yellow-billed cuckoo may occur as a result of the Proposed Action at the Verde River and Saguaro Lake Ranch sites. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Verde River and Saguaro Lake Ranch sites including HLZ/DZ/overwater hoist operations and amphibious operations.

If parachute or ground/water operations occur near the banks of Lake Patagonia, the Colorado River, Roosevelt Lake, Cave Creek, the Verde River, or the Salt River; a temporary increase in sediment runoff may occur, potentially impacting water quality in the immediate area. A decrease in water quality can lead to a decrease in riparian habitat quality for the yellow-billed cuckoo over time. Helicopter noise and increased human noise/activity in the riparian areas could cause this species to temporarily avoid the areas and impact its foraging and roosting activities and movement, as well as breeding behaviors. To avoid these impacts, foot-traffic and training activities would avoid riparian areas. The Proposed Action may affect but is not likely to adversely affect this species.

Short-term, negligible, direct adverse impacts on yellow-billed cuckoo proposed critical habitat may occur as a result of the Proposed Action. This species has proposed critical habitat in Lake Patagonia site. During water training, personnel movement could result in the trampling of aquatic vegetation and increased sedimentation. Personnel movement also could result in the trampling of riparian vegetation. To avoid impacts on this proposed critical habitat, personnel involved in the training activities would avoid entering Lake Patagonia in riparian areas with heavy vegetation and unstable shoreline. The proposed training activities would not adversely modify proposed critical habitat.

## 6.17 SOUTHWEST WILLOW FLYCATCHER

### 6.17.1 Habitat Requirements and Current Status

The southwestern willow flycatcher was listed as federally endangered on 27 February 1995 (60 FR 10694) with critical habitat designated on 22 July 1997 (62 FR 39129) and revised on 19 October 2005 (70 FR 60886) and 03 January 2013 (78 FR 343). The southwestern willow flycatcher is a small bird, approximately 5.75 inches long. It has a grayish-green back and wings, whitish throat, light grey-olive breast, and pale yellowish belly. Two wingbars are visible and the eye ring is faint or absent. The upper mandible is dark and the lower is light. The song is a sneezy “fitz- bew” or “fit-za-bew,” and the call is a repeated “whit” (60 FR 10694).

The southwestern willow flycatcher occurs in riparian habitats along rivers, streams, or other wetlands, where dense growths of willows, Baccharis, arrowweed (*Pluchea* spp.), buttonbush (*Cephalanthus* spp.), saltcedar, Russian olive, or other plants are present, often with a scattered overstory of cottonwood. Throughout the range of southwestern willow flycatcher, these riparian habitats tend to be rare, widely separated, small and/or linear locales, separated by vast expanses of arid lands (60 FR 10694).

The southwestern willow flycatcher has experienced extensive loss and modification of this habitat and is also endangered by other factors, including brood parasitism by the brown-headed cowbird (*Molothrus ater*) (60 FR 10694).

This southwestern willow flycatcher is a federally listed endangered species, with critical habitat designated since 1997. In October 2005, USFWS designated critical habitat for the southwestern willow flycatcher and revised the designation in 2013. The PCEs specific to southwestern willow flycatcher are as follows:

- Riparian habitat in a dynamic successional riverine environment (for nesting, foraging, migration, dispersal, and shelter) that comprises:
    - Trees and shrubs that include Gooddings willow (*Salix gooddingii*), coyote willow (*S. exigua*), Geyers willow (*S. geyerana*), arroyo willow (*S. lasiolepis*), red willow (*S. laevigata*), yewleaf willow (*S. taxifolia*), pacific willow, boxelder (*Acer negundo*), saltcedar, Russian olive, buttonbush, cottonwood (*Populus fremontii*), stinging nettle (*Urtica dioica*), alder (*Alnus rhombifolia, A. oblongifolia, A. tenuifolia*), velvet ash, poison hemlock (*Conium maculatum*), blackberry (*Rubus ursinus*), seep willow (*Baccharis salicifolia*, *B. glutinosa*), oak (*Quercus agrifolia*, *Q. chrysolepis*), rose (*Rosa californica*, *R. arizonica*, *R. multiflora*), sycamore, false indigo (*Amorpha californica*), Pacific poison ivy (*Toxicodendron diversilobum*), grape (*Vitus arizonica*), Virginia creeper (*Parthenocissus quinquefolia*), Siberian elm (*Ulmus pumila*), and walnut (*Juglans hindsii*).
    - Dense riparian vegetation with thickets of trees and shrubs ranging in height from 6 to 98 feet. Lower-stature thickets (6 to 13 feet tall) are found at higher elevation riparian forests, and tall-stature thickets are found at middle and lower elevation riparian forests;
    - Areas of dense riparian foliage at least from the ground level up to approximately 13 feet above ground or dense foliage only at the shrub level, or as a low, dense tree canopy;
    - Sites for nesting that contain a dense tree and/or shrub canopy (the amount of cover provided by tree and shrub branches measured from the ground) (i.e., a tree or shrub canopy with densities ranging from 50 percent to 100 percent); and
    - Dense patches of riparian forests that are interspersed with small openings of open water or marsh, or shorter/sparser vegetation that creates a mosaic that is not uniformly dense. Patch size may be as small as 0.25 acres or as large as 175 acres.
- A variety of insect prey populations found within or adjacent to riparian floodplains or moist environments, including flying ants, wasps, and bees; dragonflies; flies; true bugs; beetles; butterflies/moths and caterpillars; and spittlebugs.

Critical habitat areas were designated to provide for the conservation of the southwestern willow flycatcher throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been designated in Arizona, California, Nevada, and New Mexico. None of the proposed PR training sites occur within southwestern willow flycatcher critical habitat. However, the Roosevelt Lake and Glenwood Ranger Station sites are within 0.5 mile of southwestern willow flycatcher critical habitat.

### 6.17.2 Habitat Evaluation and Suitability

The riparian vegetation around the Roosevelt Lake site, within 0.5 mile of proposed critical habitat, contains potentially suitable habitat for the southwestern willow flycatcher. The Glenwood Ranger Station Site is within 0.5 mile of proposed critical habitat; however, this site does not contain suitable habitat for the southwestern willow flycatcher.

The Verde River and Colorado River sites have potentially suitable habitat for the southwestern willow flycatcher in the riparian vegetation along their respective rivers.

### 6.17.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the southwestern willow flycatcher may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the southwestern willow flycatcher may occur as a result of the Proposed Action at the Verde River site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Verde River site including HLZ/DZ/overwater hoist operations and amphibious operations.

Short-term, negligible, direct adverse impacts on the southwestern willow flycatcher may occur as a result of the Proposed Action at the Colorado River site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Colorado River site including HLZ/DZ/overwater hoist operations and amphibious operations.

If parachute or ground/water operations occur near the banks of Roosevelt Lake, the Verde River, or the Colorado River; a temporary increase in sediment runoff may occur, potentially impacting water quality in the area. A decrease in water quality can lead to a decrease in riparian habitat quality for the southwestern willow flycatcher over time. To avoid these impacts, foot-traffic and training activities would avoid riparian areas. Training activities in the open water could temporarily cause the southwestern willow flycatcher to avoid the area as noise levels increase during training. Trampling of vegetation and erosion of the river or lake banks could occur as a result of the movement of equipment and the activity from the personnel involved in training, though activities would likely be restricted to recreational areas and human access areas. Helicopter noise and increased human noise/activity in the riparian areas could cause the southwestern willow flycatcher to temporarily avoid the areas and impact daily activities and movement. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. The southwestern willow flycatcher arrives on breeding grounds in late April to early May. Nesting begins in late May and early June, with fledging from late June to mid-August. To avoid impacts on this species, training activities at these sites would be scheduled outside of the breeding season (April through September) for this species and would avoid areas of heavy riparian vegetation. The Proposed Action may affect but is not likely to adversely affect the southwestern willow flycatcher.

No impacts on designated southwestern willow flycatcher critical habitat are expected to occur as a result of the Proposed Action. None of the proposed PR training sites occur within critical habitat.

## 6.18 NORTHERN APLOMADO FALCON

### 6.18.1 Habitat Requirements and Current Status

The northern aplomado falcon was listed as federally endangered without critical habitat on 25 February 1986 (51 FR 6686) and a non-essential, experimental population was established in Arizona and New Mexico on 26 July 2006 (71 FR 42298). The proposed PR training sites only fall within the range of the non-essential, experimental population of northern aplomado falcon. The northern aplomado falcon is characterized by rufous (rust) underparts, a gray back, a long and banded tail, and a distinctive black and white facial pattern. Northern aplomado falcons are smaller than peregrine falcons and larger than kestrels (USFWS 2019n).

Northern aplomado falcon habitat is variable throughout the species range and includes palm and oak savannahs, various desert grassland associations, and open pine woodlands. Within these variations, the essential habitat elements appear to be open terrain with scattered trees, relatively low ground cover, an abundance of insects and small to medium-sized birds, and a supply of nest sites. The northern aplomado falcon nests in abandoned stick platforms of corvids and other raptors (USFWS 2019n).

Threats to the northern aplomado falcon include habitat loss and contamination with organochlorine pesticides (51 FR 6686).

### 6.18.2 Habitat Evaluation and Suitability

The Ranger, Rucker HLZ, and Portal Cabin and CCC Bunkhouse sites contain potentially suitable nesting habitat for the northern aplomado falcon.

### 6.18.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the northern aplomado falcon may occur as a result of the Proposed Action at the Ranger site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Ranger site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the northern aplomado falcon may occur as a result of the Proposed Action at the Rucker HLZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rucker HLZ site including HLZ/DZ, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, military operations in urban terrain/urban evasion, and technical rope work.

Short-term, negligible, direct adverse impacts on the northern aplomado falcon may occur as a result of the Proposed Action at the Portal Cabin and CCC Bunkhouse site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Portal Cabin and CCC Bunkhouse site including camping, bivouacking, assembly area use, cross-country dismounted

(non-vehicle) movements, mounted (vehicle) movement/blackout driving, and survival training/natural resource consumption.

Helicopter and/or ground operations could cause the northern aplomado falcon to avoid the areas and impact daily activities and movement, and disrupt breeding behavior. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. To avoid impacts on this species, training activities at these sites would be scheduled outside of the breeding season (January through June) for this species. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.19 YUMA CLAPPER RAIL

### 6.19.1 Habitat Requirements and Current Status

The Yuma clapper rail was listed as federally endangered without critical habitat on 11 March 1967 (32 FR 4001). The Yuma clapper rail is a marsh bird the size of a chicken; it is gray-brown above and buffy-cinnamon below, mottled brown or gray on its rump, and has brownish-gray cheeks and flanks barred with black and white. It is somewhat orange bill is long, slender, and slightly down-curved. The Yuma clapper rail is a water bird with long legs and a short tail (USFWS 2019v).

The Yuma clapper rail is associated with dense emergent riparian vegetation. It requires wet substrate (mudflat, sandbar) with dense herbaceous or woody vegetation for nesting and foraging. Freshwater marshes dominated by cattail (*Typha* spp.) or bulrush (*Cyperus* spp.) are preferred habitat as well as marshes with little residual vegetation. Habitat should be in a mosaic of vegetated areas interspersed with shallow (less than 12 inches) open water areas. The minimum size of suitable habitats is unclear, but the species has been found in areas as small as 2 to 3 acres depending on the quality of the mosaic. It is typically found below 4,500 feet of elevation (USFWS 2019v).

Populations of the Yuma clapper rail are threatened by loss of marsh habitat through channelization, dredging/filling activities, decline in quality of marsh habitat due to build-up of residual vegetation (dead stems and leaves of cattails or bulrush) that clogs movement through the vegetation, and selenium contamination of the prey base (USFWS 2019v).

### 6.19.2 Habitat Evaluation and Suitability

The Roosevelt Lake, Verde River, and Colorado River sites all have potentially suitable habitat for the Yuma clapper rail in the riparian vegetation at each site. The riparian vegetation associated with the Salt River east of the Saguaro Lake Ranch site provides potentially suitable habitat for the Yuma clapper rail.

### 6.19.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Yuma clapper rail may occur as a result of the Proposed Action at the Roosevelt Lake site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Roosevelt Lake site including HLZ/DZ, parachute operations, camping, bivouacking, assembly area use, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, technical rope work, HLZ/DZ/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Yuma clapper rail may occur as a result of the Proposed Action at the Verde River and Saguaro Lake Ranch sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Verde River and Saguaro Lake Ranch sites including HLZ/DZ/overwater hoist operations and amphibious operations.

Short-term, negligible, direct adverse impacts on the Yuma clapper rail may occur as a result of the Proposed Action at the Colorado River site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Colorado River site including HLZ/DZ/overwater hoist operations and amphibious operations.

If parachute or ground/water operations occur near the banks of Roosevelt Lake, the Verde River, the Salt River, or the Colorado River; a temporary increase in sediment runoff may occur, potentially impacting water quality in the area. A decrease in water quality can lead to a decrease in riparian habitat quality for the Yuma clapper rail over time. To avoid these impacts, foot-traffic and training activities would avoid riparian areas. Training activities in the open water could temporarily cause the Yuma clapper rail to avoid the area as noise levels increase during training. Trampling of vegetation and erosion of the river or lake banks could occur as a result of the movement of equipment and the activity from the personnel involved in training, though activities would likely be restricted to recreational areas and human access areas. Helicopter noise and increased human noise/activity in the riparian areas could cause the Yuma clapper rail to temporarily avoid the areas and impact daily activities and movement. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. To avoid impacts on this species, training activities at these sites would be scheduled outside of the breeding season (March through September) for this species, and personnel would avoid areas of heavy riparian vegetation. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.20 MEXICAN SPOTTED OWL

### 6.20.1 Habitat Requirements and Current Status

The Mexican spotted owl was listed as federally threatened on 16 March 1993 (58 FR 14248) with critical habitat designated on 06 June 1995 (60 FR 29951), 01 February 2001 (66 FR 8530), and 31 August 2004 (69 FR 53182). Mexican spotted owls have dark eyes and are an ashy-chestnut brown color with white and brown spots on their abdomen, back and head. Their brown tails are marked with thin white bands. They lack ear tufts. Young owls less than 5 months old have a downy appearance and females are larger than males (USFWS 2019k).

Mexican spotted owls are residents of old-growth or mature forests that possess complex structural components (uneven aged stands, high canopy closure, multi-storied levels, high tree density). Canyons with riparian or conifer communities are also important components. In southern Arizona and New Mexico, the mixed conifer, Madrean pine-oak, Arizona cypress, encinal oak woodlands, and associated riparian forests provide habitat in the small mountain ranges (Sky Islands) distributed across the landscape. Owls are also found in canyon habitat dominated by vertical-walled rocky cliffs within complex watersheds, including tributary side canyons. Rock walls with caves, ledges, and other areas provide protected nest and roost sites. Canyon habitat may include small isolated patches or stringers of forested vegetation including stands of mixed-conifer, ponderosa pine, pine-oak, pinyon-juniper, and/or riparian vegetation in which owls regularly roost and forage. Owls are usually found in areas with some type of water

source. Even small sources of water such as small pools or puddles create humid conditions. Roosting and nesting habitats exhibit certain identifiable features, including large trees (those with a trunk diameter of 12 inches or more), unevenly aged tree stands, multi-storied canopy, a tree canopy creating shade over 40 percent or more of the ground, and decadence in the form of downed logs and snags (standing dead trees). Canopy closure is typically greater than 40 percent. Owl foraging habitat includes a wide variety of forest conditions, canyon bottoms, cliff faces, tops of canyon rims, and riparian areas. Juvenile owls disperse into a variety of habitats ranging from high-elevation forests to pinyon-juniper woodlands and riparian areas surrounded by desert grasslands. Observations of long-distance dispersal by juveniles provide evidence that they use widely spaced islands of suitable habitat that are connected at lower elevations by pinyon-juniper and riparian forests (USFWS 2019k).

Actions that open up or remove mature or old-growth forests (logging, wildfire, road or site construction that results in fragmentation of the forest) are detrimental to Mexican spotted owl populations. Human activity (hiking, shooting, off-road vehicle activity) in or near nesting, roosting, or foraging sites may result in abandonment of an area, and indirectly may affect habitat parameters from trampling, vegetation removal, or increased fire risk (USFWS 2019k).

Critical habitat was designated for the Mexican spotted owl on 06 June 1995 (60 FR 29951), 01 February 2001 (66 FR 8530), and 31 August 2004 (69 FR 53182). The PCEs of critical habitat for this species include the habitat components that provide the following:

PCEs related to forest structure are as follows:

- A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30 to 45 percent of which are large trees with a trunk diameter of 12 inches or more when measured at 4.5 feet from the ground.
- A shade canopy created by the tree branches covering 40 percent or more of the ground.
- Large dead trees (snags) with a trunk diameter of at least 12 inches when measured at 4.5 feet from the ground.

PCEs related to maintenance of adequate prey species are as follows:

- High volumes of fallen trees and other woody debris.
- A wide range of tree and plant species, including hardwoods.
- Adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration.

PCEs related to canyon habitat include one or more of the following:

- Presence of water (often providing cooler and often higher humidity than the surrounding areas).
- Clumps or stringers of mixed conifer, pine-oak, pinyon-juniper, and riparian vegetation.
- Canyon wall containing crevices, ledges, or caves.
- High percentage of ground litter and woody debris.

Critical habitat areas were designated to provide for the conservation of the Mexican spotted owl throughout the remaining portion of its geographic range in the US Several areas of critical habitat have been designated in Arizona and New Mexico.

The Mesa, Ranger, Redington Pass, Rucker HLZ, Charoleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogolloon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito North, Rainy Mesa, Caldwell Meadows, and Sprucedale Guest Ranch sites are within the Mexican spotted owl critical habitat. The Madrean Evergreen Woodland around the Ranger, Rucker HLZ, and Charouleau Gap sites and the Petran Montane Conifer Forest around the Comanche, Hannagan Meadow – USFS Helitack Base, and Helibase Circular sites provide potentially suitable nesting habitat for the Mexican spotted owl. The Mesa, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Negrito Airstrip, and Rainy Mesa sites do not contain suitable nesting habitat for the Mexican spotted owl but are within 500 feet of potentially suitable nesting habitat. The rocky cliffs around the Mesa site, the Petran Montane Conifer Forest surrounding the Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, and Mogollon Rim (General Crook) sites, the forested area west of the Negrito Airstrip, and the forested area south of the Rainy Mesa site provide potentially suitable nesting habitat for the Mexican spotted owl. The Redington Pass, Negrito Center, Negrito North, Caldwell Meadows, and Sprucedale Guest Ranch sites do not contain suitable nesting habitat for the Mexican spotted owl.

The Spring Valley Cabin, Saddle Mountain West, Devon, Black Mesa – USFS Helitack Base, Mormon Lake – USFS Helitack Base, Negrito Helibase, and Negrito South sites are within 0.5 mile of Mexican spotted owl critical habitat. The Petran Montane Conifer Forest west of the Spring Valley Cabin site, the rocky cliffs and Madrean Evergreen Woodland at the Saddle Mountain West site, the Madrean Evergreen Woodland at the Devon site, and the Petran Montane Conifer Forest at the Black Mesa – USFS Helitack Base and Mormon Lake – USFS Helitack Base sites may provide potentially suitable nesting habitat for the Mexican spotted owl. The Negrito Helibase and Negrito South sites do not contain suitable nesting habitat for the Mexican spotted owl.

### 6.20.2 Habitat Evaluation and Suitability

The L Tank, Ranger, Rucker HLZ, Charouleau Gap, Comanche, Hannagan Meadow – USFS Helitack Base, Helibase Circular, Portal Cabin and CCC Bunkhouse, and Lake Patagonia sites contain potentially suitable nesting habitat for the Mexican spotted owl. The Metz Tank, Navajo East, Neill Flat, Rogers Lake (Logger Camp), Rogers Napier, Rogers Wren, Mesa, Saddle Mountain West, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim (General Crook), Spring Valley Cabin, Negrito Airstrip, Rainy Mesa, Devon, Black Mesa – USFS Helitack Base, Mormon Lake – USFS Helitack Base, Overgaard – USFS Helitack Base, Tribeland, Salt River High, Salt River Low, Brooke HLZ/DZ, Jenna HLZ/DZ, Fort Tuthill, Cattle, and HLZ 5 sites do not contain suitable nesting habitat for the Mexican spotted owl but are within 500 feet of suitable nesting habitat.

### 6.20.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the L Tank, Metz Tank, and Navajo East sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed L Tank, Metz Tank, and Navajo East sites including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; and pyrotechnic use.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Ranger, and Saddle Mountain West sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Ranger, and Saddle Mountain West sites including HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; pyrotechnic use; shooting/firing range; HLZs/DZS/overwater hoist operations; and amphibious operations.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Rucker HLZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rucker HLZ site including HLZs/DZs, camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Charouleau Gap site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Charouleau Gap site including cross-country dismounted (non-vehicle) movements and mounted (vehicle) movement/blackout driving.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Comanche, Mogollon Rim (General Crook), and HLZ 5 sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Comanche, Mogollon Rim (General Crook), and HLZ 5 sites including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Rogers Napier site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rogers Napier site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; technical rope work; and pyrotechnic use.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Hannagan Meadow – USFS Helitack Base, Helibase Circular, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack

Base, Black Mesa – USFS Helitack Base, Mormon Lake – USFS Helitack Base, Overgaard – USFS Helitack Base, Tribeland, and Cattle sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Hannagan Meadow – USFS Helitack Base, Helibase Circular, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Black Mesa – USFS Helitack Base, Mormon Lake – USFS Helitack Base, Overgaard – USFS Helitack Base, Tribeland, and Cattle sites including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Neill Flat site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Neill Flat site including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; technical rope work; and pyrotechnic use.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Portal Cabin and CCC Bunkhouse site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Portal Cabin and CCC Bunkhouse site including camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and survival training/natural resource consumption.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Lake Patagonia site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Lake Patagonia site including HLZs/DZs, technical rope work, HLZs/DZs/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Rogers Lake (Logger Camp) site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rogers Lake (Logger Camp)site including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; pyrotechnic use; HLZs/DZs/overwater hoist operations; and amphibious operations.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Rogers Wren site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rogers Wren site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; military operations in urban terrain/urban evasion; technical rope work; and pyrotechnic use.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Mesa and Devon sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Mesa and Devon sites including HLZs/DZs;

camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Spring Valley Cabin site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Spring Valley Cabin site including camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and survival training/natural resource consumption.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Negrito Airstrip site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Negrito Airstrip site including HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Rainy Mesa site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rainy Mesa site including HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Salt River High site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River High site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Salt River Low site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River Low site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, HLZs/DZs/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Brooke HLZ/DZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Brooke HLZ/DZ site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Jenna HLZ/DZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Jenna HLZ/DZ site including HLZs/DZs and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur as a result of the Proposed Action at the Fort Tuthill site. The Proposed Action would consist of a training

area of 0.3 to 2.7 acres at the proposed Fort Tuthill site including camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Parachute, helicopter, plane, and/or ground/water operations could cause the Mexican spotted owl to avoid the areas and impact daily activities and movement, and breeding behavior. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. To avoid impacts during the breeding season on this species, training activities at these sites would be scheduled outside of the nesting season (March through August) as required by the terms and conditions of the ESA consultation on National Forest lands. Due to potential disturbances during the non-breeding season, the Proposed Action may affect and is likely to adversely affect this species.

No effect on designated Mexican spotted owl critical habitat would be expected to occur as a result of the Proposed Action. Although critical habitat occurs at several sites (Mesa, Ranger, Redington Pass, Rucker HLZ, Charouleau Gap, Comanche, Flagstaff Hotshot – USFS Helitack Base, Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Longview – USFS Helitack Base, Mogollon Rim [General Crook], Negrito Airstrip, Negrito Center, Negrito North, Rainy Mesa, Caldwell Meadows, and Sprucedale Guest Ranch), implementing the Proposed Action would not have an effect on the critical habitat because activities would not require vegetation removal and would occur over a short duration (hour to few hours).

## 6.21 LEAST BELL'S VIREO

### 6.21.1 Habitat Requirements and Current Status

The Least Bell's vireo was listed as federally endangered on 02 May 1986 (51 FR 16474) with critical habitat designated on 02 February 1994 (59 FR 4845). The Least Bell's vireo is a small bird, only 4.5 to 5.0 inches long. They have short rounded wings and short, straight bills. There is a faint white eye ring and feathers are mostly gray above and pale below (USFWS 2019h).

The Least Bell's vireo occurs in riparian habitats along rivers, streams, or other wetlands, where dense brush, mesquite, willow-cottonwood forest, streamside thickets, and scrub oak are present, in arid regions but often near water (NatureServe 2018).

Threats to the Least Bell's vireo include where conversion of land throughout the range of the vireo for agricultural purposes; pumping to withdraw water for crop maintenance; and construction of dams, channels, and other water conveyance systems have resulted in the loss of substantial vireo habitat. Agricultural practices have also inadvertently encouraged the expansion of the range of the brown-headed cowbird (51 FR 18476).

This Least Bell's vireo is a federally listed endangered species, with critical habitat designated on 02 February 1994 (59 FR 4845). The PCE specific to Least Bell's vireo is as follows:

- Riverine and floodplain habitats (particularly willow-dominated riparian woodland with dense understory vegetation maintained, in part, in a non-climax stage by periodic floods or other agents) and adjacent coastal sage scrub, chaparral, or other upland plant communities.

Critical habitat areas were designated to provide for the conservation of the Least Bell's vireo throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been designated in California. None of the proposed PR training sites occur within Least Bell's vireo critical habitat.

### 6.21.2 Habitat Evaluation and Suitability

The Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites are within 500 feet of potentially suitable habitat for the Least Bell's vireo in the riparian vegetation east of the sites along the Las Flores Creek.

### 6.21.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Least Bell's vireo may occur as a result of the Proposed Action at the Camp Pendleton Off-Road Trail site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton Off-Road Trail site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Short-term, negligible, direct adverse impacts on the Least Bell's vireo may occur as a result of the Proposed Action at the Camp Pendleton PDL site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton PDL site including HLZs/DZs; parachute operations; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

If parachute and/or ground operations occur near the banks of the Las Flores Creek, a temporary increase in sediment runoff may occur, potentially impacting water quality in the area. A decrease in water quality can lead to a decrease in riparian habitat quality and prey abundance for the Least Bell's vireo over time. To avoid these impacts, foot-traffic and training activities would avoid riparian areas. Training activities near the riparian vegetation could temporarily cause the Least Bell's vireo to avoid the area as noise levels increase during training. Trampling of vegetation and erosion of the creek banks could occur as a result of the movement of equipment and the activity from the personnel involved in training, though activities would likely be restricted to recreational areas and human access areas. Helicopter noise and increased human noise/activity in the riparian areas could cause the Least Bell's vireo to temporarily avoid the areas and impact daily activities and movement, and breeding behavior. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. To avoid impacts on this species, training activities at these sites would be scheduled outside of the breeding season (March through August) for this species, and would avoid areas of heavy riparian vegetation. The Proposed Action may affect but is not likely to adversely affect the Least Bell's vireo.

No impacts on designated Least Bell's vireo critical habitat are expected to occur as a result of the Proposed Action. None of the proposed training sites occur within critical habitat.

## 6.22 SONORAN PRONGHORN

### 6.22.1 Habitat Requirements and Current Status

The Sonoran pronghorn was listed as federally endangered without critical habitat on 11 March 1967 (32 FR 4001) and a non-essential, experimental population was established in Arizona on 05 May 2011 (76 FR 25593). Some of the proposed training sites fall within the range of the non-essential, experimental population of Sonoran pronghorn. The Sonoran pronghorn has reddish-brown to tan upperparts; the lower sides, rump, and two bands on the neck are white; and the neck has a short black mane. The male has a black band along each side of the snout, a black patch on each cheek, and sometimes black bands on the neck. Most males and females have horns (larger and usually forked in males). The Sonoran pronghorn has two toes on each hoofed foot (NatureServe 2018).

Sonoran pronghorn are found within broad alluvial valleys separated by granite mountains and mesas; areas with small-leaf trees (foothill paloverde, mesquite, catclaw, crucifixion thorn, smoketree [*Psorothamnus spinosus*]) and numerous species of cacti (saguaro, barrel cactus, etc.) scattered over rocky hills and coarse-soiled slopes; and with triangle-leaf bursage (*Ambrosia deltoidea*) or brittle bush (*Encelia* spp.) almost always present. Habitat in southwestern Arizona includes big galleta grass (*Hilaria rigida*), six week three-awn (*Aristida adscensionis*), six weeks grama (*Bouteloua barbata*), creosote bush, bursage (*Ambrosia* spp.), and saltbush (*Atriplex* spp.), similar to habitat in Sonora, where pronghorns occupy areas of stable sand dunes that have meadowlike conditions within or adjacent to them. Sonoran pronghorn occur in creosote bush-bursage habitat throughout the year, and utilize areas containing palo verde-mixed cacti plant associations in spring and summer (NatureServe 2018).

Threats to the Sonoran pronghorn include highways, fences, railroads, developed areas, and irrigation canals that block access to essential forage or water resources; a variety of human activities that disturb pronghorn or degrade habitat, including livestock grazing in the US and Mexico; military activities; recreation; poaching and hunting; clearing of desertscrub and planting of buffelgrass (*Pennisetum ciliare*), particularly in Sonora; gold mining southeast of Sonoyta, Sonora; dewatering and development along the Gila River and Rıo Sonoyta; and high levels of undocumented immigration and drug trafficking across the international border, and associated law enforcement response in the US; wildfire, fueled by nonnative perennial and ephemeral plants that have increased fine fuels and allowed fire to become a much more frequent event in the Sonoran Desert; drought and associated limited food and water; and small population size and random changes in demographics (76 FR 25594).

### 6.22.2 Habitat Evaluation and Suitability

The NATO Hill (WPT 74), South Tactical Range, and Target 333 sites contain suitable habitat for the native population of Sonoran pronghorn. The OP Charlie, Ruby Fuzzy Paladins, Blackhills HLZ/DZ, Lost Acre HLZ/DZ, Penitas HLZ/DZ, Pond HLZ/DZ, Prieto HLZ/DZ, Rancho Seco HLZ/DZ, Sierrita HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ sites contain suitable habitat for the non-essential, experimental population of Sonoran pronghorn. The Range 3 – HLZ 1, Range 3 – HLZ 2, Range 3 – HLZ 3, Range 3 – HLZ 4, Range 3 – HLZ 5, Range 3 – HLZ 6, and Range 3 – Tower Helipad sites contain suitable habitat for both population types of the Sonoran pronghorn. The Black Mountain Reservoir and Three Points

Public Shooting Range is within 500 feet of suitable habitat for the non-essential, experimental population of the Sonoran pronghorn.

### 6.22.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Sonoran pronghorn may occur as a result of the Proposed Action at the NATO Hill (WPT 74), South Tactical Range, OP Charlie, Range 3 – HLZ 1, Range 3 – HLZ 2, Range 3 – HLZ 3, Range 3 – HLZ 4, Range 3 – HLZ 5, Range 3 – HLZ 6, and Range 3 – Tower Helipad sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed NATO Hill (WPT 74), South Tactical Range, OP Charlie, Range 3 – HLZ 1, Range 3 – HLZ 2, Range 3 – HLZ 3, Range 3 – HLZ 4, Range 3 – HLZ 5, Range 3 – HLZ 6, and Range 3 – Tower Helipad sites including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, pyrotechnic use, and shooting/firing range.

Short-term, negligible, direct adverse impacts on the Sonoran pronghorn may occur as a result of the Proposed Action at the Target 333 site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Target 333 site including HLZs/DZs, parachute operation, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, pyrotechnic use, and shooting/firing range.

Short-term, negligible, direct adverse impacts on the Sonoran pronghorn may occur as a result of the Proposed Action at the Ruby Fuzzy Paladins site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Ruby Fuzzy Paladins site including HLZs/DZs, parachute operation, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, military operations in urban terrain/urban evasion, and technical rope work.

Short-term, negligible, direct adverse impacts on the Sonoran pronghorn may occur as a result of the Proposed Action at the Blackhills HLZ/DZ, Lost Acre HLZ/DZ, Pond HLZ/DZ, Prieto HLZ/DZ, Sierrita HLZ/DZ, and Silvermine HLZ/DZ sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Blackhills HLZ/DZ, Lost Acre HLZ/DZ, Pond HLZ/DZ, Prieto HLZ/DZ, Sierrita HLZ/DZ, and Silvermine HLZ/DZ sites including HLZs/DZs and technical rope work.

Short-term, negligible, direct adverse impacts on the Sonoran pronghorn may occur as a result of the Proposed Action at the Penitas HLZ/DZ, Rancho Seco HLZ/DZ, and Waterman HLZ/DZ sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Penitas HLZ/DZ, Rancho Seco HLZ/DZ, and Waterman HLZ/DZ sites including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Sonoran pronghorn may occur as a result of the Proposed Action at the Three Points Public Shooting Range site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Three Points Public Shooting Range site including shooting/firing range.

Short-term, negligible, direct adverse impacts on the Sonoran pronghorn may occur as a result of the Proposed Action at the Black Mountain Reservoir site. The Proposed Action would consist

of a training area of 0.3 to 2.7 acres at the proposed Black Mountain Reservoir site including amphibian operations.

Parachute, helicopter, and/or ground/water operations could cause the Sonoran pronghorn to avoid the areas and impact daily activities and movement. Because of the avoidance expected due to the human disturbance and noise, it is highly unlikely that pronghorn would be exposed to potential collision with vehicles/equipment and artillery fire. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.23 MEXICAN WOLF

### 6.23.1 Habitat Requirements and Current Status

The Mexican wolf was listed as federally endangered without critical habitat on 28 April 1976 (41 FR 17742) and a non-essential, experimental population was established in Arizona and New Mexico on 24 January 1998 (63 FR 1752). The Mexican wolf was extirpated from the southwestern US by 1970. Some of the proposed PR training sites fall within the range of the non-essential, experimental population of the Mexican wolf. The Mexican wolf is the smallest extant gray wolf in North America. Adults weigh 50 to 90 pounds with a length of 5 to 6 feet and height at shoulder of 25 to 32 inches. Mexican wolves are typically a patchy black, brown to cinnamon, and cream color, with primarily light underparts. Solid black or white coloration, as seen in other North American gray wolves, does not exist in Mexican wolves (80 FR 2490).

The Mexican wolves are not limited to any particular habitat type, but viable populations occur only where human population density and persecution levels are low and prey densities are high. Young are born in a den that may be on a bluff or slope among rocks or in an enlarged badger hole (NatureServe 2018).

Mexican wolf populations declined rapidly in the early and mid-1900s, due to government and private efforts across the US to kill wolves and other predators. By 1925, poisoning, hunting, and trapping efforts drastically reduced Mexican wolf populations in all but a few remote areas of the southwestern United States, and control efforts shifted to wolves in the borderlands between the US and Mexico. It was estimated that breeding populations of Mexican wolves were extirpated from the US by 1942. The use of increasingly effective poisons and trapping techniques during the 1950s and 1960s eliminated remaining Mexican wolves north of the United States-Mexico border, although occasional reports of wolves crossing into the US from Mexico persisted into the 1960s (80 FR 2491).

### 6.23.2 Habitat Evaluation and Suitability

The Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Mogollon Rim (General Crook), Negrito Airstrip, Negrito Center, Negrito North, Rainy Mesa, Glenwood Ranger Station, Negrito Helibase, Negrito South, Overgaard – USFS Helitack Base, Reserve Ranger Station, Catron County Fairgrounds, Salt River High, Salt River Low, Caldwell Meadows, Gila County Sheriff Roosevelt Substation, Playas Training and Research Center, Tombstone 8 HLZ, and Sprucedale Guest Ranch sites contain suitable habitat for the non-essential, experimental population of Mexican wolf.

### 6.23.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Overgaard – USFS Helitack Base, Caldwell Meadows, and Gila County Sheriff Roosevelt Substation sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Hannagan Meadow – USFS Helitack Base, Helibase Circular, KP Circular, KP Tank, Overgaard – USFS Helitack Base, Caldwell Meadows, and Gila County Sheriff Roosevelt Substation sites including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Mogollon Rim (General Crook) site. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Mogollon Rim (General Crook) site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Negrito Airstrip site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Negrito Airstrip site including HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Negrito North, Rainy Mesa, and Negrito South sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Negrito North, Rainy Mesa, and Negrito South sites including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Negrito Center site. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Negrito Center site including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Negrito Helibase site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Negrito Helibase site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Glenwood Ranger Station, Reserve Ranger Station, and Catron County Fairgrounds sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the

proposed Glenwood Ranger Station, Reserve Ranger Station, and Catron County Fairgrounds sites including HLZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Salt River High site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River High site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Salt River Low site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Salt River Low site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, HLZs/DZs/overwater hoist operations, and amphibious operations.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Tombstone 8 HL, site. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Tombstone 8 HLZ site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Playas Training and Research Center site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Playas Training and Research Center site including HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; technical rope work; pyrotechnic use; and shooting/firing range.

Short-term, negligible, direct adverse impacts on the Mexican wolf may occur as a result of the Proposed Action at the Sprucedale Guest Ranch site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Sprucedale Guest Ranch site including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Parachute, helicopter, and/or ground operations could cause the Mexican wolf to avoid the areas and impact daily activities and movement. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas and open water. Also, prior to the start of PR training activities, the USAF would coordinate with the Gila National Forest and USFWS' Wolf Reintroduction Program and Interagency Field Team when activities need to occur within wolf sensitive areas (wolf dens and wolf rendezvous sites). If feasible, the Proposed Action would avoid Mexican wolf sensitive areas between 1 April and 30 September. If proposed PR training activities cannot be avoided at wolf sensitive sites during this time period, PR training activities would be coordinated with the Gila National Forest and USFWS' Wolf Reintroduction Program and Interagency Field Team. Additionally, 1-mile buffers would be established around active wolf dens between 1 April and 31 July, and around active wolf rendezvous sites between 1 June and 30 September.

The Proposed Action is not likely to jeopardize the non-essential experimental population of Mexican wolf.

## 6.24 STEPHENS' KANGAROO RAT

### 6.24.1 Habitat Requirements and Current Status

The Stephens' kangaroo rat was listed as federally endangered without critical habitat on 30 September 1988 (53 FR 38465). The Stephens' kangaroo rat is a medium-size kangaroo rat. The fur is white below and many hairs in top and bottom tail stripes have white bases, giving stripes a grizzled appearance. They have a crested tail about 1½ times body length and a white tail stripe about half as wide as a dark dorsal stripe. Their hindfoot has five toes and the soles of the feet are dusky (USFWS 2019s).

The Stephens' kangaroo rat habitats include annual grassland and coastal sage scrub with sparse shrub cover, the former more favorable than the latter, commonly in association with California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and common stork's-bill (*Erodium cicutarium*). Typical habitat includes sparsely vegetated areas (perennial cover less than 30 percent) with loose, friable, well-drained soil (generally at least 0.5 meters deep) and flat or gently rolling terrain. This species may recolonize abandoned agricultural land. It is most abundant where stands of native vegetation remain but deceases as bunchgrass density increases. Periods of inactivity are spent in underground burrows. Individuals may construct their own burrows or may nest in old burrows of the California ground squirrel (*Otospermophilus beecheyi*) or in abandoned burrows of pocket gophers (*Thomomys* spp.) (NatureServe 2018).

The Stephens' kangaroo rat is threatened by loss of habitat as a result of agriculture, and more recently, urban development. These land uses have also resulted in increased fragmentation of the remaining habitat, making populations of Stephens' kangaroo rat more susceptible to the effects of some types of grazing, off-road vehicle activity, the use of rodenticides, genetic bottlenecks, local extirpation, and predators such as domestic cats (*Felis catus*) associated with adjacent development (USFWS 1997).

### 6.24.2 Habitat Evaluation and Suitability

The Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites have potentially suitable habitat for the Stephens' kangaroo rat.

### 6.24.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Stephens' kangaroo rat may occur as a result of the Proposed Action at the Camp Pendleton Off-Road Trail site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton Off-Road Trail site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Short-term, negligible, direct adverse impacts on the Stephens' kangaroo rat may occur as a result of the Proposed Action at the Camp Pendleton PDL site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton PDL site including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country

dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Parachute, helicopter, and/or ground operations could cause the Stephens' kangaroo rat to avoid the areas and impact daily activities and movement. There is also a potential for injury to occur due to vehicle traffic. However, the presence of humans and associated noise is likely to cause the animals to flush from the area, reducing this potential risk. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas, which are less likely to be inhabited by kangaroo rats. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.25 MEXICAN LONG-NOSED BAT

### 6.25.1 Habitat Requirements and Current Status

The Mexican long-nosed bat was listed as federally endangered without critical habitat on 30 September 1988 (53 FR 38456). The Mexican long-nosed bat is a grayish-brown above and paler on shoulders and underparts. Its long nose has leaf-like projections and it has a long and protrusible tongue, medium-size ears, and no tail (USFWS 2019j).

The Mexican long-nosed bat habitats include desertscrub, open conifer-oak woodlands, and pine forests in the Upper Sonoran and Transition Life Zones, and generally arid areas where agave plants are present. Colonies roost in caves (or similar mines and tunnels), sometimes in culverts, hollow trees, or unused buildings (NatureServe 2018).

The reasons for the evident decline of the Mexican long-nosed bat are not entirely clear, but are probably associated, at least in part, with habitat disruption. The two most important aspects of the bats' habitat involve roosting sites and food sources. A limited number of caves and mines provide a proper roosting environment. While there are no precisely documented cases of roosts being made unusable, such sites are becoming increasingly subject to human destruction and disturbance (53 FR 38458).

### 6.25.2 Habitat Evaluation and Suitability

The Playas Training and Research Center site has potentially suitable habitat for the Mexican long-nosed bat.

### 6.25.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Mexican long-nosed bat may occur as a result of the Proposed Action at the Playas Training and Research Center site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Playas Training and Research Center site including HLZs/DZs; fixed wing landing zones; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; technical rope work; pyrotechnic use; and shooting/firing range.

Parachute, helicopter, and/or ground operations could cause the Mexican long-nosed bat to avoid the areas and impact nightly foraging activities and movement. With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. The Proposed Action may affect but is not likely to adversely affect this species.

## 6.26 JAGUAR

### 6.26.1 Habitat Requirements and Current Status

The US population of jaguar was listed as federally endangered on 22 July 1997 (62 FR 39147), with critical habitat designated on 05 March 2014 (79 FR 12571). The jaguar is a large, heavy-bodied, big-headed cat, yellowish to tawny, and spotted with black rosettes or rings in horizontal rows along the back and sides. Most rings are tan inside, with one or two black spots. The jaguar's legs, head, and tail have smaller, solid spots, usually giving way to incomplete bands near the end of the tail (USFWS 2019g).

The jaguar is found near water in warm, tropical savannas and forests within core of their range. In the northern portion of their range, they are found within thornscrub, desertscrub, and grasslands. Vegetation communities used in Arizona range from Sonoran desertscrub at lower elevations to sub-alpine mixed conifer in the mountain ranges (USFWS 2019g).

Threats to the jaguar include illegal shooting; overhunting of jaguar prey species; and habitat loss, fragmentation, and modification. Large-scale changes in jaguar habitat have affected not only habitat for breeding and foraging, but also movement corridors (81 FR 92846).

Based on current knowledge of the physical or biological features and habitat characteristics required to sustain the jaguar's vital life-history functions in the Northwestern Management Unit and the United States, the PCEs specific to jaguars are:

- Expansive open spaces in the southwestern US of at least 32 to 37 square miles in size, which:
    - Provide connectivity to Mexico.
    - Contain adequate levels of native prey species, including deer (*Odocoileus hemionus*) and javelina (*Pecari tajacu*), as well as medium-sized prey such as coatis (*Nasua narica*), skunks (*Mephitis mephitis*), raccoons (*Procyon lotor*), or jackrabbits (*Lepus* spp.).
    - Include surface water sources available within 12.4 miles of each other.
    - Vegetative cover, which:
        - Contains 1- to 50-percent canopy cover within Madrean evergreen woodland, generally recognized by a mixture of oak, juniper, and pine trees on the landscape, or semidesert grassland vegetation communities, usually characterized by tobosagrass or black grama along with other grasses.
        - Are characterized by intermediately, moderately, or highly rugged terrain.
        - Are below 6,562 feet in elevation.
        - Are characterized by minimal to no human population density, no major roads, or no stable nighttime lighting over any 0.4 square-mile area.

Because habitat in the US is at the edge of the species' northern range, and is marginal compared to known habitat throughout the range, the USFWS determined that all of the primary constituent elements discussed must be present in each specific area to constitute critical jaguar habitat in the

United States, including connectivity to Mexico (but that connectivity may be provided either through a direct connection to the border or by other areas essential for the conservation of the species (79 FR 12587).

The Saddle Mountain East, Saddle Mountain South, and Saddle Mountain West sites are within jaguar critical habitat and the Caliente HLZ/DZ site is within 0.5 mile of jaguar critical habitat; however, none of the above sites contain suitable habitat for the jaguar.

### 6.26.2 Habitat Evaluation and Suitability

The Ranger, Redington Pass, Rucker HLZ, Devon, and Portal Cabin and CCC Bunkhouse sites have potentially suitable habitat for the jaguar. The Black Mountain Reservoir site is within 500 feet of potentially suitable habitat for the jaguar.

### 6.26.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the jaguar may occur as a result of the Proposed Action at the Ranger site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Ranger site including HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the jaguar may occur as a result of the Proposed Action at the Redington Pass site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Redington Pass site including cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the jaguar may occur as a result of the Proposed Action at the Rucker HLZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Rucker HLZ site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Short-term, negligible, direct adverse impacts on the jaguar may occur as a result of the Proposed Action at the Devon site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Devon site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and technical rope work.

Short-term, negligible, direct adverse impacts on the jaguar may occur as a result of the Proposed Action at the Portal Cabin and CCC Bunkhouse site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Portal Cabin and CCC Bunkhouse site including camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; and survival training/natural resource consumption.

Short-term, negligible, direct adverse impacts on the jaguar may occur as a result of the Proposed Action at the Black Mountain Reservoir site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Black Mountain Reservoir site including amphibian operations.

Noise and human activity would temporarily exceed typical disturbance levels within the proposed training sites. If any jaguars were present during the Proposed Action, they might temporarily avoid the training area, or otherwise temporarily modify their behavior; however, jaguars are uncommon and infrequent in these areas. The temporary and infrequent noise by people, vehicles, and helicopters would be expected to have short-term, negligible impact to the jaguar through habitat avoidance. The training activities would not impede long distance movements of the jaguars and may only temporarily displace native prey species. Furthermore, with the exception of light foot-traffic, training activities would be restricted to already disturbed areas; therefore, the training activities may affect but are not likely to adversely affect the jaguar.

No impacts on designated jaguar critical habitat are expected to occur as a result of the Proposed Action. None of the proposed PR training sites occur within critical habitat.

## 6.27 NEW MEXICO MEADOW JUMPING MOUSE

### 6.27.1 Habitat Requirements and Current Status

The New Mexico meadow jumping mouse was listed as federally endangered on 10 July 2014 (79 FR 33119), with critical habitat designated on 16 March 2016 (81 FR 14263). The New Mexico meadow jumping mouse is grayish-brown on the back, yellowish-brown on the sides, and white underneath. The species is approximately 7.4 to 10 inches in total length, with elongated feet (1.2 inch) and an extremely long, bicolored tail (5.1 inches) (USFWS 2019l).

The meadow jumping mouse is a habitat specialist. It nests in dry soils, but uses moist, streamside, dense riparian/wetland vegetation up to an elevation of about 8,000 feet. The jumping mouse appears to only utilize two riparian community types: persistent emergent herbaceous wetlands (i.e., beaked sedge [*Carex rostrata*] and reed canarygrass [*Phalaris arundinacea*] alliances); and scrub-shrub wetlands (i.e., riparian areas along perennial streams that are composed of willows and alders [*Alnus* spp.]). It especially uses microhabitats of patches or stringers of tall dense sedges on moist soil along the edge of permanent water. Home ranges vary between 0.37 and 2.7 acres and may overlap. The jumping mouse is generally nocturnal but occasionally is diurnal. It is active only during the growing season of the grasses and forbs on which it depends. During the growing season, the jumping mouse accumulates fat reserves by consuming seeds. Preparation for hibernation (weight gain, nest building) seems to be triggered by day length. The jumping mouse hibernates about 9 months out of the year, longer than most other mammals (USFWS 2019l).

Threats to the New Mexico meadow jumping mouse include habitat loss and habitat fragmentation.

Critical habitat for the New Mexico meadow jumping mouse was designated on 16 March, 2016 (81 FR 14263). The PCEs specific to the New Mexico meadow jumping mouse include:

- Riparian communities along rivers and streams, springs and wetlands, or canals and ditches that contain:
    - Persistent emergent herbaceous wetlands especially characterized by presence of primarily forbs and sedges (*Carex* spp. or *Schoenoplectus pungens*); or
    - Scrub-shrub riparian areas that are dominated by willows or alders with an understory of primarily forbs and sedges.

- Flowing water that provides saturated soils throughout the jumping mouse's active season that supports tall (average stubble height of herbaceous vegetation of at least 24 inches) and dense herbaceous riparian vegetation composed primarily of sedges and forbs, including, but not limited to, one or more of the following associated species: spikerush (*Eleocharis macrostachya*); beaked sedge; rushes *(Juncus* spp. and *Scirpus* spp.); and numerous species of grasses such as bluegrass, slender wheatgrass (*Elymus trachycaulus*), brome (*Bromus* spp.), foxtail barley (*Hordeum jubatum*), or Japanese brome (*Bromus japonicas*); and forbs such as water hemlock (*Circuta douglasii*), field mint (*Mentha arvense*), asters (*Aster* spp.), or cutleaf coneflower (*Rudbeckia laciniata*.
- Sufficient areas of 5.6 to 15 miles along a stream, ditch, or canal that contain suitable or restorable habitat to support movements of individual New Mexico meadow jumping mice.
- Adjacent floodplain and upland areas extending approximately 330 feet outward from the boundary between the active water channel and the floodplain (as defined by the bankfull stage of streams) or from the top edge of the ditch or canal.

Critical habitat areas were designated to provide for the conservation of the New Mexico meadow jumping mouse throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been designated in Arizona and New Mexico. One of the proposed PR training sites occurs within the New Mexico meadow jumping mouse critical habitat. The Caldwell Meadows site is within critical habitat; however, the Caldwell Meadows site does not contain suitable habitat for the New Mexico meadow jumping mouse.

### 6.27.2 Habitat Evaluation and Suitability

None of the proposed PR training sites contain suitable habitat for the New Mexico meadow jumping mouse.

### 6.27.3 Determination of Effects

The Caldwell Meadows site is within the New Mexico meadow jumping mouse designated critical habitat; however, the site does not contain suitable habitat for the species. Training activities at the Caldwell Meadows site would include HLZs/DZs; parachute operation; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

With the exception of light foot-traffic, training activities would be restricted to already disturbed areas in the upland habitat away from the river and riparian vegetation. To avoid impacts on the New Mexico meadow jumping mouse, personnel would avoid the West Fork of the Black River and riparian vegetation by not going within 300 feet of the stream at this site. During the New Mexico meadow jumping mouse active season (June through October), training would be limited to daytime activities to avoid disrupting the mouse’s nocturnal activities. With avoidance of the river and riparian habitat, training activities may affect but are not likely to adversely affect the New Mexico meadow jumping mouse.

No impacts on New Mexico meadow jumping mouse critical habitat would occur as a result of the Proposed Action. The New Mexico meadow jumping mouse has designated critical habitat

at the Caldwell Meadows site. Training activities would be restricted to already disturbed areas in the upland and would not occur in the creek or riparian areas. Minor foot-traffic may occur in the upland area adjacent to the creek and near the critical habitat.

## 6.28 THREAD-LEAVED BRODIAEA

### 6.28.1 Habitat Requirements and Current Status

The thread-leaved brodiaea was listed as federally threatened on 13 October 1998 (63 FR 54975), with critical habitat designated on 08 February 2011 (76 FR 6848). The thread-leaved brodiaea is a perennial herb with a flowering stem, 2 to 4 cm tall, with several shorter stems. Narrow leaves arise from an underground bulb, a corm, and the flowers (March through June) are violet to red-purple in color (NatureServe 2018).

The thread-leaved brodiaea typically occurs on gentle hillsides, valleys, and floodplains in mesic, southern needlegrass grassland and alkali grassland plant communities in association with clay, loamy sand, or alkaline silty-clay soils. Sites occupied by this species are frequently intermixed with, or near, vernal pool complexes, such as near San Marcos (San Diego County), the Santa Rosa Plateau, and southwest of Hemet in Riverside County (63 FR 54976-54977).

Thread-leaved brodiaea and its suitable habitat have been significantly reduced by urbanization, agricultural conversion, and discing for fire and weed control (63 FR 54977).

Critical habitat for the thread-leaved brodiaea was designated on 08 February 2011 (76 FR 6848). The PCEs specific to the thread-leaved brodiaea include:

- Appropriate soil at a range of elevations and in a variety of plant communities, specifically:
    - Clay soil series of various origins (such as Alo, Altamont, Auld, or Diablo), clay lenses found as unmapped inclusions in other soil series, or loamy soil series underlain by a clay subsoil (such as Fallbrook, Huerhuero, or Las Flores) occurring between the elevations of 100 and 2,500 feet.
    - Soils (such as Cieneba-rock outcrop complex and Ramona family-Typic Xerothents soils) altered by hydrothermal activity occurring between the elevations of 1,000 and 2,500 feet.
    - Silty loam soil series underlain by a clay subsoil or caliche that are generally poorly drained, moderately to strongly alkaline, granitic in origin (such as Domino, Grangeville, Traver, Waukena, or Willows) occurring between the elevations of 600 and 1,800 feet.
    - Clay loam soil series (such as Murrieta) underlain by heavy clay loams or clays derived from Olivine basalt lava flows occurring between the elevations of 1,700 and 2,500 feet.
    - Sandy loam soils derived from basalt and granodiorite parent materials; deposits of gravel, cobble, and boulders; or hydrologically fractured, weathered granite in intermittent streams and seeps occurring between the elevations of 1,800 and 2,500 feet.

- Areas with a natural, generally intact surface and subsurface soil structure, not permanently altered by anthropogenic land use activities (such as deep, repetitive discing, or grading), extending up to 820 feet from mapped occurrences of thread-leaved brodiaea to provide for space for individual population growth, and space for pollinators.

Critical habitat areas were designated to provide for the conservation of the thread-leaved brodiaea throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been designated in California. None of the proposed PR training sites occur within the thread-leaved brodiaea critical habitat.

### 6.28.2 Habitat Evaluation and Suitability

The Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites have potentially suitable habitat for the thread-leaved brodiaea.

### 6.28.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the thread-leaved brodiaea may occur as a result of the Proposed Action at the Camp Pendleton Off-Road Trail site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton Off-Road Trail site including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Short-term, negligible, direct adverse impacts on the thread-leaved brodiaea may occur as a result of the Proposed Action at the Camp Pendleton PDL site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Camp Pendleton PDL site including HLZs/DZs; parachute operation; camping, bivouacking; and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; military operations in urban terrain/urban evasion; and technical rope work.

Potential direct impacts would include trampling or crushing of thread-leaved brodiaea from personnel and training-related equipment such as parachute, helicopter, or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance. However, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the site and only for short durations (few hours once a year). Avoidance of the blooming period (March through June) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

No impacts on designated thread-leaved brodiaea critical habitat are expected to occur as a result of the Proposed Action. None of the proposed PR training sites occur within critical habitat.

## 6.29 COCHISE PINCUSHION CACTUS

### 6.29.1 Habitat Requirements and Current Status

The Cochise pincushion cactus was listed as federally threatened without critical habitat on 09 January 1986 (51 FR 952). The Cochise pincushion cactus is a small (1 to 1.5 centimeters above ground) unbranched cactus, usually not more than 4 centimeters wide. It has "cottony" areoles and bright white radial spines. The central spines are usually lacking, but each areole

may have one to three slender spines. Most of the stem remains underground all year and during dry periods the portion of the plant exposed may shrink and become flush with the ground surface (USFWS 2019d).

The Cochise pincushion cactus is found only on one type of high-calcium limestone outcrop in the Mexican Highland vegetation community at elevations of 4,200 to 4,700 feet. Soils are thin with a soil crust of lichens, mosses, and algae, and bedrock is very near the surface at occupied sites. Plants tend to be in the open, not underneath other plants. Overall vegetation at occupied sites is sparse (USFWS 2019d).

Threats to the Cochise pincushion cactus include habitat destruction due to livestock grazing leading to trail formation, soil disturbance, erosion channels, and direct destruction of plants by trampling (51 FR 954).

### 6.29.2 Habitat Evaluation and Suitability

The Highway 80 Paladins (TW 2 Paladins) site has potentially suitable habitat for the Cochise pincushion cactus.

### 6.29.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Cochise pincushion cactus may occur as a result of the Proposed Action at the Highway 80 Paladins (TW 2 Paladins) site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Highway 80 Paladins (TW 2 Paladins) site including HLZs/DZs, parachute operation, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Potential direct impacts would include trampling or crushing of Cochise pincushion cactus from personnel and training-related equipment such as parachute, helicopter, or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance. However, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the site and only for short durations (few hours once a year). Avoidance of the blooming period (mid-March to mid-April) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

## 6.30 PIMA PINEAPPLE CACTUS

### 6.30.1 Habitat Requirements and Current Status

The Pima pineapple cactus was listed as federally endangered without critical habitat on 23 September 1993 (58 FR 49875). The Pima pineapple cactus is a low-growing hemispherical cactus that may be found as single or multi-stemmed plants. Adults measure 4 to 18 inches tall and 3 to7 inches in diameter. The spines are stout and arranged in clusters with one central hooked spine and six to15 radial straight spines. The spines are originally straw colored but become black with age. The flowers are yellow and the fruit is a green ellipsoid (USFWS 2019p).

The Pima pineapple cactus is found in alluvial basins and hillsides in semi-desert grasslands, desertscrub, and the transition area between the two. It is most commonly found on open areas

on flat ridge-tops or slopes of less than 10 to 15 percent. Soils range from shallow to deep and silty to rocky. The distribution of the cactus is patchy, with highly variable densities, and is widely distributed across the areas of suitable habitat. Lands subject to considerable disturbances due to human development or other land uses generally do not support the cactus (USFWS 2019p).

The Pima pineapple cactus is vulnerable to ground-disturbing activities that remove or degrade natural vegetation cover, including mining, poor livestock management, and urban/exurban development that also fragments remaining habitat areas. Expansion of nonnative invasive plants that alter the fire frequency and intensity, predation by insects and small mammals, and extended drought are also threats to the cactus (USFWS 2019p).

### 6.30.2 Habitat Evaluation and Suitability

The Caliente HLZ/DZ, Ruby Fuzzy Paladins, Blackhills HLZ/DZ, Penitas HLZ/DZ, and Sierrita HLZ/DZ sites have potentially suitable habitat for the Pima pineapple cactus. The Black Mountain Reservoir site is within 500 feet of potentially suitable habitat for the Pima pineapple cactus.

### 6.30.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Pima pineapple cactus may occur as a result of the Proposed Action at the Caliente HLZ/DZ, Blackhills HLZ/DZ, and Sierrita HLZ/DZ sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Caliente HLZ/DZ, Blackhills HLZ/DZ, and Sierrita HLZ/DZ sites including HLZs/DZs and technical rope work.

Short-term, negligible, direct adverse impacts on the Pima pineapple cactus may occur as a result of the Proposed Action at the Penitas HLZ/DZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Penitas HLZ/DZ site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Short-term, negligible, direct adverse impacts on the Pima pineapple cactus may occur as a result of the Proposed Action at the Ruby Fuzzy Paladins site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Ruby Fuzzy Paladins site including HLZs/DZs, parachute operation, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, survival training/natural resource consumption, military operations in urban terrain/urban evasion, and technical rope work.

Short-term, negligible, direct adverse impacts on the Pima pineapple cactus may occur as a result of the Proposed Action at the Black Mountain Reservoir site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Black Mountain Reservoir site including amphibious operations.

Potential direct impacts would include trampling or crushing of Pima pineapple cactus from personnel and training-related equipment such as parachute, helicopter, or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance. However, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the site and only for

short durations (few hours once a year). Avoidance of the blooming period (mid-July through August) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

## 6.31 NICHOL'S TURK'S HEAD CACTUS

### 6.31.1 Habitat Requirements and Current Status

The Nichol's Turk's head cactus was listed as federally endangered without critical habitat on 28 November 1979 (44 FR 61927). The Nichol's Turk's head cactus is a small, blue-green to gray-green, barrel cactus that is globose. As it grows, the cactus will become more columnar. Large individuals can range in height of 16 to 20 inches tall and 5 to 8 inches wide. Individuals are single stemmed with eight ribs that spiral around the base to the apex. Each areole has three central spines, one black that curves downward, and two red or gray that curve upwards; and five radial spines that are black or partially gray. The flowers are pink to red, and bloom near the apex of the stem. Flowers are 1.5 to 2.7 inches in diameter (USFWS 2019m).

The Nichol's Turk's head cactus is found on limestone substrates along dissected alluvial fans, inclined terraces and saddles, bajadas, and debris flows. The Pennsylvania-aged Horquilla limestone; however, appears to support higher densities of the cacti. The cactus grows in open to partially shaded areas, including limestone outcrops (USFWS 2019m).

Threats to Nichol's Turk's head cactus include activities associated with the mining of minerals, use of recreational off-road vehicles, the spread of invasive species like buffelgrass, drought, and habitat disturbance associated with border and law enforcement activities (USFWS 2019m).

### 6.31.2 Habitat Evaluation and Suitability

The Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ sites have potentially suitable habitat for the Nichol's Turk's head cactus.

### 6.31.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Nichol's Turk's head cactus may occur as a result of the Proposed Action at the Lost Acre HLZ/DZ and Silvermine HLZ/DZ sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Lost Acre HLZ/DZ and Silvermine HLZ/DZ sites including HLZs/DZs and technical rope work.

Short-term, negligible, direct adverse impacts on the Nichol's Turk's head cactus may occur as a result of the Proposed Action at the Waterman HLZ/DZ site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Waterman HLZ/DZ site including HLZs/DZs, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, and technical rope work.

Potential direct impacts would include trampling or crushing of Nichol's Turk's head cactus from personnel and training-related equipment such as helicopter operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance. However, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the site and only for short durations (few hours once a year). Avoidance of the blooming period (mid-April through July) may

reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

## 6.32 ACUNA CACTUS

### 6.32.1 Habitat Requirements and Current Status

The acuna cactus was listed as federally endangered on 31 October 2013 (78 FR 60607), with critical habitat designated on 18 August 2016 (81 FR 55265). The acuna cactus is a small cactus with a single plump stem and straight central spines. The cactus can reach 30 centimeters in height. Immature individuals do not resemble mature plants and are instead disc-shaped or spherical with no central spines. Once the immature plants reach 4 centimeters, central spines begin to develop (USFWS 2019a).

The acuna cactus occurs in valleys and on small knolls and gravel ridges of up to 30 percent slope in the Palo-Verde-Saguaro Association of the Arizona Upland subdivision of the Sonoran desertscrub at 1,198 to 3,773 feet in elevation. The plant is not found on all seemingly suitable habitat, and microclimate (soil structure, chemistry, and moisture) may be an important factor (USFWS 2019a).

Threats to the acuna cactus are largely from long-term drought; effects of climate change; ongoing and future border activities; and future nonnative, invasive species issues (USFWS 2019a).

Critical habitat for the acuna cactus was designated on 18 August 2016 (81 FR 55265). The PCEs specific to the acuna cactus include:

- Native vegetation within the Paloverde-Cacti-Mixed Scrub Series of the Arizona Upland Subdivision of the Sonoran Desertscrub at elevations between 1,198 to 3,773 feet. This vegetation must contain predominately native plant species that:
    - Provide protection to the acuna cactus. Examples of such plants are creosote bush, ironwood (*Olneya tesota*), and paloverde (*Parkinsonia* spp.).
    - Provide for pollinator habitat with a radius of 2,953 feet around each individual, reproducing acuna cactus.
    - Allow for seed dispersal through the presence of bare soils immediately adjacent to and within 33 feet of the individual acuna cactus.
- Soils overlying rhyolite, andesite, tuff, granite, granodiorite, diorite, or Cornelia quartz monzonite bedrock that are in valley bottoms, on small knolls, or on ridgetops, and are generally on slopes of less than 30 percent.

Critical habitat areas were designated to provide for the conservation of the acuna cactus throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been designated in Arizona. None of the proposed PR training sites occur within the acuna cactus critical habitat.

### 6.32.2 Habitat Evaluation and Suitability

The Target 333 site has potentially suitable habitat for the acuna cactus.

### 6.32.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the acuna cactus may occur as a result of the Proposed Action at the Target 333 site. The Proposed Action would consist of a training area of 0.3 to 2.7 acres at the proposed Target 333 site including HLZs/DZs, parachute operation, cross-country dismounted (non-vehicle) movements, mounted (vehicle) movement/blackout driving, technical rope work, pyrotechnic use, and shooting/firing range.

Potential direct impacts would include trampling or crushing of acuna cactus from personnel and training-related equipment such as parachute, helicopter, or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance. However, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the site and only for short durations (few hours once a year). Avoidance of the blooming period (late-March through April) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

No impacts on designated acuna cactus critical habitat are expected to occur as a result of the Proposed Action. None of the proposed PR training sites occur within critical habitat.

## 6.33 FICKEISEN PLAINS CACTUS

### 6.33.1 Habitat Requirements and Current Status

The Fickeisen plains cactus was listed as federally endangered on 31 October 2013 (78 FR 60607), with critical habitat designated on 18 August 2016 (81 FR 55265). The Fickeisen plains cactus is a small cactus that is around 3 inches tall, and 1.5 inches in diameter. The flowers are small, cream, yellow, or yellowish-green. The spines are corky, with the central spine around 3/8 inch long, ashy white, and pointed up. The tubercles form a spiral pattern around the plant. After flowering and fruiting, the cactus will retract into the gravely soils (USFWS 2019e).

The Fickeisen plains cactus occurs on shallow soils derived from exposed layers of Kaibab limestone. Most populations occur on the margins of canyon rims, on flat terraces or benches, or on the toe of well-drained hills with less than 20 percent slope. The Fickeisen plains cactus is found within the Plains and Great Basin grasslands and the Great Basin Desertscrub vegetation communities (USFWS 2019e).

Threats to the Fickeisen plains cactus include trampling by livestock, nonnative invasive species, herbivore, drought, and climate change (USFWS 2019e).

Critical habitat for the Fickeisen plains cactus was designated on 18 August 2016 (81 FR 55265). The PCEs specific to the Fickeisen plains cactus include:

- Soils derived from limestone that are found on mesas, plateaus, terraces, the toe of gently sloping hills with up to 20 percent slope, margins of canyon rims, and desert washes. These soils have the following features:
    - They occur on the Colorado Plateau in Coconino and Mohave Counties of northern Arizona and are within the appropriate series found in occupied areas;

- They are derived from alluvium, colluvium, or eolian deposits of limestone from the Harrisburg Member of the Kaibab Formation and limestone, siltstone, and sandstone of the Toroweap and Moenkopi Formations;
- They are nonsaline to slightly saline, gravelly, shallow to moderately deep, and well-drained with little signs of soil movement. Soil texture consists of gravelly loam, fine sandy loam, gravelly sandy loam, very gravelly sandy loam, clay loam, and cobbly loam.

- Native vegetation within the Plains and Great Basin grassland and Great Basin desertscrub vegetation communities from 4,200 to 5,950 feet in elevation that has a natural, generally intact surface and subsurface that preserves the bedrock substrate and are supportive of microbiotic soil crusts where they are naturally found.
- Native vegetation that provides for habitat of identified pollinators within the effective pollinator distance of 3,280 feet around each individual Fickeisen plains cactus.

Critical habitat areas were designated to provide for the conservation of the Fickeisen plains cactus throughout the remaining portion of its geographic range in the US. Several areas of critical habitat have been designated in Arizona. One of the proposed PR training sites occurs within the Fickeisen plains cactus critical habitat. The Sinkhole site is within Fickeisen plains cactus designated critical habitat.

### 6.33.2 Habitat Evaluation and Suitability

The Sinkhole, Babbitt Ranch 1, and Panda sites have potentially suitable habitat for the Fickeisen plains cactus.

### 6.33.3 Determination of Effects

Short-term, negligible, direct adverse impacts on the Fickeisen plains cactus may occur as a result of the Proposed Action at the Sinkhole, Babbitt Ranch 1, and Panda sites. The Proposed Action would consist of training areas of 0.3 to 2.7 acres at the proposed Sinkhole, Babbitt Ranch 1, and Panda sites including HLZs/DZs; camping, bivouacking, and assembly area use; cross-country dismounted (non-vehicle) movements; mounted (vehicle) movement/blackout driving; survival training/natural resource consumption; and technical rope work.

Potential direct impacts would include trampling or crushing of Fickeisen plains cactus from personnel and training-related equipment such as helicopter or ground operations. The proposed activities could increase the potential for the establishment of nonnative and invasive species and erosion in vegetated areas due to ground disturbance. However, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the site and only for short durations (few hours once a year). Avoidance of the blooming period (late-April through May) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

No impacts on designated Fickeisen plains cactus critical habitat would be expected to occur as a result of the Proposed Action.

# 7.0 CUMULATIVE EFFECTS

Cumulative effects result from the incremental effect of the Proposed Action when added to other past, present and reasonably foreseeable future actions regardless of the agency that undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The Red Flag-Rescue (Angel Thunder) project would occur for brief periods (21 days) biannually at some of the same rural proposed PR training sites under the Proposed Action. Short-term, negligible to minor, adverse cumulative impacts on biological resources at these rural training sites would be expected. Trampling of vegetation by personnel could occur as a result of the Proposed Action and the Red Flag-Rescue project; however, because many of the proposed PR training sites were previously disturbed, significant adverse impacts are not anticipated. Because both the Proposed Action and this future project are short-term in nature and sporadic over time, these proposed PR training sites are expected to return to pre-activity conditions once training has concluded. Therefore, cumulative impacts would be short-term, negligible to minor. If future training exercises at a proposed PR training site take place, a short-term increase in cumulative impacts related to nesting birds and special-status species could occur. At locations where special-status species could occur, it is recommended to avoid use of these proposed PR training sites during spring training events to avoid disturbances to special-status species during their reproductive periods.

Similar impacts, however slightly less, as described for rural sites above would be expected for other non-rural proposed PR training sites. Impacts at the non-rural proposed PR training sites would be less because due to their non-rural, developed nature, they support a reduced number of biological resources and less suitable habitat for many plant and wildlife species, including special-status species. No significant disturbances are anticipated at these non-rural sites from proposed PR training activities under the Proposed Action**.** Therefore, incremental effects from implementation of the Proposed Action, when combined with other actions, would result in less than significant adverse cumulative impacts to biological resources.

# 8.0 CONCLUSIONS

## 8.1 EFFECTS ON FEDERALLY LISTED SPECIES

The Proposed Action may affect but is not likely to adversely affect bonytail chub, Gila chub, little Colorado spinedace, spikedace, Gila trout, Gila topminnow, Colorado pikeminnow, loach minnow, razorback sucker, three forks springsnail, Sonoran tiger salamander, arroyo toad, Sonoyta mud turtle, northern Mexican gartersnake, narrow-headed gartersnake, yellow-billed cuckoo, Sonoran pronghorn, Mexican wolf, Stephens' kangaroo rat, Mexican long-nosed bat, and jaguar.

To avoid adverse impacts on the Chiricahua leopard frog, personnel would limit their training activities at the Salt River High, Salt River Low, Caldwell Meadows, Sprucedale Guest Ranch, Devon, Portal Cabin and CCC Bunkhouse, Rancho Seco HLZ/DZ, and Little Outfit sites to areas where human activity is more prevalent, avoid riparian habitat, as well as avoid this species' breeding season, when possible. Eggs are typically laid March through June at elevations below 5,900 feet (USFWS 2019c). The Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts on this southwestern willow flycatcher, training activities at the Roosevelt Lake, Verde River, and Colorado River sites would be scheduled outside of the breeding season (April through September) for this species and would avoid areas of heavy riparian vegetation. The Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to northern aplomado falcon, training activities at the Ranger, Rucker HLZ, and Portal Cabin and CCC Bunkhouse sites would be scheduled outside of the breeding season (January through June) for this species. The Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to Yuma clapper rail, training activities at the Roosevelt Lake, Verde River, and Colorado River sites would be scheduled outside of the breeding season (March through September) for this species, and personnel would avoid areas of heavy riparian vegetation. The Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to Mexican spotted owl, training activities at the L Tank, Metz Tank, Navajo East, Ranger, Saddle Mountain West, Rucker HLZ, Charouleau Gap, Comanche, Mogollon Rim (General Crook), HLZ 5, Rogers Napier, Hannagan Meadow – USFS Helitack Base, Helibase Circular, Flagstaff Hotshot – USFS Helitack Base, KP Circular, KP Tank, Longview – USFS Helitack Base, Black Mesa – USFS Helitack Base, Mormon Lake – USFS Helitack Base, Overgaard – USFS Helitack Base, Tribeland, Cattle, Neill Flat, Portal Cabin and CCC Bunkhouse, Lake Patagonia, Rogers Lake (Logger Camp), Rogers Wren, Mesa, Devon, Spring Valley Cabin, Negrito Airstrip, Rainy Mesa, Salt River High, Salt River Low, Brooke HLZ/DZ, Jenna HLZ/DZ, and Fort Tuthill sites would be scheduled outside of the nesting season (March through August) for this species. The Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to Least Bell's vireo, training activities at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites would be scheduled outside of the breeding season (March

through August) for this species, and would avoid areas of heavy riparian vegetation. The Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to New Mexico meadow jumping mouse, personnel would avoid the West Fork of the Black River and riparian vegetation by not going within 300 feet of the stream at the Caldwell Meadows site. During the New Mexico meadow jumping mouse active season (June through October), training would be limited to daytime activities to avoid disrupting the mouse's nocturnal activities. With avoidance of the river and riparian habitat, training activities may affect but are not likely to adversely affect this species.

To avoid impacts to thread-leaved brodiaea, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the Camp Pendleton Off-Road Trail and Camp Pendleton PDL sites and only for short durations (few hours once a year). Avoidance of the blooming period (March through June) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to Cochise pincushion cactus, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the Highway 80 Paladins (TW 2 Paladins) site and only for short durations (few hours once a year). Avoidance of the blooming period (mid-March to mid-April) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to Pima pineapple cactus, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the Caliente HLZ/DZ, Blackhills HLZ/DZ, Sierrita HLZ/DZ, Penitas HLZ/DZ, Ruby Fuzzy Paladins, and Black Mountain Reservoir sites and only for short durations (few hours once a year). Avoidance of the blooming period (mid-July through August) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to Nichol's Turk's head cactus, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the Lost Acre HLZ/DZ, Silvermine HLZ/DZ, and Waterman HLZ/DZ sites and only for short durations (few hours once a year). Avoidance of the blooming period (mid-April through July) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to acuna cactus, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the Target 333 site and only for short durations (few hours once a year). Avoidance of the blooming period (late-March through April) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

To avoid impacts to Fickeisen plains cactus, training activities would be restricted to already disturbed areas of 0.3 to 2.7 acres at the Sinkhole, Babbit Ranch 1, and Panda sites and only for short durations (few hours once a year). Avoidance of the blooming period (late-April through May) may reduce impacts to the species. Because of the limited area and duration of proposed activities, the Proposed Action may affect but is not likely to adversely affect this species.

## 8.2 EFFECTS ON CRITICAL HABITAT

Impacts are not expected to occur as a result of the Proposed Action on designated critical habitats for bonytail chub, Gila chub, little Colorado spinedace, spikedace, Colorado pikeminnow, loach minnow, razorback sucker, three forks springsnail, arroyo toad, Chiricahua leopard frog, northern Mexican gartersnake, narrow-headed gartersnake, southwestern willow flycatcher, Mexican spotted owl, Least Bell's vireo, jaguar, New Mexico meadow jumping mouse, thread-leaved brodiaea, acuna cactus, and Fickeisen plains cactus. To avoid impacts on yellow-billed cuckoo proposed critical habitat, personnel involved in the training activities would avoid entering Lake Patagonia in riparian areas with heavy vegetation and unstable shoreline. The proposed training activities would not adversely modify proposed critical habitat.

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# Attachment 1

# Proposed Personnel Recovery Training Sites Summary Table

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| ***PR Training Sites on Department of Defense Property*** | | | | | |
| Aux 6 | Barry M. Goldwater Range (BMGR) (Arizona) | Luke Air Force Base (AFB) | G2, G3, G7, G8<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR218 | 36 |
| Aux 6 Circular | BMGR (Arizona) | Luke AFB | G2, G3, G7, G8<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR218 | 36 |
| Aux 6 Rectangular | BMGR (Arizona) | Luke AFB | G2, G3, G7, G8<br>F1, F3, F4, F5, F6 F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR-218 | 36 |
| Camp Navajo Army Base | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F4, F5, F7, F9<br>W1, W2 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Camp Pendleton Cartwright Water | Marine Corps Base (MCB) Camp Pendleton (California) | MCB Camp Pendleton | F4, F7, F9<br>W1, W2 | MOAs: N/A<br>Restricted Areas: near R-2503B/C, R-2503A/D,<br>Warning Areas: W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Helicopter Outlying Landing Field | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7, F9 | MOAs: N/A<br>Restricted Areas: within R-2503B/C, near R-2503A/D<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton NFG | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F6, F7, F9 | MOAs: N/A<br>Restricted Areas: within R-2503A/D, near R-2503B/C<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Off-Road Trail | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7 | MOAs: N/A<br>Restricted Areas: within R-2503B/C, near R-2503A/D<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Piedra de Lumbre (PDL) | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7, F9 | MOAs: N/A<br>Restricted Areas: within R-2503B/C, near R-2503A/D<br>Warning Areas: near W-291<br>MTRs: N/A | 28 |
| Camp Pendleton Red Beach | MCB Camp Pendleton (California) | MCB Camp Pendleton | G1, G2, G3, G5, G6<br>F4, F7<br>W1, W2 | MOAs: N/A<br>Restricted Areas: within R-2503A/D, near R-2503B/C<br>MTRs: N/A | 28 |
| Davis-Monthan AFB | Davis-Monthan AFB (Arizona) | Davis-Monthan AFB | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: near Outlaw, Jackal, Jackal Low, Sells 1, Sells Low, Ruby 1, Fuzzy, Tombstone C<br>Restricted Areas: near R-2303A/B/C, R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| Davis-Monthan AFB Combat Arms Training and Maintenance | Davis-Monthan AFB (Arizona) | Davis-Monthan AFB | G7, G8 | MOAs: near Outlaw, Jackal, Jackal Low, Sells 1, Sells Low, Ruby 1, Fuzzy, Tombstone C<br>Restricted Areas: near R-2303A/B/C, R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| El Centro | El Centro (California) | Naval Air Facility El Centro | G1, G2, G3, G5, G6, G7<br>F1, F4, F5, F6, F7, F8, F9 | MOAs: near Kane West, Kane East, Kane South, Abel Bravo, Abel East, Abel North<br>Restricted Areas: near R-2512, R-2510A, R-2510A/B, R-2507S, R-2507E<br>MTRs: VR-1266, IR-217 | 33 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Florence Military Reservation | Florence (Arizona) | Arizona Army National Guard | G1, G2, G3, G5, G6, G7, G8<br>F1, F3, F4, F5, F6, F7, F9 | MOAs: near Outlaw (excludes airspace within R-2310A, B, C; when active)<br>Restricted Areas: near R-2310A, B, C<br>MTRs: VR-267C, D | 37 |
| Florence Range Helicopter Landing Zone (HLZ) | Florence (Arizona) | Arizona Army National Guard | G1, G2, G3, G5, G7, G8<br>F1, F3, F4, F5, F7 | MOAs: near Outlaw (excludes airspace within R-2310A, B, C; when active)<br>Restricted Areas: within R-2310A, near R-2310A, B; R-2310S, A, C<br>MTRs: VR-267C, D | 37 |
| Fort Tuthill | Flagstaff (Arizona) | Luke AFB | G1, G2, G3, G6 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Gila Bend Air Force Auxiliary Base | Gila Bend (Arizona) | Luke AFB | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: near R-2301E, R-2304, R-2305<br>MTRs: VR-223, VR-267-269, VR-242-268, IR-218 | 36 |
| Hubbard | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| Hubbard (Tombstone) | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| Humor | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F7, F9 | MOAs: near Tombstone A, B, C; Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| L Tank | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: R-2302<br>MTRs: IR-112 | 9 |
| Leon<br>(Beiringer Drop Zone [DZ]) | San Diego (California) | Naval Air Station (NAS) North Island | F9<br>W1, W2 | MOAs: N/A<br>Restricted Areas: N/A<br>Warning Areas: near W-291<br>MTRs: N/A | 32 |
| Libby Army Airfield | Fort Huachuca (Arizona) | Fort Huachuca | G1, G2, G3<br>F1, F3, F4, F5, F6, F7, F8, F9 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| March Air Reserve Base (ARB) | March ARB (California) | March ARB | G1, G2, G3<br>F6, F7, F8 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 18 |
| Melrose Air Force Range | Clovis (New Mexico) | Cannon AFB | F1, F4 | MOAs: near Taiban, Pecos North High, Pecos North Low, Pecos South<br>Restricted Areas: within R-5104A, B; near R-5105<br>MTRs: VR-100, IR-107, VR-108, IR-109, IR-111, IR-113, VR-114, VR-125, VR-1107, VR-1195 | 26 |
| Metz Tank | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| NATO Hill (WPT 74) | BMGR East (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2304, near, R-2305<br>MTRs: VR-223-239-259 | 36 |
| Navajo East | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Navajo Railroad | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Navajo West | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Neill Flat | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Nellis AFB | Nellis AFB (Nevada) | Nellis AFB | G2, G3<br>F1, F6, F7, F8 | MOAs: near Desert<br>Restricted Areas: near R-4806E, W; R-4808N, S;<br>MTRs: IR-286, VR-222 | 3 |
| OP Charlie | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2304, near R-2305<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 1 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 2 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 3 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 4 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 5 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – HLZ 6 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Range 3 – Tower Helipad | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2305, near R-2301E, R-2304<br>MTRs: VR-223-239-259 | 36 |
| Rogers Lake (Logger Camp) | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7, F9<br>W1, W2 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Rogers Napier | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G6, G7<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Rogers Wren | Camp Navajo (Arizona) | Camp Navajo | G1, G2, G3, G4, G5, G6, G7<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| San Clemente Island Naval Auxiliary Landing Field | San Clemente Island (California) | Naval Base Coronado | G2, G3<br>F4, F6, F7, F8 | MOAs: N/A<br>Restricted Areas: N/A<br>Warning Areas: within W-291, near W-292E, W-292W<br>MTRs: N/A | 27 |
| San Clemente Island Surrounding Off-Shore Areas | San Clemente Island (California) | Naval Base Coronado | F4, F9<br>W1, W2 | MOAs: N/A<br>Restricted Areas: N/A<br>Warning Areas: within W-291, near W-292E, W-292W<br>MTRs: N/A | 27 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| South Tactical Range | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F10 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: within R-2301E, near R-2301W, R-2305<br>MTRs: VR-231, VR-243, VR-244, VR-245 | 35 |
| Target 333 | BMGR (Arizona) | Luke AFB | G2, G3, G6, G7, G8<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: within Sells 1, near Sells Low<br>Restricted Areas: within R-2304, near R-2305<br>MTRs: VR-223-239-259 | 36 |
| Titan Missile Museum* | Pima County, Near Town of Sahuarita (Arizona) | USAF (leased to Pima County) | G6 | MOAs: N/A<br>Restricted Areas: near R-2303A, B;<br>MTRs: N/A | 43 |
| Tombstone Circular | Fort Huachuca (Arizona) | Fort Huachuca | G2, G3, G6<br>F1, F3, F4, F5, F6, F7, F9, F10 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| Tombstone Rectangular | Fort Huachuca (Arizona) | Fort Huachuca | G2, G3, G6<br>F1, F3, F4, F5, F6, F7, F9, F10 | MOAs: near Tombstone A/B/C, Ruby 1, Fuzzy<br>Restricted Areas: within R-2303A, B; near R-2312, R-2303C<br>MTRs: VR-259, VR-260, VR-263 | 46 |
| White Sands Missile Range (WSMR) Otero Maneuver Area | Otero County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Sierra Maneuver Area | Sierra County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Small Arms Range | Socorro County (New Mexico) | White Sands Army Garrison | G8<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Stallion Army Airfield | Socorro County (New Mexico) | White Sands Army Garrison | F4, F8 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| WSMR Thurgood West Maneuver Area | Sierra County (New Mexico) | White Sands Army Garrison | G1, G2, G3<br>F4 | MOAs: near Beak A, Beak B, Beak C<br>Restricted Areas: within R-5107B, R-5107F, near R-5107A,C,D,E,G,H,J,K; R-5111A-D, R-5119, R-5109A,B; R-5107G,F; R-5103A-C<br>MTRs: VR-176 | 31 |
| ***PR Training Sites on U.S. Forest Service (USFS) or Other Federal Land*** | | | | | |
| Black Mesa - USFS Helitack Base | Apache-Sitgreaves National Forest (NF) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 15 |
| Charouleau Gap* | Coronado NF (Arizona) | Coronado NF | G2, G3 | MOAs: near Jackal, Jackal Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268-269, VR-1233 | 38 |
| Comanche | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9, 13 |
| Delamar Dry Lake | Lincoln County, Near Alamo (Nevada) | Bureau of Land Management (BLM) | F1, F8 | MOAs: within Desert<br>Restricted Areas: near R-4806E, W; R-4808N<br>MTRs: VR-209, VR-1253 | 1 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Devon | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F10 | MOAs: within Ruby 1, Fuzzy; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 44 |
| Flagstaff Hotshot – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: R-2302<br>MTRs: IR-112 | 9 |
| Glenwood Ranger Station | Gila NF (New Mexico) | Gila NF | G1, G2, G6<br>F1, F3, F5, F7 | MOAs: within Reserve; near Morenci, Cato, Smitty, Jackal, Jackel Low<br>Restricted Areas: N/A<br>MTRs: VR-176 | 30 |
| Grapevine HLZ/DZ | Tonto NF (Arizona) | Tonto NF | G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: near Outlaw, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-239, VR-241, VR-244 | 21 |
| Hannagan Meadow – USFS Helitack Base | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176 | 24 |
| Helibase Circular | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: IR-112 | 24 |
| Kinder HLZ/DZ | Cochise County (Arizona) | BLM | G6<br>F1, F3, F5, F7 | MOAs: near Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263 | 41 |
| KP Circular | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: IR-112 | 24 |
| KP Tank | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: IR-112 | 24 |
| Lees Ferry | Marble Canyon (Arizona) | National Park Service | G1, G2, G3, G4, G6<br>F7, F9 | MOAs: N/A<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 2 |
| Longview – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 14 |
| Mesa | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: near Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268- 269, VR-1233 | 41 |
| Mogollon Rim (General Crook) | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F3, F7 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 14 |
| Mohawk | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6<br>F1, F7 | MOAs: near Sunny<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 4 |
| Mormon Lake – USFS Helitack Base | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 9, 13 |
| Mount Lemmon (Windy Point) | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F5, F7 | MOAs: near Jackal, Jackal Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268-269, VR-1233 | 38, 40 |
| Negrito Airstrip | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6<br>F1, F3, F5, F7, F8, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Negrito Center | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Negrito Helibase | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Negrito North | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Negrito South | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Overgaard – USFS Helitack Base | Apache-Sitgreaves NF (Arizona) | Apache-Sitgreaves NF | G1, G2, G3, G4, G6 F3, F5, F7, F9 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: IR-320 | 16 |
| Pittman Valley | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6 F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: N/A | 8 |
| Portal Cabin and Civilian Conservation Corps (CCC) Bunkhouse* | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G4 | MOAs: near Tombstone A/C<br>Restricted Areas: N/A<br>MTRs: N/A | 47 |
| Portal HLZ* | Coronado NF (Arizona) | Coronado NF | G2, G3, G6 F1, F3, F5, F7, F10 | MOAs: near Tombstone A/C<br>Restricted Areas: N/A<br>MTRs: N/A | 47 |
| Rainy Mesa | Gila NF (New Mexico) | Gila NF | G1, G2, G3, G6 F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Ranger | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6 F1, F3, F4, F5, F7, F9 F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| Redington Pass* | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G4, G6, G7 | MOAs: near Jackal, Jackal Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263, VR-267- 268-269, VR-1233 | 38, 40 |
| Reserve Airport | Gila NF (New Mexico) | Gila NF | G1, G2, G6 F1, F3, F5, F7, F8, F9, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Reserve Ranger Station | Gila NF (New Mexico) | Gila NF | G1, G2, G6 F1, F3, F5, F7 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| Roosevelt Lake | Tonto NF (Arizona) | Tonto NF | G1, G2, G3, G4, G6 F1, F3, F5, F7, F9, F10 W1, W2 | MOAs: near Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-239, VR-241, VR-244 | 21 |
| Rough Rider | Coconino NF (Arizona) | Coconino NF | G1, G2, G3, G4, G6 F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 13 |
| Rucker HLZ* | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G5, G6 F1, F3, F4, F5, F7, F10 | MOAs: within Tombstone A/C, near Tombstone b<br>Restricted Areas: near R-2303C<br>MTRs: VR-259, VR-263 | 47 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Saddle Mountain East | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303A, B; near R-2303C, R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Saddle Mountain South | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303B, near R-2303A,C; R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Saddle Mountain West | Coronado NF (Arizona) | Coronado NF | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303A, B; near R-2303C, R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Saguaro Lake Ranch | Tonto NF (Arizona) | Tonto NF | W1, W2 | MOAs: near Outlaw<br>Restricted Areas: N/A<br>MTRs: VR-244 | 20 |
| Spring Valley Cabin* | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4<br>F1, F3, F4 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: N/A | 8 |
| Tribeland | Kaibab NF (Arizona) | Kaibab NF | G1, G2, G3, G4, G6<br>F1, F7, F9 | MOAs: near Sunny<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 4 |
| Verde River | Tonto NF (Arizona) | Tonto NF | W1, W2 | MOAs: near Outlaw<br>Restricted Areas: near R-2310A-C<br>MTRs: VR-244 | 20 |
| ***PR Training Sites on Other Land (Municipal, City, County, State, or Tribal)*** | | | | | |
| Babbitt Ranch 1 | Coconino County, North of City Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Babbitt Ranch 3 | Coconino County, North of City of Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Bisbee Douglas International Airport (IAP)<br>(Chang Noi DZ) | Cochise County, North of Douglas (Arizona) | Cochise County | G1, G2, G3, G6<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: within Tombstone C, near Tombstone A/B<br>Restricted Areas: near R-2303A, B; R-2303C, R-2312<br>MTRs: VR-259, VR-263 | 47 |
| Blackhills HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F4, F5, F7 | MOAs: near Ruby 1, Fuzzy, Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Black Mountain Reservoir* | Pima County, Northwest of Town of Sahuarita (Arizona) | Town of Sahuarita | W2 | MOAs: near Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B<br>MTRs: N/A | 43 |
| Brooke HLZ/DZ | Pinal County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Jackal, near Outlaw, Jackal Low<br>Restricted Areas: N/A<br>MTRs: N/A | 38 |
| Caldwell Meadows | Apache County (Arizona) | Arizona Game and Fish Department | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: within Reserve, near Jackal, Jackal Low, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176 | 24 |
| Caliente HLZ/DZ | Santa Cruz County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-260 | 43, 44 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Catron County Fairgrounds | Catron County (New Mexico) | Catron County | G1, G2, G6<br>F1, F3, F5, F7, F10 | MOAs: within Reserve, near Morenci, Cato, Smitty, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-176 | 25 |
| City of Flagstaff* | Northern Arizona University (Arizona) | Arizona Board of Regents (Northern Arizona University) | G5<br>F1, F3 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| City of Winslow* | City of Winslow (Arizona) | City of Winslow | G5<br>F1, F3 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 10 |
| Colorado River | Bullhead City (Nevada) | Nevada Division of State Parks | W1, W2 | MOAs: near Turtle<br>Restricted Areas: N/A<br>MTRs: IR-213, IR-213-217, VR-1265 | 6 |
| Coolidge Airport | Pinal County, Southeast of City of Coolidge (Arizona) | City of Coolidge | G1, G3, G6<br>F1, F3, F4, F5, F7, F8, F9 | MOAs: near Outlaw<br>Restricted Areas: near R-2310A-C<br>MTRs: VR-241, VR-241-244, VR-239-244, VR-267-268-269 | 37 |
| Flagstaff Pulliam Airport | Coconino County, South of City of Flagstaff (Arizona) | City of Flagstaff | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F8 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Froelich HLZ/DZ | Graham County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: N/A | 41 |
| Gila County Sheriff Roosevelt Substation | Gila County, North of Roosevelt (Arizona) | Gila County Sheriff | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: near Outlaw, Jackal<br>Restricted Areas: R-2310A-C<br>MTRs: VR-239, VR-241, VR-244 | 21 |
| Grand Canyon National Park Airport | Coconino County, South of Tusayan (Arizona) | State of Arizona | G1, G2, G3, G6<br>F1, F7, F8 | MOAs: near Sunny<br>Restricted Areas: SFAR 50-2<br>MTRs: N/A | 4 |
| H. A. Clark Memorial Field | Coconino County, North of City of Williams (Arizona) | City of Williams | G1, G2, G3, G6<br>F1, F3, F4, F7, F8, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: N/A | 8 |
| Highway 80 Paladins (TW 2 Paladins) | Cochise County, (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F9, F10 | MOAs: within Tombstone B/C, near Tombstone A, Playas Temporary<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| Jeep HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263 | 41 |
| Jenna HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-260, VR-263 | 41 |
| Kingman Airport | Mohave County, Northeast of the City of Kingman (Arizona) | City of Kingman | G1, G2, G3, G6<br>F1, F3, F5, F7, F8, F9 | MOAs: near Turtle, Bagdad 1<br>Restricted Areas: SFAR 50-2<br>MTRs: VR-243, VR-1268, IR-213, IR-214 | 7 |
| Lake Havasu Airport* | Mohave County, North of Lake Havasu City (Arizona) | Lake Havasu City | F1, F3, F8 | MOAs: within Turtle, near Bagdad 1, Quail, Gladden 1<br>Restricted Areas: N/A<br>MTRs: VR-299 | 11 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Lake Patagonia* | Santa Cruz County (Arizona) | Arizona State Parks | G6<br>F1, F3, F7<br>W1, W2 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-259, VR-260, VR-263 | 44, 45 |
| Lake Pleasant* | Maricopa County (Arizona) | Maricopa Water District | W2 | MOAs: near Gladden 1<br>Restricted Areas: near A-231<br>MTRs: VF-239, VR-241-244 | 19 |
| Lost Acre HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Marana Regional Airport* | Pima County, South of Town of Marana (Arizona) | Town of Marana | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F7, F8, F9 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Penitas HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7 | MOAs: within Ruby 1, near Fuzzy, Sells 1, Sells Low<br>Restricted Areas: 2303A, B;<br>MTRs: VR-259, VR-260, VR-263 | 42, 43, 44 |
| Phoenix Sky Harbor IAP | Maricopa County, City of Phoenix (Arizona) | City of Phoenix | F1, F3, F4, F5, F8 | MOAs: near Gladden 1, Outlaw, Sells Low, Sells 1<br>Restricted Areas: near R-2310A-C, R 2304, R-2305<br>MTRs: VR-223, VR-231, VR-239, VR-241, VR-242, VR-243, VR-244, VR-245 | 29 |
| Pima County Emergency Operations Center | City of Tucson (Arizona) | Pima County Sheriff | G2, G3 | MOAs: near Outlaw, Jackal Low, Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| Pima County Regional Training Center | City of Tucson (Arizona) | Pima County Sheriff | G2, G3, G8 | MOAs: near Outlaw, Jackal Low, Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |
| Pinal Air Park* | Pinal County, Northwest of Town of Marana (Arizona) | Pinal County | G2, G3, G6<br>F1, F3, F7, F8, F9 | MOAs: near Sells 1, Sells Low, Outlaw<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Pinnacle HLZ/DZ | Cochise County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Outlaw, Jackal, Jackal Low<br>Restricted Areas: near R-2303A, B, C; R-2312<br>MTRs: VR-259, VR-260, VR-263 | 41 |
| Playas Training and Research Center | Hidalgo County, Playas (New Mexico) | New Mexico Institute of Mining and Technology | G1, G2, G3, G5, G6, G7, G8<br>F1, F2, F3, F4, F5, F6, F7, F8, F9, F10 | MOAs: within Playas Temporary MOA, near Tombstone A/B/C<br>Restricted Areas: near R-5115<br>MTRs: VR-263 | 48 |
| Pond HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Ruby 1, Fuzz; Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Powerline | Coconino County, Northwest of City of Flagstaff (Arizona) | State of Arizona (State Trust land) | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Prescott Airport* | Yavapai County, North of City of Prescott (Arizona) | City of Prescott | F1, F3, F8 | MOAs: near Bagdad 1, Gladden 1<br>Restricted Areas: N/A<br>MTRs: VR-242 | 12 |
| Prieto HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Ruby 1, Fuzz; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity** ***(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Rancho Seco HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Ruby 1, Fuzzy; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Ruby Fuzzy Paladins | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G4, G5, G6<br>F1, F3, F4, F5, F7, F9, F10 | MOAs: within Ruby 1, Fuzzy; near Sells 1, Sells Low<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Sahuarita Lake* | Town of Sahuarita (Arizona) | Town of Sahuarita | W2 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 43 |
| Salt River High | White River (Arizona) | White Mountain Apache | G2, G3, G6<br>F1, F3, F5, F7, F10<br>W2 | MOAs: near Outlaw, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-239 | 22 |
| Salt River Low | San Carlos (Arizona) | White Mountain Apache | G2, G3, G6<br>F1, F3, F5, F7, F10<br>W1, W2 | MOAs: near Outlaw, Jackal<br>Restricted Areas: N/A<br>MTRs: VR-239 | 22 |
| Sierrita HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F5, F7 | MOAs: near Ruby 1, Fuzz, Sells 1, Sells Low<br>Restricted Areas: R-2303A, B<br>MTRs: VR-259, VR-260, VR-263 | 42 |
| Silvermine HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G6<br>F1, F3, F7 | MOAs: near Sell 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Springerville Airport | Apache County, West of Town of Springerville (Arizona) | Town of Springerville | G1, G2, G3, G4, G6<br>F1, F3, F5, F7, F8, F9 | MOAs: near Jackal, Reserve, Cato, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176, IR-320 | 23 |
| St. Johns Industrial Air Park | Apache County, North of City of St. Johns (Arizona) | City of St. Johns | G1, G2, G3, G4, G6<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: near Jackal, Reserve, Cato, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176, IR-112, IR-320 | 17 |
| Tombstone 8 HLZ* | Hidalgo County (New Mexico) | State of New Mexico (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone B/C, near Tombstone A/C, Playas Temporary<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 48 |
| Tombstone 15 HLZ* | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: near R-2303C<br>MTRs: VR-259, VR-263 | 47 |
| Tombstone 18 HLZ* | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: R-2303C<br>MTRs: VR-259, VR-263 | 47 |
| Tombstone 19 HLZ* | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F5, F7, F10 | MOAs: within Tombstone B/C, near Tombstone A<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| Tombstone Paladins | Cochise County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F7, F9, F10 | MOAs: within Tombstone A/C, near Tombstone B<br>Restricted Areas: N/A<br>MTRs: VR-259, VR-263 | 47 |
| University of Arizona Dive Pool* | City of Tucson (Arizona) | Arizona Board of Regents (University of Arizona) | W2 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 40 |
| University of Arizona Medical Center | City of Tucson (Arizona) | Arizona Board of Regents (University of Arizona) | F7 | MOAs: near Outlaw, Jackal, Jackal Low, Sells 1, Sells Low, Ruby 1, Fuzzy<br>Restricted Areas: near R-2303A, B<br>MTRs: VR-267-268-269, VR-259, VR-260, VR-263, VR-1233, VR-259 | 40 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| Waterman HLZ/DZ | Pima County (Arizona) | State of Arizona (State Trust land) | G2, G3, G6<br>F1, F3, F7 | MOAs: near Sells 1, Sells Low<br>Restricted Areas: N/A<br>MTRs: N/A | 39 |
| Winslow-Lindbergh Regional Airport (Wiseman Aviation) | Navajo County, West of City of Winslow (Arizona) | City of Winslow | G1, G2, G3, G4, G6<br>F1, F3, F5, F6, F7, F8, F9 | MOAs: near Sunny<br>Restricted Areas: N/A<br>MTRs: IR-112 | 10 |
| Yuma Airport* | Yuma County, South of City of Yuma (Arizona) | City of Yuma | F1, F3, F8 | MOAs: within Dome, near Able East<br>Restricted Areas: near R-2301W, R-2306A-F, R-2307, R-2311, R-2309<br>MTRs: IR-218 | 34 |
| ***PR Training Sites on Private Property*** | | | | | |
| Bone Crusher | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: R-2302, SFAR 50-2<br>MTRs: IR-112 | 4 |
| Cattle | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Cattle LTFW | Coconino County, North of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 5 |
| Elk | Coconino County, South of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: R-2302<br>MTRs: IR-112 | 9 |
| Eloy North | Pinal County, North of City of Eloy (Arizona) | Skydive Arizona | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Outlaw, Sells 1, Sells Low<br>Restricted Areas: near R-2310A, R-2310A, B; R-2310A, C<br>MTRs: VR-241, VR-239-244 | 37 |
| Eloy South | Pinal County, North of City of Eloy (Arizona) | Skydive Arizona | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Outlaw, Sells 1, Sells Low<br>Restricted Areas: near R-2310A, R-2310A, B; R-2310A, C<br>MTRs: VR241, VR239-244 | 37 |
| FR 320/311 | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3<br>F1, F3, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 4 |
| Gerbil | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G5, G6, G7, G8<br>F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Grand Canyon Valle Airport | Coconino County, East of Valle (Arizona) | Grand Canyon Valle Corp | G1, G2, G3, G6<br>F1, F3, F7, F8, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: N/A | 4 |
| HLZ 5 | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |
| HLZ 6 | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F4, F5, F7 | MOAs: near Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 9 |
| Ott Family YMCA of Tucson Pool* | City of Tucson (Arizona) | YMCA of Tucson | W2 | MOAs: N/A<br>Restricted Areas: N/A<br>MTRs: N/A | 40 |
| Little Outfit | Santa Cruz County, Southwest of Canelo (Arizona) | Pete Robbins | G1, G2, G3, G6<br>F1, F3, F4, F5, F7, F9 | MOAs: near Ruby 1, Fuzzy, Tombstone A/B/C<br>Restricted Areas: within R-2303A, B; near R-2303C, R-2312<br>MTRs: VR-259, VR-260, VR-263 | 45 |
| Panda | Coconino County, North of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 5 |
| Scottsdale Osborn | City of Scottsdale (Arizona) | HonorHealth | F7 | MOAs: near Gladden 1, Outlaw, Sells Low, Sells 1<br>Restricted Areas: near R-2310A-C,<br>MTRs: VR-223, VR-231, VR-239, VR-241, VR-242, VR-243, VR-244, VR-245 | 29 |
| Sinkhole | Coconino County, Northeast of City of Flagstaff (Arizona) | Private | G1, G2, G3, G4, G6<br>F1, F3, F5, F7 | MOAs: within Sunny<br>Restricted Areas: near R-2302<br>MTRs: IR-112 | 5 |
| Sprucedale Guest Ranch | Greenlee County, Southwest of Alpine (Arizona) | Whitney Wiltbank | G1 | MOAs: within Reserve, near Jackal, Cato, Morenci, Smitty<br>Restricted Areas: N/A<br>MTRs: VR-176 | 24 |
| Squirrel | Coconino County, Northwest of City of Flagstaff (Arizona) | Private | G1, G2, G3, G6<br>F1, F3, F5, F7, F9 | MOAs: near Sunny<br>Restricted Areas: near R-2302, SFAR 50-2<br>MTRs: IR-112 | 5 |
| Three Points Public Shooting Range | Pima County, West of Three Points (Arizona) | Tucson Rifle Club, Inc. | G8 | MOAs: near Sells Low, Sells 1, Ruby 1, Fuzzy<br>Restricted Areas: N/A<br>MTRs: VR-223, VR-239-244, VR-259, VR-260 | 42 |

| Proposed Personnel Recovery Training Sites | | | | | |
|---|---|---|---|---|---|
| **Name** | **Location** | **Controlling Agency** | **Training Activity *(Key below)*** | **MOAs and Other Airspace in Vicinity of Training Area** | **Map Book Index #** |

Training Activity Key:
G1 = Ground Ops – Camping, Bivouacking, and Assembly Area Use
G2 = Ground Ops – Cross-Country Dismounted (Non-Vehicle) Movements
G3 = Ground Ops – Mounted (Vehicle) Movement/Blackout Driving
G4 = Ground Ops – Survival Training/Natural Resource Consumption
G5 = Ground Ops – Military Operations in Urban Terrain/Urban Evasion
G6 = Ground Ops – Technical Rope Work
G7 = Ground Ops – Pyrotechnic Use
G8 = Ground Ops – Shooting / Firing Range

F1 = Flight Ops – Established MOAs
F2 = Flight Ops – Temporary MOAs
F3 = Flight Ops – LATN Areas
F4 = Flight Ops – Restricted Areas
F5 = Flight Ops – Other Airspace (e.g., MTRs)
F6 = Flight Ops – FARP Operations
F7 = Flight Ops – HLZs
F8 = Flight Ops – Fixed-Wing LZs
F9 = Flight Ops – Parachute Operation/DZs
F10 = Flight Ops - Close Air Support

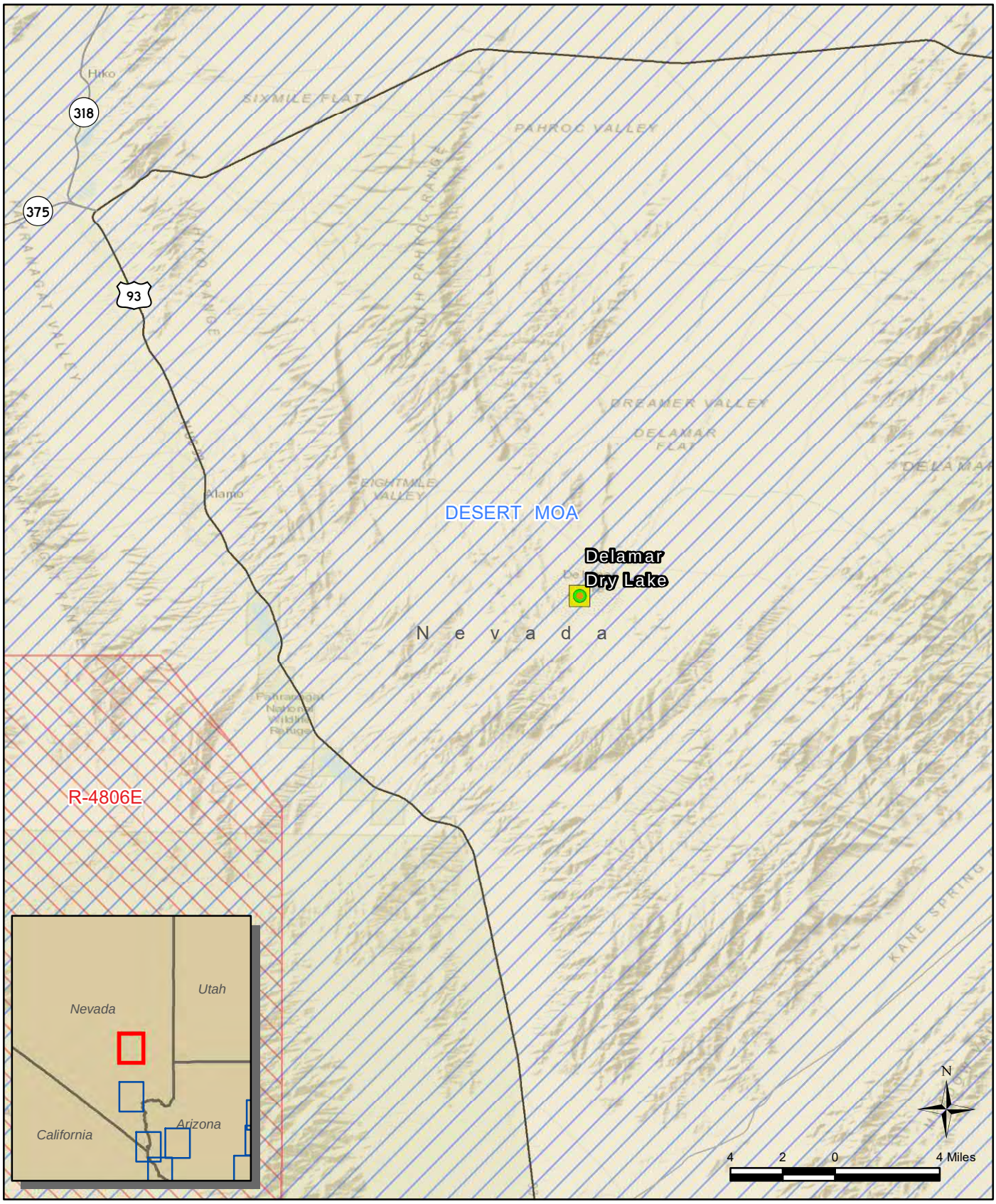
W1 = Water Ops – HLZs/DZs/Overwater Hoist Operations
W2 = Water Ops – Amphibious Ops

Note that those PR training sites denoted with an asterisk (*) are new PR training sites.

Acronyms, Abbreviations and Symbols:
AFB = Air Force Base
ARB = Air Reserve Base
BLM = Bureau of Land Management
BMGR = Barry M. Goldwater Range
DZ = Drop Zone
HLZ = Helicopter Landing Zone
IAP = International Airport
IR = Instrument Route
MCB = Marine Corps Base
MOA = Military Operations Area
MTR = Military Training Route
N/A = not applicable
NAS = Naval Air Station
NF = National Forest
PDL = Piedra de Lumbre
R = Restricted
SFAR = Special Federal Aviation Regulation
USAF = United States Air Force
USFS = United States Forest Service
VR = Visual Route
W = Warning Area

# Attachment 2

# Proposed Training Sites Mapbook

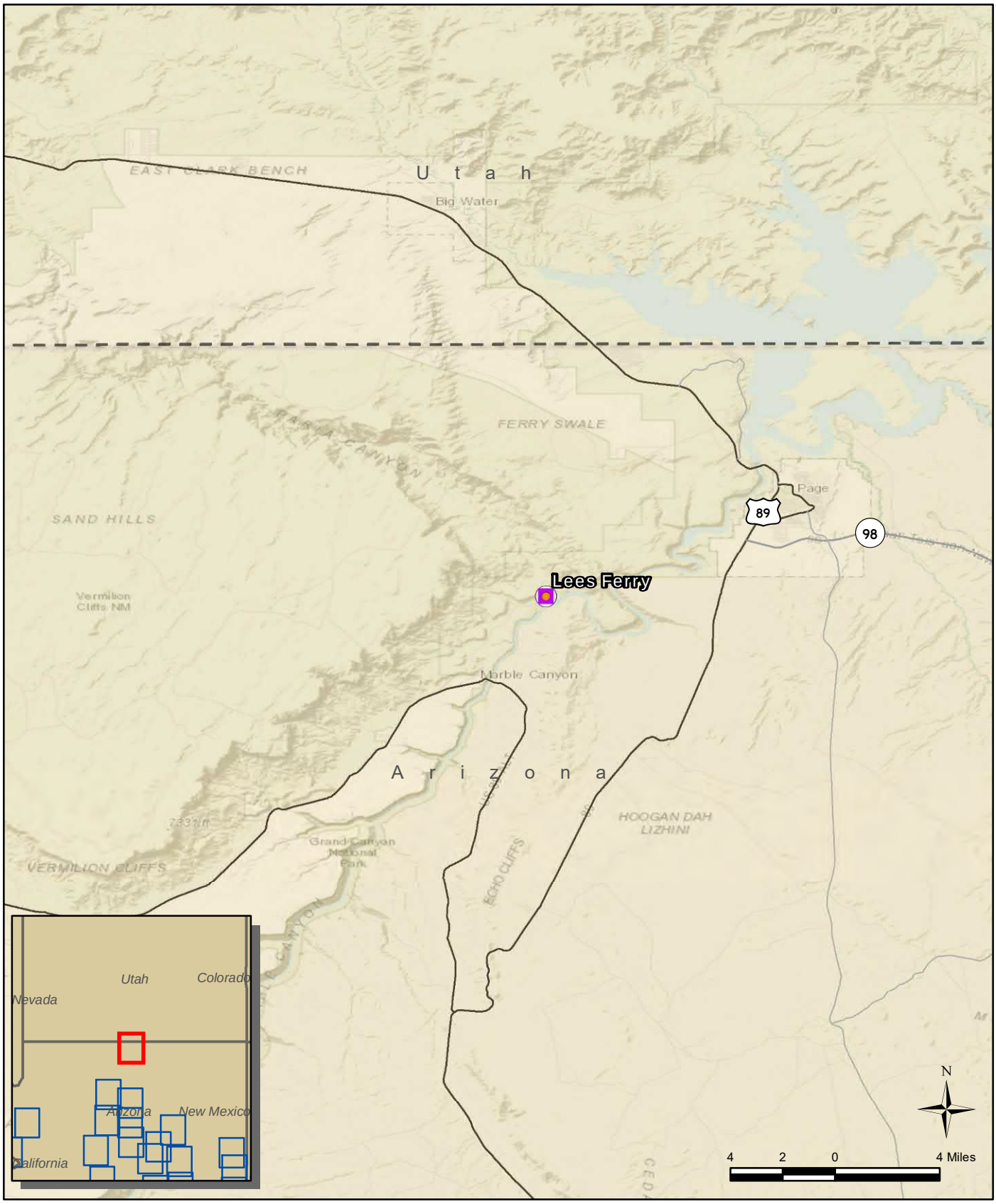



**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



**Figure C-3**




**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- US Highway
- State Highway and Route
- Other Roads



**Figure C-4**

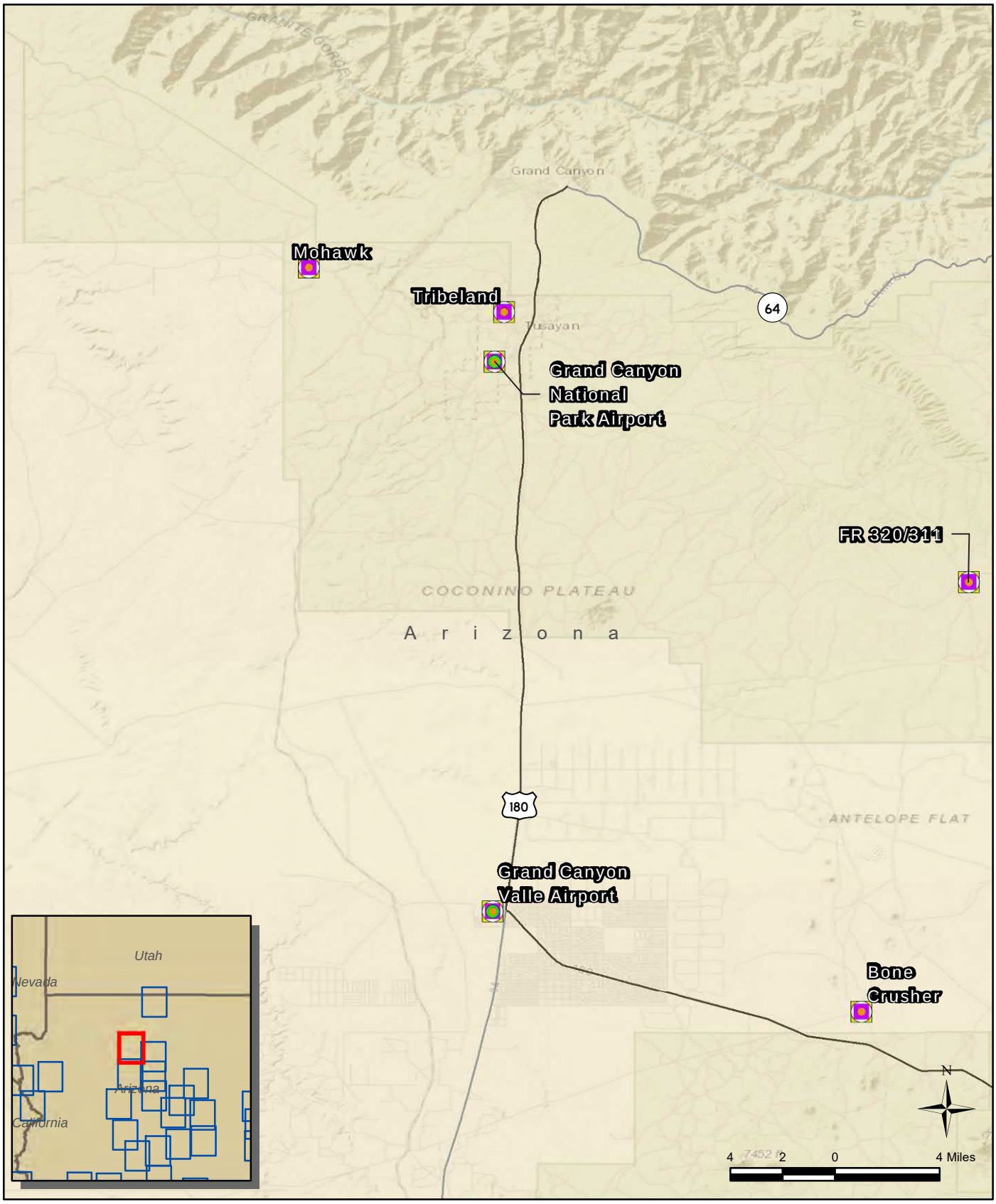



**Legend**

- Forward Aircraft Refueling Point
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-5**

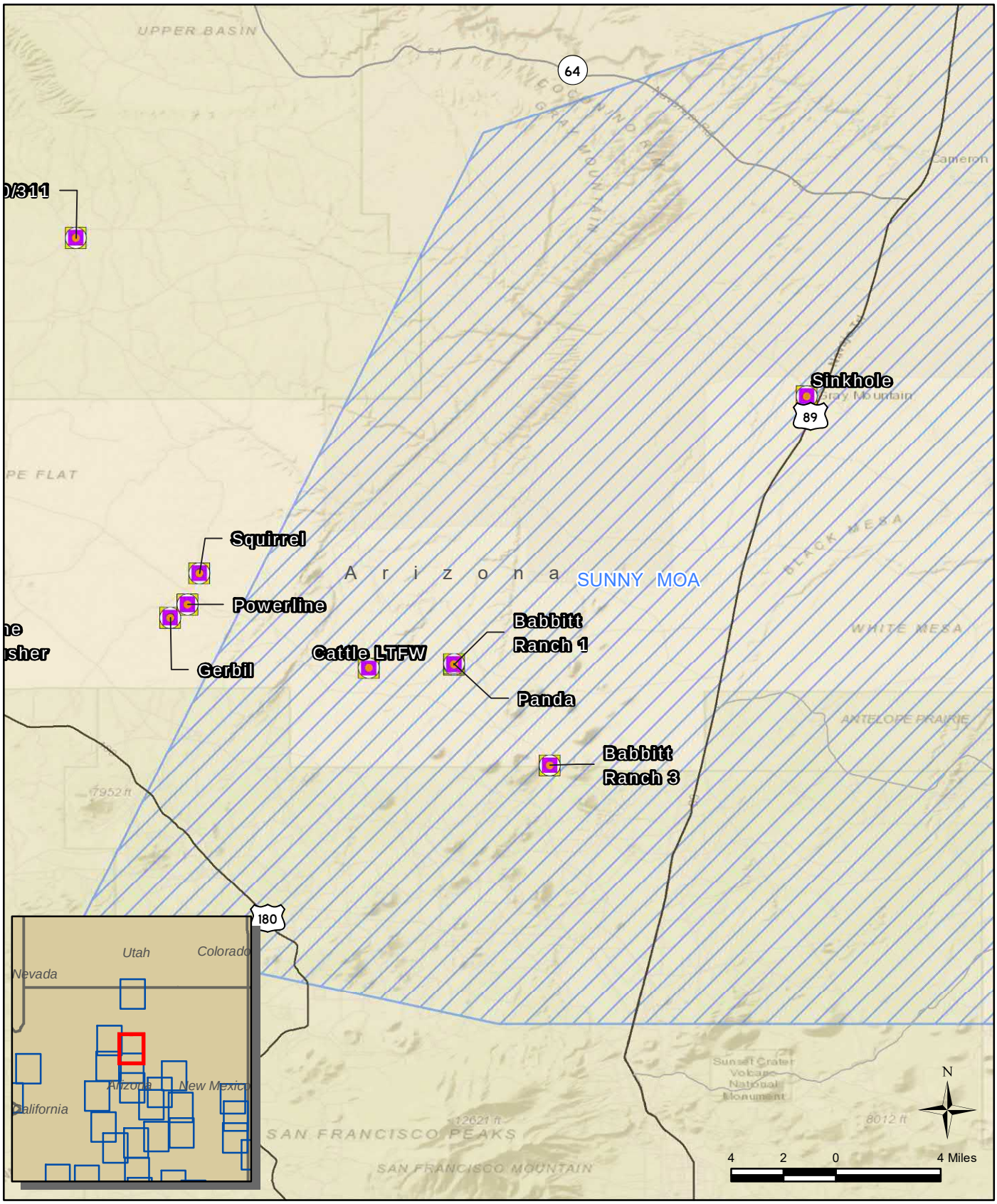



**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads



**Figure C-6**

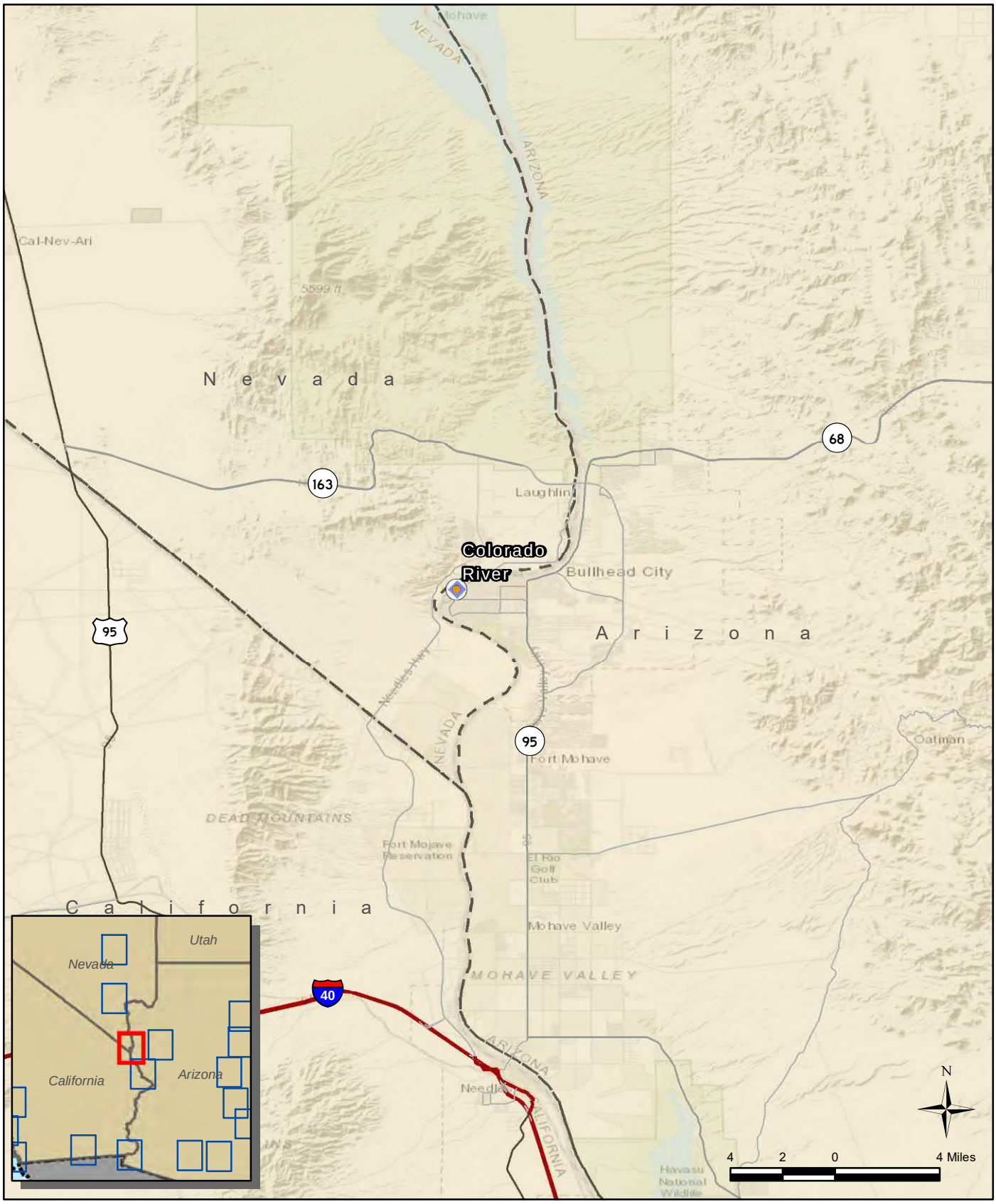



**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-7**

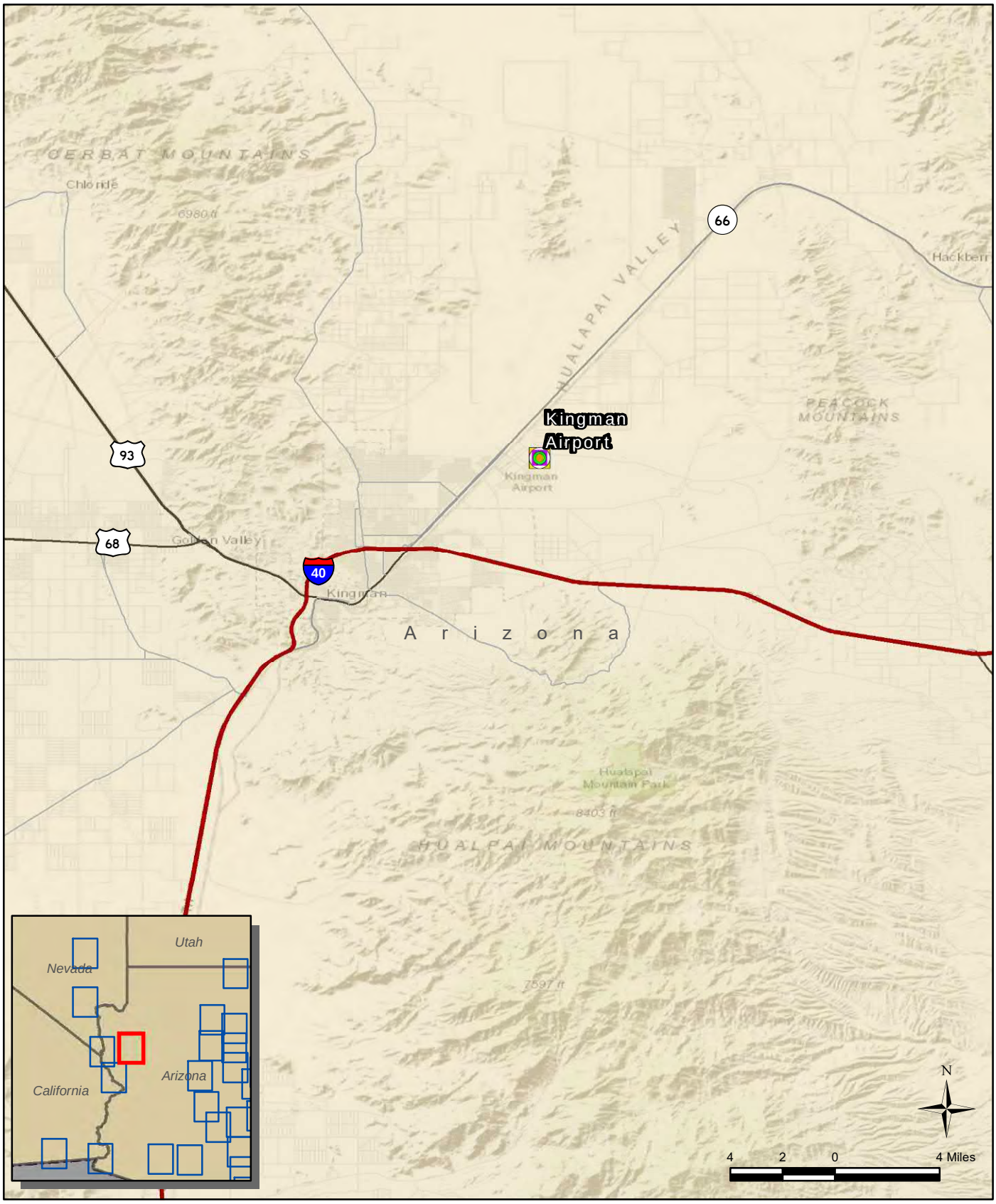



**Legend**

- Drop Zone
- Water Training
- Helicopter Landing Zone
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads



**Figure C-8**

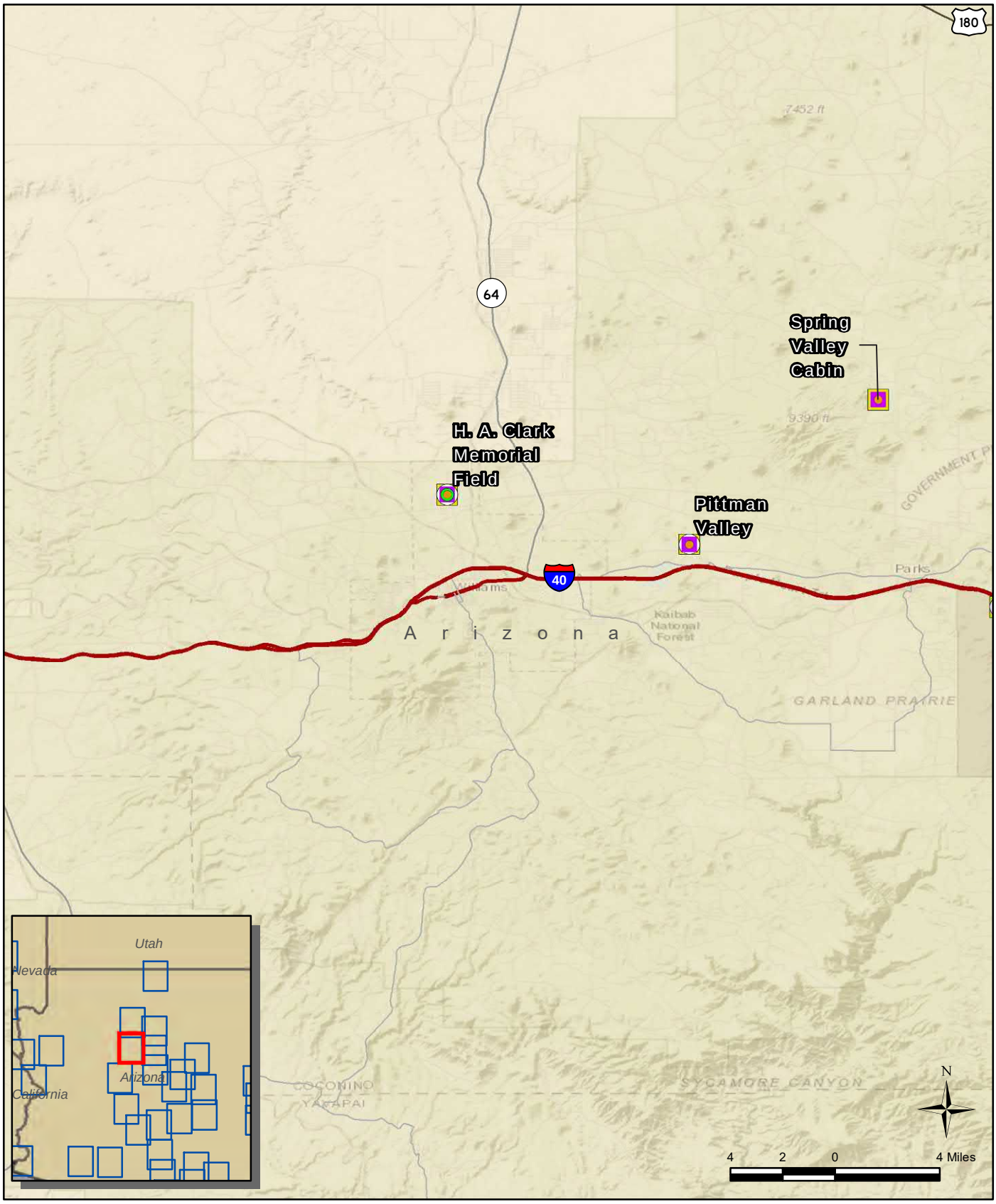



**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads



**Figure C-9**

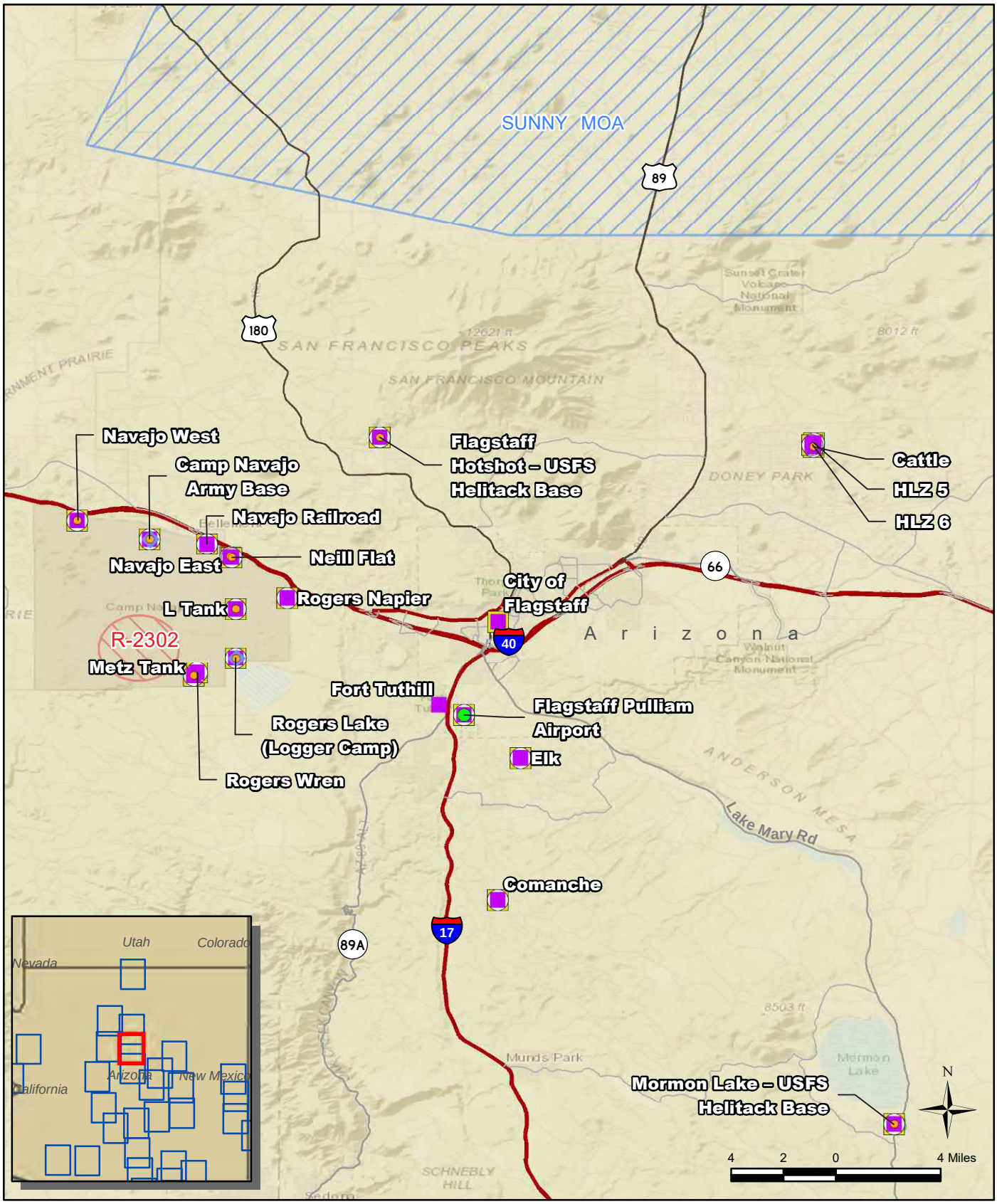



**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads



**Figure C-10**

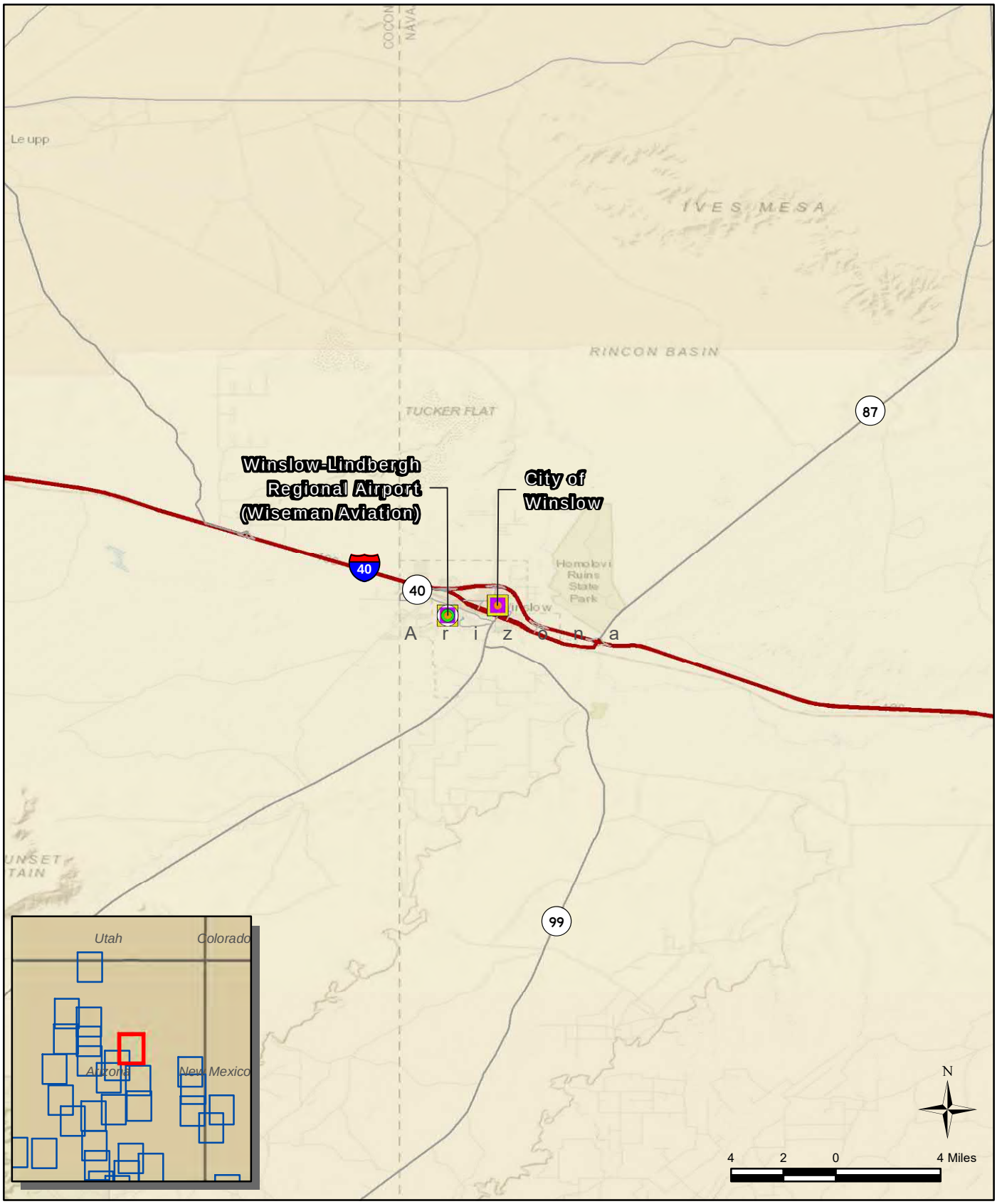



**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



**Figure C-11**

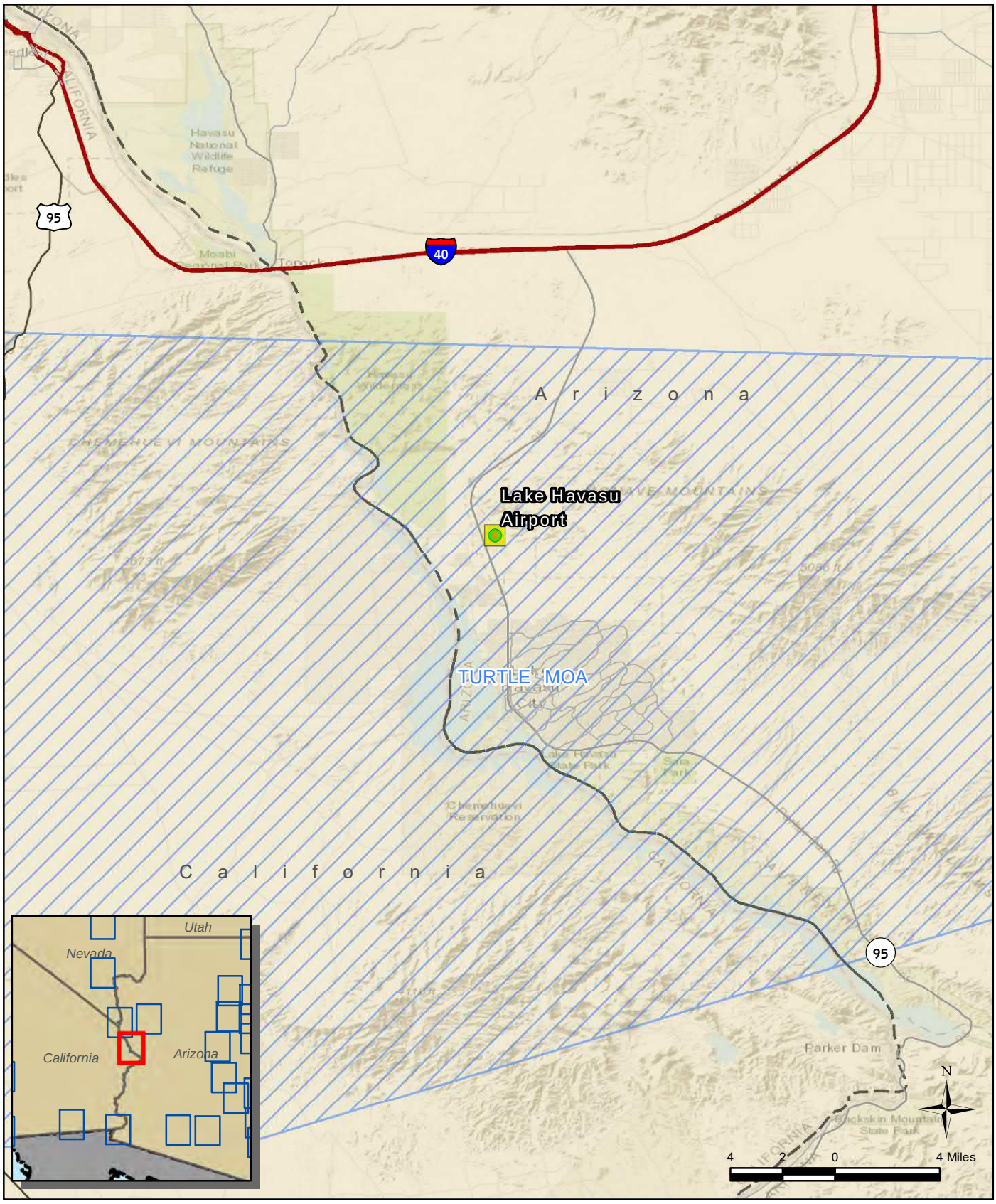



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads



**Figure C-12**

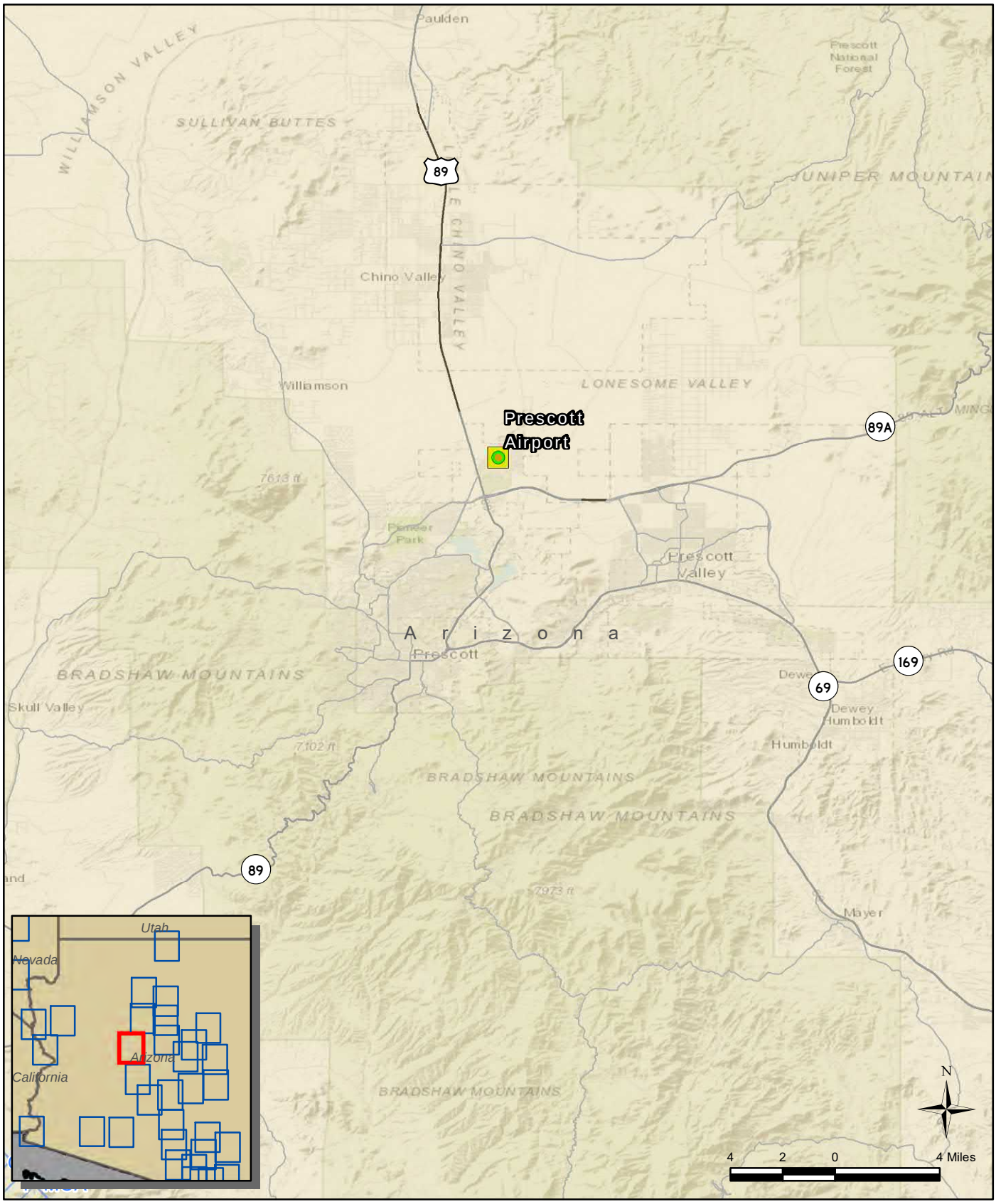



**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-13**

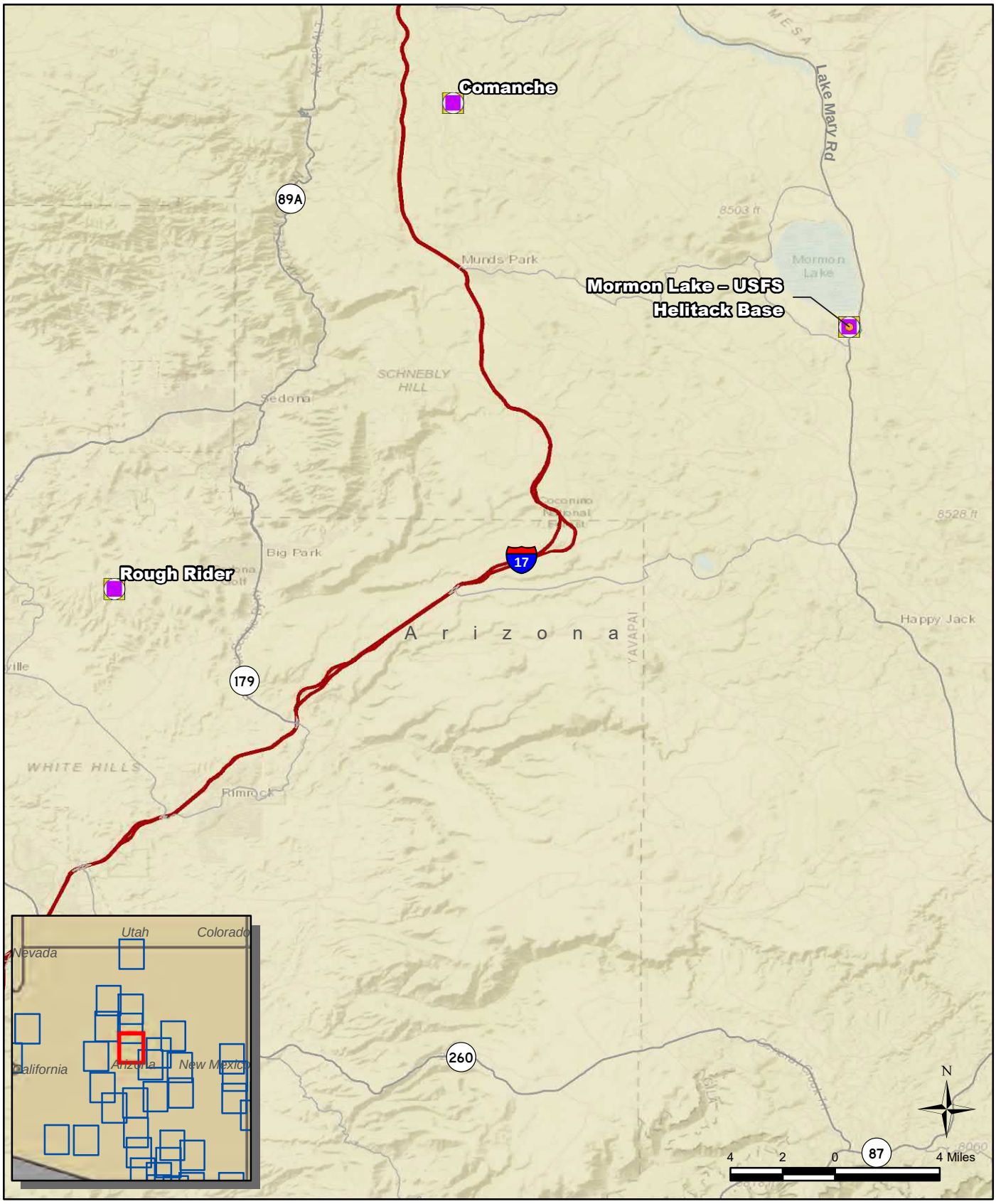



**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-14**

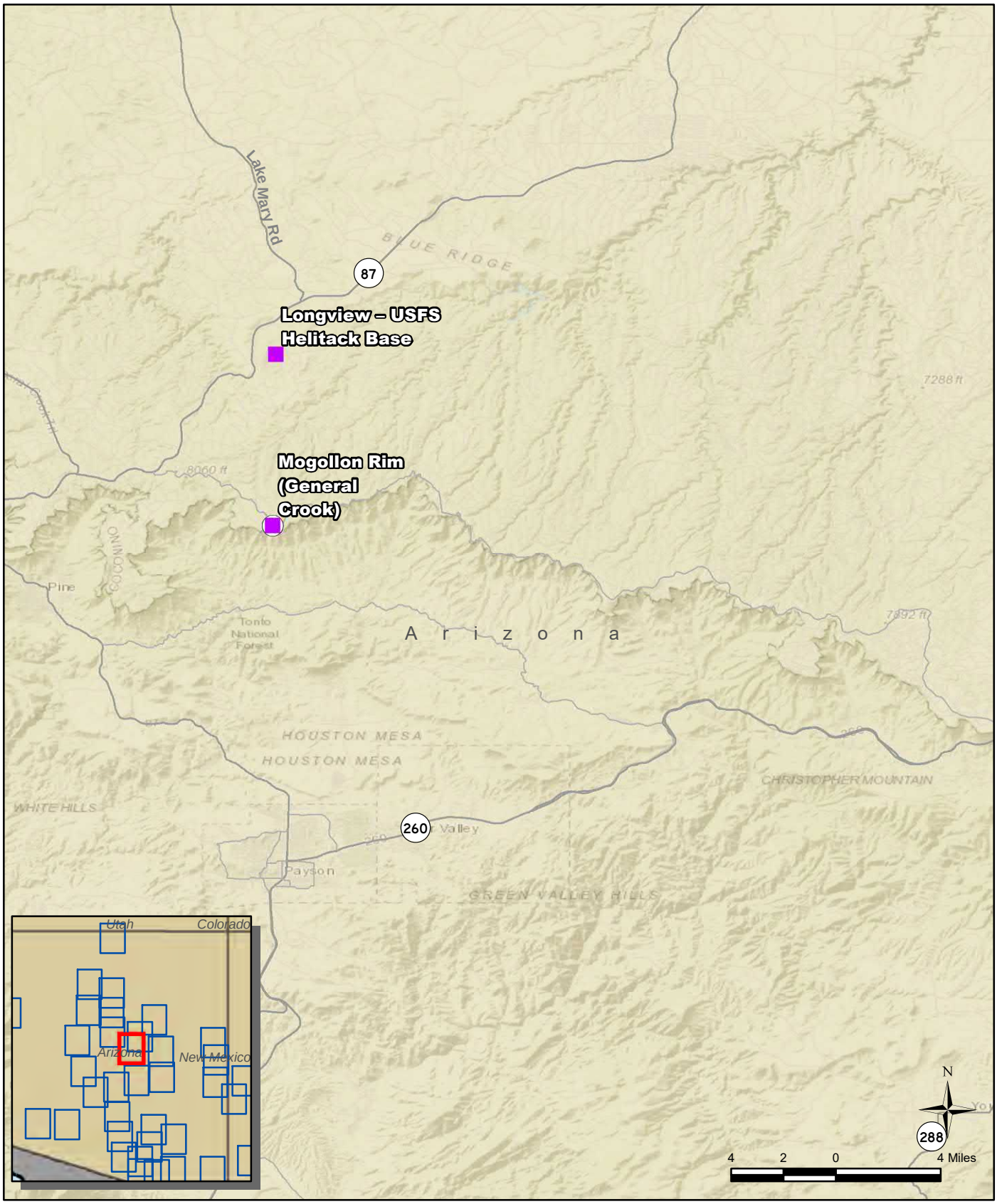



**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads



**Figure C-15**

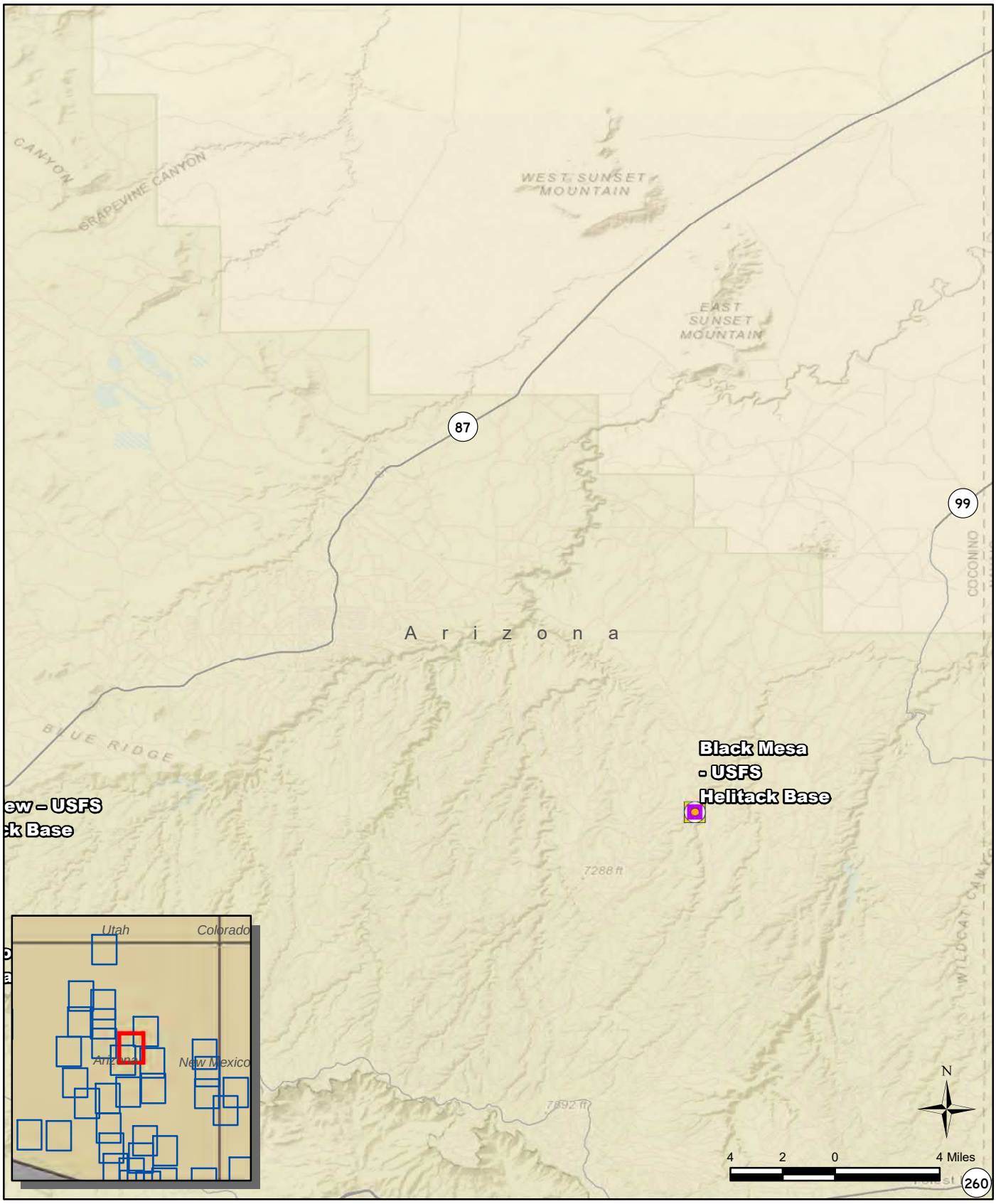



**Legend**

- Ground Training
- Helicopter Landing Zone
- State Highway and Route
- Other Roads



**Figure C-16**

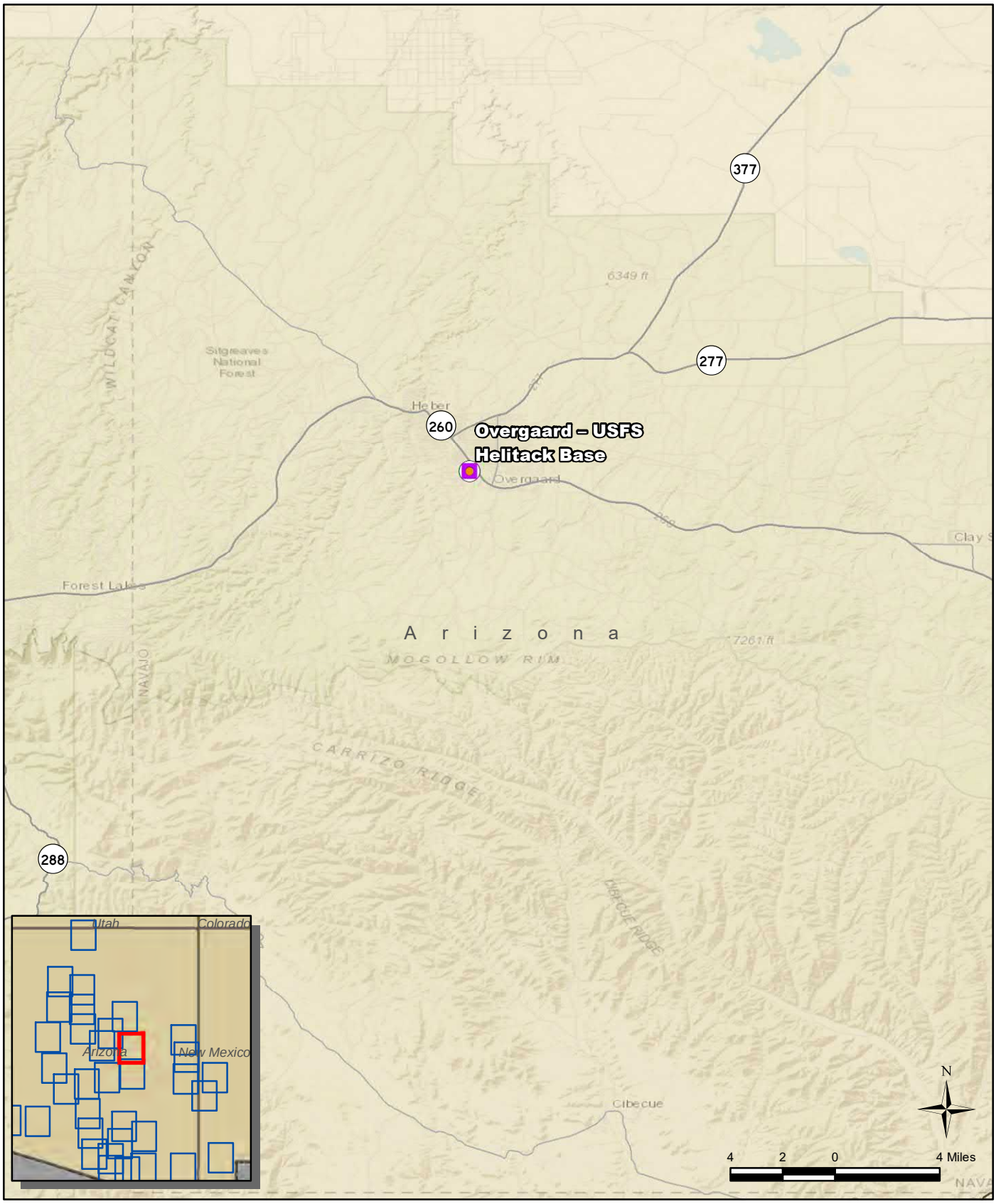



**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads



**Figure C-17**

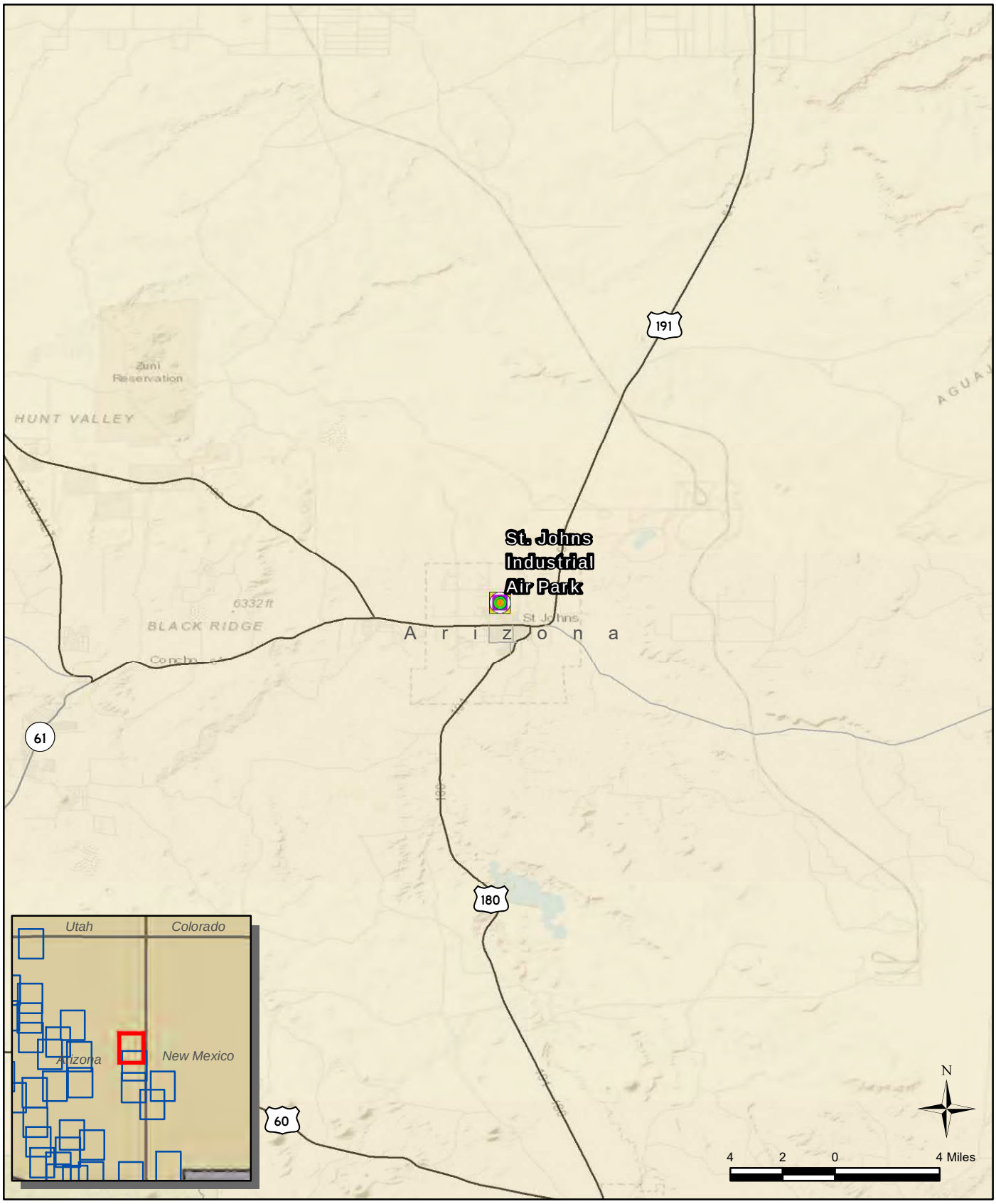



**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- US Highway
- State Highway and Route
- Other Roads



**Figure C-18**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads



**Figure C-19**

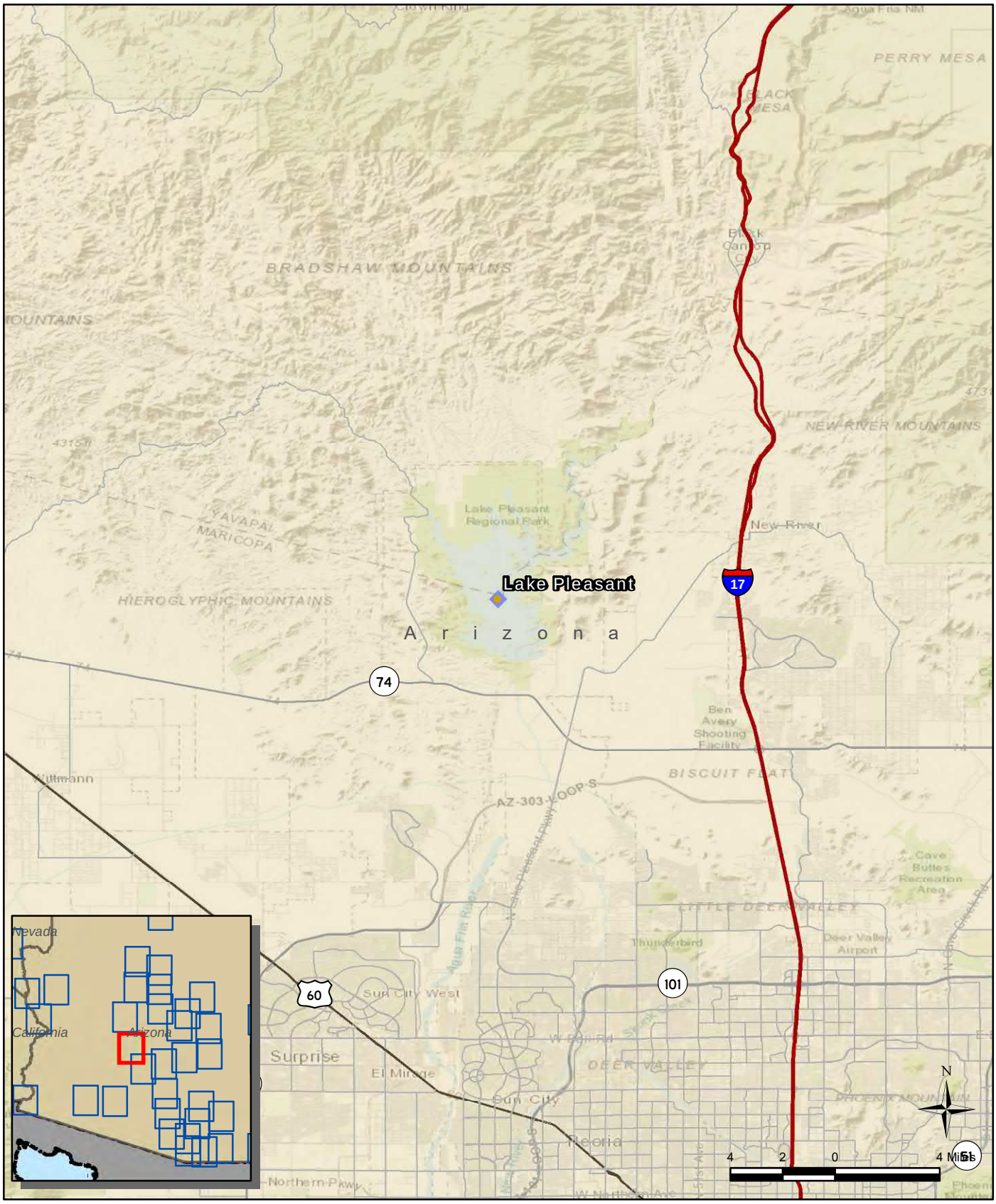



**Legend**

- Forward Aircraft Refueling Point
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Interstate Highway
- State Highway and Route
- Other Roads



**Figure C-20**

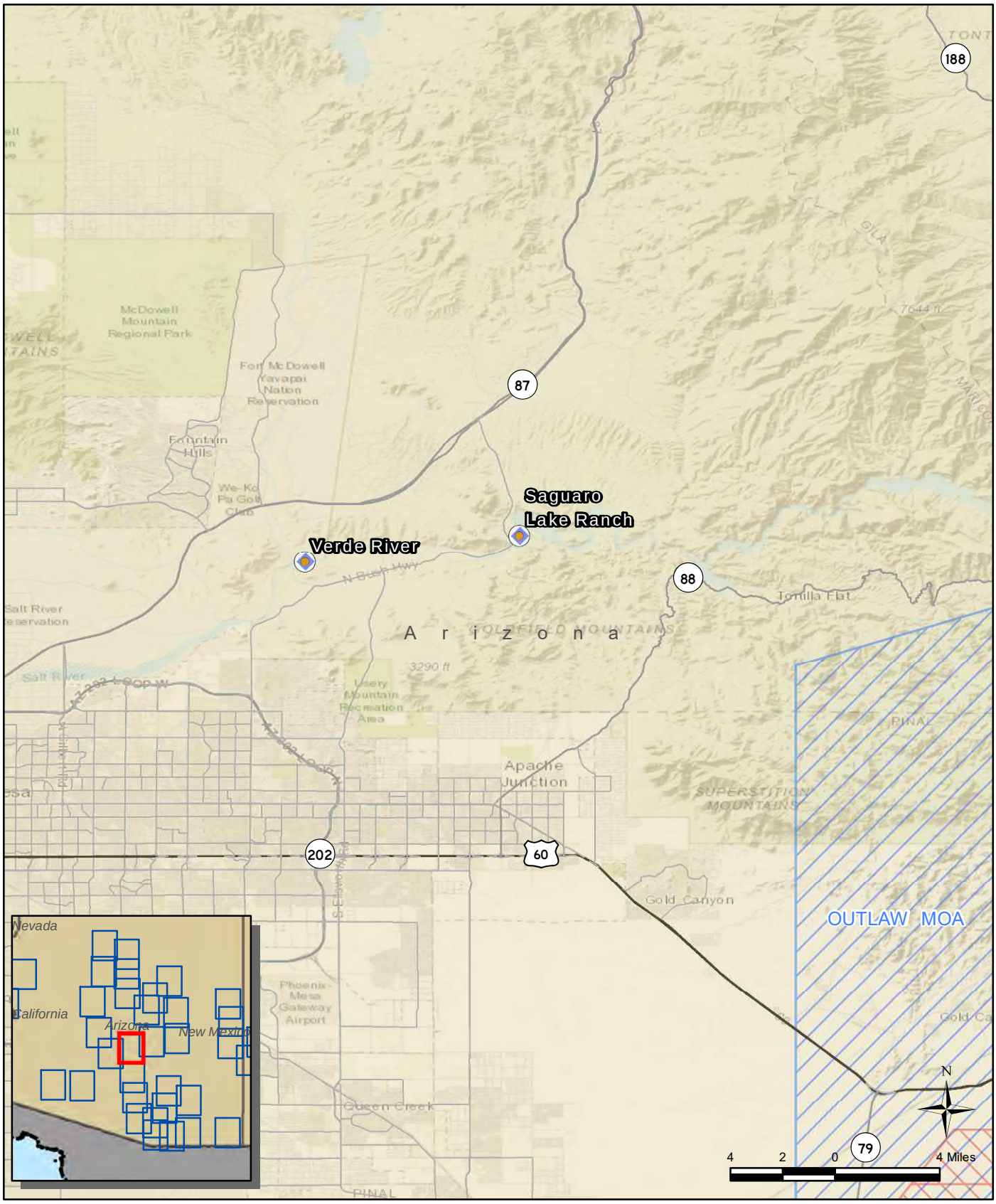



**Legend**

- Water Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads



**Figure C-21**

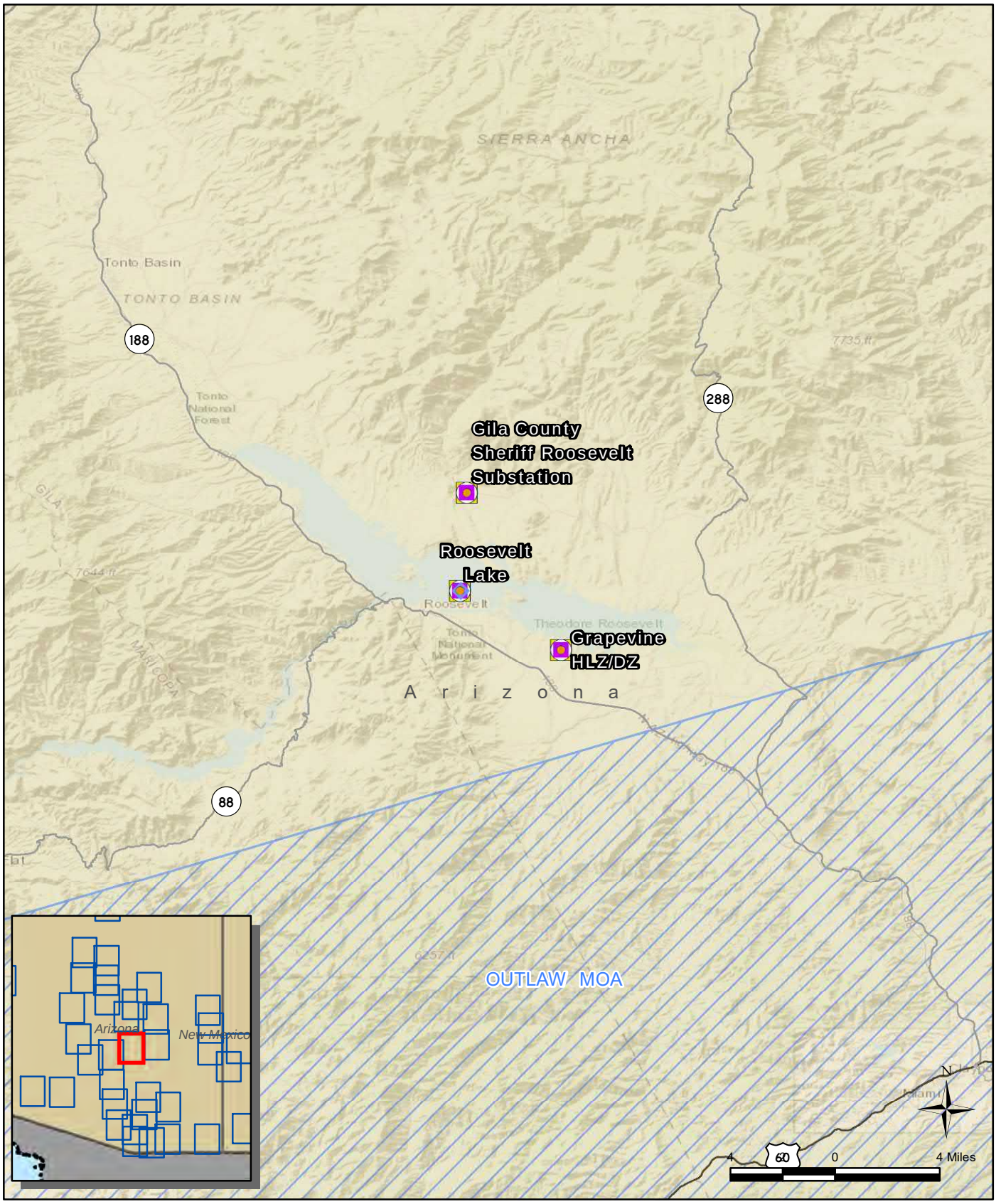



**Legend**

- Drop Zone
- Water Training
- Helicopter Landing Zone
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



**Figure C-22**

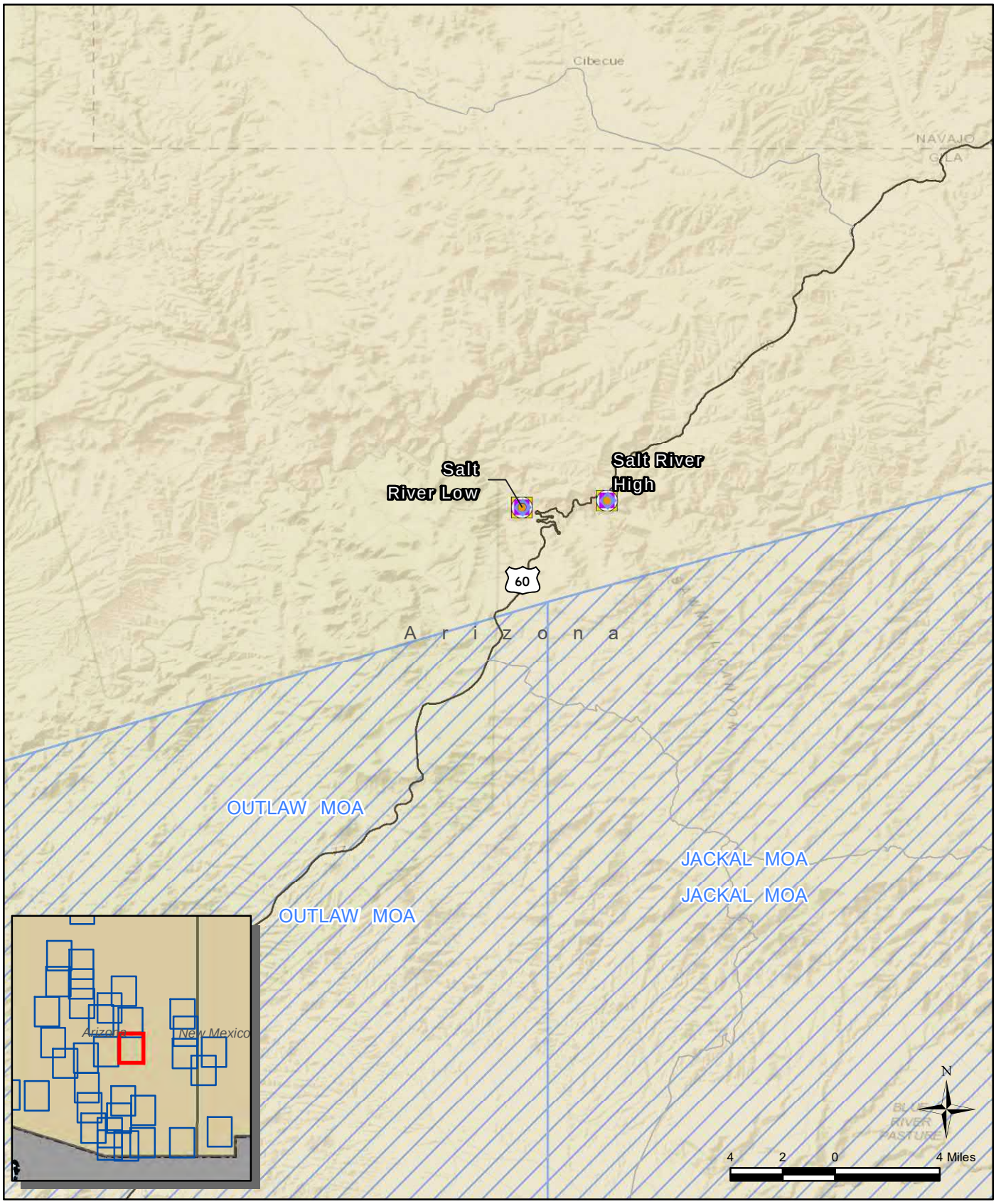



**Legend**

- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-23**

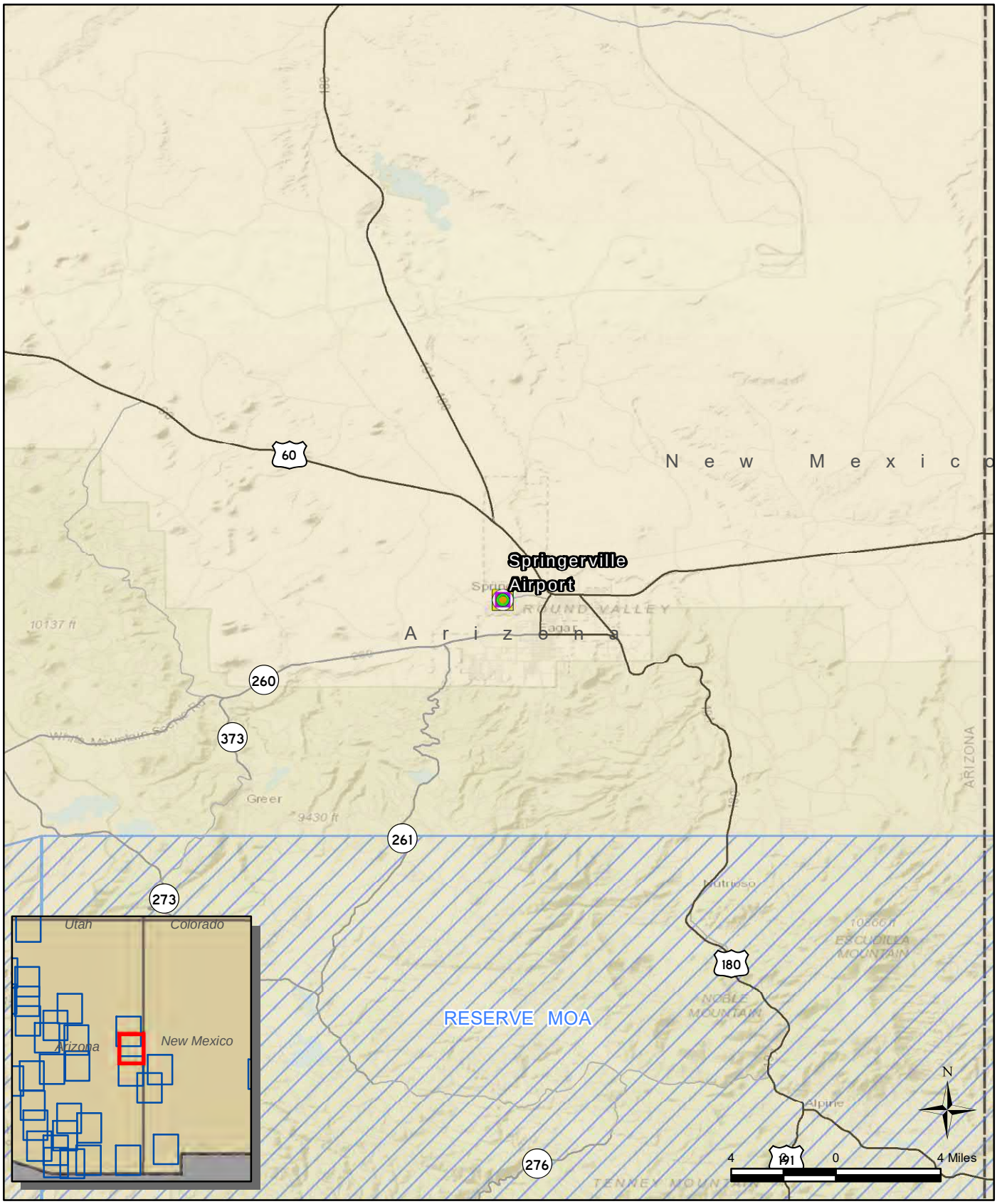



**Legend**

- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-24**

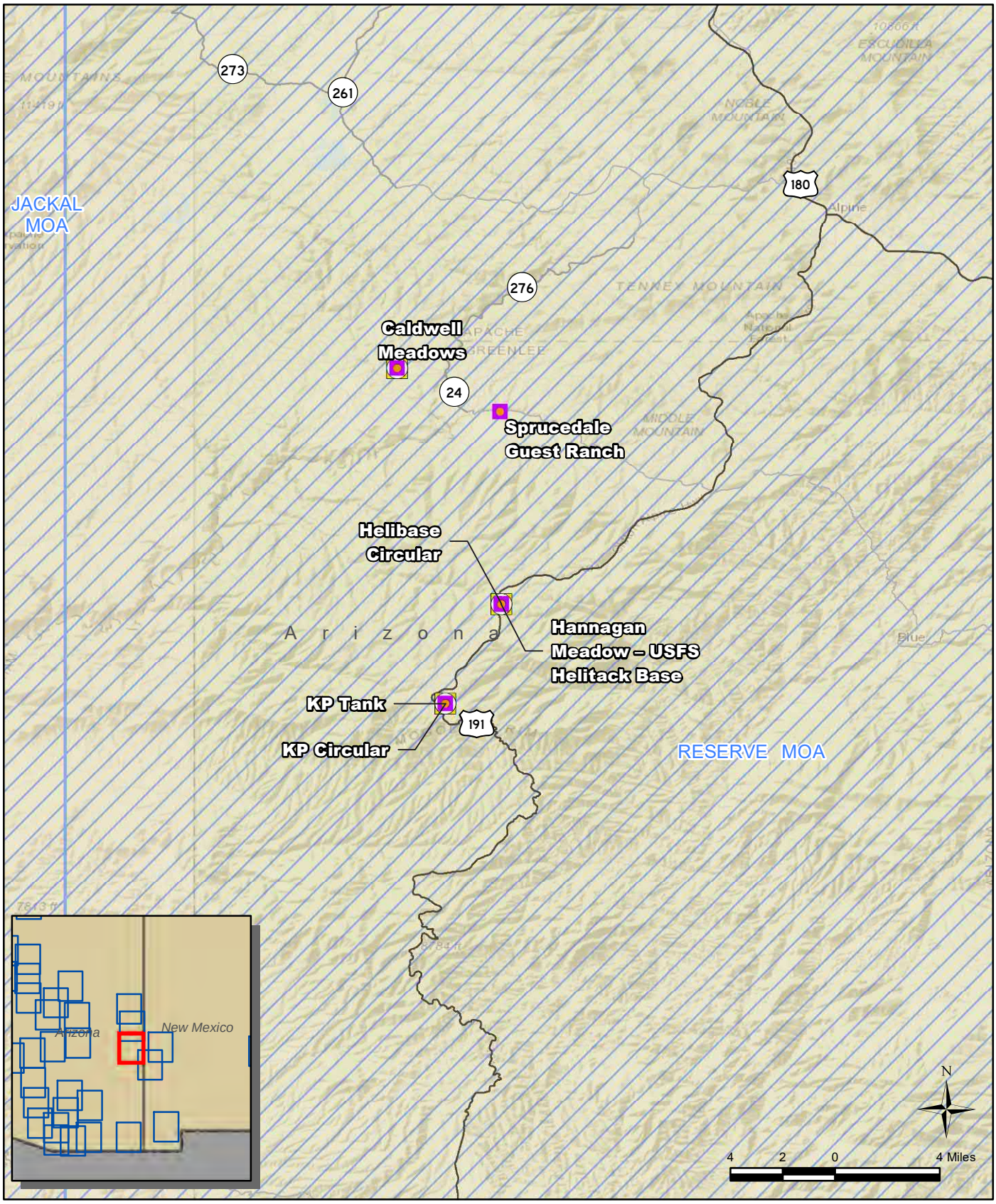



**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-25**

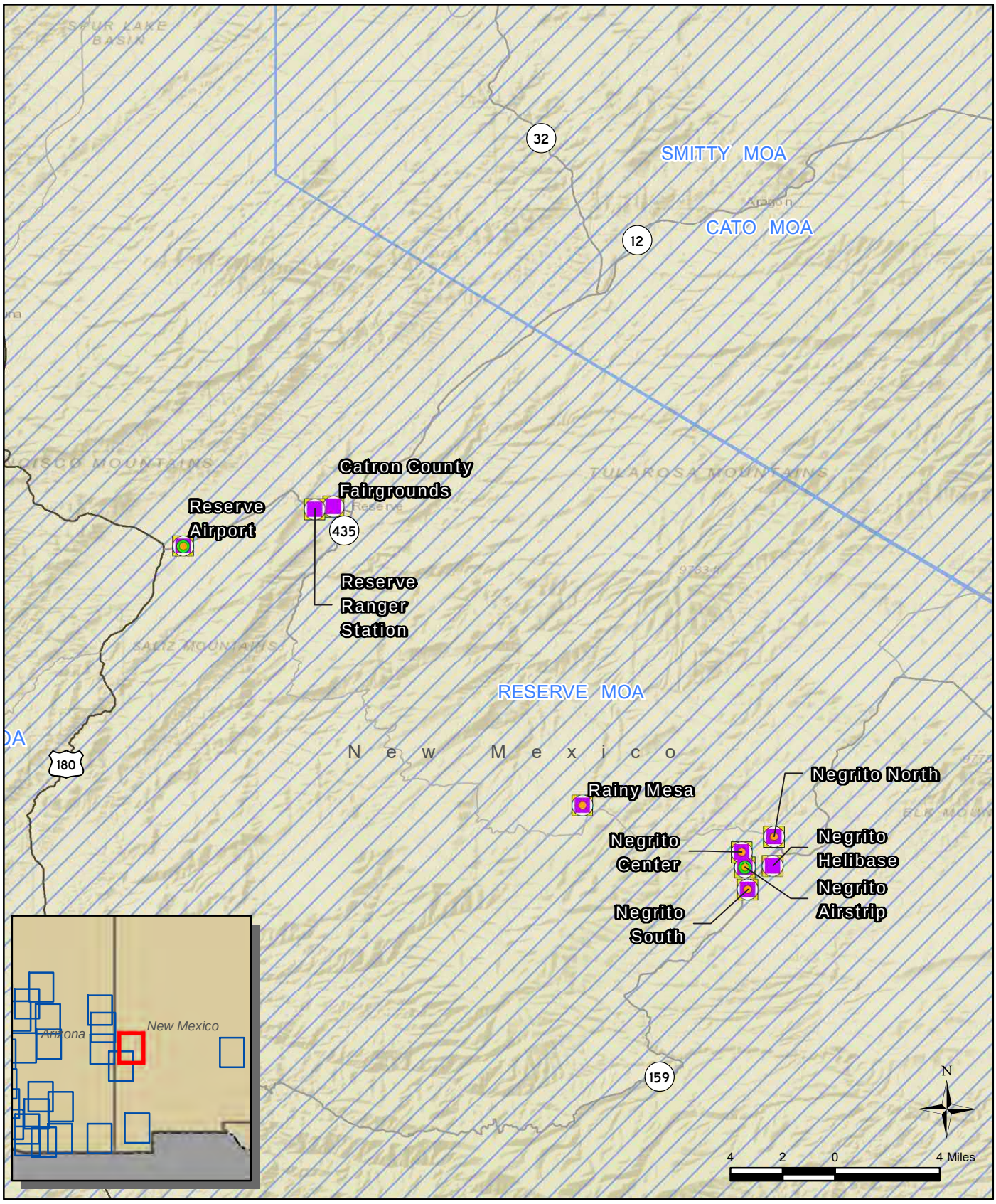



**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-26**

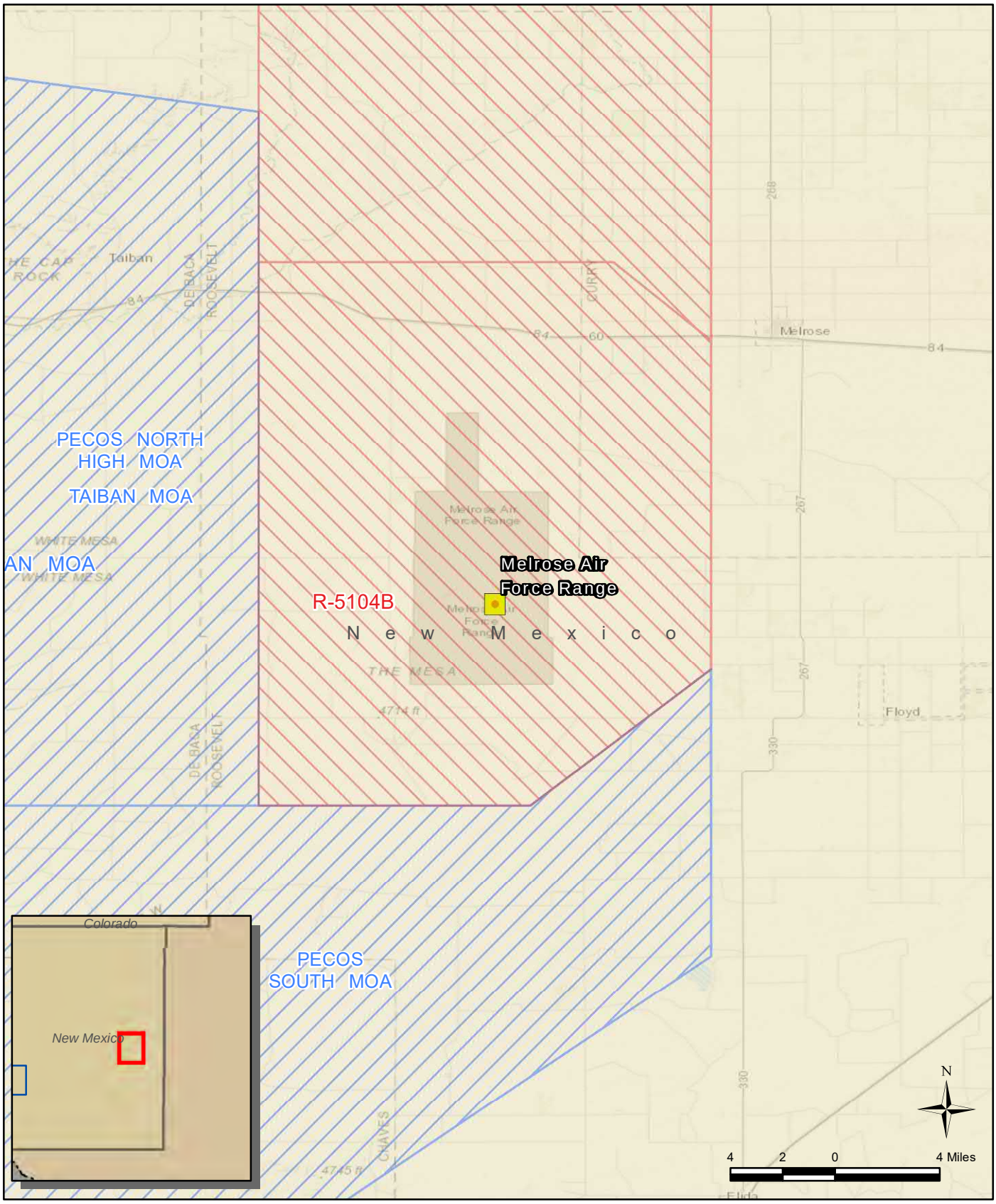



**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-27**

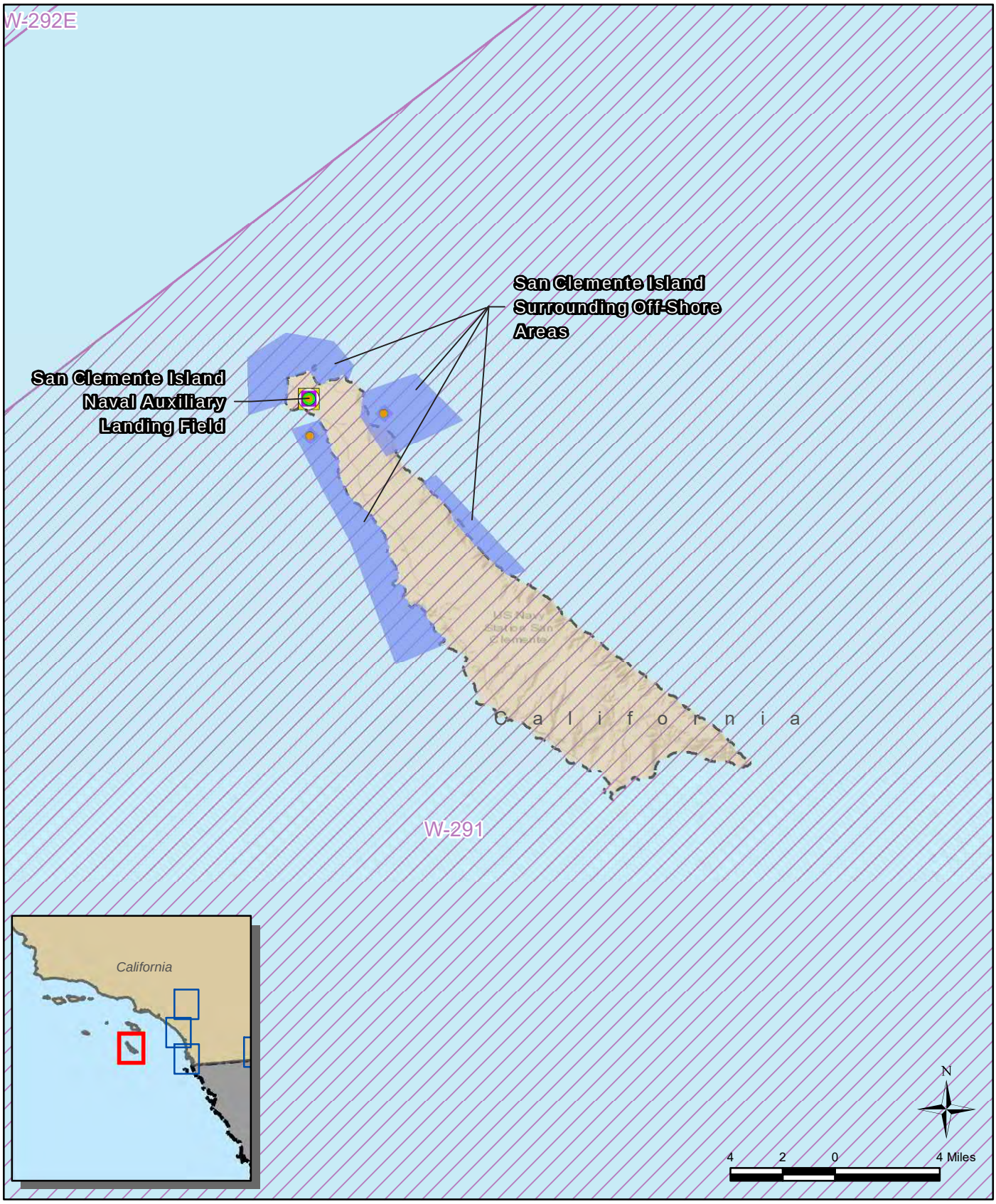



**Legend**

- Flight Training
- Restricted Area
- Military Operations Area



**Figure C-28**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- San Clemente Island Surrounding Off-Shore Areas (include Drop Zones and Water Training)
- Warning Area



**Figure C-29**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area



**Figure C-30**

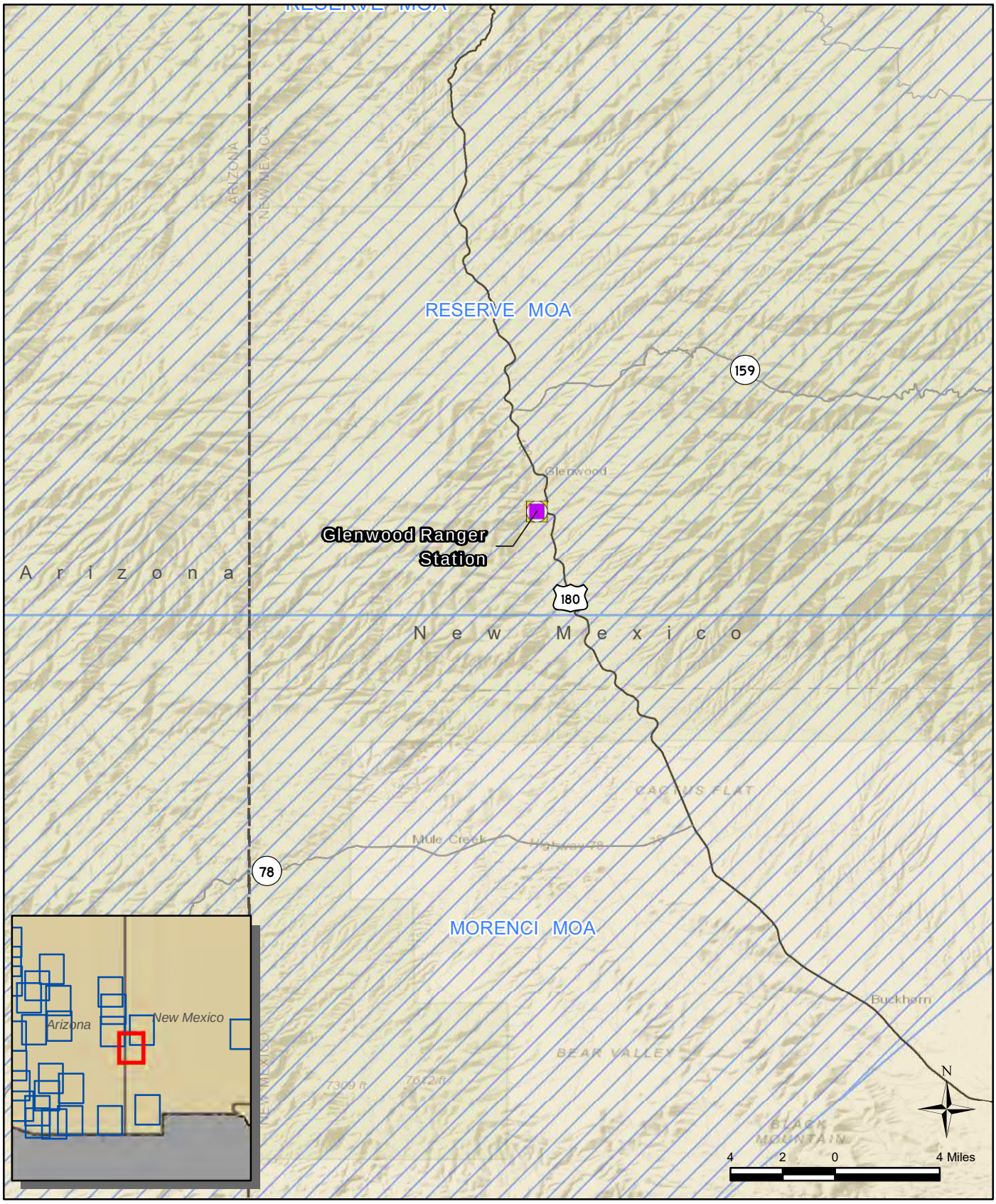



**Legend**

- Fixed-Wing Landing Zone
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads



**Figure C-31**




**Legend**

- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-32**

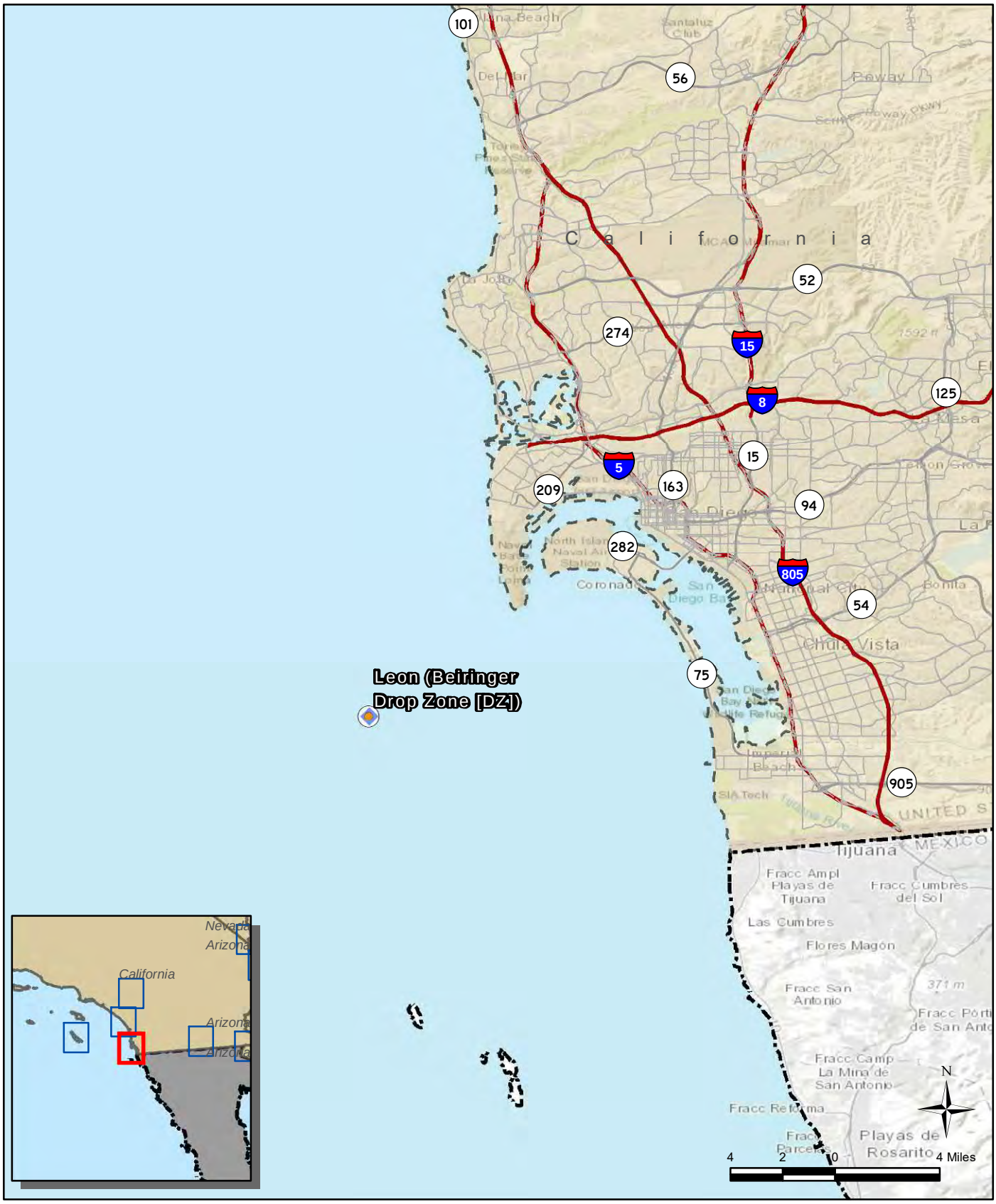



**Legend**

- Ground Training
- Flight Training
- US Highway
- Other Roads
- Restricted Area



**Figure C-33**

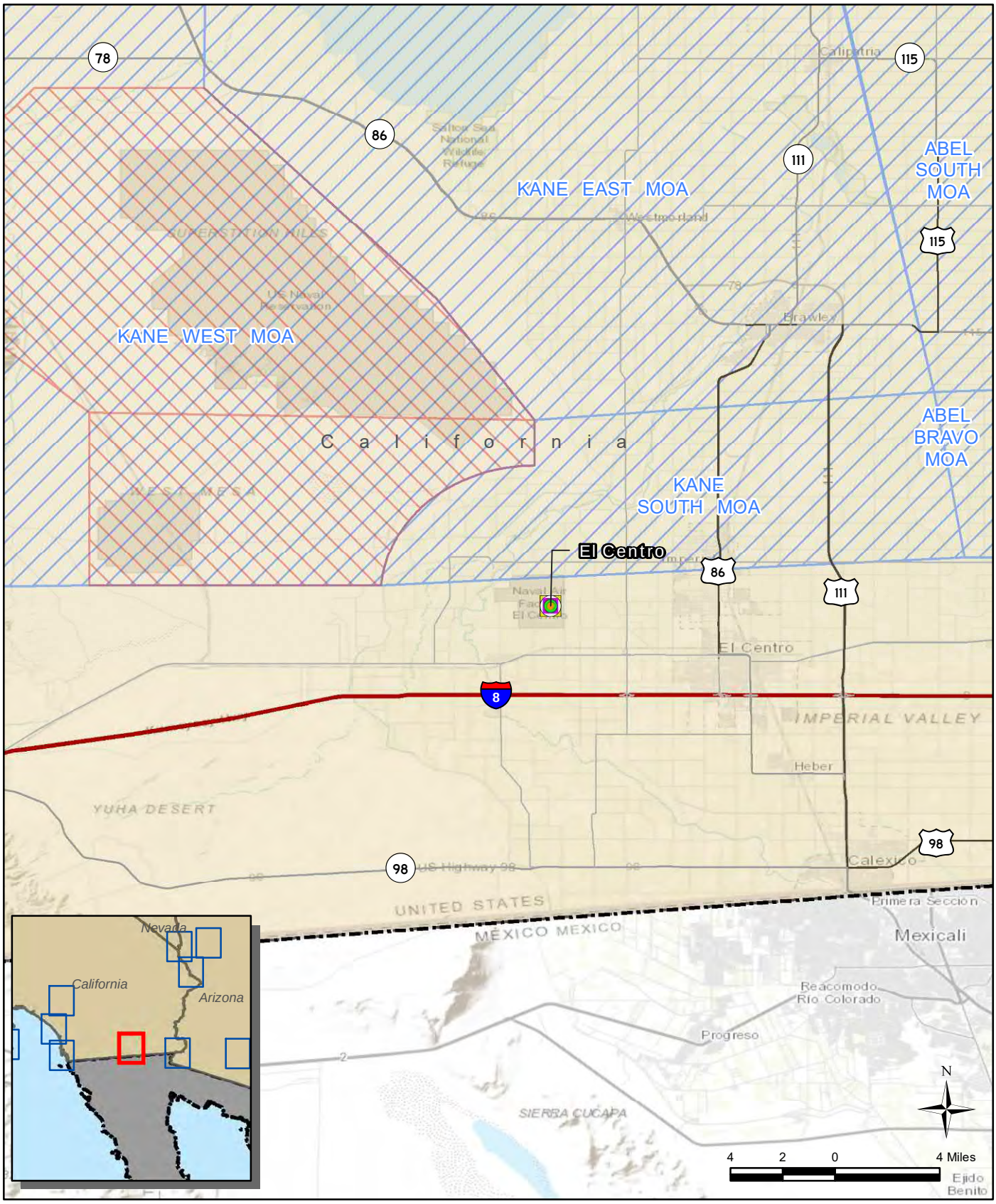



**Legend**

- Drop Zone
- Water Training
- Helicopter Landing Zone
- Interstate Highway
- State Highway and Route
- Other Roads



**Figure C-34**

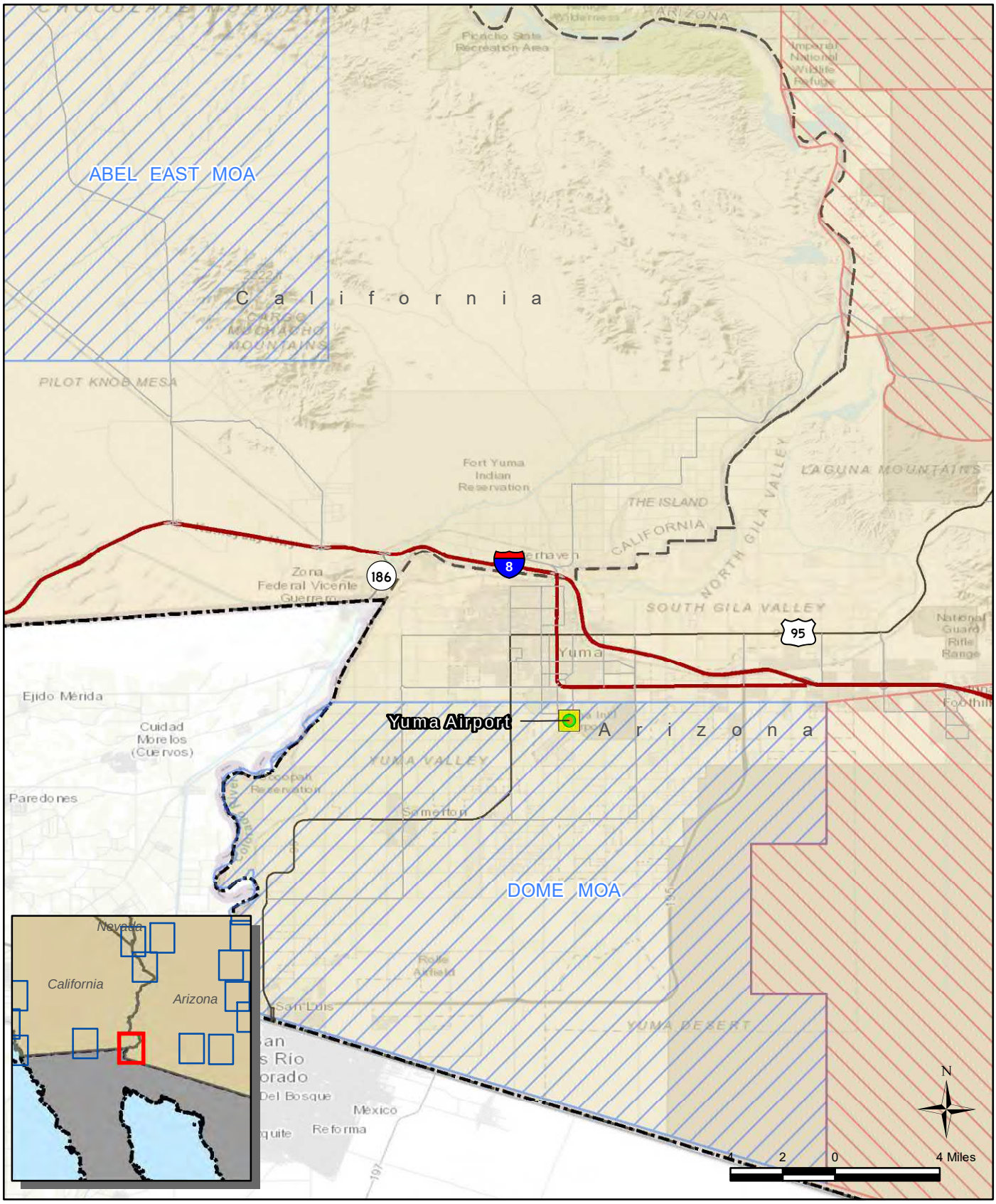



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



Figure C-35

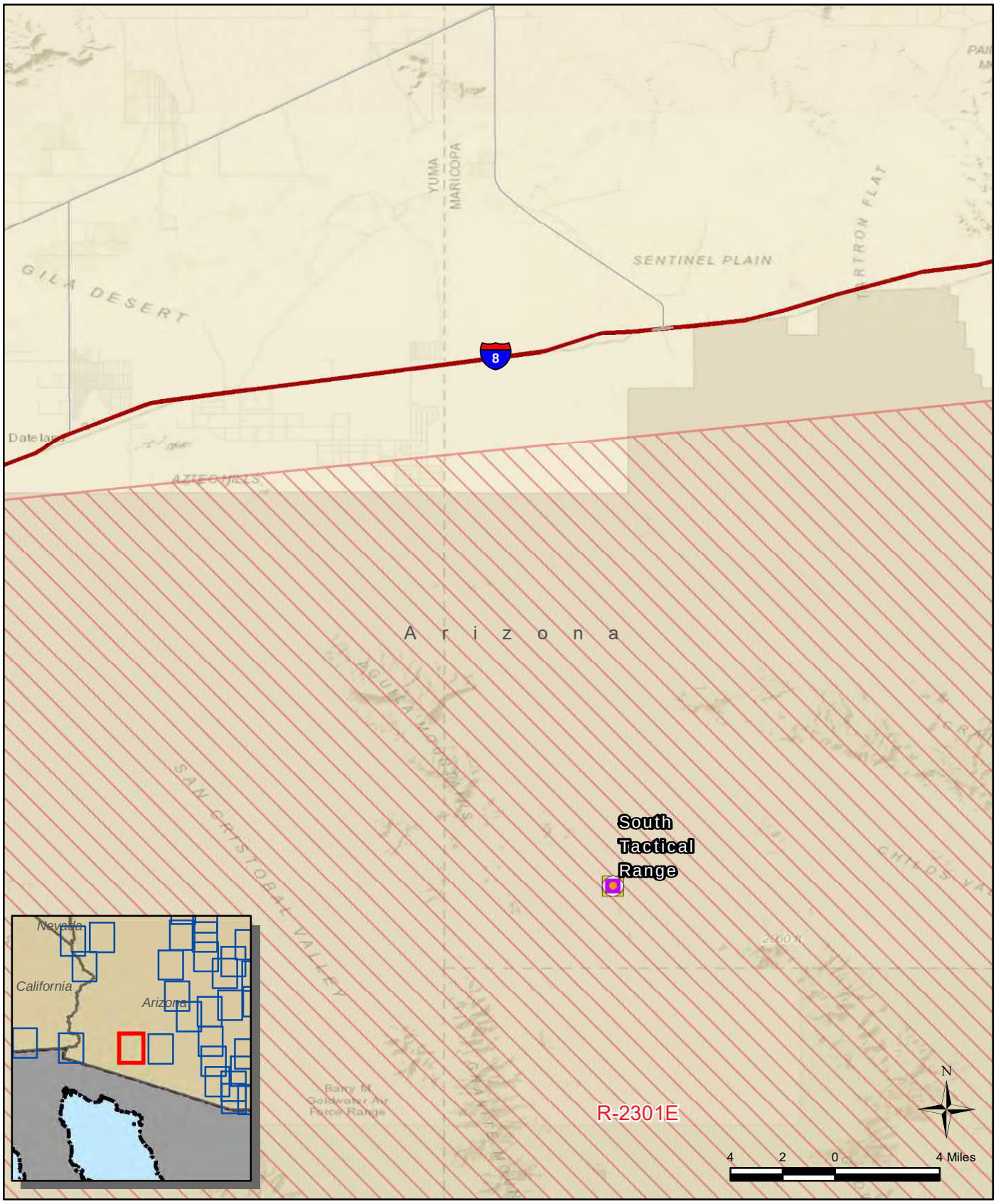



**Legend**

- Fixed-Wing Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



**Figure C-36**

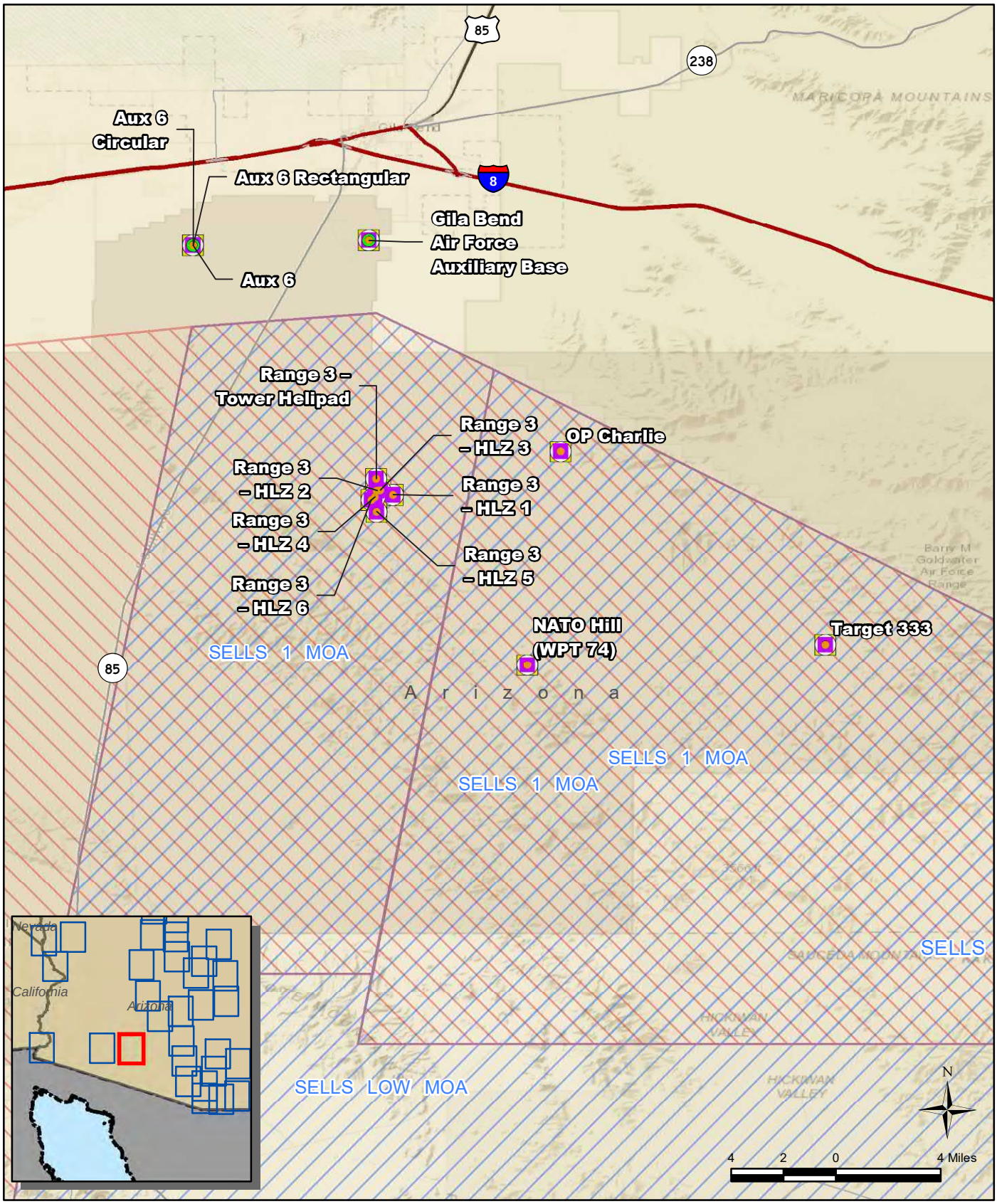



**Legend**

- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- Other Roads
- Restricted Area



**Figure C-37**

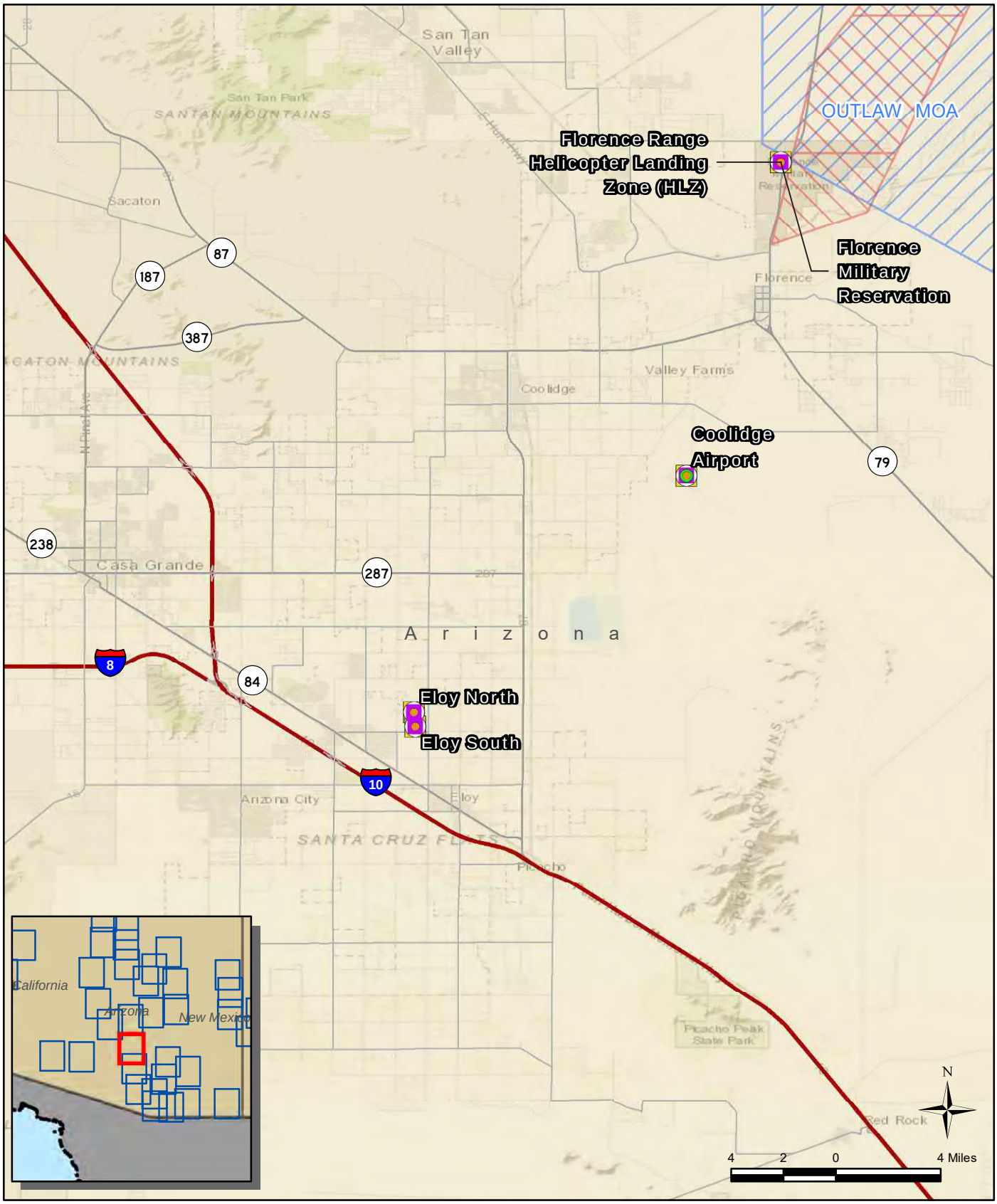



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- US Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



**Figure C-38**

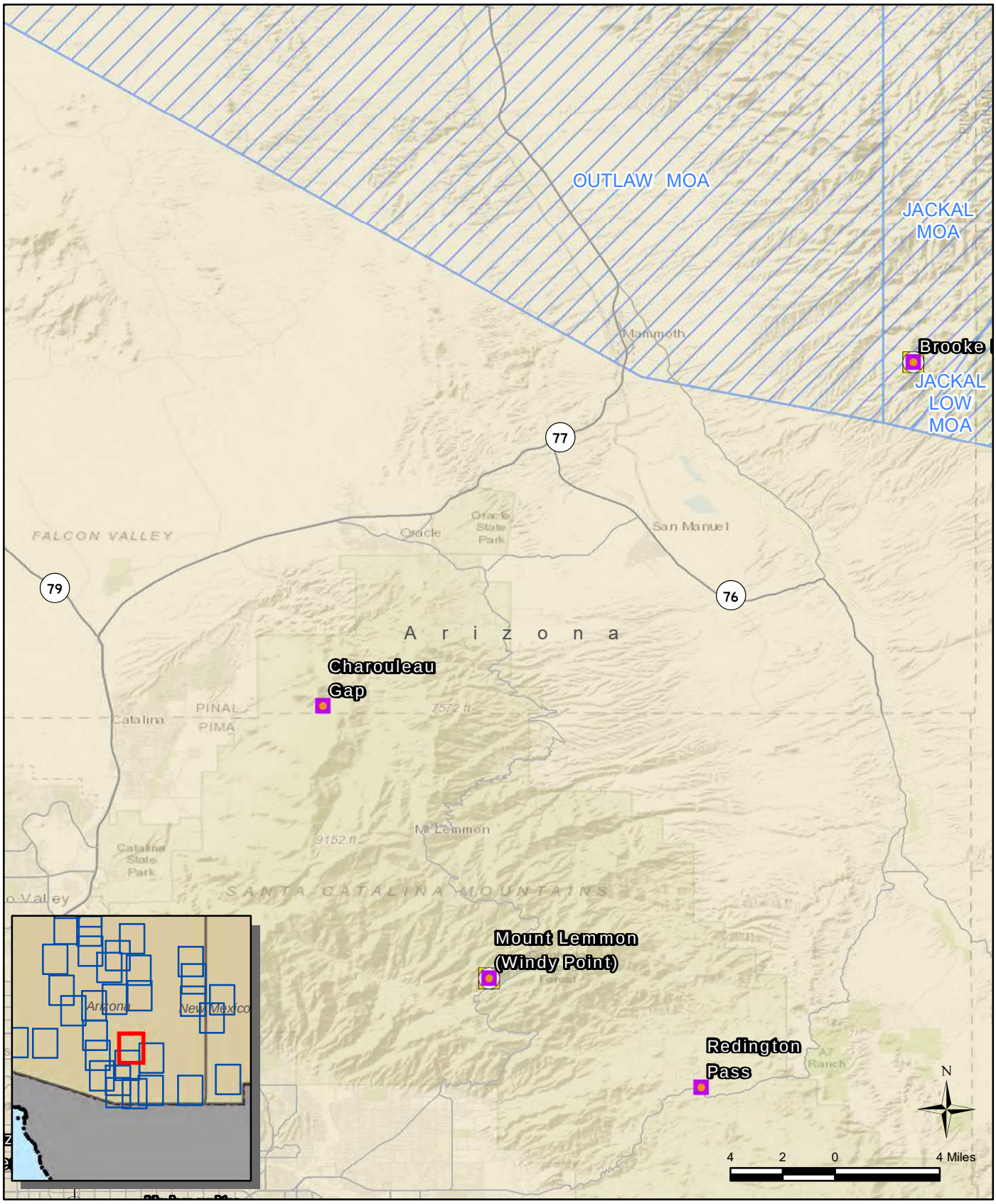



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



Figure C-39




**Legend**

- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-40**

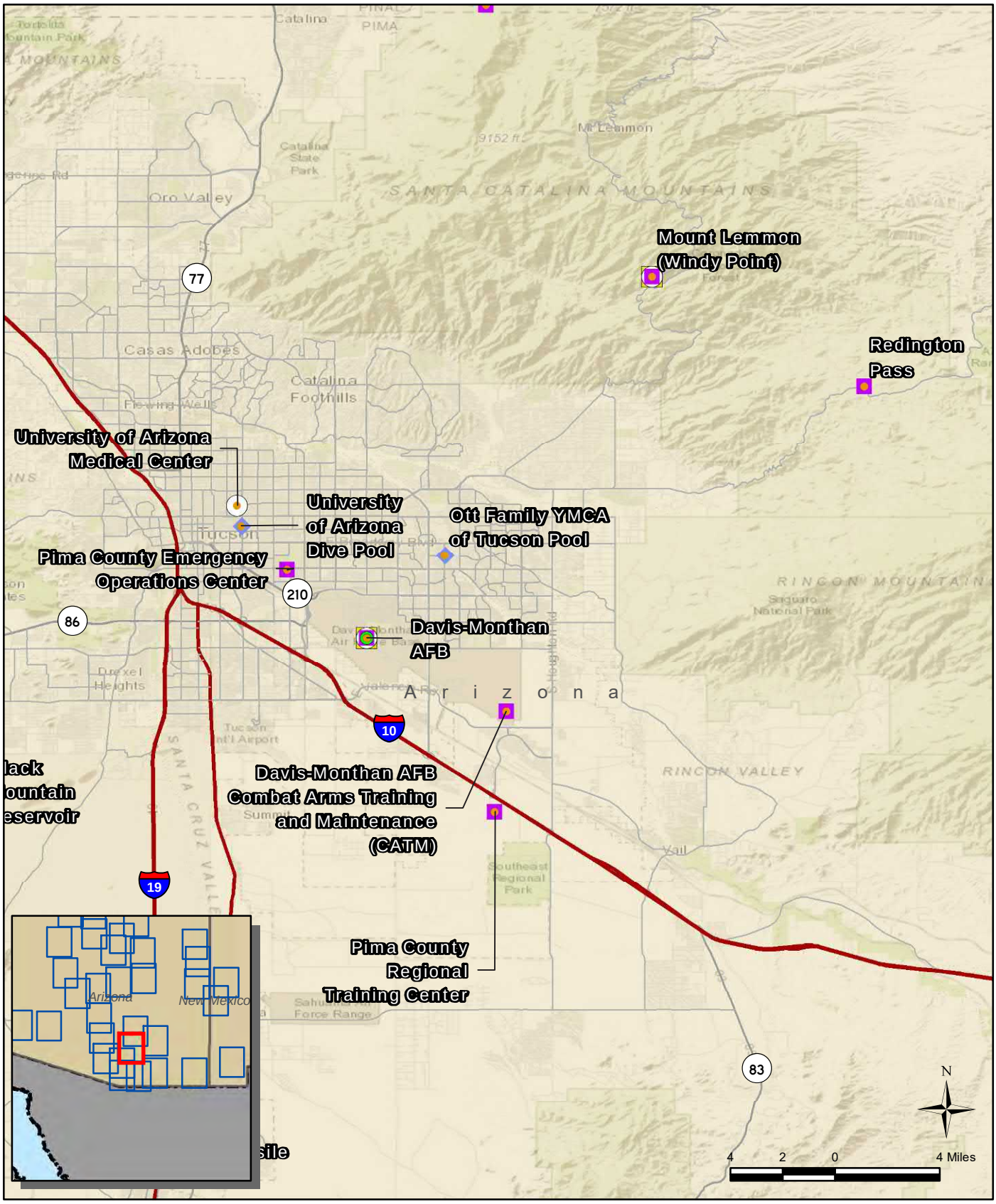



**Legend**

- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-41**

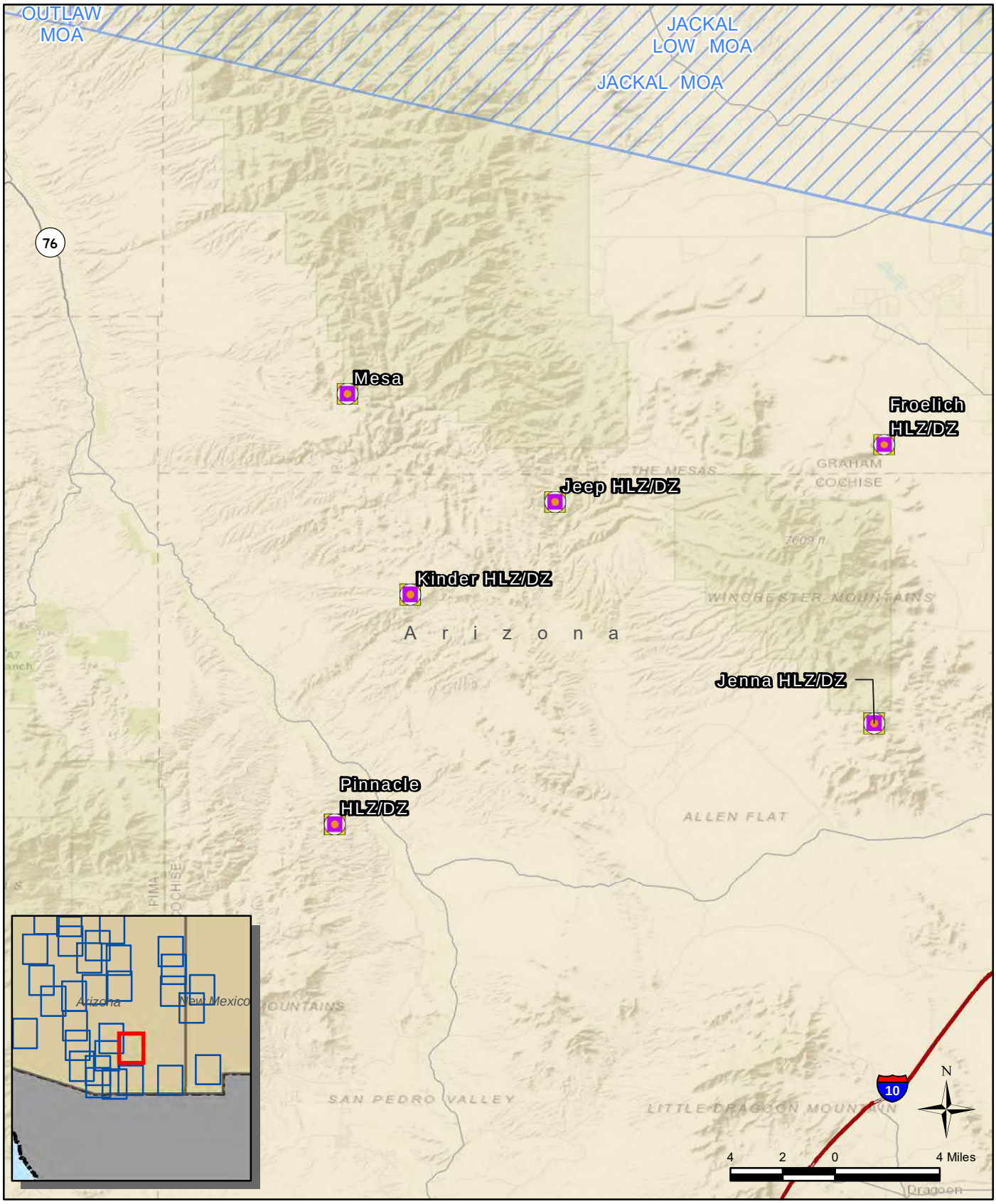



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads



**Figure C-42**

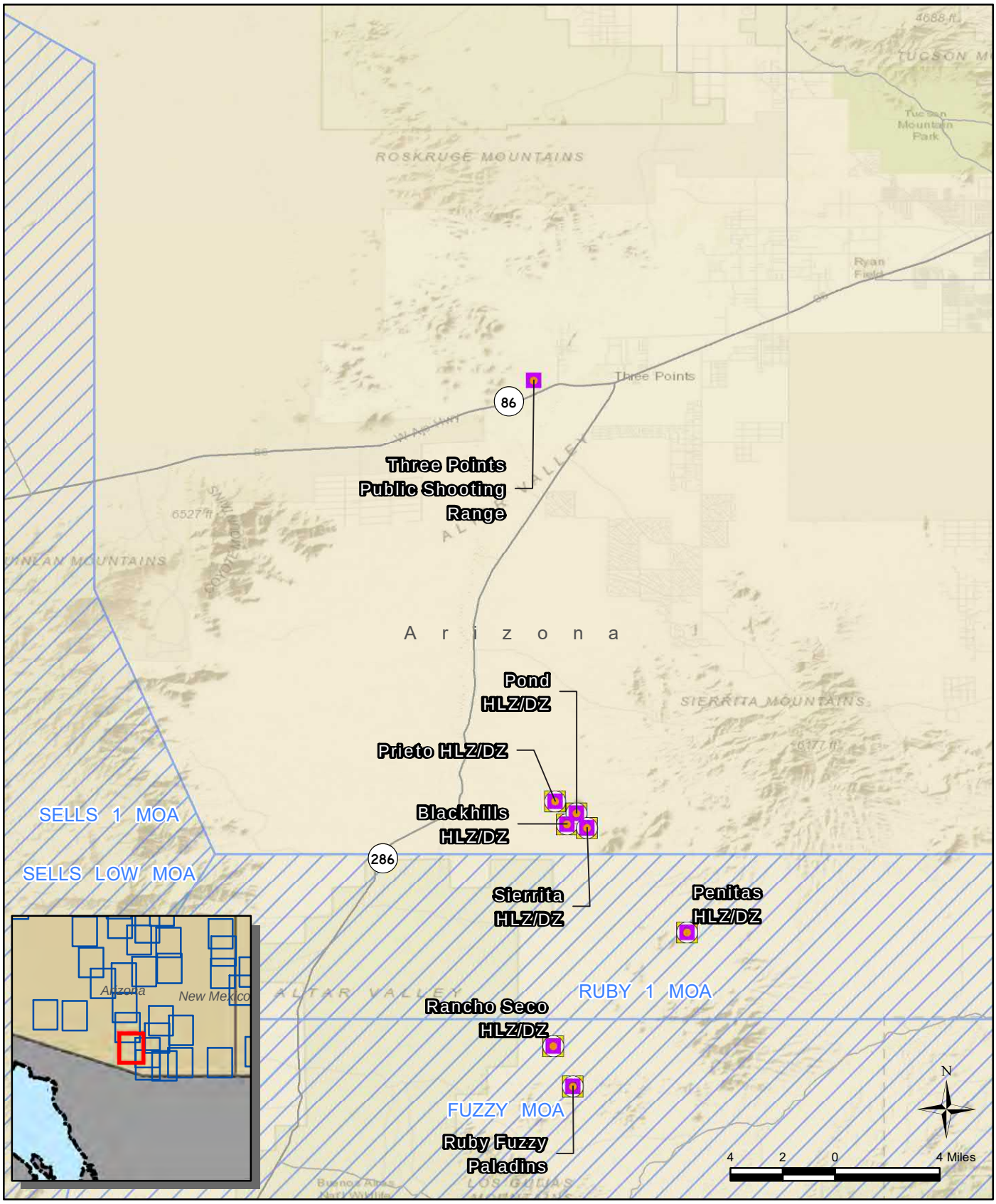



**Legend**

- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-43**

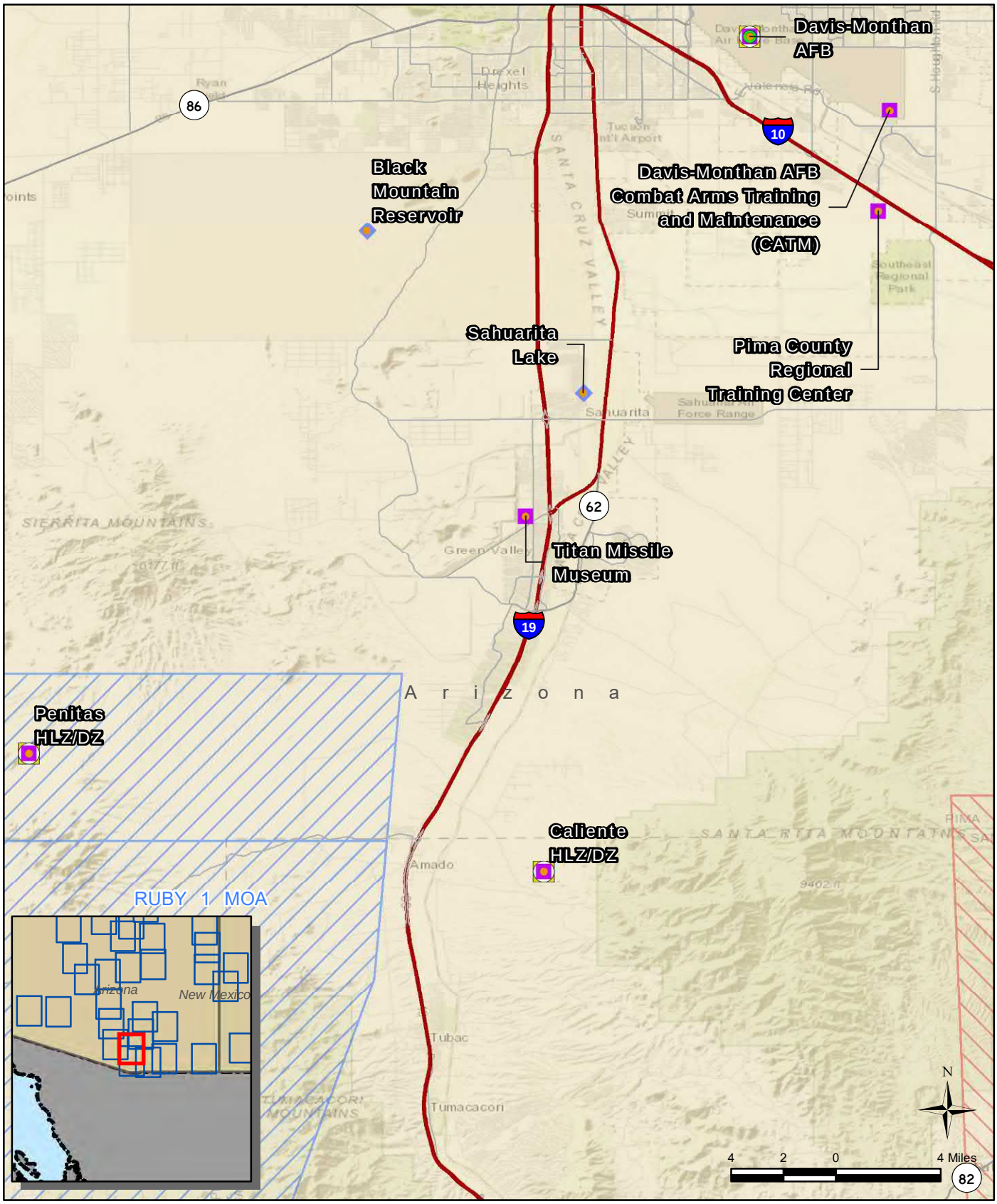



**Legend**

- Drop Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-44**

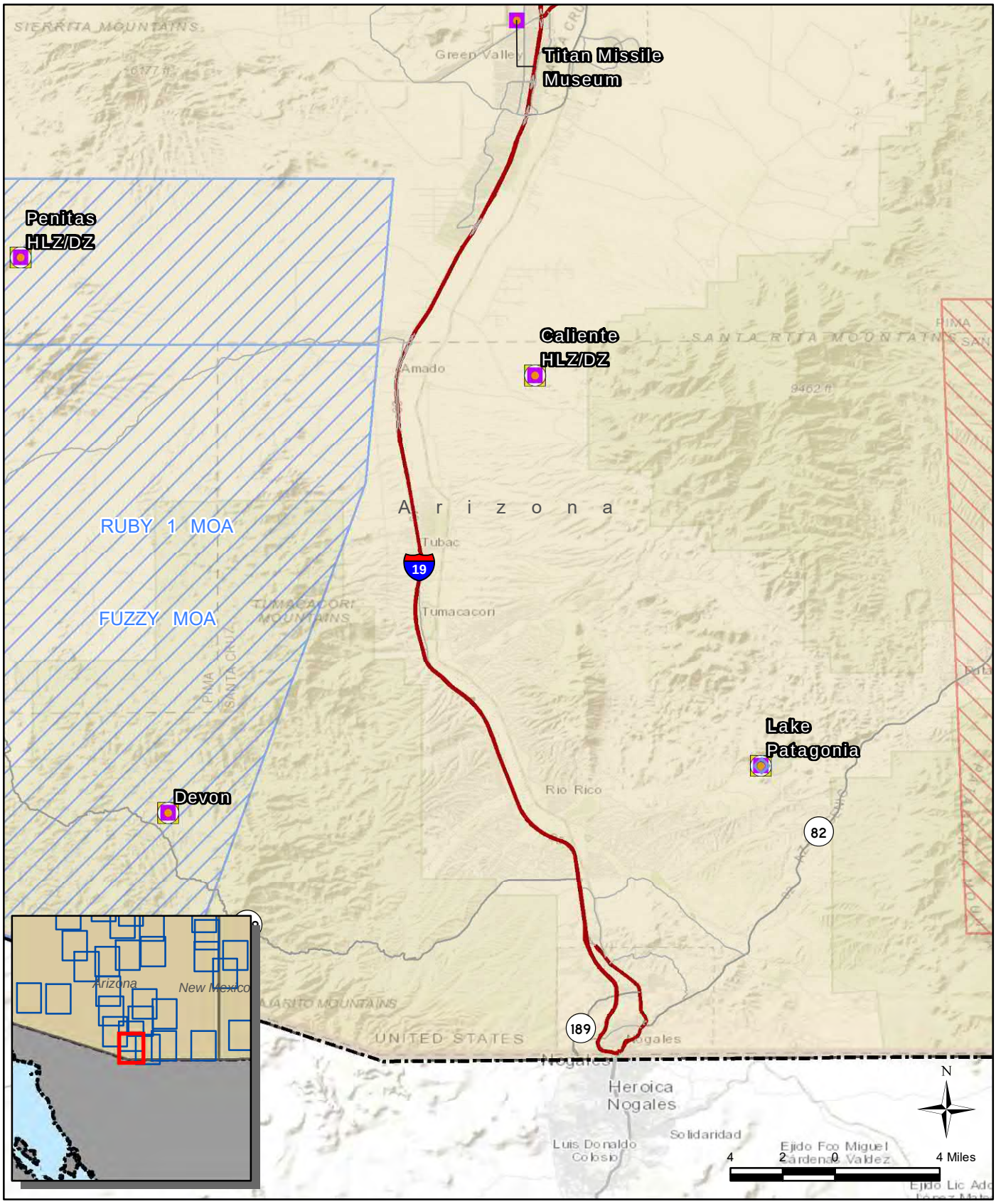



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



**Figure C-45**

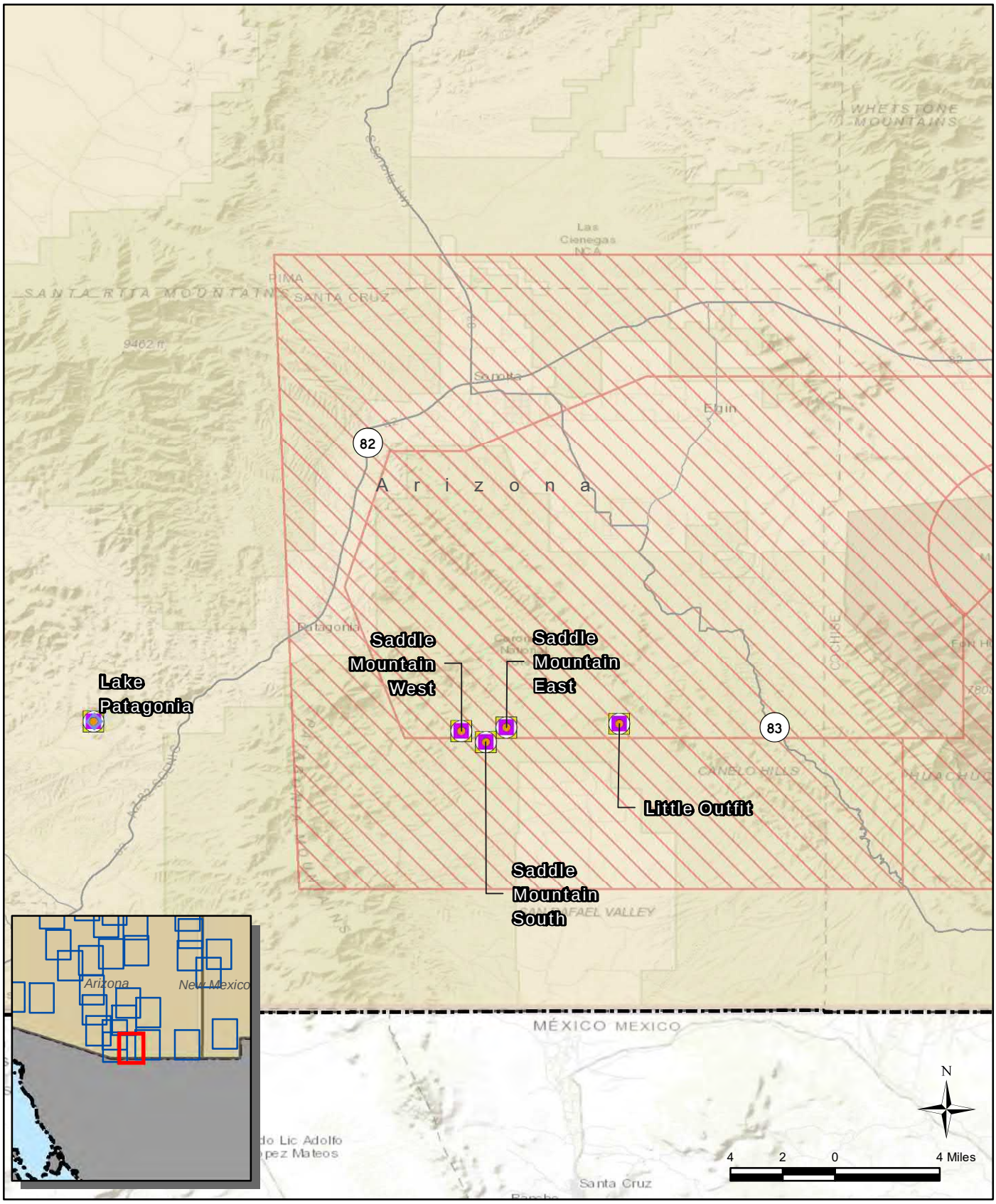



**Legend**

- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area
- Military Operations Area



**Figure C-46**

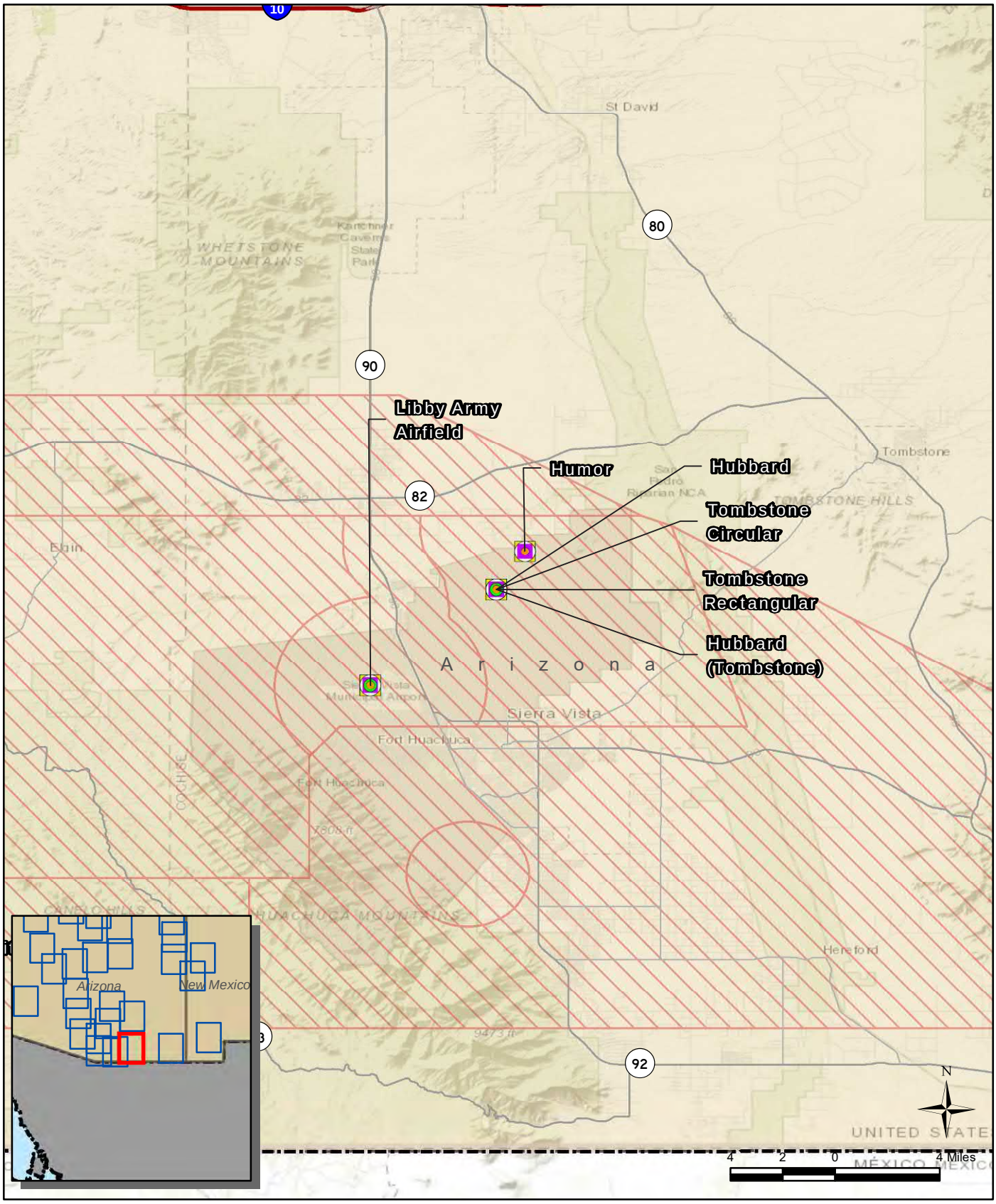



**Legend**

- Drop Zone
- Water Training
- Ground Training
- Helicopter Landing Zone
- Flight Training
- State Highway and Route
- Other Roads
- Restricted Area



**Figure C-47**

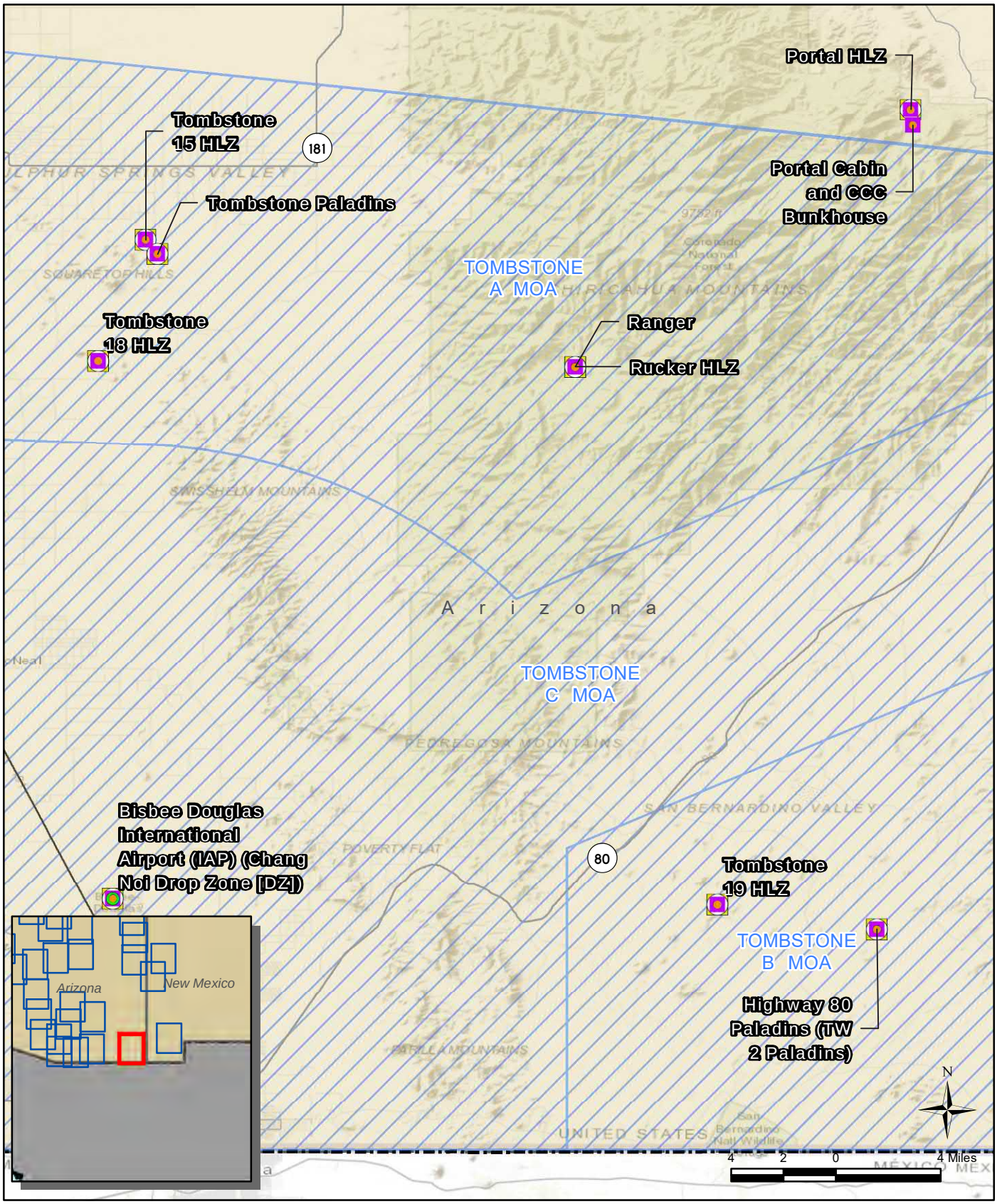



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Restricted Area



**Figure C-48**

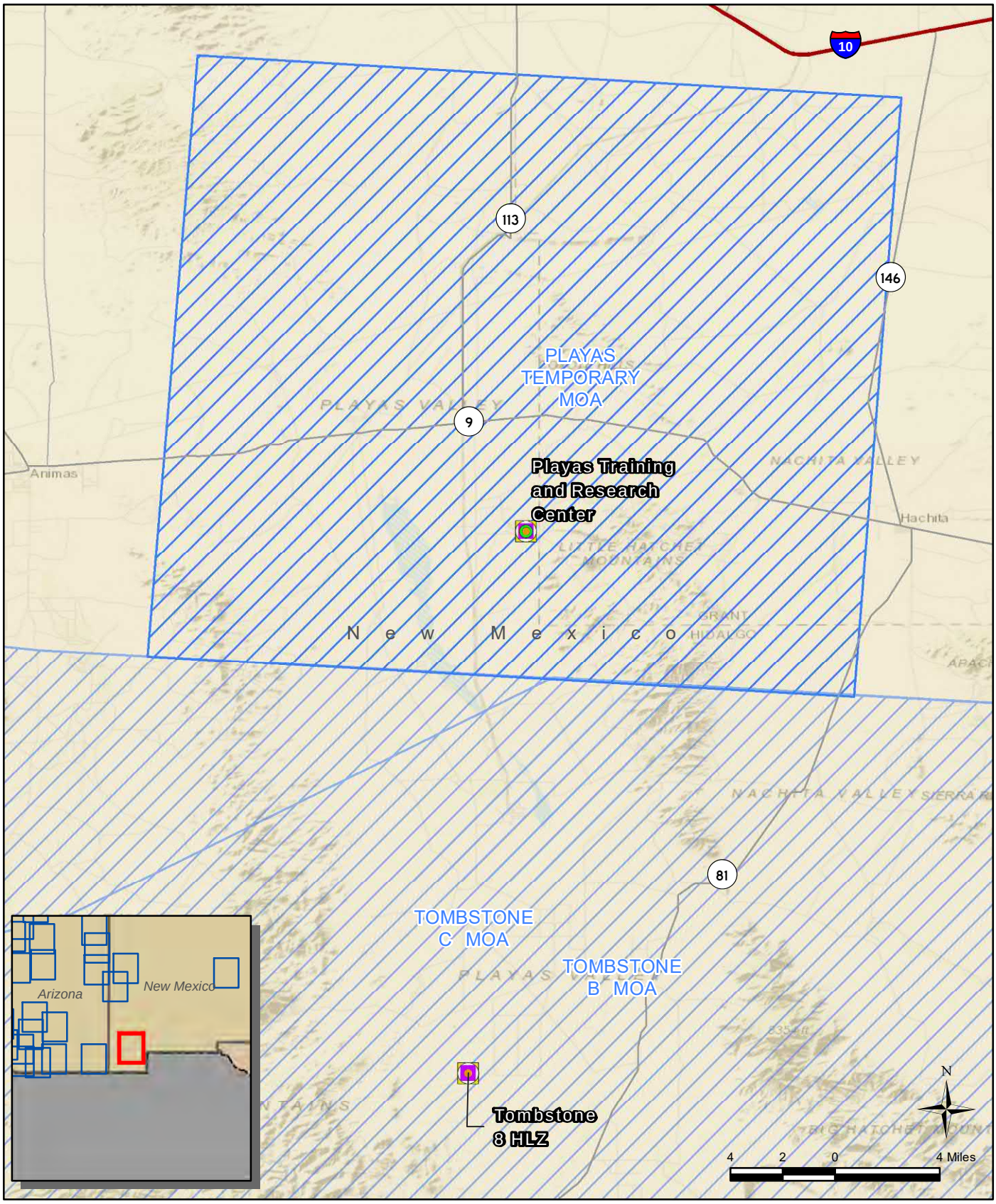



**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- US Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-49**




**Legend**

- Forward Aircraft Refueling Point
- Drop Zone
- Fixed-Wing Landing Zone
- Ground Training
- Helicopter Landing Zone
- Flight Training
- Interstate Highway
- State Highway and Route
- Other Roads
- Military Operations Area



**Figure C-50**

# Attachment 3

# USFWS Concurrence with Biological Evaluation's Findings

# United States Department of the Interior
## Fish and Wildlife Service
**Arizona Ecological Services Office**
9828 North 31st Avenue
Phoenix, Arizona 85051
Telephone: (602) 242-0210 Fax: (602) 242-2513


AESO/SE
02EAAZ00-2020-I-0217

December 17, 2019

Mr. Kevin Wakefield
355 CES/CEIS
3775 South 5th Street
Davis-Monthan Air Force Base
Tucson, Arizona 85707-4927

Dear Mr. Wakefield:

Thank you for your correspondence of September 24, 2019, received on October 1, 2019, which included the "Biological Evaluation (BE) for the Davis-Monthan Air Force Base Personnel Recovery Training Program (proposed action)." This letter documents our review of the proposed action, conducted in Arizona, California, Nevada, and New Mexico, in compliance with section 7 of the Endangered Species Act of 1973 (ESA) as amended (16 U.S.C. 1531 et seq.). You concluded that the proposed project "may affect, but is not likely to adversely affect" the bonytail chub (*Gila elegans*), Gila chub (*Gila intermedia*), little Colorado spinedace (*Lepidomeda vittata),* spikedace (*Meda fulgida*), Gila trout (*Oncorhynchus gilae*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), Colorado pikeminnow (*Ptychocheilus lucius*), loach minnow (*Tiaroga cobitis*), razorback sucker (*Xyrauchen texanus*), three forks springsnail (*Pyrgulopsis* trivialis), Chiricahua leopard frog (*Lithobates chiricahuensis*), Sonoran tiger salamander (*Ambystoma mavortium stebbensi*), Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*), arroyo toad (*Anaxyrus californicus*), northern Mexican gartersnake (*Thamnophis eques megalops*) and its proposed critical habitat, narrow-headed gartersnake (*Thamnophis rufipunctatus*) and its proposed critical habitat, Mexican spotted owl (*Strix occidentalis lucida*), southwestern willow flycatcher (*Empidonax traillii extimus*), yellow-billed cuckoo (*Coccyzus americanus*) and its proposed critical habitat, northern aplomado falcon (*Falco femoralis septentrionalis*), least Bell's vireo (*Vireo bellii* pusillus), Yuma clapper rail (*Rallus longirostris browni*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), Mexican gray wolf (*Canis lupus baileyi*), Stephens' kangaroo rat (*Dipodomys stephensi*), jaguar (*Panthera onca*), New Mexico jumping mouse (*Zapus hudsonius luteus*), Mexican long-nosed bat (*Leptonycteris nivalis*), thread-leaved brodiaea (*Brodiaea filifolia*), Cochise pincushion cactus (*Coryphantha robbinsorum*), Pima pineapple cactus (*Coryphantha scheeri var* robustispina), Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var *nicholii*), acuna catus (*Echinomastus erectocentrus var.* acunensis), and Fickeisen plains cactus (*Pediocactus peeblesianus* var. *fickeisniae*). You determined there would be "no effect" from your proposed

action to proposed or designated critical habitat for these species (as applicable), with the exception of the narrow-headed gartersnake, the northern Mexican gartersnake, the yellow-billed cuckoo, and the Sonoyta mud turtle. Because critical habitat is proposed for these four species, this document represents a conference report related to these proposed critical habitats.

Description of the Proposed Action

The U.S. Air Force (USAF) is proposing to improve Personnel Recovery (PR) training conducted throughout the southwestern United States. This would include routine and specialized formal training of PR forces, as well as Large Force joint/multi-national events. The proposed action authorizes additional training sites and the range of authorized PR training activities on some current sites would be expanded to include additional activities. However, there would be no change in the organizations at Davis-Monthan Air Force Base that conduct this training, no change in the number of personnel involved, no change in the amount and type of equipment used, and no change in current procedures used to avoid and protect environmental resources. Proposed PR training activities would be centered out of Davis-Monthan Air Force Base, Arizona, and would be conducted in Arizona, California, Nevada, and New Mexico. Training would be in areas that are previously disturbed or are currently or previously used for activities similar to those proposed under the Proposed Action.

A total of 181 sites may be utilized during PR training, 160 of which are already authorized and used for PR training. Under the Proposed Action, 21 additional sites would be authorized for use. Specifically, the Proposed Action would include using Department of Defense (DOD) and non-DOD properties for ground, flight (including activation of a Temporary Military Operations Area (MOA) above the Playas Training and Research Center), and water operations. The proposed PR training would involve related DOD training airspaces and ranges using various numbers and types of U.S. and foreign aircraft operating primarily from Davis-Monthan Air Force Base. Given the complexity of the Proposed Action and the dispersed geographical locations of the proposed PR training sites, the following scale categories were developed to capture three probable PR training and event levels: Large Force training event, Medium Force training event (group level training), and Small Force training event (squadron level training).

If changes occur to proposed PR training sites, that information will be provided to the U.S. Fish and Wildlife Service (FWS). In addition, the USAF is considering PR training sites at U.S. Marine Corps Base Camp Pendleton as part of the Proposed Action and is currently coordinating with the Marine Corps. These potential sites are not part of this consultation. If a training event is proposed for any of these Camp Pendleton sites, the Marine Corps has indicated that they would engage in Section 7 consultation related to the proposed activities at that time.

A complete description of the proposed action is found in your September 29 Biological Evaluation (BE). This document is included in this consultation by reference. Specifically, Sections 2.1.4.1 through 2.1.4.20 describe each of the proposed training activities. The associated tables, Table 2.1-1 though Table 2.1-26, give specific descriptions of the PR training events within each event scale for the Proposed Action. Table 2.3-1 describes the proposed PR training activities by land management entity. Tables 4-1 through 4-4 categorize the training sites by land management agency. In summary, Attachment 1 of the BE is the proposed PR training summary description by training site and includes information related to location, land

management agency or entity, types of training activities occurring on each site, and MOAs and other airspace requirements. This summary attachment is essentially the specific description of the Proposed Action.

DETERMINATION OF EFFECTS

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the Gila chub, razorback sucker, Chiricahua leopard frog, Sonoran tiger salamander, northern Mexican gartersnake, narrow-headed gartersnake and its proposed critical habitat, Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, Yuma clapper rail, jaguar, New Mexico jumping mouse, lesser long-nosed bat, and Fickeisen plains cactus. Due to the number of different activities associated with this proposed action, the number of different locations where the activities may occur across the State of Arizona, and the number of different listed species potentially affected by these activities, we will use tabular format in providing our rational for concurrence for each species – using concurrence factors provided in Table 3 below. The description of the proposed action (activity codes) and training sites reference the descriptions found in the BE.

Table 3. Concurrence factors.

| Code | Concurrence Factor |
|---|---|
| CF1 | Limited area affected by activity. |
| CF2 | Low likelihood of species presence during project activities. |
| CF3 | Limited duration of activities. |
| CF4 | Project site habitat attributes unfavorable for species presence. |
| CF5 | Project activities occur when species is inactive. |
| CF6 | One or more conservation measures and/or best management practices effectively render effects discountable or insignificant. |
| CF7 | Changes to habitat attributes anticipated to be minimal or will not occur. |
| CF8 | Any habitat attribute(s) that are affected are well-replicated adjacent to project site. |
| CF9 | Project site attributes discourage species presence or minimize species response. |
| CF10 | Project activity spatially removed from most suitable habitat. |
| CF11 | Potential change in human recreation/visitation level as a result of project implementation expected to be insignificant, discountable, or not expected to occur. |
| CF12 | Project activity not anticipated to appreciably alter habitat function. |

## Bonytail Chub

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Colorado River | W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** While the proposed action could result in some short-term, but negligible effects to water quality and aquatic and riparian habitat, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of bonytail chub are extremely unlikely to occur (discountable). | | | |

## Gila Chub

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF4, CF7, CF 9, CF10, CF 11, CF12 | The Little Outfit site is partially within private pasture lands and is within 500 feet of Turkey Creek. Vegetation cover for the site includes 80 percent grasses and 20 percent bare ground. |
| **Concurrence Rationale:** The proposed action will primarily occur outside of occupied habitat with the exception of foot traffic, occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Gila chub are extremely unlikely to occur (discountable). The potential for liberation of sediment into Turkey Creek is the primary concern but, for the reasons described above, is unlikely to adversely affect this species in any meaningful or measurable way. | | | |

## Little Colorado Spinedace

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF6, CF7, CF10, CF11, CF12 | The vegetation at the Jacks Canyon site is sparse with patches of Great Basin Conifer Woodland. An ephemeral stream is located within 500 feet. The stream side vegetation is not dense, but does contain cottonwood and other riparian tree species. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the spinedace and would occur in previously disturbed areas. No traffic would occur within the creek. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of the little Colorado spinedace are extremely unlikely to occur (discountable). | | | |

## Spikedace

| Site Name(s) | Activity Codes (see BE) | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the spikedace and would occur in previously disturbed areas. Some amphibious operations could happen where spikedace occur, but spikedace are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of spikedace are extremely unlikely to occur (discountable). | | | |

**Gila Trout**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Negrito North | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | This site occurs in a montane meadow surrounded by Petran Montane Conifer Forest. An ephemeral stream runs through the site, pooling at the western edge of the meadow. |
| Catron County Fairgrounds | G1, G2, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | The site occurs within a disturbed area of Great Basin Conifer Woodland. An ephemeral stream is south of the site. |
| Sprucedale Guest Ranch | G1 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | This site is in a montane meadow that has been previously developed for residential and ranching purposes. It is surrounded by Petran Montane Conifer Forest. A tributary to the Black River runs approximately 280 feet south of the project. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Gila trout and would occur in previously disturbed areas. It is unlikely that any activities would occur within any of the nearby potential Gila trout habitat. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Gila trout are extremely unlikely to occur (discountable). | | | |

**Gila Topminnow**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Lake Pleasant | W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF4, CF7, CF9, CF10, CF11, CF12 | This site has an unnamed creek is locate east of the Little Outfit site that is potentially Gila Topminnow habitat. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Gila topminnow and would occur in previously disturbed areas. Some amphibious operations could happen where Gila topminnow occur, but Gila topminnow are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering | | | |

| |
|---|
| of Gila topminnow are extremely unlikely to occur (discountable). |

**Colorado Pikeminnow**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF7, CF11, CF12 | This site occurs in a deep canyon in Interior Chaparral. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Riparian, vegetation occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Colorado pikeminnow and would occur in previously disturbed areas. Some amphibious operations could happen where Colorado pikeminnow occur, but Colorado pikeminnow are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Colorado pikeminnow are extremely unlikely to occur (discountable). | | | |

**Loach Minnow**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Catron County Fairgrounds | G1, G2, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF6, CF7, CF9, CF 10, CF11, CF12 | The site occurs within a disturbed area of Great Basin Conifer Woodland. An ephemeral stream is south of the site. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Loach minnow and would occur in previously disturbed areas. It is unlikely that any activities would occur within any of the nearby potential Loach minnow habitat. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Loach minnow are extremely unlikely to occur (discountable). | | | |

**Razorback Sucker**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Riparian, vegetation occurs along the opposite bank line. This site is heavily |

| | | | |
|---|---|---|---|
| | W2 | | disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF7, CF11, CF12 | This site occurs in a deep canyon in Interior Chaparral. |
| Colorado River | W1, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** With the exception of light foot traffic, training would occur outside the potential habitat for the Razorback Sucker and would occur in previously disturbed areas. Some amphibious operations could happen where Razorback Sucker occur, but Razorback Sucker are expected to leave the area when amphibious operations occur. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of razorback suckers are extremely unlikely to occur (discountable). | | | |

**Three Forks Springsnail**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF6, CF7, CF11, CF12 | The Caldwell Meadows site occurs in a montane meadow surrounded by Petran Montane Conifer Forest. A small stream, tributary to the Black River, runs through the site. The West Fork of the Black River is approximately 800 feet north of the site. |
| **Concurrence Rationale:** Training activities will avoid the banks of the tributary to the Black River and the Black River itself, reducing the potential for direct impacts and increased sedimentation. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of the Three Forks springsnail are extremely unlikely to occur (discountable). | | | |

**Chiricahua Leopard Frog**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Devon | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Devon site occurs along the USFS Road 4186 and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. The tree cover in the area could provide habitat for transient Chiricahua leopard frogs. |
| Saddle Mountain | G1, G2, G3, G6, F1, F3, F4, | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, | This helicopter landing zone is located in the Great Basin Grassland vegetation community |

| | | | |
|---|---|---|---|
| East | F5, F7, F9, F10 | CF11, CF12 | with about 97 percent grass cover and 5 percent shrub cover. A spatially intermittent stream (unidentified) runs along the southern edge of the site. About 820 feet downstream from the site, sparse mature cottonwoods occur which might provide nesting habitat for raptors or riparian birds during breeding season. There is also a rock outcrop approximately 656 feet east of the site. Bog Hole Tank in the San Rafael Valley is over 3,280 feet south. A Forest access road routed through the site, low off-highway vehicle activity, and moderate grazing characterize potential disturbances in the area. |
| Saddle Mountain South | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone is within the Great Basin Grassland vegetation community. Bog Hole Tank in the San Rafael Valley occurs approximately 0.75 mile southeast of the site. There is little human activity at the site, consisting of a Forest access road of limited use, and limited livestock grazing. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential riparian habitat occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian |

| | | | |
|---|---|---|---|
| | | | vegetation may provide habitat for Chiricahua leopard frogs. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF2, CF3, CF4, CF7, CF9, CF10, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F5, F7 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The site occurs less than 500 feet from the East Verde River, within Interior Chaparral vegetation. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Sprucedale Guest Ranch | G1 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This site is within Mohave desertscrub and is 500 feet from an area where water pools. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Chiricahua leopard frogs are extremely unlikely to occur (discountable). The Chiricahua leopard frog is not expected to occur in the vicinity of any of the sites analyzed for impacts. Furthermore, to avoid adverse impacts on the Chiricahua leopard frog, personnel would limit their training activities at these sites to areas where human activity is more prevalent, avoid riparian habitat, as well as avoid this species' breeding season, when possible. | | | |

**Sonoran Tiger Salamander**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Sonoran tiger salamanders are extremely unlikely to occur (discountable). The Sonoran tiger salamander is unlikely to | | | |

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| occur on this site due to the limited aquatic habitat in the area and disturbed condition of terrestrial habitat on site limiting its value to the salamander. Furthermore, to avoid adverse impacts on the Sonora tiger salamander, personnel would avoid aquatic habitat when conducting activities at this site. |

**Sonoyta Mud Turtle and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This site is within Mohave desertscrub and is 500 feet from an area where water pools. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration in an area unlikely to support the Sonoyta mud turtle. Therefore, for the reasons listed above, adverse effects to breeding, feeding, or sheltering of Sonyta mud turtle are extremely unlikely to occur (discountable). The site does not contain any suitable elements of proposed critical habitat. | | | |

**Northern Mexican Gartersnake and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Spring Valley Cabin | G1, G2, G3, G4, F1, F3, F4 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site would be used for bivouacking and assembly. The site is east of FR 76 within Plains and Great Basin Grassland. |
| Mormon Lake – USFS Helitack Base | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site occurs within Montane Meadow surrounded by Petran Montane Forest and Mormon Lake. There are residential and commercial buildings approximately 100 feet to the west. The site contains a concrete helicopter landing pad. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Lake Pleasant | W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs in the open water area of Roosevelt Lake. Some Sonoran desertscrub and riparian vegetation occurs along the banks where some training activities could occur. |
| Colorado River | W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF9, CF11, CF12 | This site is within Mohave desertscrub and is 500 feet from an area where water pools. |
| Saddle Mountain East | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone is located in the Great Basin Grassland vegetation community with about 97 percent grass cover and 5 percent shrub cover. A spatially intermittent stream (unidentified) runs along the southern edge of the site. About 820 feet downstream |

| | | | |
|---|---|---|---|
| | | | from the site, sparse mature cottonwoods occur which might provide habitat for northern Mexican gartersnakes. There is also a rock outcrop approximately 656 feet east of the site. Bog Hole Tank in the San Rafael Valley is over 3,280 feet south. A Forest access road routed through the site, low off-highway vehicle activity, and moderate grazing characterize potential disturbances in the area. |
| Saddle Mountain West | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a mix of Interior Chaparral and Madrean Evergreen Woodland with 25 percent tree cover, 20 percent shrub cover, with the remainder grass cover. Rock outcrops southeast of the site on the hill top could provide roosting habitat for bats.<br>Human disturbance in the area is minimal but includes a gravel Forest access road, a potentially inactive mining claim on the hill top to the southeast, and livestock grazing. |
| Saddle Mountain South | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone is within the Great Basin Grassland vegetation community. Bog Hole Tank in the San Rafael Valley occurs approximately 0.75 mile southeast of the site. There is little human activity at the site, consisting of a Forest access road of limited use, and limited livestock grazing. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for the northern Mexican gartersnake occurs in the riparian areas along the opposite bank line. This site is |

| | | | |
|---|---|---|---|
| | | | heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for northern Mexican gartersnakes. |
| Longview – USFS Helitack Base | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Longview site occurs in a montane meadow area within Petran Montane Conifer Forest, east of Highway 87 off of Forest Road 147E. There are residential buildings approximately 430 feet to the west and northwest of this helicopter landing zone. Two stock tanks occur 400 feet to the south. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. Roosevelt Lake occurs within the Arizona Upland subdivision of Sonoran Desertscrub. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Mogollon Rim (General Crook) | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | Within Petran Montane Conifer Forest, this helicopter landing zone occurs along the edge of the Mogollon Rim in a canopy opening along an unnamed dirt track road off of the "Rim Road" (or Forest Road 300). There is a stock tank 100 feet to the northwest of the site. |
| Metz Tank | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is located on Camp Navajo. It is Plains and Great Basin grasslands surrounded by Petran Montane Conifer Forest. |
| Navajo West | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is located on Camp Navajo. It is Plains and Great Basin Grasslands with an area where water pools within 500 feet to the east. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |

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| Sprucedale Guest Ranch | G1 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| Lee's Ferry | G1, G2, G3, G4, G6, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | The Lee's Ferry site occurs on previously land in Great Basin Desertscrub. This site occurs in a pull-off parking area off of Lees Ferry Road. The site is over 1,500 feet up from the Colorado River on its northern bank. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of northern Mexican gartersnakes are extremely unlikely to occur (discountable). Many training sites are extremely far-removed from any known currently or historically occupied areas. For other sites, the location and site characteristics make the presence of northern Mexican gartersnakes unlikely. Furthermore, to avoid impacts on this species, personnel involved in the training activities would avoid all riparian areas and/or concentrate in areas that already have high traffic use from recreational activities. No elements of proposed critical habitat will be significantly affected. | | | |

**Narrow-headed Gartersnake and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for the narrow-headed gartersnake occurs in the riparian area along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Glenwood Ranger Station | G1, G2, G3, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a |

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| | | | concrete helicopter landing pad. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of narrow-headed gartersnakes are extremely unlikely to occur (discountable). Based on the location and characteristics of the sites where the species could theoretically occur, the presence of narrow-headed gartersnakes is unlikely and potential effects from adverse human-snake interactions are therefore, also unlikely. Furthermore, to avoid impacts on this species, personnel involved in the training activities would avoid all riparian areas and/or concentrate in areas that already have high traffic use from recreational activities. Adverse effects to proposed critical habitat in the East Verde River and Salt River Subunits are also insignificant and discountable because little to no disturbance to habitat is expected. | | | |

## Mexican Spotted Owl

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Devon | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The Devon site occurs along the USFS Road 4186 in Madrean Oak Woodland, and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. The tree cover in the area could provide habitat for the Mexican spotted owl. |
| Mesa | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located on a mesa top in Semidesert Grassland, surrounded by Madrean Evergreen Woodland. The helicopter landing zone is along the western portion of the Galiuro Wilderness Area. The surrounding cliffs may provide roosting and nesting habitat for the Mexican spotted owl. Swam Springs and Redfield Creek are intermittent streams nearby which provide habitat for riparian prey species. This site is within the Galiuro Wilderness Area, where human disturbance is limited. A dirt access road occurs over a mile away with limited use by grazing permittees and recreational users. The only access to the site is by foot. |
| Redington Pass | G1, G2, G3, G4, G6, G7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is a designated off roading area. The site is in Semidesert Grassland. |
| Rucker | G1, G2, G3, G5, G6, F1, F3, F4, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is in Madrean Evergreen Woodland. |
| Charouleau Gap | G2, G3 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is a designated off roading area. The site is in Madrean Evergreen Woodland. |
| Negrito Airstrip | G1, G2, G3, G6, F1, F3, F5, F6, F7, F8, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito Center | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |

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| Negrito North | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest northeast of the Reserve Beaverhead Road. An ephemeral stream runs through the site and pools on the western edge of the meadow. |
| Negrito South | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito Helibase | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Rainy Mesa | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | The site occurs at the edge of Petran Montane Forest northwest of the Reserve Beaverhead Road. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF3, CF6, CF7, CF11, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| HLZ 7 | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | The site is northeast of Antelope Lane within Great Basin Conifer Woodland. |
| HLZ 5 | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is east of McGee Road within Plains and Great Basin Grassland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Cattle | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is east of McGee Road within Plains and Great Basin Grassland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Sprucedale Guest Ranch | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| Black Mesa | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The Black Mesa site occurs in a previously disturbed meadow within Petran Montane Conifer Forest and contains cement helipads. There is a possible ephemeral drainage over 900 feet to the east of the site. The site is east |

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| | | | of Wallace Road, along a Forest Road. The vegetation on site is sparse. |
| Comanche | G1, G2, G3, G4, G6, F1, F3, F5, F7, F4 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs in a previously disturbed meadow within Petran Montane Conifer Forest area along Forest Road 700. The vegetation consists of predominately montane grass species with pine along the edges of the meadow. There are no riparian areas or aquatic habitat within 2,000 feet of the site. The closest water body is Ward Camp Tank over 2,000 feet south of the site. |
| Elk | G1, G2, G3, G4, G6, F1, F3, F5, F7, F4 | CF1, CF3, CF6, CF7, CF11, CF12 | The Elk site occurs in a meadow area within Petran Montane Conifer Forest, along an unnamed Forest Road that connects FR 867 and National Forest-3e. There is an unnamed stock pond approximately 450 feet to the west of the site. Vegetation in the area includes various conifer and montane grass species. |
| Flagstaff Hotshot - USFS Helitack Base | G1, G2, G3, G4, G6, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs in a meadow area within Petran Montane Conifer Forest, off of North Snow Bowl Road. There are ranch buildings approximately 400 feet to the west, an unnamed stock pond approximately 780 feet south, and no trees within 400 feet of the site. |
| Hannagan Meadow | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The Hannagan Meadow site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191 in a disturbed meadow. The site contains a concrete helipad and is in close proximity to minor development. |
| Helibase Circular | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within the Hannagan Meadow site and contains a concrete helipad. |
| KP Circular | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The KP Circular site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191, in a disturbed meadow. The site contains a concrete helipad and is in close proximity to some minor development. |
| KP Tank | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The KP Tank is essentially the same as the KP Circular site. |
| L Tank | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is in Petran Montane Forest. |
| Longview – USFS Helitack Base | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | The Longview site occurs in a montane meadow area within Petran Montane Conifer Forest, east of Highway 87 off of Forest Road 147E. There are residential buildings |

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| | | | approximately 430 feet to the west and northwest of this helicopter landing zone. Two stock tanks occur 400 feet to the south. |
| Mormon Lake - USFS Helitack Base | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site occurs within Petran Montane Conifer Forest, in a meadow off of Forest Road 725. The site contains a concrete helipad and there are buildings approximately 100 feet to the west. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF3, CF6, CF7, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Spring Valley Cabin | G1, G2, G3, G4, F1, F3, F4 | CF1, CF3, CF6, CF7, CF11, CF12 | This site would be used for bivouacking and assembly. The site is east of FR 76 within Plains and Great Basin Grassland. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for Mexican spotted owls prey species and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for the narrow-headed gartersnake occurs in the riparian area along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Brooke | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is the top of a mesa within Semi-desert Grassland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Jenna | G6, F1, F3, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located on a hilltop within Great Basin Conifer Woodland. It is within 500 feet of potential Mexican spotted owl nesting habitat. |
| Fort Tuthill | G1, G2, G3, G6 | CF1, CF3, CF6, CF7, CF11, CF12 | This area will be used for billeting and as an operations center for training at Fort Tuthill Fairgrounds. It is located within Petran Montane Conifer Forest and is located within 500 feet of potential Mexican spotted owl nesting habitat. |

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| Saddle Mountain West | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF3, CF6, CF7, CF11, CF12 | This helicopter landing zone occurs in a mix of Interior Chaparral and Madrean Evergreen Woodland with 25 percent tree cover, 20 percent shrub cover, with the remainder grass cover. Human disturbance in the area is minimal but includes a gravel Forest access road, a potentially inactive mining claim on the hill top to the southeast, and livestock grazing. |
| Metz Tank | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located on Camp Navajo. It is Plains and Great Basin grasslands surrounded by Petran Montane Conifer Forest. |
| Navajo East | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Neill Flat | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Rogers Lake | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7, F9, W1, W2 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Rogers Napier | G1, G2, G3, G4, G6, G7, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Rogers Wren | G1, G2, G3, G4, G5, G6, G7, F1, F3, F4, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and is adjacent to Petran Montane Conifer Forest. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Mount Lemmon | G1, G2, G3, G6, F1, F3, F5, F7 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is more than 1,000 feet to the west of Catalina Highway along rocky outcrops surrounded by upland Sonoran Desertscrub vegetation, including juniper, manzanita, and low growing pines. The site is subject to high human recreational activity, such as rock climbing and hiking, as well as noise pollution from vehicles along Catalina Highway. |
| Ranger | G1, G2, G3, | CF1, CF3, CF6, CF7, | The Ranger helicopter landing zone site is |

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| | G6, F1, F3, F4, F5, F7, F9, F10 | CF11, CF12 | located within Madrean Evergreen Woodland consisting of 40 percent tree cover, 10 percent shrub cover, and 75 percent grass cover. The helicopter landing zone is 164 feet north of the Rucker USFS Fire Station. Rucker Creek is 0.5 miles southwest of the site and is seasonally intermittent. Human disturbance in the area includes a Forest road along the western edge, the USFS Rucker Fire Station to the south, livestock grazing, and recreational activity. |
| Overgaard | G1, G2, G3, G4, G6, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is located within Plains and Great Basin Grassland and contains a concrete helicopter landing pad. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Tribeland | G1, G2, G3, G4, G6, F1, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site is within Great Basin Desertscrub. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for Mexican spotted owls. |
| Mogollon Rim (General Crook) | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF3, CF6, CF7, CF11, CF12 | Within Petran Montane Conifer Forest, this helicopter landing zone occurs along the edge of the Mogollon Rim in a canopy opening along an unnamed dirt track road off of the "Rim Road" (or Forest Road 300). There is a stock tank 100 feet to the northwest of the site. |
| **Concurrence Rationale:** Owls might temporarily flush from their roost, avoid the training area, or otherwise temporarily modify their behavior. However, training activities will avoid the March 1 through August 31 Mexican spotted owl breeding and nesting season. Therefore, we expect these potential responses from owls to be insignificant and discountable because training activities would not disturb breeding owls. Generally, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Mexican spotted owls are extremely unlikely to occur (discountable). With the exception of light foot-traffic, training activities would be restricted to already disturbed areas. Helicopter landing zones have been previously disturbed or have a permanent, concrete helipad for helicopter use. Because training areas are already disturbed. We do not anticipate any effects to key habitat components of owl habitat or primary constituent elements of designated critical habitat. | | | |

### Southwestern Willow Flycatcher

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1 | CF1, CF3, CF6, CF7, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for riparian, migratory bird species occurs along the |

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| | | | opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Verde River | W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Verde River water training site actually occurs on the Salt River, immediately upstream from its confluence with the Verde River. The site contains dense riparian vegetation along the banks and may experience regular human visitation due to the presence of a parking lot, a road which provides easy access, and immediate proximity to the Phoenix metropolitan area. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for southwestern willow flycatchers. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for the southwestern willow flycatcher and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Lee's Ferry | G1, G2, G3, G4, G6, F7, F9 | CF1, CF3, CF6, CF7, CF12 | The Lee's Ferry site occurs on previously land in Great Basin Desertscrub. This site occurs in a pull-off parking area off of Lees Ferry Road. The site is over 1,500 feet up from the Colorado River on its northern bank. |
| Glenwood Ranger Station | G1, G2, G3, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a concrete helicopter landing pad. |
| Colorado River | W1, W2 | CF1, CF2, CF3, CF4, CF6, CF7, CF9, CF10, CF11, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of southwestern willow flycatchers are extremely unlikely to occur (discountable). There is potential for disturbance from noise to result in short-term avoidance of the area by flycatchers, and water-based exercises will occur at all sites with the exception of the Jacks Canyon, Glenwood Ranger Station, and Lee's Ferry sites. There might also be minor trampling of riparian vegetation and/or sediment production at these sites however, with the exception of light foot traffic, training activities would be restricted to already-disturbed areas. To avoid impacts on this species, training activities at these sites would avoid areas of heavy riparian vegetation. | | | |

**Yellow-billed Cuckoo and Proposed Critical Habitat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, F7, F10, W1 | CF1, CF3, CF6, CF7, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of vegetation. Potential habitat for riparian, migratory bird species occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Saguaro Lake Ranch | W1, W2 | CF1, CF3, CF6, CF7, CF12 | Another water training site, the Saguaro Lake Ranch site occurs approximately 1,300 feet downstream of the Stewart Mountain Dam, below Saguaro Lake. Bankside vegetation is dense. The site is in immediate proximity to human developments associated with dam operations and maintenance; recreational use in the area is high due to the lake's proximity to the Phoenix metropolitan area. |
| Lake Patagonia | G6, F1, F3, F7, W1, W2 | CF1, CF3, CF6, CF7, CF12 | This is a water training area. The site is an open water site, but there is some riparian, semi-desert grassland, and Petran Montane Conifer Forest along the banks of the lake. |
| Verde River | W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Verde River water training site actually occurs on the Salt River, immediately upstream from its confluence with the Verde River. The site contains dense riparian vegetation along the banks and may experience regular human visitation due to the presence of a parking lot, a road which provides easy access, and immediate proximity to the Phoenix metropolitan area. |
| Jacks Canyon | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF12 | This site, within Great Basin Conifer Woodland, is to the northwest of Highway 87, along Forest Road 69. Nearby riparian vegetation supports cottonwood and other tree species that may provide habitat for the yellow-billed cuckoo. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF6, CF7, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for the yellow-billed cuckoo and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF3, CF6, CF7, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |

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| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF3, CF6, CF7, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Glenwood Ranger Station | G1, G2, G3, G6, F1, F3, F5, F7, F9 | CF1, CF3, CF6, CF7, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a concrete helicopter landing pad. |
| **Concurrence Rationale:** There is some potential for minor trampling of riparian vegetation and/or sediment production at these sites. In general, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of yellow-billed cuckoos are extremely unlikely to occur (discountable). With the exception of light foot traffic, training activities would be restricted to already-disturbed areas. Foot traffic and training activities would avoid riparian areas. To avoid impacts to proposed critical habitat, personnel involved in training activities would avoid entering Lake Patagonia in riparian areas with heavy vegetation and eroding shorelines. | | | |

**Northern Aplomado Falcon**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Ranger | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF11, CF12 | The Ranger helicopter landing zone site is located within Madrean Evergreen Woodland consisting of 40 percent tree cover, 10 percent shrub cover, and 75 percent grass cover. The helicopter landing zone is 164 feet north of the Rucker USFS Fire Station. Rucker Creek is 0.5 miles southwest of the site and is seasonally intermittent. Human disturbance in the area includes a Forest road along the western edge, the USFS Rucker Fire Station to the south, livestock grazing, and recreational activity. |
| Rucker | G1, G2, G3, G5, G6, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF4, CF6, CF7, CF11, CF12 | This site is in Madrean Evergreen Woodland. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF4, CF6, CF7, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| **Concurrence Rationale:** With the exception of light foot traffic, training activities would be restricted to already disturbed areas. To avoid impacts to this species, training activities at these sites would be scheduled outside of the breeding season (January through June) for this species. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of razorback suckers are extremely unlikely to occur (discountable). | | | |

**Yuma Clapper Rail**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Salt River Low | G2, G3, G6, F1, F3, F5, | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | This water training site occurs along the bank of the Salt River and is relatively void of |

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| | F7, F10, W1 | | vegetation. Potential habitat for riparian, migratory bird species occurs along the opposite bank line. This site is heavily disturbed by many human recreational activities which occur in this area due to easy access to the river and proximity to the highway. |
| Saguaro Lake Ranch | W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | Another water training site, the Saguaro Lake Ranch site occurs approximately 1,300 feet downstream of the Stewart Mountain Dam, below Saguaro Lake. Bankside vegetation is dense. The site is in immediate proximity to human developments associated with dam operations and maintenance; recreational use in the area is high due to the lake's proximity to the Phoenix metropolitan area. |
| Verde River | W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | The Verde River water training site actually occurs on the Salt River, immediately upstream from its confluence with the Verde River. The site contains dense riparian vegetation along the banks and may experience regular human visitation due to the presence of a parking lot, a road which provides easy access, and immediate proximity to the Phoenix metropolitan area. |
| Roosevelt Lake | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10, W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | The Roosevelt Lake site is for open-water training in the middle of the lake. Bankside vegetation may be suitable for the yellow-billed cuckoo and includes cottonwoods, willows, salt cedar and other riparian trees and shrubs. |
| Colorado River | W1, W2 | CF1, CF3, CF4, CF6, CF7, CF9, CF12 | This water training site is an open water site with riparian vegetation along the banks of river. |
| **Concurrence Rationale:** Water and rotary-wing training would occur at these sites and noise associated with helicopter use could disrupt feeding and other daily activities of the Yuma clapper rail. There is also the potential for trampling of vegetation and erosion of the riverbanks, although activities would likely be restricted to recreational areas and human access areas (previously disturbed areas) as a conservation measure. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Yuma clapper rails are extremely unlikely to occur (discountable) because the sites used already receive much human use which generally precludes use by rails. In addition, to further avoid impacts on rails, training activities at these sites would be scheduled outside of the breeding season (March through September), and personnel would avoid areas of heavy riparian vegetation. | | | |

**Sonoran Pronghorn**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| NATO Hill | G2, G3, G6, | CF1, CF2, CF3, CF7, | This site is a hilltop in Arizona Upland |

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| | G7, G8, F1, F3, F4, F5, F7, F10 | CF8, CF11, CF12 | Sonoran Desertscrub. |
| Range 3 – HLZ 1 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub. |
| Range 3 – HLZ 2 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 3 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 4 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 5 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – HLZ 6 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Range 3 – Tower Helipad | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| South Tactical Range | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| Target 333 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is in Mohave Desertscrub |
| OP Charlie | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub. |
| Ruby Fuzzy Palidans | G2, G3, G4, G5, G6, F1, | CF1, CF2, CF3, CF4, CF7, CF8, CF9, | This site occurs in Semidesert Grassland. |

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| | F3, F4, F5, F7, F9, F10 | CF11, CF12 | |
| Black Hills | G6, F1, F3, F4, F5, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub. |
| Lost Acre | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub. |
| Penitas | G2, G3, G6, F1, F3, F5, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Semidesert Grassland |
| Pond | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is an area where water pools during rain events and is adjacent to a desert wash within Mohave Desertscrub. |
| Prieto | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is in Mohave Desertscrub. |
| Rancho Seco | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is in Mohave Desertscrub, 500 feet from an area where water pools. |
| Sierrita | G6, F1, F3, F5, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is in Mohave Desertscrub |
| Silvermine | G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub. |
| Waterman | G2, G3, G6, F1, F3, F7 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub, 500 feet from an area where water pools. |
| Black Mountain Reservoir | W2 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub, but is a water training site at a man-made reservoir in the Town of Sahuarita. |
| Three Points Shooting Range | G8 | CF1, CF2, CF3, CF4, CF7, CF8, CF9, CF11, CF12 | This site is located north of Tucson Rifle Club Road and is surrounded by Arizona Upland Sonoran Desertscrub. |
| **Concurrence Rationale:** Due to the limited nature of the occurrence of the Sonoran pronghorn, it is unlikely that the species will be present during the proposed action. If they are present, it is expected that the disturbance associated with the proposed action will cause the individuals to leave the area. Habitat impacts are insignificant due to the activities occurring in previously disturbed areas. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Sonoran pronghorn are extremely unlikely to occur (discountable). | | | |

**Mexican Gray Wolf**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Hannigan Meadow | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The Hannagan Meadow site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191 in a disturbed meadow. The site contains a concrete helipad and is in close proximity to minor development. |
| Helibase Circular | Helibase Circular | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within the Hannagan Meadow site and contains a concrete helipad. |
| KP Circular | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The KP Circular site occurs within Petran Montane Conifer Forest, along the eastern side of Highway 191, in a disturbed meadow. The site contains a concrete helipad and is in close proximity to some minor development. |
| KP Tank | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The KP Tank is essentially the same as the KP Circular site. |
| Mogollon Rim (General Crook) | G1, G2, G3, G4, G6, F3, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | Within Petran Montane Conifer Forest, this helicopter landing zone occurs along the edge of the Mogollon Rim in a canopy opening along an unnamed dirt track road off of the "Rim Road" (or Forest Road 300). There is a stock tank 100 feet to the northwest of the site. |
| Payson-Rimside | G1, G2, G3, G4, G6, F3, F7, F5 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | Within Interior Chaparral, the Payson-Rimside site occurs east of Flowing Springs Road, along the eastern side of the East Verde River which is less than 500 feet away. |
| Negrito Airstrip | G1, G2, G3, G6, F1, F3, F5, F6, F7, F8, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito Center | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Negrito North | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest northeast of the Reserve Beaverhead Road. An ephemeral stream runs through the site and pools on the western edge of the meadow. |
| Rainy Mesa | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs at the edge of Petran Montane Forest northwest of the Reserve Beaverhead Road. |
| Glenwood Ranger Station | F1, F3, F5, F7, F9, G1, G2, G3, G6 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is a disturbed area within Great Basin Conifer Woodland. Old Forest Road is located to the north. The site contains a concrete helicopter landing pad. |
| Negrito Helibase | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs within a Montane Meadow surrounded by Petran Montane Conifer Forest. |

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| Negrito South | G1, G2, G3, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within a Montane Meadow surrounded by Petran Montane Conifer Forest. |
| Overgaard | G1, G2, G3, G4, G6, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is located within Plains and Great Basin Grassland and contains a concrete helicopter landing pad. It is located within 500 feet of potential Mexican spotted owl nesting habitat. |
| Reserve Ranger Station | F1, F3, F5, F7, F10, G1, G2, G6 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site occurs in a grassland area surrounded by Great Basin Conifer Woodland. The site is south of Smokey Bear Circle. |
| Catron County Fairgrounds | G1, G2, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | The site occurs within a disturbed area of Great Basin Conifer Woodland. An ephemeral stream is south of the site. |
| Salt River High | G2, G3, G6, F1, F3, F5, F7, F10, W2 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site, within the Interior Chaparral vegetation community, occurs along the northern edge of Highway 60 along the Salt River Canyon - more than 1,000 feet to the northwest of the Salt River itself. This site is heavily disturbed, with a scraped area that may be used as a vehicle pull off area. |
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| Gila County Sheriff Roosevelt Substation | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within Semidesert Grassland. |
| Playas Training and Research Center | F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, G1, G2, G3, G5, G6, G7, G8 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within Semidesert Grassland. |
| Tombstone 8 | G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This site is within Semidesert Grassland. |
| Sprucedale Guest Ranch | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9 | CF1, CF2, CF3, CF7, CF8, CF11, CF12 | This helicopter landing zone occurs in a montane meadow that has been developed for residential and ranching purposes. There is a tributary to the Black River that runs approximately 280 feet south of the site. |
| **Concurrence Rationale:** Due to the limited nature of the occurrence of the Mexican Wolf, it is unlikely that the species will be present during the proposed action. If they are present, it is expected that the disturbance associated with the proposed action will cause the individuals to leave the area. Habitat impacts | | | |

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| are insignificant due to the activities occurring in previously disturbed areas. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of Mexican wolf are extremely unlikely to occur (discountable). |

**Jaguar**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Devon | G1, G2, G3, G6, F1, F3, F5, F7, F10 | CF1, CF2, CF3, CF7, CF12 | The Devon site occurs along the USFS Road 4186 and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. The tree cover in the area could provide habitat for migrating or transient jaguars. |
| Saddle Mountain East | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF12 | This helicopter landing zone is located in the Great Basin Grassland vegetation community with about 97 percent grass cover and 5 percent shrub cover. A spatially intermittent stream (unidentified) runs along the southern edge of the site. About 820 feet downstream from the site, sparse mature cottonwoods occur which might provide habitat for jaguars. There is also a rock outcrop approximately 656 feet east of the site. Bog Hole Tank in the San Rafael Valley is over 3,280 feet south. A Forest access road routed through the site, low off-highway vehicle activity, and moderate grazing characterize potential disturbances in the area. |
| Saddle Mountain West | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF12 | This helicopter landing zone occurs in a mix of Interior Chaparral and Madrean Evergreen Woodland with 25 percent tree cover, 20 percent shrub cover, with the remainder grass cover. Human disturbance in the area is minimal but includes a gravel Forest access road, a potentially inactive mining claim on the hill top to the southeast, and livestock grazing. |
| Saddle Mountain South | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF7, CF12 | This helicopter landing zone is within the Great Basin Grassland vegetation community. Bog Hole Tank in the San Rafael Valley occurs approximately 0.75 mile southeast of the site. There is little human activity at the site, consisting of a Forest access road of limited use, and limited livestock grazing. |
| Little Outfit | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9 | CF1, CF2, CF3, CF4, CF7, CF9 | The Little Outfit helicopter landing zone is within Interior Chaparral on the edge of Plains Grasslands in the San Rafael Valley. The site has about 80 percent grass cover and 20 percent bare ground. The headwaters of the Santa Cruz River occur approximately 2,070 |

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| | | | feet southeast of the site as well as a stock pond 328 feet to the southeast. Human disturbance is commensurate with cattle ranch management activity. |
| Caliente | F1, F3, F7, G6 | CF1, CF2, CF3, CF4, CF7, CF9 | This site occurs within Semidesert Grassland. |
| Ranger | G1, G2, G3, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF2, CF3, CF4, CF7, CF9 | The Ranger helicopter landing zone site is located within Madrean Evergreen Woodland consisting of 40 percent tree cover, 10 percent shrub cover, and 75 percent grass cover. The helicopter landing zone is 164 feet north of the Rucker USFS Fire Station. Rucker Creek is 0.5 miles southwest of the site and is seasonally intermittent. Human disturbance in the area includes a Forest road along the western edge, the USFS Rucker Fire Station to the south, livestock grazing, and recreational activity. |
| Redington Pass | G1, G2, G3, G4, G6, G7 | CF1, CF2, CF3, CF4, CF7, CF9 | This site is a designated off roading area. The site is in Semidesert Grassland. |
| Rucker | G1, G2, G3, G5, G6, F1, F3, F4, F5, F7, F10 | CF1, CF2, CF3, CF7, CF12 | This site is in Madrean Evergreen Woodland. |
| Portal Cabin and CCC Bunkhouse | G1, G2, G3, G4 | CF1, CF2, CF3, CF7, CF12 | This site would be used for bivouacking and assembly. The site is west of FR 42 within Madrean Evergreen Woodland. |
| Black Mountain Reservoir | W2 | CF1, CF2, CF3, CF4, CF7, CF9 | This site occurs in Arizona Upland Sonoran Desertscrub, but is a water training site at a man-made reservoir in the Town of Sahuarita |
| **Concurrence Rationale:** The temporary and infrequent noise by people, vehicles, and helicopters would be expected to have short-term, negligible impact to the jaguar and its potential prey species through habitat avoidance, if a jaguar was in the area. However, the proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to breeding, feeding, or sheltering of jaguars are extremely unlikely to occur (discountable) and unlikely to impede or alter long-distance movements. | | | |

**New Mexico Meadow Jumping Mouse**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Caldwell Meadows | G1, G2, G3, G4, G6, F1, F3, F5, F7, F9, F10 | CF1, CF2, CF3, CF5, CF6, CF7, CF10, CF12 | This helicopter landing zone occurs in a montane meadow within Petran Montane Conifer Forest approximately 1,100 feet north Route 25. The West Fork of the Black River is approximately 800 feet north of the site. |
| **Concurrence Rationale:** Training activities at the Caldwell Meadows site use of helicopters, parachute operations, and ground operations which could affect the New Mexico meadow jumping mouse. However, with the exception of light foot-traffic, training activities would be restricted to already disturbed areas in the upland habitat, away from the river. To avoid impacts on the New Mexico meadow jumping mouse, personnel would avoid the West Fork of the Black River and riparian vegetation by limiting activity to the | | | |

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| daytime to avoid disrupting the mouse's nocturnal surface activity. |

**Mexican Long-nosed Bat**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Playas Training and Research Center | F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, G1, G2, G3, G5, G6, G7, G8 | CF1, CF3, CF7, CF12 | The Devon site occurs along the USFS Road 4186 and is upland from an ephemeral drainage. Rocky outcrops occur to the west of the site. |
| **Concurrence Rationale:** Helicopter activity as well as ground operations and movements are expected to occur at each site. Technical rope work activities at the Mount Lemon site could affect any potential roosts there. Collectively, these activities may cause bats temporarily avoid these areas as result of the human activity and helicopter noise. However, with the exception of light foot-traffic, training activities would be restricted to previously disturbed areas and vegetation would not be removed. Impacts on vegetation associated with light foot-traffic would be minimal and no different than the regular use of these sites by USFS employees and Search and Rescue Teams. No vegetation removal would be expected to occur, training activities are spread out between the sites, and the lesser long-nosed bats are mostly active at night when activities are not proposed to occur. | | | |

**Cochise Pincushion Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Highway 80 Paladins | F1, F3, F5, F7, F9, F10, G2, G3, G6 | CF1, CF3, CF7, CF12 | This site occurs within Chihuahaun Desertscrub. |
| **Concurrence Rationale:** The Cochise pincushion cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to the Cochise pincushion cactus are extremely unlikely to occur (discountable). | | | |

**Pima Pineapple Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Caliente | F1, F3, F7, G6 | CF1, CF3, CF7, CF12 | This site occurs within Semidesert Grassland. |
| Ruby Fuzzy Paladins | G2, G3, G4, G5, G6, F1, F3, F4, F5, F7, F9, F10 | CF1, CF3, CF7, CF12 | This site occurs in Semidesert Grassland. |
| Blackhills | G6, F1, F3, F4, F5, F7 | CF1, CF3, CF7, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub. |

| | | | |
|---|---|---|---|
| Penitas | G2, G3, G6, F1, F3, F5, F7 | CF1, CF3, CF7, CF12 | This site occurs in Semidesert Grassland. |
| Sierrita | G6, F1, F3, F5, F7 | CF1, CF3, CF7, CF12 | This site is in Mohave Desertscrub. |
| Black Mountain Reservoir | W2 | CF1, CF3, CF7, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub, but is a water training site at a man-made reservoir in the Town of Sahuarita. |
| **Concurrence Rationale:** The Pima pineapple cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to the Pima pineapple cactus are extremely unlikely to occur (discountable). | | | |

**Nichol's Turk's Head Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Lost Acre | G6, F1, F3, F7 | CF1, CF3, CF7, CF12 | This site occurs in Arizona Upland Sonoran Desertscrub |
| Silvermine | G6, F1, F3, F7 | CF1, CF3, CF7, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub. |
| Waterman | G2, G3, G6, F1, F3, F7 | CF1, CF3, CF7, CF12 | This site is a hilltop in Arizona Upland Sonoran Desertscrub, 500 feet from an area where water pools. |
| **Concurrence Rationale:** The Nichol's Turk's Head Cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to the Nichol's Turk's Head Cactus are extremely unlikely to occur (discountable). | | | |

**Acuna Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Target 333 | G2, G3, G6, G7, G8, F1, F3, F4, F5, F7, F9, F10 | CF1, CF3, CF7, CF12 | This site is in Mohave Desertscrub. |
| **Concurrence Rationale:** The Acuna Cactus has a very limited distribution and is unlikely to be impacted by the proposed action. The proposed action occurs infrequently, has a small footprint (insignificant), and is of limited duration such that adverse effects to Acuna Cactus are extremely unlikely to occur (discountable). | | | |

**Fickeisen Plains Cactus**

| Site Name(s) | Activity Codes | Concurrence Factor | Site Notes from BE |
|---|---|---|---|
| Sinkhole | F1, F3, F5, F7, G1, G2, G3, | CF1, CF3, CF7, CF12 | The Sinkhole site is used as a helicopter landing zone and occurs on the western |

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|---|---|---|---|
| | G4, G6 | | outskirts of the town of Gray Mountain in Great Basin Desertscrub off Highway 89. |
| Babbit Ranch 1 | F1, F3, F5, F7, G1, G2, G3, G4, G6 | CF1, CF3, CF7, CF12 | This site is next to the Panda Site and is within Plains and Great Basin Grassland. |
| Panda | F1, F3, F5, F7, G1, G2, G3, G4, G6 | CF1, CF3, CF7, CF12 | This site is next to the Babbit Ranch 1 Site and is within Plains and Great Basin Grassland. |
| **Concurrence Rationale:** The proposed action has a small footprint of between 0.3 and 2.7 acres in size and the likelihood of this rare cactus occurring within the footprint of the training site is minimal. Additionally, all training activities at the Sinkhole Site will be restricted to already disturbed areas, south of Black Mesa Pump Station Road and west of Arizona Hwy 89 (outside of the cactus' designated critical habitat), which minimizes the probability of adverse effects to the Fickeisen Plains Cactus even further. | | | |

Certain project activities may also affect species protected under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. sec. 703-712) and/or bald and golden eagles protected under the Bald and Golden Eagle Protection Act (Eagle Act). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the FWS. The Eagle Act prohibits anyone, without a FWS permit, from taking (including disturbing) eagles, and including their parts, nests, or eggs. If you think migratory birds and/or eagles will be affected by this project, we recommend seeking our Technical Assistance to identify available conservation measures that you may be able to incorporate into your project.

For more information regarding the MBTA and Eagle Act, please visit the following websites. More information on the MBTA and available permits can be retrieved from http://www.fws.gov/migratorybirds and http://www.fws.gov/migratorybirds/mbpermits.html. For information on protections for bald eagles, please refer to the FWS's National Bald Eagle Management Guidelines (72 FR 31156) and regulatory definition of the term "disturb" (72 FR 31132) published in the Federal Register on June 5, 2007 (http://www.fws.gov/southwest/es/arizona/BaldEagle.htm), as well at the Conservation Assessment and Strategy for the Bald Eagle in Arizona (SWBEMC.org).

In keeping with our trust responsibilities to American Indian Tribes, by copy of this letter we are notifying Tribes that may be affected by this proposed action and encourage you to invite the Bureau of Indian Affairs to participate in the review of your proposed action. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department.

Thank you for your continued coordination. No further section 7 consultation is required for this project at this time. Should project plans change, or if information on the distribution or abundance of listed species or critical habitat becomes available, this determination may need to be reconsidered. In all future correspondence on this project, please refer to consultation number 02EAAZ00-2020-I-0217.

Should you require further assistance or if you have any questions, please contact Julie McIntyre (520-670-6150 x223) or Scott Richardson (x242).

Sincerely,

Jeffrey A. Humphrey
Field Supervisor

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cc (electronic copies):
Field Supervisor, Fish and Wildlife Service, Phoenix, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson and Flagstaff, AZ
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Manager, Cultural Resources, Ak Chin Indian Community, Maricopa, AZ
Tribal Historic Preservation Office, Colorado River Indian Tribes, Parker, AZ
Director, Aha Makav Cultural Society Fort Mojave Indian Tribe, Mohave Valley, AZ
Tribal Historic Preservation Officer, Gila River Indian Community, Sacaton, AZ
Chairperson, Havasupai Tribe, Peach Springs, AZ
Director, Cultural Preservation Office, Hopi Tribe, Kykotsmovi, AZ
Director, Cultural Resources Department, Hualapai Tribe, Peach Springs, AZ
Coordinator, Cultural Resources, Kaibab Band of Paiute Indians, Fredonia, AZ
Director, Heritage and Historic Preservation, Navajo Nation, Window Rock, AZ
Chairman, Pascua Yaqui Tribe, Tucson, AZ
Historic Preservation Officer, Quechan Tribe, Yuma, AZ
Director, Cultural Resources, Salt River Pima-Maricopa Indian Community, Scottsdale, AZ
Director, San Carlos Tribal Historic Preservation and Archaeology, San Carlos, AZ
President, San Juan Southern Paiute Tribe, Tuba City, AZ
Manager, Cultural Affairs, Tohono O'odham Nation, Sells, AZ
Director, Cultural Resources Department, Tonto Apache Tribe, Payson, AZ
Director, Cultural Resources, White Mountain Apache Tribe, Whiteriver, AZ
Director, Heritage/Archaeology Program, White Mountain Apache Tribe, Whiteriver, AZ
Sensitive Species Coordinator, Game and Fish Department, White Mountain Apache Tribe, Whiteriver, AZ
Special Counsel, White Mountain Apache Tribe, Whiteriver, AZ
Tribal Archaeologist, Yavapai-Apache Nation, Camp Verde, AZ
Director, Cultural Research Program, Yavapai-Prescott Indian Tribe, Prescott, AZ
Branch Chief, Environmental Quality Services, Western Regional Office, Bureau of Indian Affairs, Phoenix, AZ
Archaeologist, Western Regional Office, Bureau of Indian Affairs, Phoenix, AZ

# Appendix H

# Draft EA Comments

# Summary of Substantive Comments on Draft EA

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| **Federal Agencies** | | |
| Gila National Forest | Training activities for the Glenwood Ranger Station outlined on page Appendix A-5 indicates that the training activity *G3 – Mounted (Vehicle) Movement/Blackout Driving* and *F9 – Parachute Operations and Drop Zones* are proposed at this site. As described, these activities are not an appropriate activity to occur at the Glenwood Ranger Station facility. For consistency G3 and F9 are activities not shown for the Reserve Ranger Station (Appendix A-7) and therefore should not be shown at the Glenwood Ranger Station. | Appendix A (Proposed Personnel Recovery Training Sites Table and Map Book); Appendix E (Table E-2); Appendix G (Table 4-2, Section 6.23.3, Attachment 1, and Attachment 2); and, "U.S. Forest Service or Other Federal Land" subsections throughout Section 3.0 of the Final EA. |
| | Training activities for the Reserve Ranger Station outlined on page Appendix A-7 indicates that training activity *F10 – Close Air Support/Escort* is proposed at this site. As described, this is not an appropriate activity to occur in or around the Reserve Ranger Station facilities and impacts associated with low flying aircraft on the community of Reserve, which the office is closely situated, need to be considered. For consistency F10 is not shown at the Glenwood Ranger Station and therefore should not be shown at the Reserve Ranger Station. | Appendix A (Proposed Personnel Recovery Training Sites Table and Map Book); Appendix E (Table E-2); Appendix G (Table 4-2 and Attachment 1); and, "U.S. Forest Service or Other Federal Land" subsections throughout Section 3.0 of the Final EA. |
| | Reserve Ranger Station should be included in Table 3.7-6 Proposed HLZ PR Training [Sites] with Potential Incompatible Land Use. The Reserve Ranger Station is adjacent to the Catron County Fairgrounds and in close proximity to the community of Reserve. | Section 3.7.3.1 (Figure 3.7-5) and Section 3.7.3.1.2 (Table 3.7-6) of the Final EA. |
| | Training activities for the Negrito Airstrip outlined on page Appendix A-6 indicates that training activity *F6 – Flight Operations – Forward Aircraft Refueling Point Operations* is proposed for this site. In the Draft EA page 2-32 lines 7-9 state: *Airfields used for refueling activities have appropriate fuel storage on site, and are managed in accordance with facility Spill Prevention Control, and Countermeasure Plan* | Appendix A (Proposed Personnel Recovery Training Sites Table and Map Book); Appendix E (Table E-2); Appendix G (Table 4-2, Section 6.20.3, and Attachment 1); and "U.S. Forest Service or Other Federal Land" subsections throughout Section 3.0 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest (continued) | *(SPCCP).* The Negrito Airstrip is a remote airfield with no fuel related facilities. The training activity F6 should be removed from the training activity list for the Negrito Airfield site. | |
| | Page FONSI-v, indicates that the Catron County Fairgrounds and the Reserve Airport are under Forest Service control and that both are under special use permit to Catron County. This is incorrect. Only the Reserve Airport is under Forest Service control and permitted to the County for use and administration. The Catron County Fairgrounds is under Catron County jurisdiction and control and activities need to be coordinated with Catron County.<br>References to Catron County Fairgrounds need to be removed from tables and sections under federal land control and discussed and displayed with Other Land sections. | Appendix A (Proposed Personnel Recovery Training Sites Table and Map Book); Appendix E (Table E-2); Appendix G Section 4.3, Attachment 1, and Attachment 2); "Training Site Locations" subsection of the FONSI; and, "Other Land (Municipal, City, County, State, or Tribal)" subsections throughout Section 3.0 of the Final EA. |
| | On page 3-151, lines 20-23, address the topic of motorized access and dispersed motorized camping. Note that the Gila National Forest has a designated motorized system of roads and trails that are identified on a Motor Vehicle Use Map (MVUM) (36 CFR § 212.56) and motor vehicle use off designated roads and trails and outside designated areas is prohibited (36 CFR §212.50).<br>Our concern is the creation of tracks off of the designated motorized system, which may encourage more unauthorized motorized vehicle uses, creating more routes, or causing resource damage. If motorized activities are needed outside the designated motorized roads, trails, or areas requiring cross-country or off-road travel, the forest would need to know such things as locations, timing, duration, frequency, and potential vehicle types and an operating plan outlining corrective measures should tracks or rutting become evident as a result of use. The potential use and impacts should be included in the analysis. Any cross-country travel would be authorized through the special use permit process. | Section 2.1.4.3, Section 2.1.4.5, and Section 3.5.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest (continued) | I appreciate the incorporation of the Air Force safety and health program elements for activities occurring on national forest lands and especially consideration of public safety. Although the following points may be more related to terms and conditions of special use permit processing, they should also be reviewed for consideration in this analysis:<br>• Silver City Dispatch Center should be contacted in advance and prior to beginning activities to coordinate flight activities; check for other planned flight activities occurring or upcoming in areas; to check on current fire danger level, and to check on fire or other emergency status.<br>o Forest has concerns related to aerial operations and timing. The use of ranger station helipads, Negrito Helibase, and airstrips during fire season may be problematic due to the unknown timing or length of wildfire events.<br>• Notify the District Rangers on the Reserve and Glenwood Ranger Districts when training activities are planned in order to be able to address public questions or concerns and also to coordinate any temporary closures of roads, trails, and areas.<br>• The forest has concern regarding potential fire starts with current fire behavior across the southwest region. We request consideration of appropriate fire precautions and tools to assist in extinguishing fires to be readily available during activities.<br>• If damage or rutting to the surface of any Forest Service helispot or airstrip occurs during training activities, damage will immediately be repaired. The Forest Service Aviation Officer will be notified regarding damages and repairs or if repairs cannot be completed immediately. The Forest Aviation Officer may be contacted at the Supervisor's Office or through Silver City Dispatch Center. | Section 3.1.3.1.2, Section 3.5.3.1.2, and Section 3.8.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest (continued) | • Range improvements such as waters, fences, pipelines, etc. are located across the landscape. Personnel should be aware that these features exist on the ground. If damage occurs to improvements, they should be repaired. District should be notified regarding damages and repairs or if repairs cannot be completed immediately.<br>• Be aware that there is active livestock grazing in and around all areas except for ranger station offices. | |
| | • The District office should be contacted at least 1 week prior to start of training activities [at the Glenwood Ranger Station] due to:<br>o This location is a District Office and has residences on the compound.<br>o Forest Service livestock (horses) are maintained in either the pasture which includes the helipad or adjacent pasture periodically during the year.<br>o The helispot is visible from Hwy 180 and in close proximity to the community of Glenwood and other small communities.<br>• This would provide advance notice to the District to ensure personnel, equipment, residents, and livestock are out of the way for training activities, and the District would be able to assist with communication with the public to address questions or concerns. | Section 3.5.3.1.2 and Section 3.8.3.1.2 of the Final EA. |
| | • The District office should be contacted at least 1 week prior to start of training activities [at the Ranger Reserve Station] due to:<br>o This location is a District Office and has residences on the compound.<br>o The helispot is in close proximity to the community of Reserve.<br>• This would provide advance notice to the District to ensure personnel, equipment, and residents are out of the way for | Section 3.5.3.1.2 and Section 3.8.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest (continued) | training activities. Also, the District would be able to assist with communication with the public to address questions or concerns. | |
| | • The District office should be contacted at least 1 week prior to start of training activities [at the Negrito Helibase] due to:<br>o This location is a District Work Center and is staffed seasonally.<br>o The Center does have residences on the compound.<br>• This would provide advance notice to the District to ensure personnel, equipment, and residents are out of the way for training activities.<br>• Silver City Dispatch Center should be contacted to check if there are any Forest Service activities utilizing the helibase.<br>• Be aware that the airstrip is used be recreational pilots [Appendix G, Biological Assessment]. | Section 3.1.3.1.2, Section 3.5.3.1.2, and Section 3.8.3.1.2 of the Final EA. |
| | • The Silver City Dispatch Center should be contacted in advance to check if there are any Forest Service activities utilizing the [Negrito Airstrip].<br>• Be aware that the [Negrito Airstrip] is used be recreational pilots [Appendix G, Biological Assessment]. | Section 3.1.3.1.2, Section 3.5.3.1.2, and Section 3.8.3.1.2 of the Final EA. |
| | The statement [on pages Appendix E-13, E-14, E-15, and E-41]: "Personal communication USFS 2019b" was NOT with the Gila NF Forest Archaeologist (not sure who they spoke with on the forest). USAF must consult with the Gila NF Forest Archaeologist for bivouac locations, as there is not a current, valid survey in this area. | Appendix E (Table E-2 and References Cited); Section 3.4.3.2.2 and Section 6.0 of the Final EA. |
| | Overall, our greatest concern for the protection of cultural resources at the sites proposed on the forest is the location of bivouacs and where mounted travel (in vehicles), off-road would take place. There are no locations identified for these activities in the analysis. | Appendix E (Table E-2); Section 3.4.3.2.2 and Section 3.5.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest (continued) | The description of species and/or its critical habitat [on page Appendix G-65] in relation to the helipad at the Glenwood Ranger Station is missing for the following species:<br>• loach minnow and spikedace occupied critical habitat is located within 0.5 miles from the Glenwood Ranger Station site. | Appendix G (Section 4.2.2). |
| | We have a concern that the most current critical habitat final rule [regarding spikedace discussed on pages Appendix G-95 and G-96] is not being used for this analysis. The final rule published February 23, 2012, revised the critical habitat designations (same reference as shown on page Appendix G-102, line 10 for loach minnow). | Appendix G (Section 6.3). |
| | The statement [on page Appendix G-97, line 12] that *spikedace designated critical habitat does not occur near any of the proposed sites* is incorrect. See correction provided for Page Appendix G-65 regarding that loach minnow and spikedace occupied critical habitat is located within 0.5 miles from the Glenwood Ranger Station Site. | Appendix G (Section 4.2.2). |
| | We do not agree with the determination of effects to Gila trout [on page Appendix G-98, lines 2-3] from proposed activities occurring at the Negrito North site, i.e*., short-term, negligible, direct adverse impacts*. The nearest population from this site is located in Willow Creek, which is greater than 5 miles away. The proposed action does not indicate ground disturbing activities taking place that far from the proposed site, therefore, the proposed action should have no effect on Gila trout. | Appendix G (Section 6.4.3). |
| | We do not agree with the determination of effects to Gila trout [on page Appendix G-98, line 18] from proposed activities occurring at the Catron County Fairgrounds site, i.e., *short-term, negligible, direct adverse impacts*. The nearest | Appendix G (Section 6.4.3). |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest (continued) | population to the Catron County Fairgrounds is greater than 20 miles away, therefore, the proposed action should have no effect on Gila trout. | |
| | Please review the following information regarding sites listed in lines 17-20 [on page Appendix G-98] on the Gila National Forest in relation to effects analysis and determination of effects to Gila trout:<br>• Gwynn Tank has been stocked with Gila trout in the past, however, the species is not established there. The fish in Gwynn Tank are considered a put and take fishery.<br>• The ephemeral drainage near the Catron County Fairgrounds drains to the San Francisco River. There are no Gila trout in the San Francisco River. | Appendix G (Section 6.4). |
| | We do not agree with the determination of effects to loach minnow or its critical habitat [on page Appendix G-103, lines 2-3] from proposed activities occurring at the Catron County Fairgrounds site. Based on the information provided below, the proposed action should have no effect on loach minnow or its critical habitat.<br>Please review the following information regarding the Catron County Fairgrounds site and revise the whole Section 6.8.3 Determination of Effects for the loach minnow and its critical habitat.<br>• It is more than 500 feet, probably closer to 0.5 miles, from the Fairgrounds to the San Francisco River where the species occurs.<br>• Loach minnow occupied habitat occurs downstream of the Fairgrounds.<br>• The area around the Fairgrounds including the stream bank of the ephemeral drainage has already been disturbed and modified.<br>• Line 5 contradicts the effects determination. If there are direct adverse impacts (line 5), then the proposed action | Appendix G (Section 6.7). |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest (continued) | cannot be "not likely to adversely affect" (line[s] 14-15). Direct adverse impacts would result in a "likely to adversely affect" to the species.<br>• If the proposed action is increasing sediment runoff then it is impacting downstream critical habitat. The analysis for the species says there will be *direct adverse impacts* (line 5) to the species due to potential sediment movement. If sediment is impacting the species then the habitat would be impacted as well. | |
| | We have concerns regarding the determination for the Mexican spotted owl (MSO) [on page Appendix G-134, lines 31-11] and request that the impacts and determination be reviewed, revised and ensure impacts align with the appropriate determination. Each location starts with *short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur…*The use of "adverse impacts" is contradictory to the determination of "not likely to adversely affect." Another concern is based on the frequency and duration displayed in Table 2.1-2 and associated ground and flight operations. Table 2.1-2 shows that proposed activities may occur, especially for the Small Force category, nearly year-round. Are activities within proximity of owl sites proposed on the Gila National Forest going to be in line with the statement on line[s] 31-32 that training activities would occur outside the nesting season?<br>We request that this be clarified and clearly identify the proposed activities and timing that are in alignment with ESA consultation on national forest lands. All of which will be ultimately used to assist in the forest permitting process for these activities. | Appendix G (Section 6.20.3); Section 3.3.3.1.2.3 of the Final EA. |
| | The Mexican gray wolf is a non-essential experimental population. The determination [on page Appendix G-141, lines 23-24] is incorrect for its status. The determination | Appendix G (Section 6.23.3). |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila National Forest<br>(continued) | would be *Not Likely to Jeopardize the non-essential experimental population.*<br>We are concerned with potential impacts to the Mexican gray wolf and denning sites from proposed activities. The forest requests the following design features be considered to be included to minimize impact to wolves:<br>• Coordinate with the [Gila National Forest] and U.S. Fish and Wildlife Service (USFWS) wolf reintroduction program and Interagency Field Team (ITF) when activities need to occur within sensitive areas during [the] following periods:<br>o Seasonal period of April 1-September 30<br>o 1 mile buffer for active Wolf dens between April 1st-July 31st<br>o 1 mile buffer for active Wolf rendezvous sites between June 1st and September 30th<br>• Where possible, avoid conducting activities in Mexican gray wolf sensitive sites spatially and seasonally as described above.<br>• Maps and field GPS units can be utilized to identify and avoid sensitive wolf areas to reduce or eliminate direct or indirect impacts. When planning, contact one of the following sources for sensitive sites information:<br>1. For recent wolf location sightings review maps at: [https://www.fws.gov/southwest/es/mexicanwolf](click on "view larger map" for locations)<br>2. **Mexican Wolf Recovery Coordinator**<br>New Mexico Ecological Services Field Office<br>2105 Osuna Road NE; Albuquerque, NM 87113<br>Office: (505) 346-2525; Fax: (505) 346-2542<br>3. Contact the Wildlife Biologist on the Ranger District that activities are being planned | |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Coronado National Forest | The proposed ground-based activities, number of personnel participating in these activities, frequency and duration of activities are presented in the EA, and expected ground disturbance is described as less than significant on the numerous sites across the [Coronado National Forest (CNF)]. Proposed forest sites are generally described as "previously disturbed". The ground and air/ground activities are characterized as brief, infrequent and having minimal ground disturbance which results in the "less than significant" impact conclusion. Without a site-by-site assessment, the CNF cannot definitely concur with these conclusions. For example, there could be routine and large force activities including cross-country dismounted movements supported by ATVs and UTVs as part of this program. The CNF interprets the EA as programmatic in nature, therefore, the descriptions and effects of proposed activities on forest sites would need to be evaluated when a specific training operation is planned.<br><br>The EA acknowledges that land management plans and wildland fire considerations could preclude various operations/activities. The physical, biological and cultural characteristics of a site may influence its suitability and could potentially eliminate a site from consideration for program activities. As sites are identified for particular uses, surveys must be conducted and the CNF must account for multiple, potentially competing or conflicting uses at these sites. Supporting the "less than significant" impact conclusion for ground disturbance may require mitigations, stipulations and conditions for site specific activities. An adequate evaluation and effects assessment of each site would be needed prior to a special use permit issuance to Davis-Monthan Air Force Base for use of a site on the CNF.<br><br>The FONSI recognizes that if a site is determined not to be suitable for an activity, a special use permit would not be | Appendix E (Table E-1 and Table E-2); Section 2.3, "Affected Environment" and "Environmental Consequences" subsections in Section 3.0, and Section 3.5.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Coronado National Forest (continued) | issued. This determination reinforces our position that the effects of program activities on forest sites would need to be assessed in the future when a specific training operation is planned. It also confirms that activities must comply with all stipulations in a special use permit for each site. | |
| | The cumulative effects section of the EA does not consider the US Army Intelligence Center and Fort Huachuca's Sentinel Landscapes Proposed Range Expansion. The proposal involves airspace re-design and 195,000-acre expansion for a test area with multiple training nodes (sites) located west of the Huachuca Mountains. The EA should be updated to consider this project in the analysis of cumulative effects. | Section 4.1 (Table 4.1-1) of the Final EA |
| Kaibab National Forest | The EA description of proposed actions [in Section 2.1.4.3] states, "Occasionally, off-road driving is conducted during PR training activities". The Kaibab NF has a designated system of roads and trails for motorized use, as identified on the forest's Motor Vehicle Use Map and in compliance with regulations which govern such use (36 CFR 212.56). Motor vehicle use off designated roads and trails is prohibited (36 [CFR] 212.50), except as authorized through special use permit or other written instrument. Thus, any cross-country motorized vehicle use would be authorized through the special use permit process. For the special use authorization, the Kaibab NF would need site-specific information and analysis of effects for proposed off-road driving, such as locations, timing, frequency, types of vehicles, number of vehicles, and measures to minimize resource impacts. Ideally, this information would be included in the Air Force environmental analysis process.<br><br>The EA description of proposed Blackout Driving activities states, "Roads used for this activity are temporarily closed to the public to prevent safety mishaps". This focus on public safety is invaluable, and at the same time, public access is | Appendix E (Table E-2); Section 2.3, "Affected Environment" and "Environmental Consequences" subsections in Section 3.0, and Section 3.5.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Kaibab National Forest (continued) | important. We request that advance coordination occur with the Kaibab NF to assure that limitations for public access are minimized and public notification can occur prior to any temporary road closures. | |
| | For all flight operations on Kaibab NF [described in Sections 2.1.4.9 to Section 2.1.4.17], we request that advance coordination occur with the Kaibab NF Dispatch Center and Aviation Officer. This would allow for a check of other planned flight activities and prevent potential conflicts for airspace or other uses. | Section 3.1.3.1.2, Section 3.5.3.1.2, and Section 3.8.3.1.2 of the Final EA. |
| | The Williams and Tusayan Districts are within the experimental nonesstential population area designated for the reintroduced California condor, which is a Federally-listed species. Condors have occasionally been detected on the Tusayan District and are rarely seen on the Williams District. We ask that you add an analysis of effects, and measures to avoid potential impacts related to condors. | Section 3.3.2.2.3 and Section 3.3.3.1.2.3 of the Final EA. |
| Coconino National Forest | Page 2-42 of the Draft EA states that the Jacks Canyon proposed training site was removed from consideration from the training program, however, it is included and analyzed throughout the analysis. Confirmation in the final EA and decision that this site was removed from the training program would be helpful. | "Training Sites Considered but Eliminated from Detailed Analysis" subsection in Section 2.4 of the Final EA. |
| | The Rough Rider location, located on the Red Rock Ranger District, is primarily accessible via forest road 9205K, which includes an exposed natural gas pipeline. Please ensure that appropriate safety precautions are taken given the condition of this road, especially related to the proposed "blackout" driving exercises proposed at this location. | Section 3.5.3.1.2 and Section 3.8.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Coconino National Forest (continued) | Page 3-161 addresses the topic of motorized access and includes the sentence, "As discussed previously in Section 3.5.2.2, three of the 13 proposed PR training sites on USFS land (Jacks Canyon, Rough Rider, and Mesa PR training 14 sites) are in areas not generally suitable for mechanized/nonmotorized use (Google Earth Pro 15 2019; USFS 2018b, 2018c)." This statement is incorrect as Jacks Canyon is identified as an area classified as Semi-primitive non-motorized, and is not generally suitable to *motorized* use. Please change this sentence in the EA to include the word motorized instead of non-motorized. | Section 3.5.3.1.2 of the Final EA. |
| | The proposed Longview training site is described as a USFS Helitack Base, but is actually managed as a group campground identified as the Long Valley Work Center. Training activities for the "Longview Helitack Base" identified on Appendix A-5 indicates a number of ground-based and flight ops that would not be appropriate activities for this setting given its current management as a recreation site with regular camping and group events. | Appendix A (Proposed Personnel Recovery Training Sites Table and Map Book); Appendix E (Table E-2); Appendix G (Table 4-2, Attachment 1, and Attachment 2); and, "U.S. Forest Service or Other Federal Land" subsections throughout Section 3.0 of the Final EA. |
| | Also, regarding the discussion of motorized access on page 3-161, please note that the Coconino National Forest has a designated system of routes and areas identified on a Motor Vehicle Use Map (MVUM). Motor vehicle use off of designated routes and areas is prohibited without a written permit (36 CFR 212.50). Our concern is the establishment of tracks off of designated routes, which may encourage more unauthorized motor vehicle access, creating more routes, or causing resource damage. If motor vehicle use is requested outside of designated routes and areas through the special use permit process, the forest would need to know information including the proposed locations, timing, duration, frequency, and potential vehicle types, and mitigations to address the aforementioned concerns. | Section 2.1.4.3 and Section 2.1.4.5 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Coconino National Forest (continued) | Several of the maps included in the EA provide incorrect road numbers and can be misleading. For example, in Appendix A-22, map 9 of 48; in Appendix A-26, map 13 of 48; and in Appendix A-27, map 14 of 48; Lake Mary Road, marked as County Road 3 or FH3, is tagged on the map as "487". Also, Appendix A-27, map 14 of 48; and in Appendix A-28, map 15 of 48, Highway 87 appears to be marked as "65". With few other visible landmarks on these maps, having road numbers different than how the road is marked and known from other area maps makes it very difficult to accurately read and understand them. | Appendix A (Map Book) and Appendix G (Attachment 2). |
| | In Appendix G-134 it indicates restrictions would be in place to limit potential impacts to Mexican spotted owl during the nesting season. However, it is unclear which sites this includes, and thus at which sites there would be restrictions during the nesting seasons. Providing a table or other clear display of information would be helpful. | Appendix G (Section 8.1); Section 3.3.3.1.2.3 and Section 3.3.3.1.5 of the Final EA. |
| | I appreciate the incorporation of the Air Force safety and health program elements for activities occurring on national forest lands and especially consideration of public safety. Although the following points may be more relevant to terms and conditions of the special use permit processing, they may also be incorporated into this analysis.<br>• The Coconino National Forest Dispatch Center should be contacted in advance and prior to beginning activities to coordinate flight activities. Use of station helipads and other flight activities during wildfire season could result in conflicts due to the unknown timing or length of wildfire events. The Coconino National Forest Dispatch Center also regularly receives direct communications from forest visitors, and knowing of operations ahead of time can help prevent unnecessary conflicts and result in responses that better address public safety needs. | Section 3.1.3.1.2, Section 3.5.3.1.2, and Section 3.8.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Coconino National Forest (continued) | • Notify District Rangers on the Red Rock, Mogollon Rim, or Flagstaff Ranger Districts when training activities are planned in order to be able to address public questions or concerns and also coordinate any issues with permittees or public use, where necessary.<br>• The forest is concerned with potential fire starts given recent periods of extreme fire risk throughout the forest. This is an issue that will need to be discussed and included as part of the terms and conditions during the special use permitting process.<br>• Damage or rutting to the surface of any Forest Service helispot or road conditions or facilities during training activities should be repaired immediately after the completion of such activities. The Forest Engineer, located at the Forest Supervisor's office, will be notified regarding damages or repairs or if repairs cannot be completed immediately.<br>• Livestock and range improvements such as waters, fences, pipelines, etc. are located across the landscape. Personnel should be aware that these features exist on the ground. If damage occurs to improvements, they should be repaired. The appropriate District Ranger should be notified regarding damages and repairs or if repairs cannot be completed immediately. | |
| U.S. Army Garrison Fort Huachuca | The EA is not site specific so the assumption is that the proposed training will not significantly increase the number of sorties and training events that currently take place on Fort Huachuca. Meaning that the hours of operations, the number of flights, and number of training events will not increase significantly. Significant increases in these variables can/will have impacts on resources and will need to be address in further detail. | Appendix E (Table E-1 and Table E-2); Section 2.3, "Affected Environment" and "Environmental Consequences" subsections in Section 3.0, Section 3.1.3.1, and Section 3.1.3.1.1 of the Final EA. |
| | Is there a previous EA covering the initial action? | Section 2.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| U.S. Army Garrison Fort Huachuca (continued) | Range Control Managers would be required to ensure that all activities are compliant with environmental management plans. | "Training Site Locations" subsection of the FONSI. |
| | The title is confusing on [Figure 1.1]. | Section 1.1 (Figure 1.1-1) of the Final EA. |
| | How will the AF coordinate to ensure that training events remain in compliance with DoD hosting agencies BAs/BOs and other environmental documents? | Section 2.3 of the Final EA. |
| | Driving off road on [Fort Huachuca (FH)] is prohibited unless closely coordinated with Range Operations and Environmental. The East Reservation has high UXO potential. | Section 2.1.4.3 of the Final EA. |
| | How is avoidance of areas be communicated to participants prior to activities? | Section 2.3 of the Final EA. |
| | There is discussion on obtaining special use permits on non-DoD land to ensure that requirements are met. How will AF coordinate with DoD entities to ensure resource compliance on individual DoD installations? | Section 2.3 of the Final EA. |
| | EA states: "Soil disturbance would primarily occur within previously disturbed areas." There is no discussion of soil erosion. Large, medium, and small force training, even in sporadic use, will create soil erosion and staying "primarily" within previously disturbed areas means that there will be new ground disturbance, including trampling of vegetation, which will cause soil erosion. | "Geology and Soils" subsection in Section 3.0 and Section 3.3.3 of the Final EA. |
| | How was it determined that there are no soil impacts associated with off road driving? Soils in different regions respond to damage in very different ways. | Section 2.1.4.3 and "Geology and Soils" subsection in Section 3.0 of the Final EA. |
| | There is no discussion about migratory birds in the document. The sites that were excluded from the biological evaluation certainly have MBTA issues. Several species of birds that have protections under the MBTA have the potential to [exist] and breed very close to the areas proposed for use on FH. Off road vehicle and foot travel can have an impact on ground nesting species. | Section 3.3.2.1.2, Section 3.3.2.2.2, Section 3.3.2.3.2, Section 3.3.2.4.2, Section 3.3.3.1.1.2, Section 3.3.3.1.2.2, Section 3.3.3.1.3.2, and Section 3.3.3.1.4.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| U.S. Army Garrison Fort Huachuca (continued) | EA talks about the proposed action and future project being "short-term in nature and sporadic over time" so there are no significant impacts anticipated on biological resources, however, it is not clear how many events will be taking place, nor how many people per event at locations on FH. We may have concerns depending on the location of the event (i.e., G1, G2 and G3 in areas that have not been specifically identified). | Section 2.1.3, Section 2.3, and Section 3.5.3.1.1 of the Final EA. |
| | Training activities G1, G2, and G3 are indicated at Hubbard, Hubbard (Tombstone), Humor, Libby Airfield, Tombstone Circular and Tombstone Rectangular; are these ground ops staying within the confines of these areas, or are there plans to go outside these areas (i.e., camping and blackout driving on Libby). | Appendix E (Table E-1); Appendix G (Attachment 2); Section 3.3.2 of the Final EA. |
| | There is no such thing as a "Mexican Long-nosed Bat." The name is either Mexican Long-Tongued or Lesser Long-Nosed. Term is used throughout the section in TOC and pp. 142-143, as well as other areas of the document, to include the Biological Evaluation. The Lesser Long-nosed bat is no longer a listed species. | Appendix G (Section 6.25, Section 9.0, and Attachment 3). |
| | How are clean up efforts handled? Is there a plan in place for environmental degradation due to AF training? | "Geology and Soils" subsection in Section 3.0 and Section 3.6.3.1 of the Final EA. |
| **State Agencies** | | |
| State of New Mexico Department of Cultural Affairs, Historic Preservation Division | The New Mexico SHPO was wondering if it might be possible to use the EA to facilitate the Section 106 process by incorporating language that includes a binding commitment on the part of the Air Force to consult under Section 106 on a case by case basis with the appropriate agency, SHPO, and consulting parties in the FONSI . This could eliminate the need to develop a separate MOA or PA to conclude the Section 106 process. | Section 2.3 and Section 3.4.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| **Organizations or Interest Groups** | | |
| Center for Biological Diversity | I am looking for the Draft EA/FONSI captioned above. Please add it to your website so I can download it or send me a link. I cannot find it using the web address in your notice. | Section 1.7 of the Final EA. |
| Heart of the Gila | I'd like to have some questions clarified before the comment period ends on October 26th.<br>1. My main question is: **Are there any non DOD sites currently being used for Recovery Training?** I am particularly interested in the 11 sites [Catron County Fairgrounds, Glenwood Ranger Station, Hannagan Meadows, USFS Helitack Base, Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, Negrito South, Rainy Mesa, Reserve Ranger Station, and Springerville Airport]. The EA does evaluate these sites and the potential impact of training so I am unclear if they are ***CURRENTLY*** being used or if they are being ***PROPOSED*** for use. If they are being used currently for training, is there a way to determine **which of these sites are used and how often?**<br>**2. Also, given that each of these sites lists the accompanying MOA's and VR route, can we assume that these sites will include support aircraft during the trainings?** | Appendix A (Proposed Personnel Recovery Training Sites Table); Section 2.1.3, Section 2.1.4, and "U.S. Forest Service or Other Federal Land" subsections within Section 3.0 of the Final EA. |
| Gila Conservation Coalition et al. | In general, it is very difficult to understand the proposed action analyzed by this EA. For example, it is not clear which sites will be locations for large force, medium force or small force personnel recovery (PR) training activities. Will the largest use be in the WSMR and Playas areas only? What proportion will happen on the five Negrito sites, the Reserve sites and the Glenwood site? It is therefore impossible to understand the scale of potential impacts for specific sites and to comprehensively comment on the potential impacts. | Section 2.3 and Section 2.1.3 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila Conservation Coalition et al. | We are concerned about PR training activities on 12 potential training sites that affect the Gila Region in New Mexico and Arizona, including Catron County Fairgrounds, Glenwood Ranger Station, Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, Negrito South, Rainy Mesa, Reserve Ranger Station, Reserve Airport in New Mexico and Hannagan Meadow and US Forest Service Helitack Base in Apache Sitgreaves National Forest in Arizona.<br>Use of these sites for PR training could produce negative effects on the environment, to residents, and to visitors. All 12 sites proposed include use of VR-176 and associated Military Operations Areas (MOA), including Morenci, Cato-Smitty or and Reserve. These MOAs include areas within the Gila National Forest that border wilderness areas (Blue Range and Gila Wilderness Areas in New Mexico and Blue Range Primitive Area in Arizona) and are adjacent or within rural communities in southwestern New Mexico. | Appendix A (Proposed Personnel Recovery Training Sites Table), Section 2.1.4.9, Section 2.3, and "U.S. Forest Service or Other Federal Land" subsections within Section 3.0 of the Final EA. |
| | We believe that an EA is not a sufficient level of analysis to comprehensively analyze the potential impacts of the proposed action. An Environmental Impact Statement should be conducted to more fully assess the range of effects on local communities, public lands and the environment. Although an EA was used to assess the original Angel Thunder proposal, the geographic breadth and expansion of PR training to new sites in this current proposal warrants an EIS. | FONSI; "Environmental Consequences" subsections of Section 3.0 of the Final EA. |
| | **Increased Noise** –The EA does not adequately recognize and analyze the impacts of increased noise in communities in which the sites are proposed and the potential negative effect of noise on recreational opportunities. | Appendix D; Section 3.7.3.1, Section 3.7.3.1.2, and Section 3.9.3.1.2 of the Final EA. |
| | **Negative Economic Impacts** –Given the potential impacts of noise and significant disturbance from military operations, the EA fails to realistically consider the negative economic impact of proposed PR training on communities that are reliant on | Section 2.3, Section 3.5.3.1.2, and Section 3.9.3.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila Conservation Coalition et al. (continued) | tourism dollars from activities such as hunting, fishing, camping, and hiking. | |
| | **Effects on Public Lands and Wildlife** – The EA does not adequately consider the impact of PR training on adjacent Wilderness Areas, Forest Service land and wildlife habitat. | Section 3.1.2.2, Section 3.3.3.1.2, Section 3.5.3.1.2, and Section 3.7.3.1.2 of the Final EA. |
| | The EA inaccurately asserts that training activities on Forest Service land would not result in any physical disturbance of recreational areas because permits would be approved and no removal of vegetation would occur. However, the EA does not seem to consider on-the-ground impacts of vehicles and large numbers of personnel, as well as the disturbance caused by low flying aircraft. | Section 3.3.3.1.2.1, Section 3.3.3.1.2.2, Section 3.3.3.1.2.3, Section 3.3.3.1.2.4, and Section 3.5.3.1.2 of the Final EA. |
| | The EA does not sufficiently assess the impact on habitat for the Mexican Spotted Owl at Negrito Airstrip, Negrito Center, Negrito North, and Rainy Mesa by not examining the potential effect of low-level flights that will accompany PR training. | Section 3.3.3.1.2.3 and Section 3.3.2.2.3 of the Final EA. |
| | We are particularly concerned about the **cumulative impacts** on the Gila Region from the PR training proposal combined with current and proposed Air Force and Air National Guard training operations in the area.<br>• For example, the EA neglects to consider the cumulative impacts of additional flights within MOAs in the Gila Region (e.g. Taiwan AFB) already used for F-16 training by the Arizona Air National Guard.<br>• The EA also omits consideration of the cumulative impact of creating a Combat Search and Rescue (CSAR) Low Altitude Tactical Navigation (LATN) Area (Figure 2.1-4) covering all of central and southwest NM.<br>• Although NAS Fort Worth Joint Reserve Base is the preferred location for the Air Force Reserve Command F-35-A beddown proposal, Davis-Monthan AFB is a | Section 4.1.2 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Gila Conservation Coalition et al. (continued) | "reasonable alternative." The EA omits the potential cumulative impact of the PR training with this action.<br>• With the potential establishment of a new MOA (Lobos) over the Gila Region, as proposed by the Holloman Air Force Base Special Use Airspace Optimization Environmental Impact Statement project, the EA neglects to analyze the cumulative impact of adding additional F-16 training flights in the region. We are concerned that the EA minimizes the cumulative impact of the potential addition of some large portion of 10,000 sorties per year that Holloman needs for F-16 training within the Lobos MOA. | |
| **Tribal** | | |
| Viejas Band of Kumeyaay Indians | The project area may contain many sacred sites to the Kumeyaay people and requested that these sites be avoided with adequate buffer zones. | Appendix B; Section 3.4.2, Section 3.4.3.2.1, Section 3.4.3.2.2, Section 3.4.3.2.3, and Section 3.4.3.2.4 of the Final EA. |
| | Additionally, Viejas is requesting, as appropriate, the following:<br>• All NEPA/CEQA/NAGPRA laws be followed<br>• Immediately contact Viejas on any changes or inadvertent discoveries. | Appendix B; "Regulatory Requirements Applicable to the Proposed Action" subsection of Section 3.4.1 and Section 3.4.2 of the Final EA. |
| Augustine Band of Cahuilla Indians | At this time, we are unaware of specific cultural resources that may be affected by the proposed action, however, in the event you should discover any cultural resources during the development of this project please contact our office immediately for further evaluation. | Appendix B; Section 3.4.2 of the Final EA. |
| Rincon Band of Luiseño Indians | Identified locations within the Territory of the Luiseño people, and also within Rincon's specific area of Historic interest, are Camp Pendleton, March AFB, and possible PR training sites on San Clemente Island, all located in California.<br>Embedded in the Luiseño territory are Rincon's history, culture and identity. As mentioned in our email from July 9, | Appendix B; Appendix E (Table E-2); Section 6.0 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
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| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Rincon Band of Luiseño Indians (continued) | 2019, in particular the area of Camp Pendleton in California, is considered by the Rincon Band to be a Traditional Cultural Place (TCP) within a Traditional Cultural Landscape (TCL), as it is associated with the traditional practices. Please provide access to the 2008 SOCAL EIS/OEIS and 2018 HSTT EIS/OIS (pg. 3-136) regarding EAs for San Clemente Island. | |
| | We request consultation at this time in order to learn more about the project and any potential impacts to cultural resources, implementation/reviews of mitigation measures, and to explore the opportunity to enter a Programmatic Agreement. | Appendix B; Section 3.4.2 of the Final EA. |
| **General Public** | | |
| Private Citizens (New Mexico) | The socioeconomic analysis was facile, focusing only on a limited number of fee-based recreational sites and USFS recreational revenue generated for each national forest impacted by proposed military training operations. No detailed consideration was given regarding tour operators bringing clients seeking wilderness, fishing or hunting experiences, or independent travelers. Lost revenue for businesses that benefit from tourism, such as gas stations, restaurants, lodging (day-trip and pass-through tourists), and other local businesses is totally disregarded. Although the proposed action is in Catron County, the socioeconomic impact on adjacent counties such as Grant County, a gateway to the Gila National Forest, the Gila Wilderness, and the Gila Cliff Dwellings, was completely ignored. Rural livelihoods and communities count on tourist revenue. | Section 3.9.3.1.2, Section 3.9.3.1.3, Section 3.9.3.1.4, and Section 3.9.3.1.5 of the Final EA. |
| | The impact of military ground training activities on hikers, campers, and hunters encountering these operations or avoiding coming to the Gila all together was given short shrift. The impact on tourism of military jets flying over the forest was inadequately considered, i.e., “the degree of an | Section 3.1.2.2, Section 3.5.3.1.2, and Section 3.7.3.1.2, Section 3.9.3.1.2, Section 3.9.3.1.3, 3.9.3.1.4, and Section 3.9.3.1.5 of the Final EA. |

| Table H-1<br>Summary of Substantive Comments on Draft EA | | |
|---|---|---|
| **Commenter** | **Comment** | **EA Section Where Comment is Discussed** |
| Private Citizens (New Mexico) (continued) | incremental noise impact…is considered minor and would not appreciably impact the DNL levels on…proposed PR training sites over time." In fact, there is *no* mention of the Gila Wilderness even though Figure 2.1-2 indicates a significant portion is within the 'military operations area,' nor is there any analysis of the impact of military flights overhead on this country's first-designated wilderness, tourism, or wildlife—*a major oversight.* Tourists visit the Gila National Forest (including the Gila Wilderness) throughout the year with peak periods, which is not considered in the draft environmental assessment. The socioeconomic impact of the Proposed Action on rural communities is sorely lacking. We strongly recommend a more thorough and thoughtful analysis. | Section 3.1.2.2, Section 3.5.3.1.2, and Section 3.7.3.1.2, Section 3.9.3.1.2, Section 3.9.3.1.3, 3.9.3.1.4, and Section 3.9.3.1.5 of the Final EA. |
| | And finally, there is no analysis of the cumulative impact of additional proposed F-16 training flights in the area (i.e., Holloman Air Force Base Special Use Airspace Optimization EIS project). With up to 10,000 proposed sorties annually, this is critical. | Section 4.1.1 and Section 4.1.2 of the Final EA. |

**ATTACHMENT 1**

**DRAFT EA COMMENT LETTERS**

**FEDERAL AGENCIES**

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**File Code:** 1950
**Date:** October 18, 2019

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Dear Mr. Wakefield:

Thank you for the opportunity to comment on the Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Davis-Monthan Air Force Base Personnel Recovery Training Program, which includes proposed sites on the Reserve and Glenwood Ranger Districts on the Gila National Forest. Our emphasis of review was to ensure the description and effects of use on the forest sites are adequately addressed in order that a special use permit may be issued to Davis-Monthan Air Force Base for the use of sites on the Gila National Forest for training purposes.

The following are some specific comments or concerns my staff have identified.

Glenwood Ranger Station

Training activities for the Glenwood Ranger Station outlined on page Appendix A-5 indicates that the training activity *G3 – Mounted (Vehicle) Movement/Blackout Driving* and *F9 – Parachute Operations and Drop Zones* are proposed at this site. As described, these activities are not an appropriate activity to occur at the Glenwood Ranger Station facility. For consistency G3 and F9 are activities not shown for the Reserve Ranger Station (Appendix A-7) and therefore should not be shown at the Glenwood Ranger Station.

Reserve Ranger Station

Training activities for the Reserve Ranger Station outlined on page Appendix A-7 indicates that training activity *F10 – Close Air Support/Escort* is proposed at this site. As described, this is not an appropriate activity to occur in or around the Reserve Ranger Station facilities and the impacts associated with low flying aircraft on the community of Reserve, which the office closely situated, needs to be considered. For consistency F10 is not shown at the Glenwood Ranger Station and therefore should not be shown at the Reserve Ranger Station.

Reserve Ranger Station should be included in Table 3.7-6 Proposed HLZ PR Training Sties with Potential Incompatible Land Use. The Reserve Ranger District is adjacent to the Catron County Fairgrounds and in close proximity to the community of Reserve.

Negrito Airstrip

Training activities for the Negrito Airstrip outlined on page Appendix A-6 indicates that training activity *F6 – Flight Operations – Forward Aircraft Refueling Point Operations* is proposed for this site. In the Draft EA page 2-32 lines 7-9 state: *Airfields used for refueling activities have appropriate fuel storage on site, and are managed in accordance with facility Spill Prevention Control, and Countermeasure Plan (SPCCP).* The Negrito Airstrip is a remote airfield with no fuel related facilities. The training activity F6 should be removed from the training activity list for the Negrito Airfield site.

Catron County Fairgrounds

Page FONSI-v, indicates that the Catron County Fairgrounds and the Reserve Airport are under Forest Service control and that both are under special use permit to Catron County. This is incorrect. Only the Reserve Airport is under Forest Service control and permitted to the County for use and administration. The Catron County Fairgrounds is under Catron County jurisdiction and control and activities need to be coordinated with Catron County.

References to Catron County Fairgrounds needs to be removed from tables and sections under federal land control and discussed and displayed with Other Land sections.

Motor vehicle use for support or activities under G3

Page 3-151, lines 20-23 address the topic of motorized access and dispersed motorized camping. Note that the Gila National Forest has a designated motorized system of roads and trails that are identified on a Motor Vehicle Use Map (MVUM) (36 CFR §212.56) and motor vehicle use off designated roads and trails and outside designated areas is prohibited (36 CFR §212.50).

Our concern is the creation of tracks off of the designated motorized system, which may encourage more unauthorized motorized vehicle uses, creating more routes, or causing resource damage. If motorized activities are needed outside the designated motorized roads, trails, or areas requiring cross-country or off-road travel, the forest would need to know such things as locations, timing, duration, frequency, and potential vehicle types and an operating plan outlining corrective measures should tracks or rutting become evident as result of use. The potential use and impacts should be included in the analysis. Any cross-country travel would be authorized through the special use permit process.

Safety page 3-197

I appreciate the incorporation of the Air Force safety and health program elements for activities occurring on national forest lands and especially consideration of public safety. Although the following points may be more related to terms and conditions of special use permit processing, they should also be reviewed for consideration in this analysis.

- Silver City Dispatch Center should be contacted in advance and prior to beginning activities to coordinate flight activities; check for other planned flight activities

occurring or upcoming in areas; to check on current fire danger level, and to check on fire or other emergency status.
    - Forest has concerns related to aerial operations and timing. The use of ranger station helipads, Negrito Helibase, and airstrips during fire season may be problematic due to the unknown timing or length of wildfire events.
- Notify the District Rangers on the Reserve and Glenwood Ranger Districts when training activities are planned in order to be able to address public questions or concerns and also to coordinate any temporary closures of roads, trails, and areas.
- The forest has concern regarding potential fire starts with current fire behavior across the southwest region. We request consideration of appropriate fire precautions and tools to assist in extinguishing fires to be readily available during activities.
- If damage or rutting to the surface of any Forest Service helispot or airstrip occurs during training activities, damage will immediately be repaired. The Forest Service Aviation Officer will be notified regarding damages and repairs or if repairs cannot be completed immediately. The Forest Aviation Officer may be contacted at the Supervisor's Office or through Silver City Dispatch Center.
- Range improvements such as waters, fences, pipelines, etc. are located across the landscape. Personnel should be aware that these features exist on the ground. If damage occurs to improvements, they should be repaired. District should be notified regarding damages and repairs or if repairs cannot be completed immediately.
- Be aware that there is active livestock grazing in and around all areas except for ranger station offices.

## Site Specific Location Concerns Related to Proposed Use

### Glenwood Ranger Station

- The District office should be contacted at least 1 week prior to start of training activities due to:
    - This location is a District Office and has residences on the compound
    - Forest Service livestock (horses) are maintained in either the pasture which includes the helipad or adjacent pasture periodically during the year
    - The helispot is visible from Hwy 180 and in close proximity to the community of Glenwood and other small communities
- This would provide advance notice to the District to ensure personnel, equipment, residents, and livestock are out of the way for training activities. Also the District would be able to assist with communication with the public to address questions or concerns.

### Reserve Ranger Station

- The District office should be contacted at least 1 week prior to start of training activities due to:

  - This location is a District Office and has residences on the compound
  - The helispot is in close proximity to the community of Reserve
- This would provide advance notice to the District to ensure personnel, equipment, and residents are out of the way for training activities. Also District would be able to assist with communication with the public to address questions or concerns.

Negrito Helibase

- The District office should be contacted at least 1 week prior to start of training activities due to:
  - This location is a District Work Center and is staffed seasonally
  - The Center does have residences on the compound
- This would provide advance notice to the District to ensure personnel, equipment, and residents are out of the way for training activities.
- Silver City Dispatch Center should be contacted to check if there are any Forest Service activities are utilizing the helibase
- Be aware the airstrip is used by recreational pilots Appendix G – Biological Assessment

Negrito Airstrip

- Silver City Dispatch Center should be contacted in advance to check if there are any Forest Service activities are utilizing the airstrip
- Be aware the airstrip is used by recreational pilots Appendix G – Biological Assessment

Appendix E Cultural Resources Supporting Documentation

Page Appendix E-13:

The statement: "Personal communication USFS 2019b" was NOT with the Gila NF Forest Archaeologist (not sure who they spoke with on the forest). USAF must consult with the Gila NF Forest Archaeologist for bivouac locations, as there is not a current, valid survey in this area.

Page Appendix E-14:

The statement: "Personal communication USFS 2019b" was NOT with the Gila NF Forest Archaeologist (not sure who they spoke with on the forest). USAF must consult with the Gila NF Forest Archaeologist for bivouac locations, as there is not a current, valid survey in this area.

Page Appendix E-15 (Reserve Ranger Station):

The statement: "Personal communication USFS 2019b" was NOT with the Gila NF Forest Archaeologist (not sure who they spoke with on the forest). USAF must consult with the Gila NF Forest Archaeologist for bivouac locations, as there is not a current, valid survey in this area.

Page Appendix E-41:

The statement "Personal communication USFS 2019b" was NOT with the Gila NF Forest Archaeologist (not sure who they spoke with on the forest).

Overall, our greatest concern for the protection of cultural resources at the sites proposed on the forest is the location of bivouacs and where mounted travel (in vehicles), off-road would take place. There are no locations identified for these activities in the analysis.

Appendix G Biological Evaluation

Page Appendix G-65 line 22, Glenwood Ranger Station Site

The description of species and/or its critical habitat in relation to the helipad at the Glenwood Ranger Station is missing for the following species:

- loach minnow and spikedace occupied critical habitat is located within 0.5 miles from the Glenwood Ranger Station Site.

Page Appendix G-95-G-96 regarding Spikedace

We have a concern that the most current critical habitat final rule is not being used for this analysis. The final rule published February 23, 2012, revised the critical habitat designations (same reference as shown on page Appendix G-102, line 10 for loach minnow).

Page Appendix G-97 line 12

The statement that *spikedace designated critical habitat does not occur near any of the proposed sites* is incorrect. See correction provided for Page Appendix G-65 regarding that loach minnow and spikedace occupied critical habitat is located within 0.5 miles from the Glenwood Ranger Station Site.

Page Appendix G-98 line 2-3, Gila Trout – Negrito North

We do not agree with the determination of effects to Gila trout from activities occurring at the Negrito North site, i.e. *short-term, negligible, direct adverse impacts*. The nearest population from this site is located in Willow Creek, which is greater than 5 miles away. The proposed action does not indicate ground disturbing activities taking place that far from the proposed site, therefore, the proposed action should have no effect on Gila Trout.

Page Appendix G-98 line 8-9; line 18, Gila Trout – Catron County Fairgrounds

We do not agree with the determination of effects to Gila trout from proposed activities occurring at the Catron County Fairgrounds site, i.e. *short-term, negligible, direct adverse impacts*. The nearest population to the Catron County Fairgrounds is greater than 20 miles away, therefore the proposed action should have no effect on Gila Trout.

Page Appendix G-98 line 17-20

Please review the following information regarding sites listed in lines 17-20 on the Gila National Forest in relation to effects analysis and determination of effects to Gila trout:

- Gwynn Tank has been stocked with Gila trout in the past, however the species is not established there. The fish in Gwynn Tank are considered a put and take fishery.
- The ephemeral drainage near the Catron County Fairgrounds drains to the San Francisco River. There are no Gila trout in the San Francisco River.

Page Appendix G-103 line 2-3, Loach Minnow

We do not agree with the determination of effects for loach minnow or its critical habitat from proposed activities occurring at the Catron County Fairgrounds site. Based on the

information provided below, the proposed action should have no effect on loach minnow or its critical habitat.
Please review the following information regarding the Catron County Fairgrounds site and revise the whole section 6.8.3 Determination of Effects for the loach minnow and its critical habitat.

- It is more than 500 feet, probably closer to 0.5 miles, from the Fairgrounds to the San Francisco River where the species occurs.
- Loach minnow occupied habitat occurs downstream of the Fairgrounds.
- The area around the Fairgrounds including the stream bank of the ephemeral drainage has already been disturbed and modified.
- Line 5 contradicts the effects determination. If there are *direct adverse impacts* (line 5), then the proposed action cannot be "not likely to adversely affect" (line 14-15). Direct adverse impacts would result in a "likely to adversely affect" to the species.
- If the proposed action is increasing sediment runoff then it is impacting downstream critical habitat. The analysis for the species says there will be *direct adverse impacts* (line 5) to the species due to potential sediment movement. If sediment is impacting the species then the habitat would be impacted as well.

Page Appendix G-134 line 31-33, Mexican Spotted Owl

We have concerns regarding the determination for the Mexican spotted owl (MSO) and request that the impacts and determination be reviewed, revised and ensure impacts align with the appropriate determination. Each location starts with *short-term, negligible, direct adverse impacts on the Mexican spotted owl may occur*... The use of "adverse impacts" is contradictory to the determination of "not likely to adversely affect".
Another concern is based on the frequency and duration displayed in Table 2.1-2 (page 2-7 Draft EA) and associated ground and flight operations. Table 2.1-2 shows that proposed activities may occur, especially for the Small Force category, nearly year-round. Are activities within proximity of owl sites proposed on the Gila National Forest going to be in line with the statement on line 31-32 that training activities would occur outside the nesting season?
We request that this be clarified and clearly identify the proposed activities and timing that are in alignment with ESA consultation on national forest lands. All of which will ultimately be used to assist in the forest permitting process for these activities.

Page Appendix G-141 line 23-24, Mexican Gray Wolf

The Mexican gray wolf is a non-essential experimental population. The determination on line 23-24 is incorrect for its status. The determination would be *Not Likely to Jeopardize the non-essential experimental population.*
We are concerned with potential impacts to the Mexican gray wolf and denning sites from proposed activities. The forest requests the following design features be considered to be included to minimize impacts to wolves:

- Coordinate with the GNF and U.S. Fish and Wildlife Service (USFWS) wolf reintroduction program and Interagency Field Team (IFT) when activities need to occur within sensitive areas during following periods:
    - Seasonal period of April 1-September 30

- 1 mile buffer for active Wolf dens between April 1st-July 31st
- 1 mile buffer for active Wolf rendezvous sites between June 1st – September 30th

- Where possible, avoid conducting activities in Mexican gray wolf sensitive sites spatially and seasonally as described above
- Maps and field GPS units can be utilized to identify and avoid sensitive wolf areas to reduce or eliminate direct or indirect impacts. When planning contact one of the following sources for sensitive sites information:

1. For recent wolf location sightings review maps at:

   https://www.fws.gov/southwest/es/mexicanwolf/RWL.cfm (click on "view larger map" for locations

2. **Mexican Wolf Recovery Coordinator**

   New Mexico Ecological Services Field Office
   2105 Osuna Road NE; Albuquerque, NM 87113
   Office: (505) 346-2525; Fax: (505) 346-2542

3. Contact the Wildlife Biologist on the Ranger District that activities are being planned

If you have any questions, please contact Lisa Mizuno, Environmental Coordinator, by email at - lisa.mizuno@usda.gov or by phone at 575-388-8267.

Sincerely,

Adam Mendonca

ADAM MENDONCA
Forest Supervisor

USDA United States Department of Agriculture | Forest Service | Coronado National Forest Supervisor's Office | 300 West Congress St. Tucson, AZ 85701 520-388-8300 Fax: 520-388-8305

**File Code:** 1950
**Date:** October 21, 2019

Mr. Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4987

Dear Mr. Wakefield:

Thank you for providing the opportunity to comment on the Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the proposed Davis-Monthan Air Force Base Personnel Recovery Training Program (Program), which includes proposed sites on the Coronado National Forest (CNF). In our response of July 17, 2019 to the notification of preparation of an EA for the proposed program, we shared that our primary concern is to ensure that the descriptions and effects of the program activities on forest sites are adequately addressed.

The proposed ground-based activities, number of personnel participating in these activities, frequency and duration of activities are presented in the EA, and expected ground disturbance is described as less than significant on the numerous sites across the CNF. Proposed forest sites are generally described as "previously disturbed". The ground and air/ground activities are characterized as brief, infrequent and having minimal ground disturbance which results in the "less than significant" impact conclusion. Without a site-by-site assessment, the CNF cannot definitively concur with these conclusions. For example, there could be routine and large force activities including cross-country dismounted movements supported by ATVs and UTVs as part of this program. The CNF interprets the EA as programmatic in nature, therefore the descriptions and effects of proposed activities on forest sites would need to be evaluated when a specific training operation is planned.

The EA acknowledges that land management plans and wildland fire considerations could preclude various operations/activities. The physical, biological and cultural characteristics of a site may influence its suitability and could potentially eliminate a site from consideration for program activities. As sites are identified for particular uses, surveys must be conducted and the CNF must account for multiple, potentially competing or conflicting uses at these sites. Supporting the "less than significant" impact conclusion for ground disturbance may require mitigations, stipulations and conditions for site specific activities. An adequate evaluation and effects assessment of each site would be needed prior to a special use permit issuance to Davis-Monthan Air Force Base for the use of a site on the CNF.

The FONSI recognizes that if a site is determined not to be suitable for an activity, a special use permit would not be issued. This determination reinforces our position that the effects of program activities on forest sites would need to be assessed in the future when a specific training operation is planned. It also confirms that activities must comply with all stipulations in a special

use permit for each site.

The cumulative effects section of the EA does not consider the US Army Intelligence Center and Fort Huachuca's Sentinel Landscapes Proposed Range Expansion. The proposal involves airspace re-design and 195,000-acre expansion for a test area with multiple training nodes (sites) located west of the Huachuca Mountains. The EA should be updated to consider this project in the analysis of cumulative effects.

If there are any questions regarding these comments, please contact Mindi Lehew, Environmental Coordinator, by email at mindi.lehew@usda.gov or by phone at 520-388-8352.

Sincerely,

KERWIN S. DEWBERRY
Forest Supervisor

cc: Mindi Lehew

USDA United States Department of Agriculture Forest Service Kaibab National Forest
800 South 6th Street
Williams, AZ 86046
928-635-8200 928-635-8208

**File Code:** 1950
**Date:** October 23, 2019

Mr. Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Dear Mr. Wakefield:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Davis-Monthan Air Force Base Personnel Recovery Training Program, which includes proposed training activities at four sites on the Williams and Tusayan Ranger Districts of the Kaibab National Forest (NF). Our review focused on assuring effects to resources on the Kaibab NF are clearly addressed and necessary mitigation measures are prescribed to minimize impacts, which would support future issuance of a special use permit to authorize proposed activities.

The following are some specific comments and requests for additional analysis, information or coordination. These comments and requests are listed in reference to specific sections of the EA.

Section 2.1.4.3 Ground Operations – Mounted Movements / Blackout Driving

The EA description of proposed actions states, "Occasionally, off-road driving is conducted during PR training activities". The Kaibab NF has a designated system of roads and trails for motorized use, as identified on the forest's Motor Vehicle Use Map and in compliance with regulations which govern such use (36 CFR 212.56). Motor vehicle use off designated roads and trails is prohibited (36 212.50), except as authorized through special use permit or other written instrument. Thus, any cross-country motorized vehicle use would be authorized through the special use permit process. For the special use authorization, the Kaibab NF would need site-specific information and analysis of effects for proposed off-road driving, such as locations, timing, frequency, type of vehicles, number of vehicles, and measures to minimize resource impacts. Ideally, this information would be included in the Air Force environmental analysis process.

The EA description of proposed Blackout Driving activities states, "Roads used for this activity are temporarily closed to the public to prevent safety mishaps". This focus on public safety is invaluable, and at the same time, public access is important. We request that advance coordination occurs with the Kaibab NF to assure that limitations for public access are minimized and public notification can occur prior to any temporary road closures.

Sections 2.1.4.9 to 2.1.4.17 Flight Operations

For all flight operations on the Kaibab NF, we request that advance coordination occur with the Kaibab NF Dispatch Center and Aviation Officer. This would allow for a check of other planned flight activities and prevent potential conflicts for airspace or other uses.

Sections 3.3.2.2.3 and 3.3.3.1.2.3 Threatened and Endangered Species

The Williams and Tusayan Districts are within the experimental nonessential population area designated for the reintroduced California condor, which is a Federally-listed species. Condors have occasionally been detected on the Tusayan District and are rarely seen on the Williams District. We ask that you add an analysis of effects, and measures to avoid potential impacts to condors.

Section 3.9.2.2 Socioeconomics

The description of proposed activities notes, "training activities would occur at an existing recreation facility that provides fee-based overnight accommodation", including the Spring Valley Cabin on the Kaibab NF. We agree with the proposed action, "the USAF would pay the existing fess for rental or use of the facility and there would be no revenue lost due to training activities". In addition, this should prevent potential conflict as no other users would be authorized to occupy the cabin for the duration of the USAF rental.

If you have questions or a need for additional information, please contact Sue Farley, Environmental Coordinator, by email at susan.farley@usda.gov or by phone at 928-635-8331.

Sincerely,

for HEATHER PROVENCIO
Forest Supervisor

Chelsea Muise, Susan Farley, Debra Mollet

USDA United States Department of Agriculture | Forest Service | Coconino National Forest Supervisor's Office | 1824 South Thompson Street Flagstaff, AZ 86001 928-527-3600 Fax: 928-527-3620

**File Code:** 1950; 1500
**Date:** October 24, 2019

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Dear Mr. Wakefield,

Thank you for the opportunity to comment on the Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Davis-Monthan Air Force Base Personnel Recovery Training Program, which includes eight proposed sites on the Coconino National Forest. We have reviewed the Draft EA and have the following comments on the content of the document and the proposal:

- Page 2-42 of the Draft EA states that the Jacks Canyon proposed training site was removed from consideration from the training program, however, it is included and analyzed throughout the analysis. Confirmation in the final EA and decision that this site was removed from the training program would be helpful.
- The Rough Rider location, located on the Red Rock Ranger District, is primarily accessible via forest road 9205K, which includes an exposed natural gas pipeline. Please ensure that appropriate safety precautions are taken given the condition of this road, especially related to the proposed "blackout" driving exercises proposed at this location.
- Page 3-161 addresses the topic of motorized access and includes the sentence, "As discussed previously in Section 3.5.2.2, three of the 13 proposed PR training sites on USFS land (Jacks Canyon, Rough Rider, and Mesa PR training 14 sites) are in areas not generally suitable for mechanized/nonmotorized use (Google Earth Pro 15 2019; USFS 2018b, 2018c)." This statement is incorrect as Jacks Canyon is identified as an area classified as Semi-primitive non-motorized, and is not generally suitable to *motorized* use. Please change this sentence in the EA to include the word motorized instead of non-motorized.
- The proposed Longview training site is described as a USFS Helitack Base, but is actually managed as a group campground identified as the Long Valley Work Center. Training activities for the "Longview Helitack Base" identified on page Appendix A-5 indicates a number of ground-based and flight ops that would not be appropriate activities for this setting given its current management as a recreation site with regular camping and group events.
- Also, regarding the discussion of motorized access on page 3-161, please note that the Coconino National Forest has a designated system of routes and areas identified on a Motor Vehicle Use Map (MVUM). Motor vehicle use off of designated routes and areas is prohibited without a written permit (36 CFR 212.50). Our concern is the establishment of tracks off of designated routes, which may encourage more unauthorized motor vehicle access, creating more routes, or causing resource damage. If motor vehicle use is

requested outside of designated routes and areas through the special use permit process, the forest would need to know information including the proposed locations, timing, duration, frequency, and potential vehicle types, and mitigations to address the aforementioned concerns.

- Several of the maps included in the EA provide incorrect road numbers and can be misleading. For example, in Appendix A-22, map 9 of 48; in Appendix A-26, map 13 of 48; and in Appendix A-27, map 14 of 48; Lake Mary Road, marked as County Road 3 or FH3, is tagged on the map as "487". Also, Appendix A-27, map 14 of 48; and in Appendix A-28, map 15 of 48, Highway 87 appears to be marked as "65". With few other visible landmarks on these maps, having road numbers different than how the road is marked and known from other area maps makes it very difficult to accurately read and understand them.
- In Appendix G-134 it indicates restrictions would be in place to limit potential impacts to Mexican spotted owl during the nesting season. However, it is unclear which sites this includes, and thus at which sites there would be restrictions during the nesting seasons. Providing a table or other clear display of this information would be helpful.

I appreciate the incorporation of the Air Force safety and health program elements for activities occurring on national forest lands and especially consideration of public safety. Although the following points may be more relevant to terms and conditions of the special use permit processing, they may also be incorporated into this analysis.

- The Coconino National Forest Dispatch Center should be contacted in advance and prior to beginning activities to coordinate flight activities. Use of station helipads and other flight activities during wildfire season could result in conflicts due to the unknown timing or length of wildfire events. The Coconino National Forest Dispatch Center also regularly receives direct communications from forest visitors, and knowing of operations ahead of time can help prevent unnecessary conflicts and result in responses that better address public safety needs.
- Notify District Rangers on the Red Rock, Mogollon Rim, or Flagstaff Ranger Districts when training activities are planned in order to be able to address public questions or concerns and also coordinate any issues with permittees or public use, where necessary.
- The forest is concerned with potential fire starts given recent periods of extreme fire risk throughout the forest. This is an issue that will need to be discussed and included as part of the terms and conditions during the special use permitting process.
- Damage or rutting to the surface of any Forest Service helispot or road conditions or facilities during training activities should be repaired immediately after the completion of such activities. The Forest Engineer, located at the Forest Supervisor's office, will be notified regarding damages or repairs or if repairs cannot be completed immediately.
- Livestock and range improvements such as waters, fences, pipelines, etc. are located across the landscape. Personnel should be aware that these features exist on the ground. If damage occurs to improvements, they should be repaired. The appropriate District Ranger should be notified regarding damages and repairs or if repairs cannot be completed immediately.

Thank you again for the opportunity to review and comment on this Draft EA and FONSI. If you have any questions, please contact Deirdre McLaughlin, Acting Lands Staff, by e-mail at damclaughlin@USDA.gov.

Sincerely,

Laura Jo West

LAURA JO WEST
Forest Supervisor

-----Original Message-----
From: Phillips, Betty M CIV USARMY ID-TRAINING (USA)
<betty.m.phillips11.civ@mail.mil>
Sent: Saturday, October 26, 2019 10:21 AM
To: WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE
<kevin.wakefield.1@us.af.mil>
Cc: Haws, Daniel D II CIV USARMY USAG (US) <daniel.d.haws.civ@mail.mil>;
Rohr, Dawn R CIV USARMY ID-TRAINING (USA) <dawn.r.rohr.civ@mail.mil>
Subject: RE: EA for DMAFB Personnel Recovery Training Program (UNCLASSIFIED)

Good Morning Mr. Wakefield,

Thank you for the opportunity to review the DMAFB Recovery Training Program EA. Please see attached comments from Fort Huachuca. The FH Environmental office would like to request an electronic copy of the final EA and FNSI once it is available for our records. I am glad to answer any questions you might have regarding our comments. Have a great weekend.

Betty Phillips
NEPA Coordinator/Hunting Program Manager
Environmental and Natural Resources Division
USAG Fort Huachuca, Arizona
520-533-8763
Betty.m.phillips11.civ@mail.mil

For wildlife information or emergencies please call 520-678-8112.

| EA for the Davis-Monthan Air Force Base Personnel Recovery Training Program<br>Comment Response Matrix | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Comment Number** | **Page Number** | **Section/Exhibit/ Table/Appendix** | **Line Number** | **Commentor** | **Organization** | **Comment** | **Response By** | **Response** |
| 1 | General | General | General | BP | Fort Huachuaca ENRD | The EA is not site specific so the assumption is that the proposed training will not significantly increase the number of sorties and training events that currently take place on Fort Huachuca. Meaning that the hours of operations, the number of flights, and number of training events will not increase significantly. Significant increases in these variables can/will have impacts on resources and will need to be address in further detail. | | |
| 2 | General | General | General | DH | FORT Huachuca SJA | Is there a previous EA covering the initial action? | | |
| 3 | iv | FONSI | 32 | DR | Fort Huachuaca ENRD | Range control managers would be required to ensure that all activities are compliant with environmental management plans?? | | |
| 4 | 1-2 | Figure 1.1 | Figure 1.1 | BP | Fort Huachuaca ENRD | The title is confusing on this figure. | | |
| 5 | 2-11 | 2.1.4.2 | General | BP | Fort Huachuaca ENRD | How will the AF coordinate to ensure that training events remain in compliance with DoD hosting agencies BA/BO and other environmental documents? | | |
| 6 | 2-12 | 2.1.4.3 | 1-21 | BP | Fort Huachuca ENRD | Driving off road on FH is prohibited unless closely corrdinated with Range Operations and Environmental. The East Reservation has high UXO potential. | | |
| 7 | 2-15 | 2.1.4.4 | 8 | BP | Fort Huachuaca ENRD | How is avoidance of areas communicated to participants prior to activities? | | |
| 8 | 2-42 | 2.3 | 28-33 | BP | Fort Huachuaca ENRD | There is discussion on obtaining special use permits on non-DoD land to ensure that requirements are met. How will AF coordinate with DoD entities to ensure resource compliance on individual DoD installations? | | |

| EA for the Davis-Monthan Air Force Base Personnel Recovery Training Program<br>Comment Response Matrix | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | 3-5 | 3 | 1-12 | DR | Fort Huachuaca ENRD | EA states: "Soil disturbance would primarily occur within previously disturbed areas." There is no discussion of soil erosion. Large, medium, and small force training, even in sporadic use, will create soil erosion and staying "primarily" within previously disturbed areas means that there will be new ground disturbance, including trampling of vegetation, which will cause soil erosion. | | |
| 10 | 3-5 | 3 | 1-12 | BP | Fort Huachuaca ENRD | How was it determined that there are no soil impacts associated with off road driving? Soils in different regions respond to damage in very different ways. | | |
| 11 | 3.42 | 3.3.2.1.2 | 18 | BP | Fort Huachuaca ENRD | There is no discussion about migratory birds in the document. The sites that were excluded from the biological evaluation certainly have MBTA issues.There are thousands of birds that have protections under the MBTA. Several of those species have the potential to exsist and breed very close to the areas proposed for use on FH. Off road vehicle and foot travel can have an impact on ground nesting species. | | |
| 12 | 4-12 | Biological Resources | 1-34 | DR | Fort Huachuaca ENRD | EA talks about the proposed action and future project being "short-term in nature and sporadic over time" so there are no significant impacts anticipated on biological resources, however, it is not clear how many events will be taking place, nor how many people per event at locations on FH. We may have concerns depending on the location of the event (i.e., G1, G2 and G3 in areas that have not been specifically identified). | | |

| EA for the Davis-Monthan Air Force Base Personnel Recovery Training Program<br>Comment Response Matrix | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 13 | Appendix A | Appendix A | A-2 | DR | Fort Huachuaca ENRD | G1 = Ground Ops – Camping, Bivouacking, and Assembly Area Use; G2 = Ground Ops – Cross-Country Dismounted (Non-Vehicle) Movements; and G3 = Ground Ops – Mounted (Vehicle) Movement/Blackout Driving are indicated at Hubbard, Hubbard (Tombstone), Humor, Libby Airfield, Tombstone Circular and Tombstone Rectangular. Are these ground ops staying within the confines of these areas, or are there plans to go outside these areas (i.e., camping and blackout driving on Libby??) | | |
| 14 | Appendix G | Appendix G | 31 | DR | Fort Huachuaca ENRD | No such thing as a "Mexican Long-nosed Bat." The name is either Mexican Long-Tongued or Lesser Long-Nosed. Term is used throughout the section in ToC and pgs 142-143, as well as other areas of the document, to include the Biological Evaluation. The Lesser Long-nosed bat is no longer a listed species. | | |
| 15 | General | General | General | BP | Fort Huachuca ENRD | How are clean up efforts handled? Is there a plan in place for environmental degradation due to AF training? | | |

**STATE AGENCIES**

STATE OF NEW MEXICO
**DEPARTMENT OF CULTURAL AFFAIRS**
**HISTORIC PRESERVATION DIVISION**

Michelle Lujan Grisham
Governor

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 FAX (505) 827-6338

September 26th, 2019

Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB, Arizona, 85707

*Re: Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Davis-Monthan Air Force Base Personnel Recovery Training Program (HPD Log 111500)*

Dear Mr. Wakefield,

Thank you for sending the State Historic Preservation Officer (SHPO) the above draft EA. The New Mexico SHPO was wondering if it might be possible to use the EA to facilitate the Section 106 process by incorporating language that includes a binding commitment on the part of the Air Force to consult under Section 106 on a case by case basis with the appropriate agency, SHPO and consulting parties in the FONSI. This could eliminate the need to develop a separate MOA or PA to conclude the Section 106 process.

New Mexico SHPO looks forward to working with the Air Force to complete the Section 106 process for this undertaking. Please do not hesitate to contact State Archaeologist Michelle Ensey (michelle.ensey@state.nm.us) or Geoff Cunnar (geoff.cunnar@state.nm.us) if you would like to discuss these comments or the potential development of a PA for this undertaking.

Sincerely,

Geoffrey Cunnar, PhD
Staff Archaeologist
Historic Preservation Division

**ORGANIZATIONS OR INTEREST GROUPS**

**From:** Doug Wolf <DWolf@biologicaldiversity.org>
**Sent:** Tuesday, September 24, 2019 6:07 AM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Cc:** Todd Schulke <TSchulke@biologicaldiversity.org>; Allyson Siwik <allysonsiwik@gmail.com>; patriceontheroad@gmail.com; Peter Russell <peterfrussell@gmail.com>; Susan Beck <smbeck56@gmail.com>; Donna Stevens <director@ugwa.org>
**Subject:** [Non-DoD Source] Draft EA and FONSI for Davis-Monthan Base Personnel Recovery Training Program

Mr. Wakefield,

I just left you a voice message. I am looking for the Draft EA/FONSI captioned above. Please add it to your website so I can download it or send me a link. I cannot find it using the web address in your notice.

Thank you for your assistance,

Douglas W. Wolf
Senior Attorney
Center for Biological Diversity
1411 K St. NW, Suite 1300
Washington, D.C. 20005
202-510-5604

**From:** Patrice Mutchnick <patriceontheroad@gmail.com>
**Sent:** Monday, October 21, 2019 2:03 PM
**To:** WAKEFIELD, KEVIN L GS-11 USAF ACC 355 CES/CEIE <kevin.wakefield.1@us.af.mil>
**Subject:** [Non-DoD Source] EA on Davis Monthon, Personal Recovery-Comments

Hello,
I am developing some comments to respond to the Draft EA.
I'd like to have some questions clarified before the comment period ends on October 26th.

1. My main question is: **Are there any non DOD sites *currently* being used for Recovery Training?**
I am particularly interested in the 11 sites below. The EA does evaluate these sites and the potential impact of training so I am unclear if they are ***CURRENTLY*** being used or if they are being ***PROPOSED*** for use. If they are being used currently for training, is there a way to determine **which of these sites are used and how often?**
**2. Also, given that each of these sites lists the accompanying MOA's and VR route, can we assume that these sites will include support aircraft during the trainings?**
Thank you very much.
Patrice Mutchnick

***Catron County Fairgrounds, Gila NF***
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Glenwood Ranger Station: Same info*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Hannagan Meadow, USFS Helitack Base,*
*Apache Sitgreaves*
*Within Reserve, near Jackal, Jackal Low, Cato, Morenci*
VR-176

*Negritio Airstrip*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Negrito Center,*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Negrito Helibase*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
**VR-176**

*Negrito North*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Negrito South*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Rainy Mesa*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Reserve Ranger Station*
*MOA's within Reserve, near Morenci, Cato-Smitty, Jackal*
VR-176

*Springerville Airport (Reserve, Cato, Smitty), VR176*

October 25, 2019

Mr. Kevin Wakefield
355 CES/CEIE, 3775
South 5th Street
Davis-Monthan AFB, AZ 85707-4927

Via email: kevin.wakefield.1@us.af.mil and USPS

**RE: Davis-Monthan Air Force Base Personnel Recovery Training Program Draft Environmental Assessment and Finding of No Significant Impact**

Dear Mr. Wakefield:

On behalf of the undersigned organizations and individuals, please accept these comments regarding the Davis-Monthan Air Force Base Personnel Recovery Training Program Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI).

In general, it is very difficult to understand the proposed action analyzed by this EA. For example, it is not clear which sites will be locations for large force, medium force or small force personnel recovery (PR) training activities. Will the largest use be in the WSMR and Playas areas only? What proportion will happen on the five Negrito sites, the Reserve sites and the Glenwood site? It is therefore impossible to understand the scale of potential impacts for specific sites and to comprehensively comment on the potential impacts.

We are concerned about PR training activities on 12 potential training sites that affect the Gila Region in New Mexico and Arizona, including Catron County Fairgrounds, Glenwood Ranger Station, Negrito Airstrip, Negrito Center, Negrito Helibase, Negrito North, Negrito South, Rainy Mesa, Reserve Ranger Station, Reserve Airport in New Mexico and Hannagan Meadow and US Forest Service Helitack Base in Apache Sitgreaves National Forest in Arizona.

Use of these sites for PR training could produce negative effects on the environment, to residents, and to visitors. All 12 sites proposed include use of VR-176 and associated Military Operations Areas (MOA), including Morenci, Cato-Smitty or and Reserve. These MOAs include areas within the Gila National Forest that border wilderness areas (Blue Range and Gila Wilderness Areas in New Mexico and Blue Range Primitive Area in Arizona) and are adjacent or within rural communities in southwestern New Mexico.

We believe that an EA is not a sufficient level of analysis to comprehensively analyze the potential impacts of the proposed action. An Environmental Impact Statement should be conducted to more fully assess the range of effects on local communities, public lands and the environment. Although an EA was used to assess the original Angel Thunder proposal, the geographic breadth and expansion of PR training to new sites in this current proposal warrants an EIS.

The draft EA is deficient for the following reasons:

- **Increased Noise** – The EA does not adequately recognize and analyze the impacts of increased noise in communities in which the sites are proposed and the potential negative effect of noise on recreational opportunities.

- **Negative Economic Impacts** – Given the potential impacts of noise and significant disturbance from military operations, the EA fails to realistically consider the negative economic impact of proposed PR training on communities that are reliant on tourism dollars from activities such as hunting, fishing, camping, and hiking.

- **Effects on Public Lands and Wildlife** – The EA does not adequately consider the impact of PR training on adjacent Wilderness Areas, Forest Service land and wildlife habitat.

    - The EA inaccurately asserts that training activities on Forest Service land would not result in any physical disturbance of recreational areas because permits would be approved and no removal of vegetation would occur. However, the EA does not seem to consider on-the-ground impacts of vehicles and large numbers of personnel, as well as the disturbance caused by low flying aircraft.

    - The EA does not sufficiently assess the impact on habitat for the Mexican Spotted Owl at Negrito Airstrip, Negrito Center, Negrito North, and Rainy Mesa by not examining the potential effect of low-level flights that will accompany PR training.

We are particularly concerned about the **cumulative impacts** on the Gila Region of the PR training proposal combined with current and proposed Air Force and Air National Guard training operations in the area.

- For example, the EA neglects to consider the cumulative impacts of additional flights within MOAs in the Gila Region (e.g. Taiwan AFB) already used for F-16 training by the Arizona Air National Guard.

- The EA also omits consideration of the cumulative impact of creating a Combat Search and Rescue (CSAR) Low Altitude Tactical Navigation (LATN) Area (Figure 2.1-4) covering all of central and southwest NM.

- Although NAS Fort Worth Joint Reserve Base is the preferred location for the Air Force Reserve Command F-35-A beddown proposal, Davis-Monthan AFB is a "reasonable alternative." The EA omits the potential cumulative impact of the PR training with this action.

- With the potential establishment of a new MOA (Lobos) over the Gila Region, as proposed by the Holloman Air Force Base Special Use Airspace Optimization Environmental Impact Statement project, the EA neglects to analyze the cumulative impact of adding additional F-16 training flights in the region. We are concerned that the

EA minimizes the cumulative impact of the potential addition of some large portion of 10,000 sorties per year that Holloman needs for F-16 training within the Lobos MOA.

Thank you for your consideration of our comments.

Sincerely,

Todd Schulke, Co-founder and Senior Staff
Center for Biological Diversity

Allyson Siwik, Executive Director
Gila Conservation Coalition

Sally Smith, President
Gila Resources Information Project

Patrice Mutchnick, Director
Heart of the Gila

Donna Stevens, Executive Director
Upper Gila Watershed Alliance

**TRIBAL**

VIEJAS
TRIBAL GOVERNMENT

P.O Box 908
Alpine, CA 91903
#1 Viejas Grade Road
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Phone: 6194453810
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viejas.com

September 30, 2019

Mr. Kevin Wakefield
355 CES/ CEIE,
3775 South 5th Street
Davis- Monthan AFB, AZ 85707-4927

**RE: Davis-Monthan Air Force Base Personnel Recovery Training Program**

Dear, Mr. Wakefield

In reviewing the above referenced project the Viejas Band of Kumeyaay Indians ("Viejas") would like to comment at this time.

The project area may contain many sacred sites to the Kumeyaay people. We request that these sacred sites be avoided with adequate buffer zones.

Additionally, Viejas is requesting, as appropriate, the following:

- All NEPA/CEQA/NAGPRA laws be followed
- Immediately contact Viejas on any changes or inadvertent discoveries.

Thank you for your collaboration and support in preserving our Tribal cultural resources. I look forward to hearing from you. Please call me at 619-659-2312 or Ernest Pingleton at 619-659-2314, or email, rteran@viejas-nsn.gov or epingleton@viejas-nsn.gov, for scheduling. Thank you.

Sincerely,

Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

# AUGUSTINE BAND OF CAHUILLA INDIANS

**PO Box 846 84-481 Avenue 54 Coachella CA 92236**
**Telephone: (760) 398-4722**
**Fax (760) 369-7161**
**Tribal Chairperson: Amanda Vance**
**Tribal Vice-Chairperson: William Vance**
**Tribal Secretary: Victoria Martin**


October 8, 2019

Kevin Wakefield
U. S. Air Force
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB
Arizona 85707

RE: **Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) For the Davis-Monthan Air Force Base Personnel Recovery Training Program**

Dear Mr. Wakefield-

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project, and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources has resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time, we are unaware of specific cultural resources that may be affected by the proposed project, however in the event you should discover any cultural resources during the development of this project please contact our office immediately for further evaluation.

Very truly yours,

Augustine Band of Cahuilla Indians

Victoria Martin
Tribal Secretary

# RINCON BAND OF LUISEÑO INDIANS

**Cultural Resources Department**

One Government Center Lane · Valley Center, California 92082 ·
(760) 297-2635 Fax:(760) 749-8901


October 17, 2019

Mr. Kevin Wakefield
355 CES/CE IE
Davis-Monthan AFB, AZ 85707-4927

**Re: Davis-Monthan Air Force Base Personnel Recovery Training Program**

Dear Mr. Wakefield,

This letter is written on behalf of the Rincon Band of Luiseño Indians. We have received your notification regarding the above referenced project and we thank you for the opportunity to consult and comment on the Draft EA. Identified locations within the Territory of the Luiseño people, and also within Rincon's specific area of Historic interest, are Camp Pendleton, March AFB, and possible PR training sites on San Clemente Island, all located in California.

Embedded in the Luiseño territory are Rincon's history, culture and identity. As mentioned in our email from July 9, 2019, in particular the area of Camp Pendleton in California, is considered by the Rincon Band to be a Traditional Cultural Place (TCP) within a Traditional Cultural Landscape (TCL), as it is associated with the traditional practices. Please provide access to the 2008 SOCAL EIS/OEIS and 2018 HSTT EIS/OIS (pg. 3-136) regarding EAs for San Clemente Island.

We request consultation at this time in order to learn more about the project and any potential impacts to cultural resources, implementation/reviews of mitigation measures, and to explore the opportunity to enter a Programmatic Agreement.

If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 297-2635.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Cheryl Madrigal
Cultural Resources Manager
Rincon Cultural Resources Department


| Bo Mazzetti | Tishmall Turner | Steve Stallings | Laurie E. Gonzalez | Alfonso Kolb |
|---|---|---|---|---|
| Tribal Chairman | Vice Chairwoman | Council Member | Council Member | Council Member |

**GENERAL PUBLIC**

Mr. Kevin Wakefield
355 CES/CEIE
3775 South 5th Street
Davis-Monthan AFB
AZ 85707-4927

Dear Mr. Wakefield,

**RE: COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE DAVIS-MONTHAN AIR FORCE BASE PERSONNEL RECOVERY TRAINING PROGRAM**

**Socioeconomic Impact**

The socioeconomic analysis was facile, focusing only on a limited number of fee-based recreational sites and USFS recreational revenue generated for each national forest impacted by proposed military training operations. No detailed consideration was given regarding tour operators bringing clients seeking wilderness, fishing or hunting experiences, or independent travelers. Lost revenue for businesses that benefit from tourism, such as gas stations, restaurants, lodging (day-trip and pass-through tourists), and other local businesses is totally disregarded. Although the proposed action is in Catron County, the socioeconomic impact on adjacent counties such as Grant County, a gateway to the Gila National Forest, the Gila Wilderness, and the Gila Cliff Dwellings, was completely ignored. Rural livelihoods and communities count on tourist revenue.

The impact of military ground training activities on hikers, campers, and hunters encountering these operations or avoiding coming to the Gila all together was given short shrift. The impact on tourism of military jets flying over the forest was inadequately considered, i.e., "the degree of an incremental noise impact… is considered minor and would not appreciably impact the DNL levels on… proposed PR training sites over time." In fact, there is *no* mention of the Gila Wilderness even though Figure 2.1-2 indicates a significant portion is within the 'military operations area,' nor is there any analysis of the impact of military flights overhead on this country's first-designated wilderness, tourism, or wildlife –*a major oversight*. Tourists visit the Gila National Forest (including the Gila Wilderness) throughout the year with peak periods, which is not considered in the draft environmental assessment. The socioeconomic impact of the proposed action on rural communities is sorely lacking. We strongly recommend a more thorough and thoughtful analysis.

And finally, there is no analysis of the cumulative impact of additional proposed F-16 training flights in the area (i.e., Holloman Air Force Base Special Use Airspace Optimization EIS project). With up to 10,000 proposed sorties annually, this is critical.

Sincerely,

[redacted]
Silver City, NM