Draft
Environmental Assessment for Personnel Recovery Update Davis-Monthan Air Force Base, Arizona

June 2025

United States Department of the Air Force
355th Wing
Davis-Monthan Air Force Base, Arizona

PRIVACY ADVISORY

This Environmental Assessment (EA) is provided for public comment in accordance with the *National Environmental Policy Act* (NEPA) and 32 CFR Part 989, *Environmental Impact Analysis Process (EIAP)*.

The EIAP provides an opportunity for public input on Department of Air Force (DAF) decision-making, allows the public to offer inputs on alternative ways for the DAF to accomplish what it is proposing, and solicits comments on the DAF's analysis of environmental effects.

Public commenting allows the DAF to make better, informed decisions. Letters or other written or oral comments provided may be published in the EA. As required by law, comments provided will be addressed in the EA and made available to the public. Providing personal information is voluntary. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meetings or hearings or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA; however, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the EA.

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DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI)
PERSONNEL RECOVERY UPDATE – DAVIS-MONTHAN AFB, ARIZONA

In accordance with the *National Environmental Policy Act of 1969* (42 *United States Code* § 4321 et seq.) (NEPA), as amended by the *Fiscal Responsibility Act of 2023* (Public Law 118-5) (FRA); the United States (US) Department of the Air Force (DAF) NEPA regulations at Title *32 Code of Federal Regulations* Part 989, *Environmental Impact Analysis Process (EIAP)*, to the extent they are consistent with NEPA as revised by the FRA; and Executive Order 14154, *Unleashing American Energy* (20 January 2025), the DAF prepared the attached Environmental Assessment (EA) to address the potential environmental consequences associated with multiple personnel recovery (PR) training and activities to enhance readiness of forces at Davis-Monthan Air Force Base (DMAFB).

Purpose and Need

The purpose of the Proposed Action is to provide real-world training and enhance readiness of forces operating out of DMAFB. PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due to the lack of available, appropriate training sites. Due to environmental changes caused by forest fires in the Southwest, some of the sites covered in the *Personnel Recovery 2020 EA* are not currently usable. In order to address these limitations, DMAFB is proposing to identify additional sites that can be used to support the training activities. Further, additional landing zones (LZs) and drop zones (DZs) for Pararescue, HH-60, A-10, and C-130 aircraft operations are needed to provide a wider range of site selection, specifically closer to DMAFB. This would include austere and semi-improved landing strips (dirt/pavement) for takeoff and landings and Forward Arming and Refueling Points (FARP) operations.

Description of Proposed Action and Alternatives

Under the Proposed Action, the DAF is proposing to improve PR training conducted throughout the Tucson region. Improvements would involve increasing suitable training site access and expanding training activities at some sites. Currently, there are 175 PR training sites already evaluated under the 2020 EA that may be utilized during PR training. Under the Proposed Action in this EA, six 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 involves the following activities:

- Establishment of two helicopter landing zones (HLZs) and Pararescue training areas within the Coronado National Forest: the Mount Lemmon/Windy Vista Summer training area and the Redington Pass training area;
- Establishment of a dirt landing strip on the Willcox Playa;
- Establishment of the Sentinel DZ in Marana, Arizona;
- Establishment of HLZs, fixed-wing LZs, and DZs at the Shi-Ka-She Training Complex in St. David, Arizona; and
- Establishment of the Benson DZ at Benson Municipal Airport in Benson, Arizona.

No Action Alternative

Under the No Action Alternative, no additional training sites, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of available, appropriate training sites.

While the No Action Alternative would not satisfy the purpose of and need for the Proposed Action, this alternative is retained to provide a comparative baseline against which to analyze the environmental effects

of the Proposed Action. The No Action Alternative serves as a benchmark for the evaluation of the Proposed Action.

Summary of Findings

Potentially affected environmental resources were identified through communications with state and federal agencies and review of past environmental documentation. Specific environmental resources with the potential for environmental consequences include airspace, air quality, noise, cultural resources, biological resources, land use, earth resources, and safety.

Airspace
No significant effects to airspace would be expected to result from implementation of the Proposed Action. No existing Special Use Airspace would be utilized as part of the Proposed Action nor would any airspace be modified. Airspace management in the Tucson area would not be impacted by the Proposed Action.

Air Quality
No effects to air quality would be expected to result from implementation of the Proposed Action. The estimated total annual emissions of the Proposed Action would not exceed the *de minimis* or Prevention of Significant Deterioration permitting thresholds for any criteria pollutant or precursor. The proposed net changes in criteria pollutants and/or precursors would be less than the indicator of significance threshold of 250 tons per year for all the criteria pollutants and 25 tons per year for lead.

While emissions for all pollutants would increase at the six training sites with implementation of the Proposed Action, the net changes are less than the *de minimis* thresholds. Because the emissions associated with the Proposed Action are below the General Conformity *de minimis* thresholds, the requirements of the General Conformity Rule are not applicable, as documented in the detailed air conformity analysis performed for this EA and available in the Project Administrative Record.

Noise
The Proposed Action would introduce new military noise sources and increase the overall noise levels at all six training sites. However, as there are no nearby residences at the six training sites or other noise-sensitive receptors, these noise impacts would be expected to be negligible.

Cultural Resources
No significant effects to cultural resources would be expected to result from implementation of the Proposed Action. No ground-disturbing activities are included as part of the Proposed Action. No cultural resources listed or eligible for listing in the National Register of Historic Places have been identified within four of the six training sites. The Proposed Action would not impact archaeological sites, historic properties, or Native American Traditional Cultural Properties.

Biological Resources
For five of the six sites, the DAF has determined that the Proposed Action would not affect any threatened or endangered species. Critical habitat for the Mexican spotted owl has been designated in the Santa Catalina and Rincon mountains, which includes the Mount Lemmon site. If the Mexican spotted owl is present, the proposed helicopter training operations and land navigation training could cause the species to avoid these areas, affecting daily activities, movement, and breeding behavior, resulting in direct, short-term effects to the species. However, helicopter training flights would last approximately 45 minutes and would occur about six times annually. With the identification of specific areas to avoid and maintaining an appropriate buffer distance during the Mexican spotted owl nesting season, implementation of the Proposed Action at the Mount Lemmon HLZ training site may affect but not likely adversely affect the Mexican spotted owl.

Land Use
Under the Proposed Action, PR training activities would occur on training sites that are both publicly and privately owned. All activities would occur within the proposed training site to minimize interaction with the public. All PR training activities would comply with the special use permits issued by either the US Forest Service or local governments and would be consistent with existing land use. In addition, the proposed PR training activities would not restrict the ability of individuals to use or access recreational areas. Noise would temporarily increase to non-significant levels during training activities. Implementation of the Proposed Action at the six training sites would not result in significant impacts to land use.

Earth Resources
The Proposed Action would result in minimal disturbance at the six training sites and would not result in substantial alteration of underlying geologic conditions or the disturbance of soils. Implementation of the Proposed Action at the training sites would not impact earth resources.

Safety and Occupational Health

Ground Safety
Although the Proposed Action involves PR training activities that inherently include risks to safety, PR personnel are properly trained to train in these environments, and ground crews are used to ensure that the general public is not exposed to any ground safety risks resulting from PR training activities. The proposed PR training activities would prepare PR personnel for deployment, resulting in beneficial impacts. Therefore, implementation of the Proposed Action and exposure to short-term, adverse ground safety risks would result in long-term, beneficial impacts to military personnel safety.

Flight Safety
Safety personnel at DMAFB regularly train and prepare for flight safety incidents. The types of PR training that would occur at the new sites are currently ongoing with no new types of flight operation activities that would induce additional flight safety risks. With the established crash response program and implementation of all applicable DAF Office of Safety and Health and Occupational Safety and Health Administration requirements, no significant impacts to flight safety would be expected to occur from the Proposed Action. Likewise, no significant impacts to flight safety would be expected with implementation of flight safety rules and bird/wildlife-aircraft strike hazard procedures.

Cumulative Impacts

This EA considered cumulative impacts that could result from the incremental impact of the Proposed Action when added to other past, present, or reasonably foreseeable environmental trends and planned actions within the six training sites. When considered in conjunction with other past, present, and reasonably foreseeable environmental trends and planned actions at the six training sites, no significant adverse cumulative effects are expected to occur with implementation of the Proposed Action.

Mitigation

The EA analysis concluded that the Proposed Action would not result in significant environmental impacts; therefore, no mitigation measures are required. Best management practices are described and recommended in the EA where applicable.

Conclusion

Finding of No Significant Impact. After review of the EA prepared in accordance with the requirements of NEPA and the EIAP, and which is hereby incorporated by reference, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment. Accordingly, an Environmental Impact Statement will not be prepared. This decision was made after considering all submitted information, including a review of agency comments submitted during the 30-day public comment period, and considering a full range of practical alternatives that meet project requirements and are within the legal authority of the DAF.

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TBD DATE

COVER SHEET

Draft Environmental Assessment
Personnel Recovery Update
Davis-Monthan Air Force Base, Arizona

a. *Responsible Agency: United States Department of the Air Force*

b. *Location: Davis-Monthan Air Force Base, Arizona*

c. *Designation: Draft Environmental Assessment*

d. *Point of Contact: Barbara Long, Department of the Air Force, barbara.long.3@us.af.mil*

Abstract:

This Environmental Assessment (EA) has been prepared in accordance with the *National Environmental Policy Act of 1969* (42 *United States Code* § 4321 et seq.) (NEPA), as amended by the *Fiscal Responsibility Act of 2023* (Public Law 118-5) (FRA); the United States (US) Department of the Air Force (DAF) NEPA regulations at Title *32 Code of Federal Regulations* Part 989, *Environmental Impact Analysis Process (EIAP)*, to the extent they are consistent with NEPA as revised by the FRA; and Executive Order 14154, *Unleashing American Energy* (20 January 2025). EIAP informs decision-makers, regulatory agencies, and the public about a DAF proposed action before any decision is made on whether to implement the action. Potentially affected environmental resources were identified in coordination with local, state, and federal agencies. Specific environmental resources with the potential for environmental consequences include airspace, air quality; noise, cultural, biological, and earth resources; land use; and safety and occupational health.

This EA evaluates the potential impacts from personnel recovery (PR) training and activities to enhance readiness of forces at Davis-Monthan Air Force Base (DMAFB). DMAFB previously evaluated PR training and activities at locations throughout the southern Arizona region in the *Final Environmental Assessment for the Davis-Monthan AFB Personnel Recovery Training Program* dated January 2020. The DAF is now proposing to establish new helicopter landing zones, landing zones, drop zones and full-mission profile training locations. The Proposed Action includes the establishment of two training areas within the Coronado National Forest, designated the Mt. Lemmon/Windy Vista Summer Training Area and the Redington Pass Training Area.

The purpose of the Proposed Action is to provide real-world training and enhance readiness of forces operating out of DMAFB.

PR training events that are critical for joint readiness and strengthening multi-national partnerships are limited due to the lack of available, appropriate training sites. Due to environmental changes caused by forest fires in the Southwest, some of the sites covered in the 2020 EA are not currently usable. In order to address these limitations, DMAFB is proposing to identify additional sites that can be used to support the training activities. Further, additional landing and drop zones for Pararescue, HH-60, A-10, and C-130 aircraft operations are needed to provide a wider range of site selection specifically closer to DMAFB. This would include austere and semi-improved landing strips (dirt/pavement) for takeoff and landings and Forward Arming and Refueling Points operations.

The analysis of the affected environment and environmental consequences of implementing the Proposed Action concluded that by implementing standing environmental protection measures and best management practices, there would be no significant adverse impacts to the environmental resources in the Proposed Project areas. Further, significant cumulative impacts would not be anticipated from activities associated with the Proposed Action when considered in combination with the effects of other past, present, and reasonably foreseeable future projects in the region.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

2020 EA	Final Environmental Assessment for the DMAFB Personnel Recovery Training Program
563 RQG	563rd Rescue Group
355 WG	355th Wing
ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AFSEC	Air Force Safety Center
AGL	above ground level
AMSL	above mean sea level
APE	Area of Potential Effects
AQCR	Air Quality Control Region
ASL	above sea level
ATS	Air Traffic Service
ATV	all-terrain vehicle
BASH	bird/wildlife-aircraft strike hazard
BGEPA	Bald and Golden Eagle Protection Act
CAA	Clean Air Act
CEJC	Community of Environmental Justice Concern
CFR	Code of Federal Regulations
CO_2e	carbon dioxide-equivalent
COC	Community of Comparison
CT	Census Tract
DAF	Department of the Air Force
DAFI	Department of the Air Force Instruction
DAFPD	Department of the Air Force Policy Document
DAFMAN	Department of the Air Force Manual
DMAFB	Davis-Monthan Air Force Base
DNL	Day-Night Sound Average Level
DoD	United States Department of Defense
DOPAA	Description of Proposed Action and Alternatives
DZ	drop zone
DZSO	Drop Zone Safety Officer
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 Arming and Refueling Points
FMP	full-mission profile
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FRA	Fiscal Responsibility Act of 2023
ft	feet/foot
ft^2	square foot/feet
GES	Generalized Terrestrial Ecosystem
GHGs	Greenhouse gases
HAP	hazardous air pollutant
HLZ	helicopter landing zone
IBA	Important Bird Area
IPaC	Information for Planning and Consultation
lbs	pounds
IR	Institutional reserve
LZ	landing zone

MBTA	Migratory Bird Treaty Act
MEA	minimum enroute instrument flight rule altitude
MOA	military operations area
MTR	military training route
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NEPA	National Environmental Policy Act
NFSR	National Forest System Road
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
ppm	parts per million
PR	personnel recovery
PSD	Prevention of Significant Deterioration
RH	Rural homestead
ROI	Region of Impact
RU-4	Rural Zoning; minimum parcel size of 4 acres
RT	Rural Transition
SAIAQCR	Southeast Arizona Interstate Air Quality Control Region
SEL	Sound Exposure Level
SHPO	State Historic Preservation Office
SIP	state implementation plan
SMU	Soil Map Unit
SOW	Special Operations Wing
SUA	special use airspace
sUAS	small unmanned aerial systems
TCP	Traditional Cultural Property
tpy	tons per year
$\mu g/m^3$	micrograms per cubic meter
US	United States
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound
VR	visual flight rule military training route

CHAPTER 1 PURPOSE AND NEED FOR ACTION

The United States (US) Department of the Air Force (DAF) prepared this Environmental Assessment (EA) in accordance with the *National Environmental Policy Act of 1969* (42 *United States Code* [USC] § 4321 et seq.) (NEPA), as amended by the *Fiscal Responsibility Act of 2023* (Public Law 118-5) (FRA); the DAF NEPA regulations at Title 32 *Code of Federal Regulations* (CFR) Part 989, *Environmental Impact Analysis Process (EIAP)*, to the extent they are consistent with NEPA as revised by the FRA; and Executive Order (EO) 14154, *Unleashing American Energy* (20 January 2025). EIAP informs decision-makers, regulatory agencies, and the public about a DAF proposed action before any decision is made on whether to implement the action.

The information presented in this EA serves as the basis for deciding whether the Proposed Action and Alternatives would result in a significant impact to the human or natural environment, requiring the preparation of an Environmental Impact Statement (EIS), or whether no significant impacts would occur, in which case a Finding of No Significant Impact (FONSI) would be prepared.

1.1 INTRODUCTION

Davis-Monthan Air Force Base (DMAFB) previously evaluated personnel recovery (PR) training and activities at locations throughout the southern Arizona region in the *Final Environmental Assessment for the DMAFB Personnel Recovery Training Program* (2020 EA) (DMAFB, 2020). The DAF is now proposing to establish new helicopter landing zones (HLZs), landing zones (LZs), drop zones (DZ) and full-mission profile (FMP) training locations. The new LZs and operations would provide real-world training and enhance readiness of forces operating out of DMAFB.

PR activities are a DAF Service Core Function. US Department of Defense (DoD) Directive 3002.01E, *Personnel Recovery*, identifies this as “one of the highest priorities of the DoD,” and tasks Service Chiefs with this responsibility. The DAF’s goal is to quickly return friendly forces to duty, while denying adversaries a source of intelligence and political exploitation. This is achieved via utilizing a range of military operations. PR forces may engage in combat search and rescue 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 the Nation’s allies during peacetime, as well as rescue operations during natural disasters.

PR ground forces include Pararescue Specialists; Combat Rescue Officers; Survival, Evasion, Resistance, and Escape Specialists; and other uniquely trained support personnel. These ground forces are known as Guardian Angels, the ground element of the DAF Rescue triad, with specially configured HH-60 helicopters and HC-130 cargo planes comprising the other two parts of the triad.

1.2 BACKGROUND

DMAFB is located 5 miles south-southeast of downtown Tucson, Arizona (**Figure 1-1**). It was established in 1925 as Davis-Monthan Landing Field. The host unit for DMAFB is the 355th Wing (355 WG) assigned to the Air Combat Command’s Fifteenth Air Force. The Base is best known as the location of the DAF’s Materiel Command’s 309th Aerospace Maintenance and Regeneration Group, the aircraft “boneyard” for all excess military and US government aircraft and aerospace vehicles.

The 355 WG provides A-10 Thunderbolt II close air support to ground forces worldwide. The 355 WG is also a host unit, providing medical, logistical, mission, and operational support to all assigned units. The 355 WG is the sole formal training unit for the A-10 aircraft, providing initial and recurrent training to all DAF A-10 pilots, including those in the DAF Reserve Command and the Air National Guard.

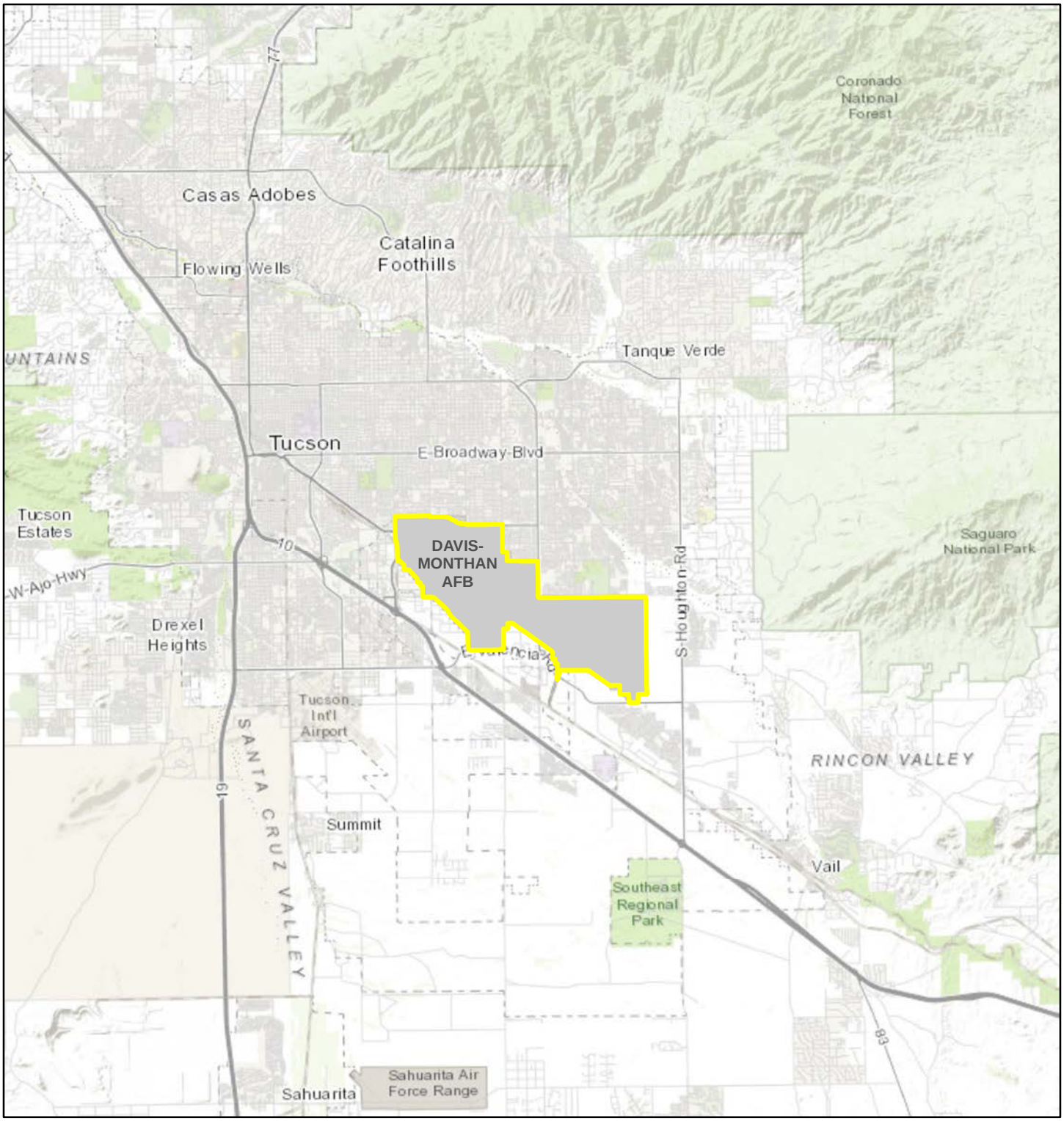

FIGURE 1-1
Regional Overview

Installation Boundary

N

0 4.5 Miles

Coordinate System: WGS 1984 UTM Zone 12N

The 563rd Rescue Group (563 RQG) is one of two rescue groups operating out of DMAFB. The 563 RQG is under the operational control of the 355 WG at Davis- Monthan AFB and falls under Air Combat Command. The 563 RQG directs flying operations for one of only two active-duty DAF rescue groups dedicated to PR. The 563 RQG is responsible for training and readiness of one HC-130 squadron, one HH-60 squadron, three Pararescue squadrons, and an operations support squadron operating from two geographically separate locations: DMAFB, Arizona, and Nellis AFB, Nevada.

1.3 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to provide real-world training and enhance readiness of forces operating out of DMAFB.

PR training events that are critical for joint readiness and strengthening multi-national partnerships, are limited due to the lack of available, appropriate training sites. Due to environmental changes caused by forest fires in the Southwest, some of the sites covered in the 2020 EA are not currently usable. In order to address these limitations, DMAFB is proposing to identify additional sites that can be used to support the training activities. Furthermore, additional LZs and DZs for Pararescue, HH-60, A-10, and C-130 aircraft operations are needed to provide a wider range of site selection, specifically closer to DMAFB.

1.4 SCOPE OF THE ENVIRONMENTAL ANALYSIS

This EA evaluates the potential environmental consequences of implementing the Proposed Action and Alternatives, including the No Action Alternative. This EA has been prepared in accordance with NEPA and the EIAP. NEPA ensures that environmental information, including the anticipated environmental consequences of a Proposed Action, is available to the public, federal agencies, state agencies, tribal governments, and the decision-maker before decisions are made and before actions are taken.

The EA is organized into the following sections:

- Chapter 1, Purpose and Need for the Proposed Action, includes an introduction and background on the project, purpose and need statements, scope of the EA, intergovernmental coordination and public and agency participation, public and agency review of the EA, and the decision to be made.
- Chapter 2, Description of the Proposed Action and Alternatives, includes a description of the Proposed Action, selection standards for alternative selection, a description of the alternatives being analyzed, a description of the alternatives considered but eliminated from detailed analysis, and a summary of potential environmental consequences in tabular form.
- Chapter 3, Affected Environment and Environmental Consequences, includes a description of the framework for the EA analysis, explains the resources eliminated for detailed analysis, and analyzes the natural and man-made environments within and surrounding DMAFB and the airspace that may be affected by the Proposed Action and Alternatives. This chapter includes a discussion of direct, indirect, and cumulative impacts.
- Chapter 4, List of Preparers, provides a list of the preparers of this EA.
- Chapter 5, References, contains references for studies, data, and other resources used in the preparation of this EA.
- Appendices, as required, provide relevant correspondence, studies, modeling results, and public review information.

1.5 INTERGOVERNMENTAL COORDINATION AND PUBLIC AND AGENCY PARTICIPATION

The EIAP includes public and agency review of information pertinent to a proposed action and alternatives. The DAF's compliance with the requirement for intergovernmental coordination, and public and agency

participation, begins with the scoping[1] process. Accordingly, and per EO 12372, *Intergovernmental Review of Federal Programs*, the DAF notified federal, state, and local agencies and tribal governments with jurisdiction that could potentially be affected by the Proposed Action and Alternatives via written correspondence throughout development of this EA. A mailing list of the recipients of this correspondence as well as a sample of the outgoing letters and all responses are included in **Appendix A**.

1.5.1 Government-to-Government Consultation

The *National Historic Preservation Act* (54 USC § 300101 et seq.) (NHPA) and implementing regulations at 36 CFR Part 800 direct federal agencies to consult with federally recognized Native American tribes when a Proposed Action or Alternatives may have an effect on tribal lands or on properties of religious and cultural significance to a tribe. Consistent with the NHPA, DoD Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, and DAF Instruction (DAFI) 90-2002, *Interactions with Federally Recognized Tribes*, the DAF invited federally recognized tribes that are historically affiliated with lands in the vicinity of the Proposed Action and Alternatives to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation and requires separate notification to all relevant tribes. The timelines for tribal consultation are distinct from those of NEPA consultation. The DMAFB point of contact for Native American tribes is the DMAFB Cultural Resources Manager. The point of contact for consultation with the Tribal Historic Preservation Officer and the Advisory Council on Historic Preservation is the DMAFB Cultural Resources Manager.

1.5.2 Agency Consultations and Coordination

Implementation of the Proposed Action involves coordination with several organizations and agencies. Compliance with Section 7 of the *Endangered Species Act of 1973*, as amended (16 USC § 1531 et seq.) (ESA), and implementing regulations (50 CFR Part 402) requires communication with the US Fish and Wildlife Service (USFWS) and/or National Oceanic and Atmospheric Administration National Marine Fisheries Service. On 22 May 2025, the DAF initiated Section 7 consultation under the ESA for the Proposed Action using the USFWS's Information for Planning and Consultation (IPaC) tool. Basic information concerning the location and nature of the projects included in the Proposed Action was entered into IPaC to obtain an official species list from the USFWS. The list identifies threatened and endangered species, other protected species (e.g., migratory birds), and critical habitat with potential to be affected by the Proposed Action. This information is included in **Appendix A** and incorporated into this EA where applicable.

The DAF also coordinated with the following local, state, and Federal Government agencies regarding potential effects from the Proposed Action and Alternatives:

- NHPA Section 106 compliance – State Historic Preservation Office;
- Air and water quality effects – Pima County Department of Environmental Quality and Arizona Department of Environmental Quality; and
- Habitat and species of concern – Arizona Game and Fish Department and USFWS

1.6 Public and Agency Review of Environmental Assessment

As required by NEPA and its implementing regulations, preparation of an environmental document, as well as public and agency review, must precede final decisions regarding the proposed project and be available to inform decision-makers of the potential environmental impacts. Therefore, the DAF invites the public and other interested stakeholders to review and comment on the Draft EA and Draft FONSI. Accordingly, a Notice of Availability of the Draft EA and Draft FONSI were published in the *Arizona Daily Star* to commence a 30-day public comment period.

[1] Scoping is a process for determining the extent of issues to be addressed and analyzed in a NEPA document.

During the public comment period, the Draft EA and Draft FONSI will be made available online for view or download at https://www.dm.af.mil/About-DM/Environmental-Stewardship. Additionally, printed copies of the Draft EA and Draft FONSI are available upon request (see Cover Sheet) and placed at the following Tucson area libraries for review:

- Eckstrom-Columbus Branch Library, 4350 East 22nd Street
- Quincie Douglas Library, 1585 East 36th Street

1.7 DECISION TO BE MADE

Based on the analysis in this EA and comments received from the public and interested stakeholders, the DAF will make one of three decisions regarding the Proposed Action:

1) choose to implement the Proposed Action or Alternatives and sign a FONSI, allowing implementation of the Preferred Alternative;
2) initiate preparation of an EIS, if it is determined that implementation of the Proposed Action and Alternatives would cause significant impacts to the human and natural environment; or
3) select the No Action Alternative, whereby the Proposed Action would not be implemented.

Should the DAF decide to implement the Proposed Action, this EA will identify any actions the DAF will commit to undertake to minimize environmental effects and comply with NEPA.

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CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 OVERVIEW OF THE PROPOSED ACTION

Under the Proposed Action, the DAF is proposing to improve PR training conducted throughout the Tucson region. Improvements would involve increasing suitable training site access and expanding training activities at some sites. Currently, there are 175 PR training sites already evaluated under the 2020 EA that may be utilized during PR training. Under the Proposed Action in this EA, six 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 involves the following activities with locations shown in **Figure 2-1**:

- Establishment of two HLZs and Pararescue training areas within the Coronado National Forest: the Mount Lemmon/Windy Vista Summer training area and the Redington Pass training area;
- Establishment of a dirt landing strip on the Willcox Playa;
- Establishment of the Sentinel DZ in Marana, Arizona;
- Establishment of HLZs, fixed-wing LZs, and DZs at the Shi-Ka-She Training Complex in St. David, Arizona; and
- Establishment of the Benson DZ at Benson Municipal Airport in Benson, Arizona.

2.1.1 Description of General Training Activities

The PR training activities are centered out of DMAFB 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.

Established LZs are utilized as part of PR training activities. The LZ sites include paved runways or unpaved runways that have been graded and cleared of vegetation by landowners through regular land management activities. Low-level helicopter insertions/extractions involve flying helicopters 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. Forward Arming and Refueling Points (FARP) training could occur at LZs suitable for fixed-wing aircraft. FARPs are used to effectively refuel aircraft in remote locations when air-to-air refueling is not possible or when fueling stations are not accessible. 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.

PR training encompasses parachute operations. Parachute operations include day and night extractions as well as infiltration, evasion, and exfiltration activities. During such training activities, Pararescue Specialists parachute into a remote location to rescue simulated injured personnel. Once secured, they arrange for retrieval of the injured and Pararescue Specialists by ground vehicle or via helicopter at an approved HLZ. During the exercises, equipment is airdropped by parachute and recovered by parachutists or ground party personnel. PR training conducts 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 DZs. During parachute training, personnel deploy from the airdrop platforms typically between altitudes of 800 feet above ground level (AGL) and 25,000 feet above mean sea level (AMSL) into the designated area, and equipment is dropped between altitudes of 150 feet and 6,000 feet AGL.

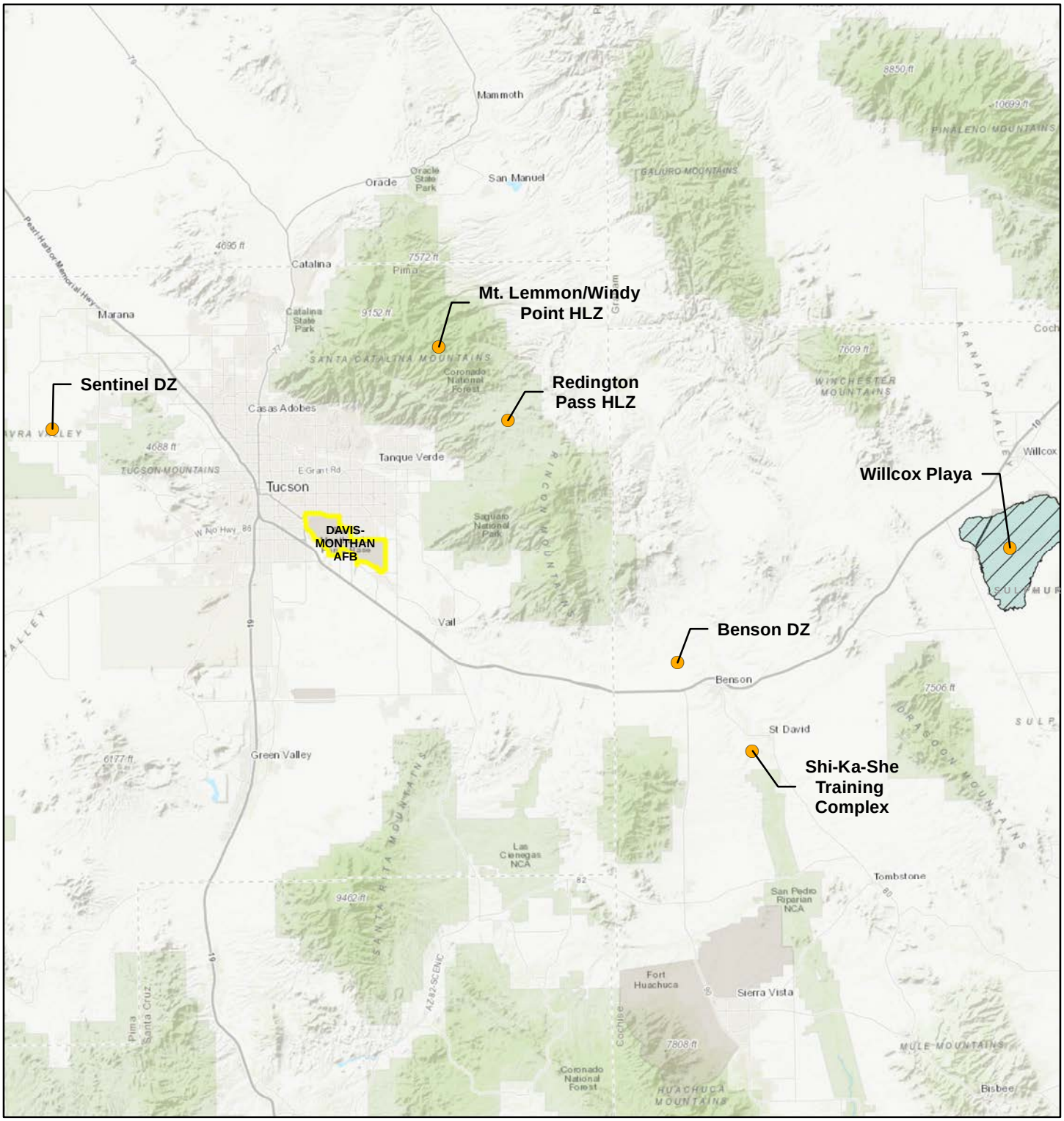


FIGURE 2-1
Regional Overview of Training Site Locations

Training Site Location

Installation Boundary

Willcox Playa

N

0 20 Mile

Coordinate System: WGS 1984 UTM Zone 12N

DZ = Drop Zone; HLZ = Helicopter Landing Zone

An FMP goes through a basic mission set that Pararescue Operators would experience in a combat or non-combat environment. Example scenarios include a pilot that is shot down and needs to be rescued or a local hiker that is lost and has been found hurt at the bottom of a cliff. The exercise would involve a team being inserted by helicopter (using an established HLZ/DZ) or via trucks or all-terrain vehicles (ATV) on a road. The Pararescue Operators, while in full kit (i.e., camouflage uniforms, helmets, radios, ruck sacks, rubber weapons or real weapons that fire blanks), would navigate to the individual and prepare that individual for extraction. During the exercise, the Pararescue Operators could encounter a medical scenario because they are combat paramedics and would be expected to treat the patient on site. The scenario could involve a hoist of the team/patient out of the area into a helicopter or extraction via trucks or ATVs. Certain scenarios would require the use of small unmanned aerial systems (sUAS) Group 1–2 for reconnaissance of the Initial Point, route to the Initial Point, and potential hazards to the Pararescue Operators.

Land navigation training is basic map and compass overland movement using point to point navigation or terrain navigation. Training would occur during both the day and night. Students are instructed for two days with the basics of land navigation and are then evaluated by navigating to green ammo cans with a shaped holepunch inside.

High-angle ropes training teaches high-angle rope evacuation techniques. Students and instructors wear civilian clothes and have little contact with the civilian populace visiting the area. All students and instructors commute to and from the training site from DMAFB.

2.1.2 Description of Site-Specific Training Activities

The following sections describe the locations of the additional HLZ, LZs, and DZs under the Proposed Action. Graphical illustrations of the locations are provided in **Figures 2-2–2-7** at the end of the section.

2.1.2.1 Coronado National Forest Sites

The Proposed Action would establish two additional HLZs and training areas for FMP and sUAS activities on US Forest Service (USFS) lands: one to support FMP training at Redington Pass and one to support the Mount Lemmon Instructor/Student Camp near Windy Point. (**Figures 2-2** and **2-3**).

Redington Pass HLZ

Redington Pass HLZ would support FMP training, with approximately six helicopter training operations occurring annually. The maximum altitude for rescue training is 500 ft AGL. Each helicopter operation would last an average of 45 minutes.

In order to project realism for FMP, propane cannons, ground burst simulators, and blanks could be used to simulate gun fire to change the teams' actions for combat-related scenarios. The teams would travel along USFS roads, adhering to strict guidelines, and would be used only in the Redington Pass training area on USFS lands to minimize interaction with civilians. Local fire restrictions would directly impact the use of propane cannons and ground burst simulators. Approximately 10,000 blanks would be fired annually at this HLZ.

Land navigation training would be conducted in the Redington Pass training areas during the cooler months. Training frequency would consist of 4 days of training, up to 20 times per year, for 30 participants. High-angle rope training would take place in the vicinity of Redington Pass. Land navigation training would occur within the larger training area shown in **Figure 2-2**.

sUAS training would be conducted in the Redington Pass training areas with sUAS Groups 1 and 2 and operate at an altitude below 1,000 ft AGL. This training is necessary for rescue operations to simulate enhanced capability employment for extending the rescue force's ability to support isolated personnel. Training frequency would consist of 5 days of training, up to 20 times per year, for 20 participants. sUAS training would occur within the larger training area shown in **Figure 2-2**.

Mount Lemmon HLZ

The Mount Lemon HLZ would support the instructor/student camp near Windy Point. Approximately six helicopter training operations would occur annually. The maximum altitude for rescue training is 500 ft AGL. Each helicopter operation would last an average of 45 minutes.

Land navigation training would be conducted at the Mount Lemmon site during the summer months. Training frequency would consist of approximately 4 days of training, up to 20 times per year, for up to 30 participants. High-angle rope training would take place in the vicinity of Windy Point on Mount Lemmon. Land navigation training would occur within the larger training area shown in **Figure 2-3**.

Similar to the Redington Pass HLZ, blanks also could be used to make simulate gun fire during training. Approximately 10,000 blanks would be fired annually at this HLZ.

sUAS Group 1 or 2 would be used at the HLZ with operating altitudes below 1,000 ft AGL. Training frequency would consist of approximately 5 days of training, up to 20 times per year, for up to 20 participants. sUAS training would occur within the larger training area shown in **Figure 2-3**.

2.1.2.2 Willcox Playa

The Willcox Playa and additional LZs/DZs would be used for helicopter and HC-130 aircraft operations, as well as helicopter landing training. This action would require dirt landing strips on the Willcox Playa. These landing strips would be used for takeoffs and landings and FARP operations (**Figure 2-4**). The Willcox Playa DZ would be used up to 120 times per year by the HC-130 and approximately 4 times per year by the HH-60.

Equipment to be airdropped in support of training activities would consist of platforms weighing approximately 5,000 pounds (lbs), bundles weighing approximately 700 lbs, sandbags weighing approximately 30 lbs, and personnel. To conduct LZ operations, a ground crew from the squadron would be physically present at the LZ. This would include a DoD-certified Landing Zone Control Officer to ensure the safety of the aircraft and crew. HC-130 operations would be limited to four or fewer landings per seven calendar days (annual maximum of 208 landings) due to reduced fire-fighting capabilities at the LZ. Other ground operations at the LZ would include onloading and offloading of personnel and equipment, such as vehicles and Pararescue Operators.

2.1.2.3 Sentinel DZ

The Sentinel DZ is located in Marana, Arizona, approximately 6 miles from the Marana Regional Airport. This site was not included in the 2020 EA evaluation. The site is approximately 1,738 yards long by 1,072 yards wide, for a total area of 384.94 acres (**Figure 2-5**).

The Sentinel DZ would support helicopter Pararescue Specialist jump operations approximately 2 times per year and would involve only overflight. HC-130 operations would occur a maximum of 125 uses per year. Contract aircraft, most likely C-23 Sherpas and Skyvans, would perform a maximum of 45 flyovers annually. Equipment to be airdropped in support of training activities would consist of platforms weighing approximately 5,000 lbs, bundles weighing approximately 700 lbs, sandbags weighing approximately 30 lbs, and personnel. DZ operations would include airdrops of personnel and equipment normally between 150 ft AGL and 25,000 ft AMSL.

A ground safety team would be required for all drops and would include a DoD-certified Drop Zone Safety Officer (DZSO). A medical team also would be required for personnel drops. Operations would occur during periods of both daylight and darkness and would include multiple passes across the DZ. All ground crew operations would be coordinated with airfield operations prior to use of the DZ.

2.1.2.4 Shi-Ka-She Training Complex

Seven DZs and five HLZs for training activities would be established within the Shi-Ka-She Training Complex. This site would be used for helicopter landing training and Pararescue Specialist support

approximately 2 times per year (**Figure 2-6**). One fixed-wing LZ would be established within the training complex to be used for FARP operations up to 6 times per year (3 each day and night) for approximately 4 hours each occurrence. Training primarily would occur in the western portion of the complex, with the North and South training areas primarily used as egress points on existing roads.

2.1.2.5 Benson DZ

Located at the Benson Municipal Airport, the Benson DZ is approximately 37 acres in size. Ground and parachute training for rescue personnel would occur within the DZ, as described in **Section 2.1.1** (**Figure 2-7**).

HC-130 aircraft would perform a maximum of approximately 5 flyovers annually. Operations at Benson DZ would include airdrops of personnel and equipment normally between 800 feet AGL and 25,000 AMSL. A ground safety team would be required for all drops, including a DoD-certified DZSO and a medical team for personnel drops. DZ operations normally occur one to 2 times per week but could be more frequent when training to prepare for a deployment or exercise. There would be the potential for Benzon DZ to be utilized for Pararescue Specialist jump training support, which would involve a maximum of 1 flyover-only operation per year.

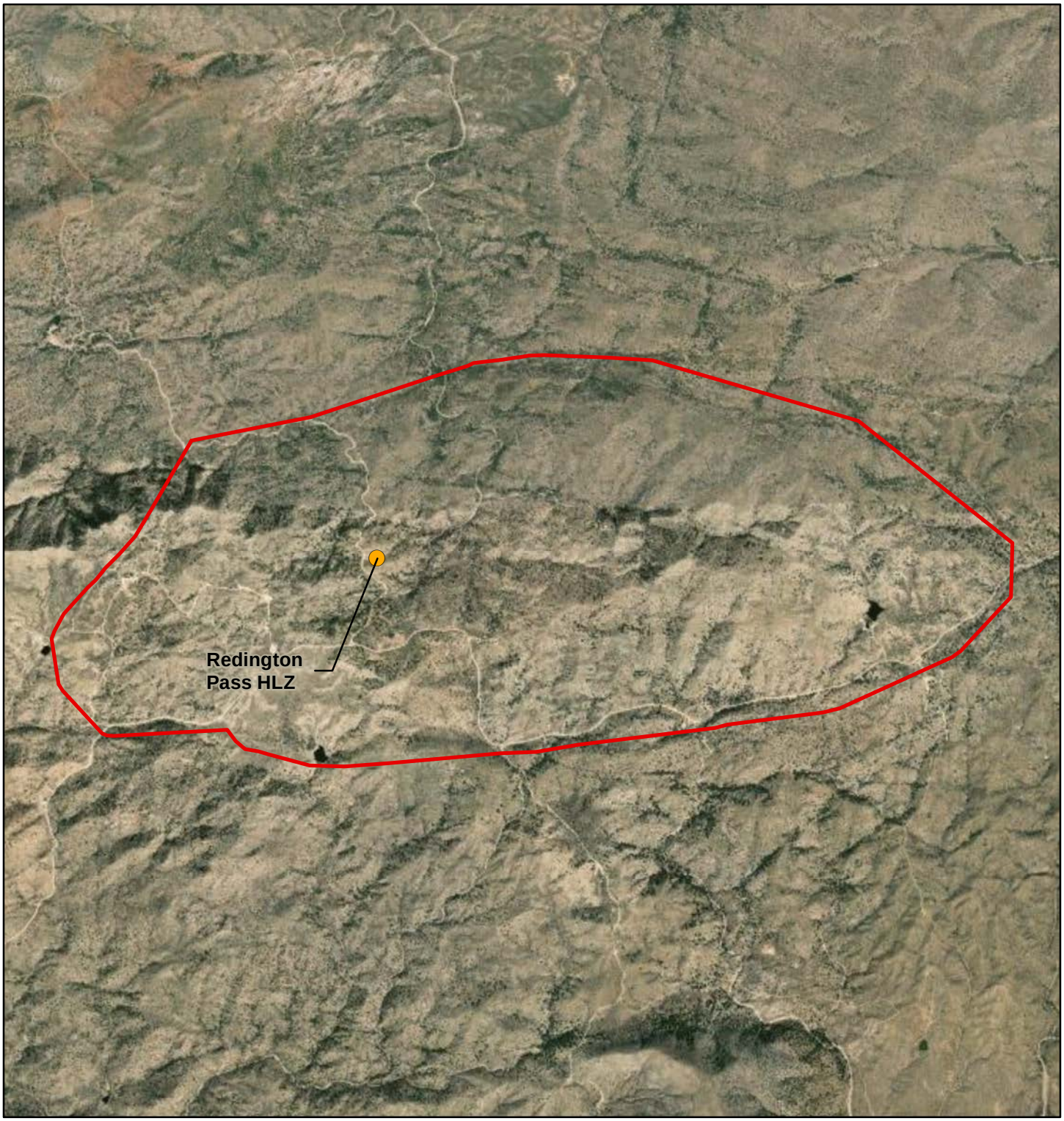


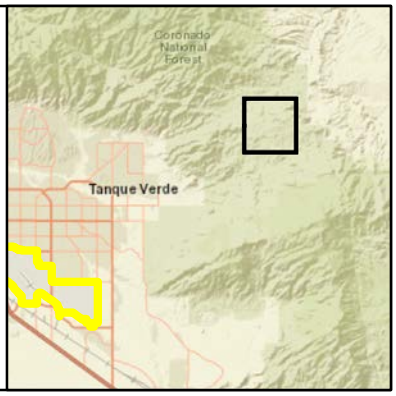
FIGURE 2-2
Redington Pass Training Site

Redington Pass HLZ
Training Use Area

N

0 0.5 Miles

Imagery: Maxar 2022, 2023
Coordinate System: WGS 1984 UTM Zone 12N



HLZ = Helicopter Landing Zone

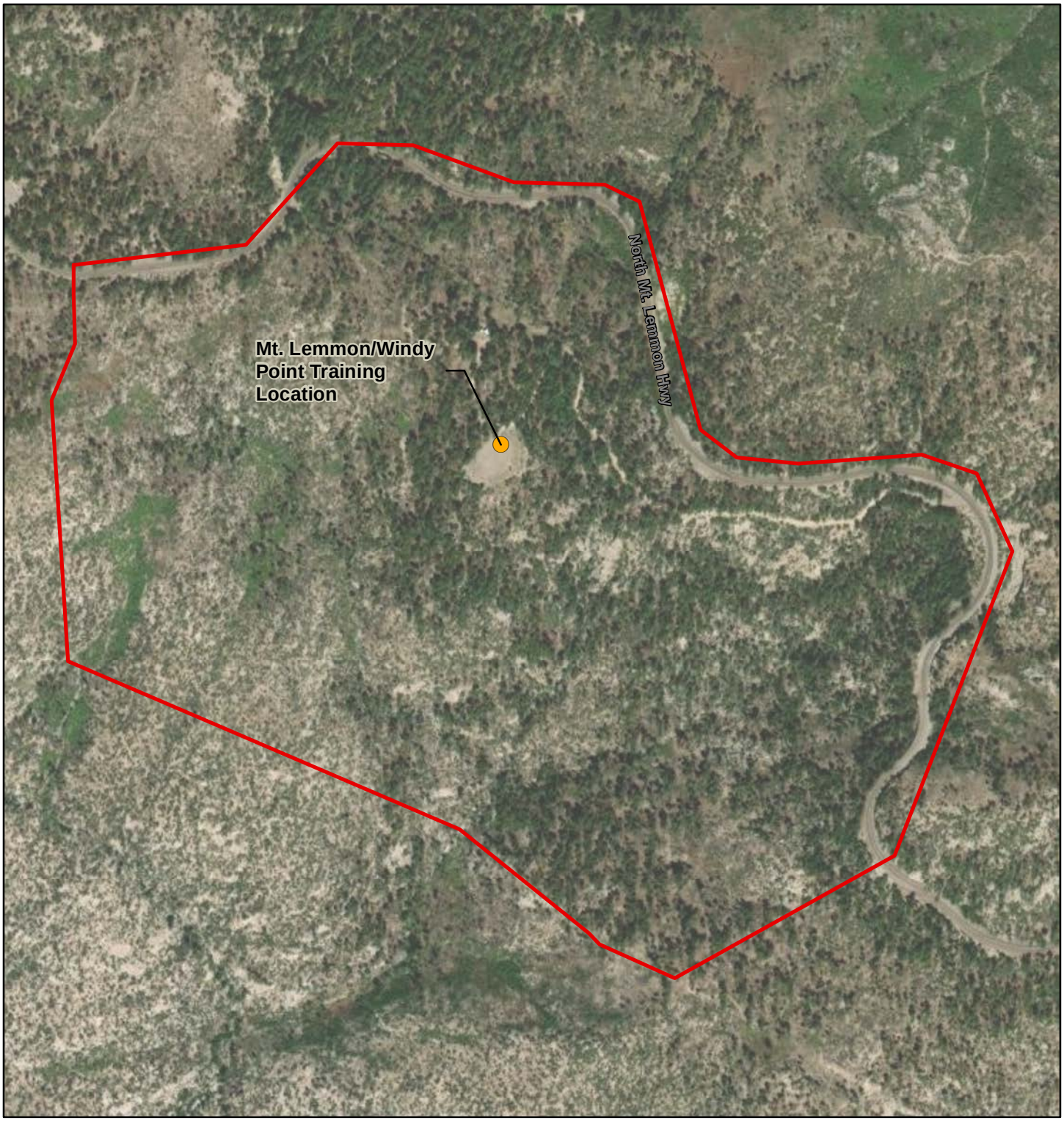


FIGURE 2-3
Mt. Lemmon/Windy Point Training Site

Mt. Lemmon HLZ
Training Use Area

N

0 1,000 Feet

Imagery: ESRI, 2021
Coordinate System: WGS 1984 UTM Zone 12N

HLZ = Helicopter Landing Zone

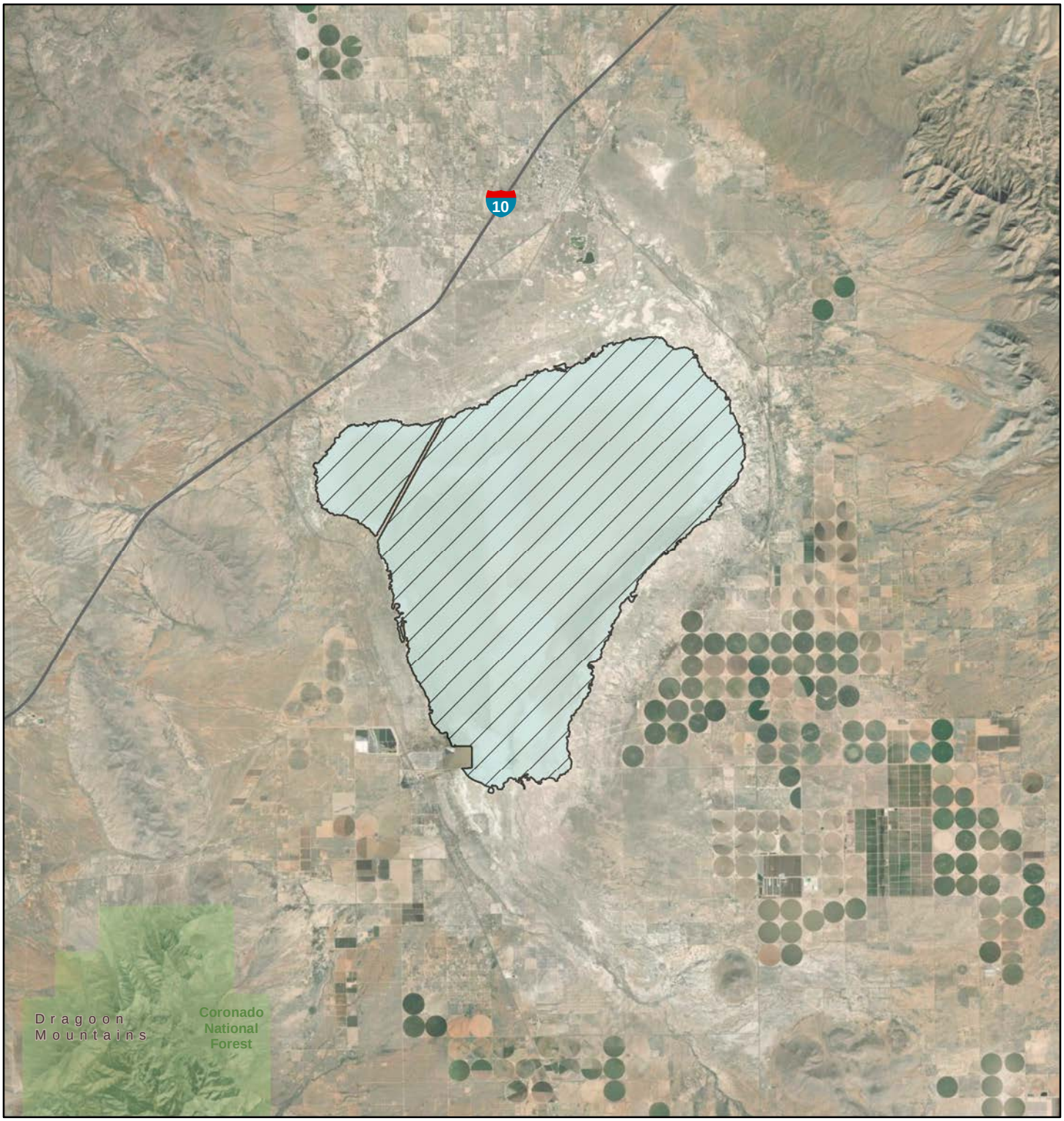


FIGURE 2-4
Willcox Playa Training Site

Willcox Playa

N

0 5 Miles

Imagery: Maxar 2022, 2023, 2024
Coordinate System: WGS 1984 UTM Zone 12N

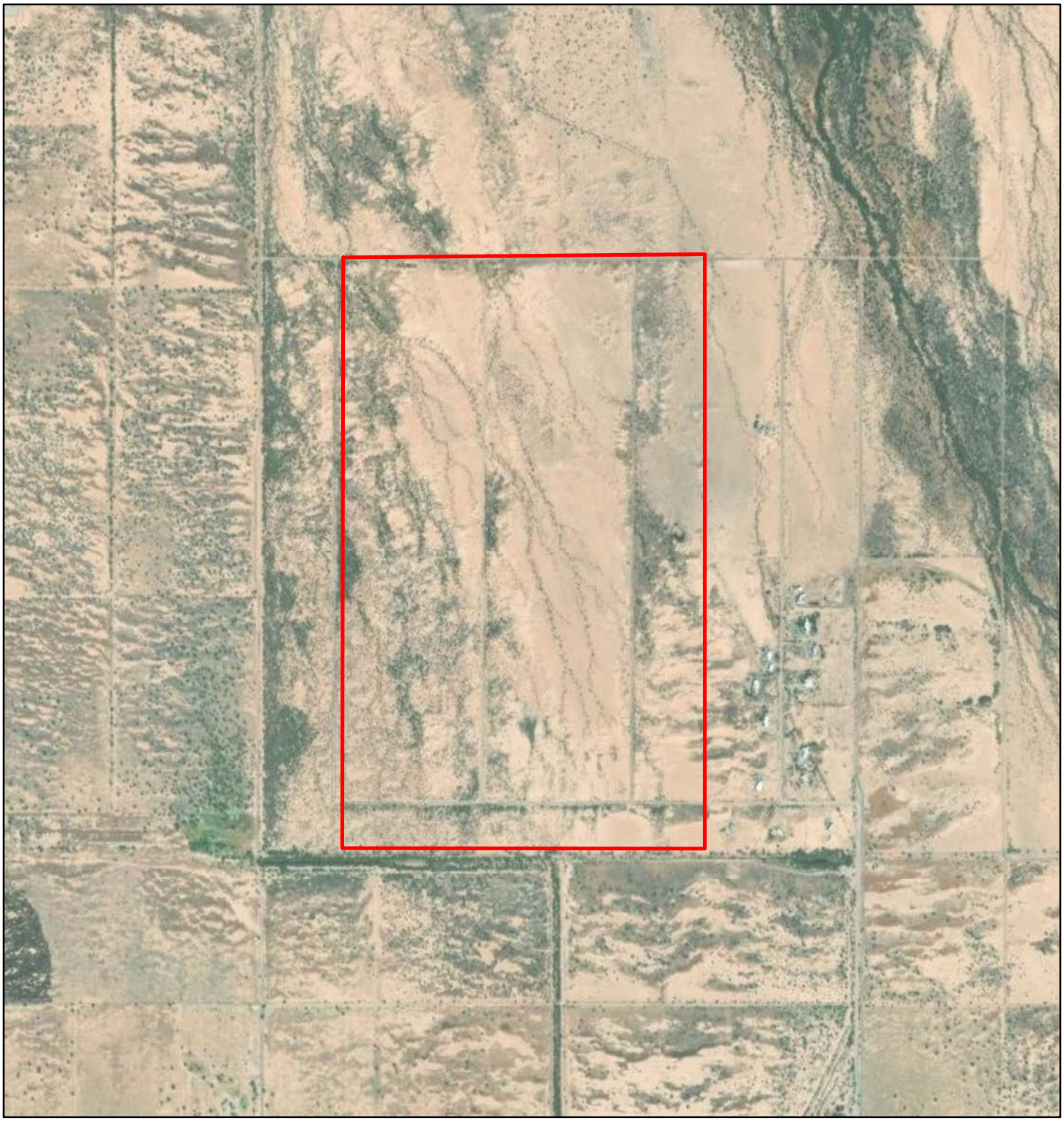


FIGURE 2-5
Sentinel Drop Zone Training Site

Sentinel DZ

N

0 0.5 Miles

Imagery: Maxar, 2023
Coordinate System: WGS 1984 UTM Zone 12N

DZ = Drop Zone

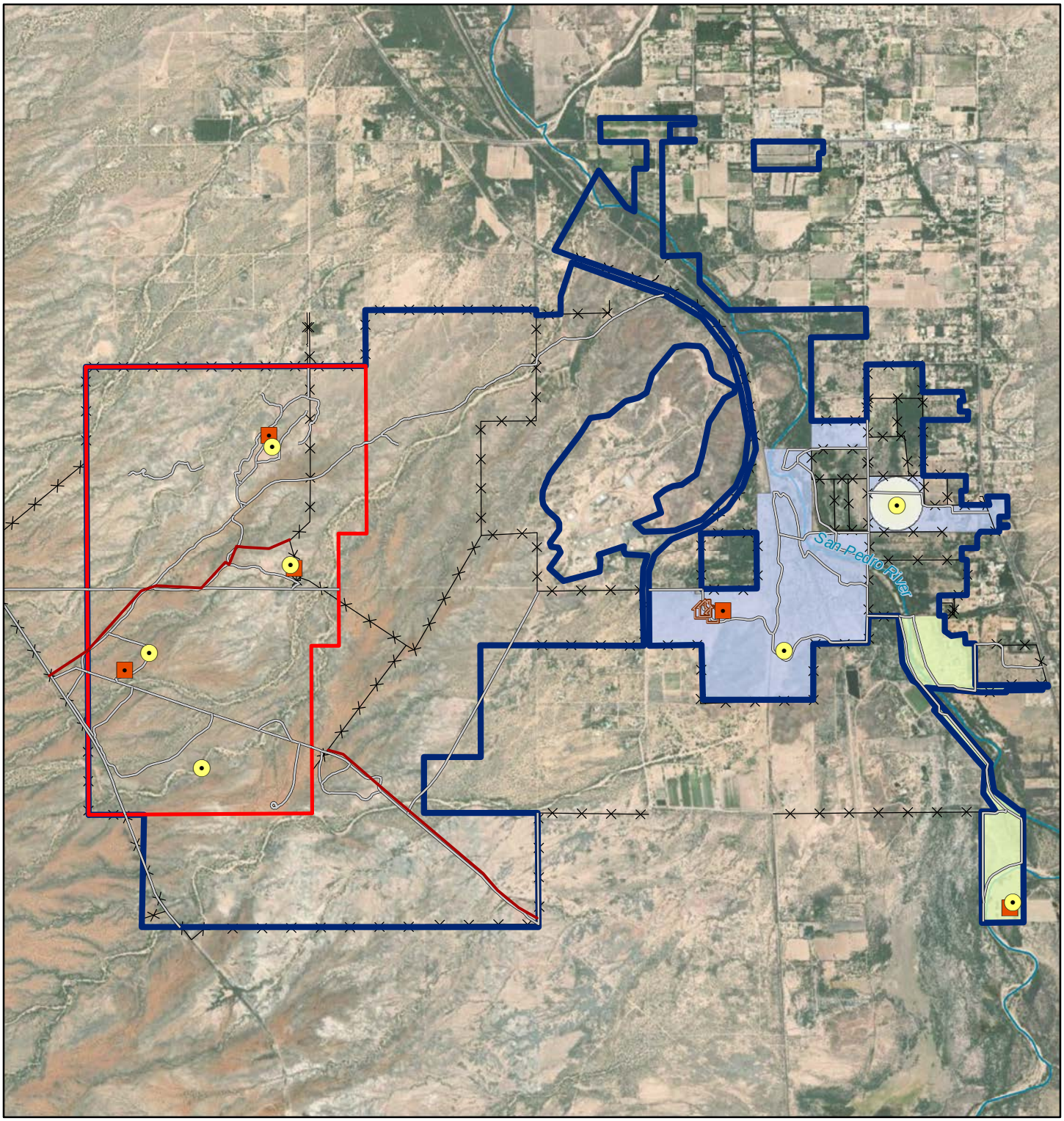


FIGURE 2-6
Shi-Ka-She Training Complex

DZ
HLZ
Eder Assault Buildings
Existing Fence
Ranch Roads
2025 Fence Install
FMP Training Area
Ranch Boundary
North River Training Area
South River Training Area
Thomas 23 DZ

N
0
1 Mile

Imagery: Maxar, 2023
Coordinate System: WGS 1984 UTM Zone 12N

DZ = Drop Zone; FMP = Full Mission Profile; HLZ = Helicopter Landing Zone

FIGURE 2-7
Benson Drop Zone Training Site

Benson DZ

N

0 1,000 Feet

Imagery: Maxar, 2024
Coordinate System: WGS 1984 UTM Zone 12N

DZ = Drop Zone

2.2 SELECTION STANDARDS FOR ALTERNATIVE SCREENING

Consistent with 32 CFR § 989.8, selection standards were developed to establish a means for determining the reasonableness of an alternative to the Proposed Action and whether an alternative should be carried forward for further analysis in the EA. Potential alternatives to the Proposed Action were evaluated based on universal selection standards, which were applied to all alternatives. In accordance with 32 CFR § 989.8(c), the following selection standards meet the purpose of and need for the Proposed Action and were used to identify reasonable alternatives for analysis in the EA. The alternative must:

1) 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, and the type of equipment and facilities available;
2) accommodate the number of personnel and the number and types of aircraft (e.g., HH-60, HC-130) involved in the training scenario;
3) be available to schedule for training; and
4) provide a reasonable travel timeframe to DMAFB, while still providing operational utility in order to optimize use of limited resources (e.g., fuel, time, personnel).

2.3 DESCRIPTION OF ALTERNATIVES

NEPA regulations mandate the consideration of reasonable alternatives to the Proposed Action. "Reasonable alternatives" are those that could be utilized to meet the purpose of and need for the Proposed Action. Alternatives were considered for each of the proposed projects. The NEPA process is intended to support flexible, informed, decision-making; the analysis provided by this EA and feedback from stakeholders will inform decisions made about whether, when, and how to execute the Proposed Action. Among the alternatives evaluated for each project is a No Action Alternative, which evaluates the potential consequences of not undertaking the Proposed Action and serves to establish a comparative baseline for analysis.

This section presents reasonable and practicable alternatives for projects where multiple, viable courses of action exist. Each alternative was assessed against the selection standards above and tabulated for applicability.

2.3.1 Preferred Alternative

The Preferred Alternative would establish all training areas, HLZs, LZs, DZ, and landing strips as described under **Section 2.1**.

2.3.2 No Action Alternative

Under the No Action Alternative, no additional training sites, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of availability of appropriate training sites.

While the No Action Alternative would not satisfy the purpose of and need for the Proposed Action, this alternative is retained to provide a comparative baseline against which to analyze the environmental effects of the Proposed Action. The No Action Alternative serves as a benchmark for the evaluation of the Proposed Action.

2.4 ALTERNATIVE ACTIONS ELIMINATED FROM FURTHER CONSIDERATION

Two other alternatives were evaluated, but both were eliminated from further consideration because they did not meet the selection standards for the Proposed Action as outlined above.

2.4.1 Fort Huachuca Assault Landing Strip

The Fort Huachuca Assault Landing Strip would be used for LZs/DZs for helicopter operations, A-10 operations, and C-130 operations. These austere landing strips (dirt) would be used for takeoff and landings and FARP operations. The Fort Huachuca Assault Landing Strip is too short to be used by A-10 aircraft for landing and takeoff operations; therefore, this alternative would not satisfy Selection Standards 1 and 2.

2.4.2 The Williams Auxiliary Airfield 6

The Williams Auxiliary Airfield 6 at Gila Bend, Arizona, would be used for C-130 assault landing practice. Due to the condition of the airfield, it could not be used for A-10 operations. The airfield is controlled by Luke AFB, which could present a scheduling issue. Therefore, this alternative would not satisfy Selection Standards 1, 2, and 3.

2.5 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 2-1 summarizes the potential impacts under the Preferred Alternative and the No Action Alternative. The summary is based on information discussed in detail in **Chapter 3** of this EA and includes a concise definition of the issues addressed and the potential environmental impacts associated with each alternative.

Table 2-1
Summary of Environmental Consequences

Resource Area	Preferred Alternative	No Action Alternative
Airspace	Under the Proposed Action, no impacts to airspace would be expected.	Under the No Action Alternative, no impacts to airspace would be expected.
Air Quality	Under the Proposed Action, impacts to air quality would be negligible.	Under the No Action Alternative, no impacts to air quality would be expected.
Noise	Under the Proposed Action, no impacts to noise would be expected.	Under the No Action Alternative, no impacts to noise would be expected.
Cultural Resources	Under the Proposed Action, no impacts to cultural resources would be expected.	Under the No Action Alternative, no impacts to cultural resources would be expected.
Biological Resources	Under the Proposed Action, no impacts to biological resources would be expected.	Under the No Action Alternative, no impacts to biological resources would be expected.
Land Use	Under the Proposed Action, no impacts to land use would be expected.	Under the No Action Alternative, no impacts to land use would be expected.
Earth Resources	Under the Proposed Action, no impacts to earth resources would be expected.	Under the No Action Alternative, no impacts to earth resources would be expected.
Public Health and Safety	Under the Proposed Action, no impacts to safety would be expected.	Under the No Action Alternative, no impacts to safety would be expected.

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CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 FRAMEWORK FOR ANALYSIS

To provide a framework for the analyses in this EA, the DAF defined a study area specific to each resource or sub-resource area. Referred to as a Region of Influence (ROI), these areas delineate a boundary where possible effects from the considered alternatives would have a reasonable likelihood to occur. Beyond these ROIs, potential adverse effects on resources would not be anticipated. For the purposes of analysis, impacts are described as follows:

- **Beneficial –** positive effects that improve or enhance resource conditions
- **Adverse –** negative or harmful results
- **Negligible –** effects likely to occur but at levels not readily observable by evaluation
- **Minor –** observable, measurable, tangible effects qualified as below one or more significance threshold(s)
- **Moderate –** tangible effects that are readily apparent, qualified as below one or more significance threshold(s)
- **Significant –** obvious, observable, verifiable effects qualified as above one or more significance threshold(s); not mitigable to below significance

When relevant to the analyses in this EA, potential effects are further defined as direct or indirect; short- or long-term; and temporary, intermittent, or permanent. Based upon the nature of the Proposed Action and the affected environment, both qualitative and quantitative thresholds were used as benchmarks to qualify effects. Further, each resource analysis section (i.e., **Sections 3.4–3.11**) concludes with a cumulative effects analysis that considers the effects on the environment that result from the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the project area. **Table 3-1** briefly describes the proposed or planned projects identified for consideration of potential cumulative impacts when combined with the effects of the Proposed Action on a regional scale.

Table 3-1
Past, Present, and Reasonably Foreseeable Actions

Name	Description	Timeframe	Location
Federal Projects			
Permanent Playas Special Use Airspace (SUA)	Establishment of an SUA in the form of a permanent Playas MOA and Air Traffic Control-Assigned Airspace above Playas, New Mexico.	Activity Ongoing (NEPA review completed)	140 miles from DMAFB
Personnel Recovery Training EA (2020 EA)	Personal recovery training for regular DAF, Army, Navy, and US Marine Corps units; special forces; and other federal and state agencies. The training program involves ground, water, and flight/airspace activities. The Personal Recovery Program is centered out of DMAFB.	Activity Ongoing	At DMAFB and Surrounding MOAs
Davis-Monthan Multiple Development Projects EA	Various short-, mid-, and long-term phase area development plan projects at DMAFB, including munitions storage.	Activity Ongoing (timeframe: 2–5 years)	At DMAFB
492nd Special Operations Wing (492 SOW) Beddown EIS	Proposed relocation of the 492 SOW from Hurlburt Field, Florida, to DMAFB and transition from a support wing into a power projection wing. Includes proposed retirement of all A-10 aircraft at DMAFB, including the 357 FS and 47 FS.	Active NEPA (timeframe: 2–5 years)	At DMAFB
Regional Special Use Airspace Optimization EIS	Optimization of 10 existing MOAs used by aircrews stationed at DMAFB, Luke AFB, and Morris ANGB in Arizona. The MOAs proposed for optimization include Tombstone, Outlaw, Jackal, Reserve, Morenci, Bagdad, Gladden, Sells, Ruby, and Fuzzy.	Active NEPA (timeframe: 3–10 years)	Surrounding MOAs
Non-Federal Projects			
Willcox Playa Lithium Mine Project	Exploratory drilling for lithium on 3,754 acres on the eastern side of the Playa.	Ongoing	Willcox Playa
Benson Airport Terminal Construction	Development of a terminal at Benson Municipal Airport is currently in the planning and permitting stage.	Future activity (3–5 years)	Benson Municipal Airport

AFB = Air Force Base; ANGB = Air National Guard Base; MOA = Military Operations Area; NEPA = National Environmental Policy Act; SOW = Special Operations Wing; SUA = special use airspace

3.2 RESOURCES ELIMINATED FROM DETAILED ANALYSIS

The DAF considered the resources in relation to the six training locations defined in **Section 2.1.2** in deciding to eliminate or carry forward a resource for analysis.

No construction activities or increase in personnel would occur as part of the Proposed Action, so no impacts to socioeconomics, infrastructure, transportation, or utilities would occur. Water resources were eliminated from detailed analysis because the Proposed Action does not have the potential to cause impacts to this resource. No increase in hazardous waste or materials would occur under the Proposed Action.

3.3 RESOURCES CARRIED FORWARD FOR DETAILED ANALYSIS

Based on the results of internal and external scoping (see **Section 1.5**), the following resources were carried forward for analysis: land use; air quality and climate change (including greenhouse gas); noise; geological and soil, water, biological, and cultural resources; infrastructure (including utilities, traffic, and transportation); hazardous and toxic materials and waste; and human health and safety.

3.4 AIRSPACE

3.4.1 Definition of the Resource

Airspace management and use considers how airspace is designated, used, and administered in a manner that best accommodates the individual and common needs of the military, commercial, general aviation and other users of the airspace.

In the US, the FAA manages and controls airspace. The FAA is solely responsible for developing plans and policy for the use of airspace and for managing airspace in such a manner that it ensures the safety of flight and that all users of the National Airspace System (NAS) can operate in a safe, secure, and efficient manner (49 USC § 40103(b)). The FAA considers multiple and sometimes competing demands for airspace in relation to airport operations, Air Traffic Service (ATS) routes, military training airspace, and other special needs to determine how the NAS can best be structured to address all user requirements.

The DoD requests airspace from the FAA and schedules and uses airspace in accordance with the processes and procedures detailed in DoD Directive 5030.19, *DoD Responsibilities on Federal Aviation, and FAA regulations*. Procedures governing the use of training areas and airspace operated and controlled by the DAF are included in DAF Policy Directive (DAFPD) 13-2, *Air Traffic, Airfield, Airspace and Range Management*, and its implementing regulations. The DAF manages airspace in accordance with processes and procedures detailed in DAF Manual (DAFMAN) 13-201, *Airspace Management*.

FAA Order 1050.1F (issued July 16, 2015), *Environmental Impacts: Policies and Procedures*, provides FAA policy and procedures for implementing the provisions of the NEPA, Department of Transportation Order 5610.1C, *Procedures for Considering Environmental Impacts*, and other related statutes and directives.

Figures 2-2 through **2-7** show the training sites under consideration. The areas surrounding these sites make up the ROI for this airspace analysis.

3.4.1.1 Airspace Classification

Airspace is a three-dimensional resource defined by latitude, longitude, and altitude. There are six classes of airspace – A, B, C, D, E (controlled airspace), and G (uncontrolled airspace) – that are available to all civilian and military users (FAA, 2024a). **Figure 3-1** displays examples of these classifications. The airspace classes dictate pilot qualification requirements, rules of flight that must be followed, and the type of equipment necessary to operate within that airspace.

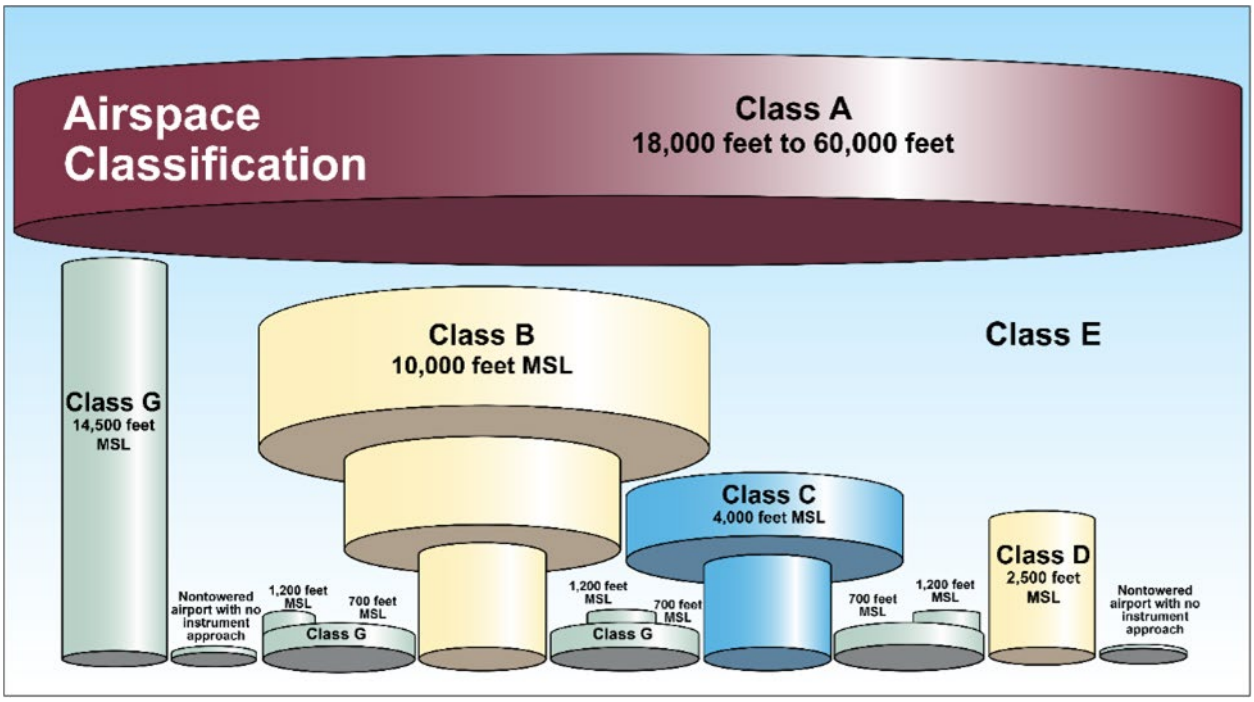


Figure 3-1 Airspace Classification

3.4.2 Existing Conditions

Table 3-2 below provides information for each of the public and private airports in the ROI of the proposed PR training sites. These airports and their proximity to the sites are depicted in **Figure 3-2**. The airport operations data provided in **Table 3-2** was obtained from the FAA Terminal Area Forecast for aviation activity in 2023. The Redington Pass HLZ and Mount Lemmon HLZ training sites have no private or public airports in the vicinity. All the proposed PR training sites are located outside the boundaries of the DMAFB and Tucson International Airport Class C Airspace. The closest site to this Class C Airspace would be the Redington Pass HLZ, approximately 17 nautical miles (nm) northeast of DMAFB.

3.4.2.1 Military Training Routes and Air Traffic Service Routes

There are six ATS routes in the vicinity of the proposed PR training sites: V-66 (northwest), V-16, T-310, T-306, V-105, and J-2 (**Figure 3-2)**. All of these ATS routes flow through the San Simon VOR approximately 83 nm east of DMAFB, and the minimum enroute instrument flight rule altitude (MEA) for the routes ranges from 6,500 feet to 18,000 feet AMSL. An MEA is the lowest published altitude between two navigation aids that assures acceptable navigation signal coverage and meets obstacle clearance requirements. The published MEA is not indicative of the actual altitude aircraft will use on any given ATS route (FAA, 2024a).

There are five visual flight rule military training routes (VR) in the vicinity of the proposed PR sites: VR-259, VR-260, VR-267, VR-268, and VR-269 (**Figure 3-2)**. Operations in a VR are conducted only when the weather conditions are equal to or greater than minimum visual flight rule requirements. The Willcox Playa DZ training site is located within the vertical and lateral limits of VR-259, where the route altitude is between 700 feet and 15,000 feet AGL. VR-259 and VR-260 are managed and scheduled by the 162nd Operations Support Squadron, and VR-267, VR-268, and VR-269 are managed and scheduled by Training Air Wing Two at Naval Air Station Kingsville, Texas. Schedule deconfliction for the VRs occurs between the users and these installations.

Table 3-2
Airports in the ROI

Associated Training Site	Airport Name (Airport Code)	Airport Ownership	Based Aircraft	Annual Operations
Willcox Playa	Cochise County Airport (P33), Willcox, Arizona	Public	21	GA Itinerant = 7,500 Military = 1,000 Civil = 1,500
Willcox Playa	Indie Motorsports Ranch Airport (93AZ), Willcox, Arizona[a]	Private	None Reported	None Reported
Willcox Playa	Ammon Airport (AZ14), Willcox, Arizona[a]	Private	None Reported	None Reported
Willcox Playa	Leroy Airport (4AZ9), Willcox, Arizona[a]	Private	None Reported	None Reported
Willcox Playa	Woods Bay Winery Airport (AZ19), Willcox, Arizona[a]	Private	None Reported	None Reported
Sentinel DZ	Marana Regional Airport (AVQ), Marana, Arizona	Public	198	Air Taxi = 10,000 GA Itinerant = 30,630 Military Itinerant = 20,252 Civil = 30,631
Sentinel DZ	Ryan Field Airport (RYN), Tucson, Arizona	Public	237	Air Taxi = 154 GA Itinerant = 34,862 Military Itinerant = 1,062 Civil = 64,150
Sentinel DZ	El Tiro Gliderport (AZ67), Tucson, Arizona[a]	Private	None Reported	None Reported
Sentinel DZ	The Ultralight Strip (4AZ8), Marana, Arizona[a]	Private	None Reported	None Reported
Shi-Ka-She Training Complex / Benson DZ	Benson Airport (31AZ), Benson, Arizona[a]	Private	None Reported	None Reported
Shi-Ka-She Training Complex	Four Pillars Airport (AZ21), Huachuca City, Arizona[a]	Private	None Reported	None Reported
Shi-Ka-She Training Complex	Stronghold Airport (09AZ), St David, Arizona[a]	Private	None Reported	None Reported
Shi-Ka-She Training Complex / Benson DZ	Benson Municipal / Paul Kerchum Field Airport (E95)	Public	18	GA Itinerant = 15,000 Military Itinerant = 400 Civil = 9,000

Source: FAA, 2024b
Notes:
a Operations data not available.
GA = General Aviation; ROI = Region of Influence

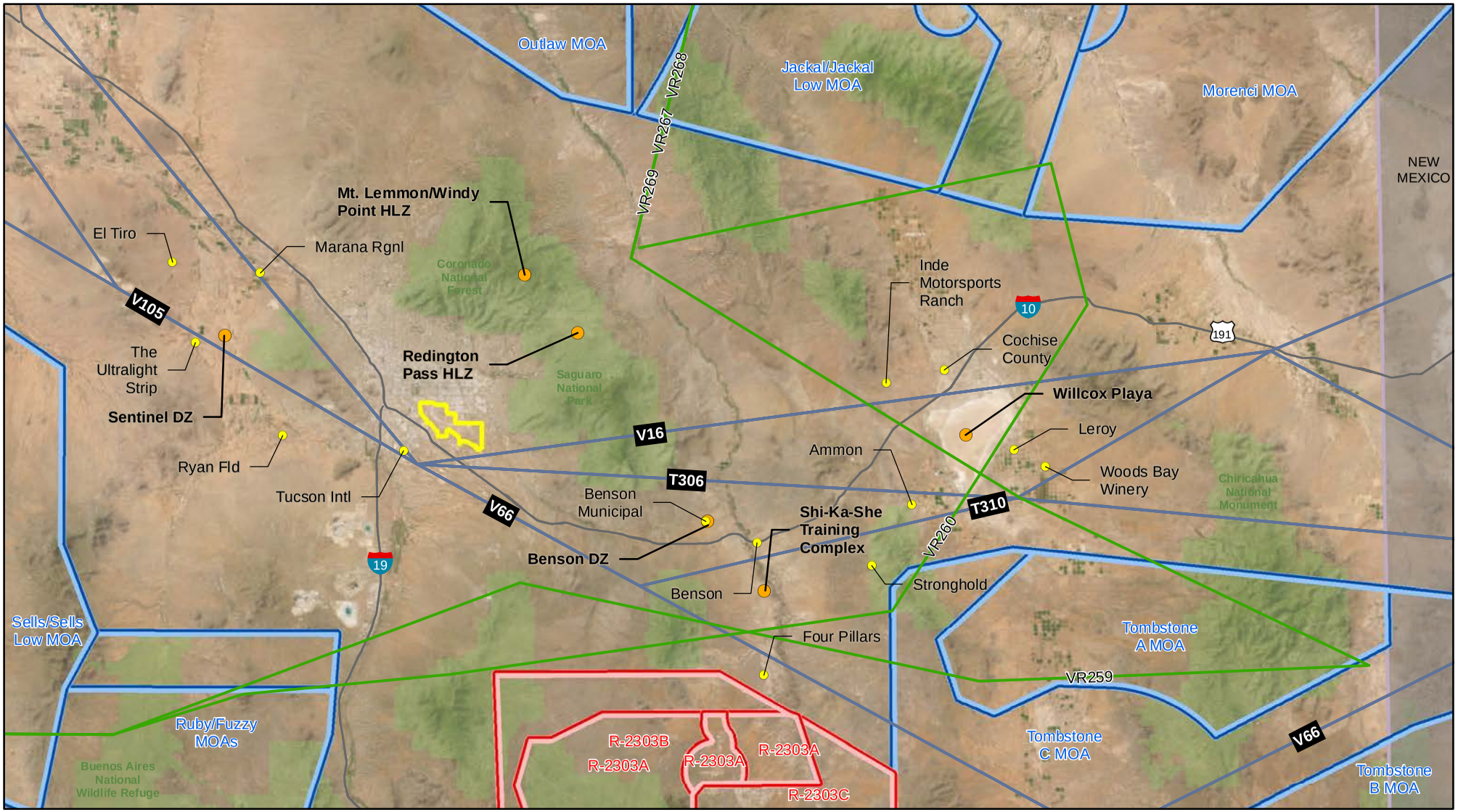


FIGURE 3-2
Regional Overview of Airspace

Airport
Training Site Location
ATS Route
MTR Centerline
Installation Boundary
MOA
Restricted Area

N

0 50 Miles

Imagery: Maxar 2022, 2023, 2024
Coordinate System: WGS 1984 UTM Zone 12N

ATS = Air Traffic Service; MOA = Miitary Operations Area; MTR = Military Training Route

3.4.2.2 Existing Special Use Airspace

The proposed PR training sites would not be located within the confines of existing special use airspace (SUA) (see **Figure 3-2**). The Tombstone MOA is located southeast of the Benson DZ training site and the Shi-Ka-She Training Complex. The Willcox Playa DZ training site lays between the Tombstone MOA to the south and the Outlaw MOA, Jackal MOA, and Morenci MOA complex to the north. The Outlaw/Morenci/Jackal MOA complex is northeast of the Redington Pass and Mount Lemmon HLZs. The Sells MOA Complex is southwest of the Sentinel DZ.

3.4.3 Environmental Consequences

3.4.3.1 Evaluation Criteria

The airspace management analysis describes the potential effects to air traffic and airports when compared to the existing environment. Airspace management impacts created by the Proposed Action would be significant if they resulted in departure or arrival delays for aircraft operating, or if the volume of PR training events created a significant impact to air traffic in the ROI. Since the Proposed Action would not change controlled airspace or SUA, the analysis in this EA focuses on increases in air traffic. For the purposes of this analysis, a significant impact is considered an increase in traffic without the regulatory guidance to handle the traffic load. Annual training operations at the proposed training sites are described in detail in **Section 2.1.2**.

3.4.3.2 Proposed Action

Redington Pass HLZ and Mount Lemmon HLZ

The Redington Pass and Mount Lemmon HLZs are beneath Class G airspace. Operations at the Redington Pass HLZ would support FMP training. A typical scenario for this training would consist of inserting a rescue team by helicopter using the proposed HLZ. Helicopter operations would be conducted at 500 feet AGL and below, and the proposed sUAS training would be conducted below 1,000 feet AGL. Similarly, the Mount Lemmon HLZ activities would include using helicopters and sUAS operations at the same altitudes. There are no public or private airports in the vicinity of these two proposed training sites. There are no other military aircraft training activities in this region. The nearest ATS route is V-16, with an MEA of 11,500 feet AMSL. As there are no other regular aviation activities in the area, there would be no impacts to air traffic as a result of the Proposed Action.

Willcox Playa DZ

The Willcox Playa DZ training site is beneath Class G airspace. Aircraft operations at this proposed training site would consist of HC-130 flight operations and helicopter landing training. Aircraft would utilize dirt landing strips for takeoff and landing and FARP operations. The Willcox Playa training site is located between two low-altitude ATS routes: T-306 and V-16. The MEA on T-306 is 10,700 feet AMSL and the MEA on V-16 is 11,500 feet AMSL.

Cochise County Airport (P33) is a public-use airport located less than 5 nm north of Willcox Playa that experiences approximately 10,000 aircraft operations annually. P33 has two published instrument procedures. One procedure has an initial approach fix called KAYEP, which is west of Willcox Playa. Aircraft on this procedure enroute to KAYEP may be in a descent to 7,200 feet AMSL. There are also missed approach procedures that direct pilots to execute a climbing turn to 8,800 feet AMSL to the southeast of P33 (FAA, 2024a). When aircraft are conducting these procedures, they could traverse the area of the Willcox Playa training site.

As aircraft operations at the Willcox Playa training site would be conducted at low altitude, there would be potential for aircraft engaging in training activities to cross into Class A airspace and interact with P33's approach procedures. This potential for interaction between P33's procedures and aircraft operations at the Willcox Playa training site would need to be noted by relevant safety personnel; however, the impacts

to air traffic as a result of the Proposed Action would be expected to be negligible due to the proposed low number of operations described in **Section 2.1.2**. Flights on the ATS routes could require alternate routing or altitude deconfliction from the proposed training site activities. Impacts to scheduling and management of existing MTRs would be handled internally by the DAF. Thus, impacts to airspace management in the area of the Willcox Playa training site would be negligible.

Sentinel DZ

The Sentinel DZ training site is beneath Class G airspace. Aircraft operations at this proposed training site DZ would consist of HC-130, helicopter, and C-23 operations. Flight operations would include conducting drops between 150 feet AGL and 25,000 feet AMSL.

The Sentinel DZ training site is located between three low-altitude ATS routes, T-306 and V-66 and V-105. The MEA on T-306 is 10,700 feet AMSL and the MEA on V-66 and V-105 is 8,000 feet AMSL. There is a high-altitude jet route, J-2, established over the proposed training site. The MEA on a jet route is 18,000 feet AMSL unless noted otherwise in a sectional chart.

Marana Regional Airport (KAVQ) is a public-use airport located north of the Sentinel DZ training site that experiences approximately 91,513 aircraft operations annually. The KAVQ has two published instrument procedures that include navigation waypoints called COXOT and TUPBO that are west of the Sentinel DZ training site. Aircraft executing this procedure via COXOT may be in a descent to 5,400 feet AMSL or lower in the vicinity of the proposed DZ training site. Aircraft using the procedure via TUPBO would execute a climb to 6,700 feet AMSL. (FAA, 2024a.). When aircraft are executing one of these two procedures, they could traverse the area of the Sentinel DZ training site. This potential for interaction between KAVQ's procedures and aircraft operations at the Sentinel DZ training site would need to be noted by relevant safety personnel; however, the impacts to air traffic as a result of the Proposed Action would be expected to be negligible due to the proposed low number of operations described in **Section 2.1.2**. Flights on the ATS routes could require alternate routing or altitude deconfliction from the proposed training site activities. Impacts to scheduling and management of existing MTRs would be handled internally by the DAF.

Shi-Ka-She Training Complex

The Shi-Ka-She Training Complex is beneath Class G airspace. Operations at the Shi-Ka-She Training Complex would consist of DZ and HLZ training activities. The site would be used for helicopter landing training and Pararescue Specialist support. The proposed Shi-Ka-She Training Complex is located between segments of T-310 and V-66. The MEA on T-310 and V-66 is 10,000 feet AMSL. There are several private airports and one public-use airport in the vicinity of the proposed training site. Benson Municipal Airport (E95) is a public-use airport located northwest of the Shi-Ka-She Training Complex. This airport does not have published instrument approaches. The expected level of operations at the Shi-Ka-She Training Complex would be low as noted in **Section 2.1.2**. Implementation of the Proposed Action would not impact air traffic at the Shi-Ka-She Training Complex.

Benson DZ

The Benson DZ training site is located at E95, which is located in Class G airspace. E95 is a public-use airport that experiences approximately 24,400 aircraft operations annually. E95 does not have an operational air traffic control tower and is located in uncontrolled airspace. Training-related aircraft operations at this site would consist of HC-130 aircraft conducting airdrops between 800 feet AGL and 25,000 feet AMSL five times per year.

The Benson DZ training site is located between T-306 and T-310. The MEA on T-306 is 10,700 feet AMSL and T-310 is 10,000 feet AMSL. A high-altitude jet route, J-2, is established over the proposed DZ. The MEA on a jet route is 18,000 feet AMSL unless noted otherwise in a sectional chart. There is one private airport in the vicinity of the Benson DZ and no public airports. The addition of five new annual military operations under the Proposed Action would not impact air traffic at the Benson DZ.

3.4.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of available, appropriate training sites. There would be no impacts to airspace beyond baseline conditions.

3.4.3.4 Cumulative Impacts

Two proposed actions with the potential to impact airspace in and around the ROI are the Regional SUA Optimization EIS and the 492 SOW Beddown EIS (see **Table 3-1**). The Regional Special Use Airspace Optimization EIS is ongoing and proposes changes to the size and location of various SUAs. These proposed changes would not impact the airspace around the training locations. The 492 SOW Beddown EIS proposes to relocate the 492 SOW aircraft and personnel to DMAFB and to retire all remaining A-10 aircraft at DMAFB, which could change airspace utilization in the surrounding SUA. None of the remaining reasonably foreseeable projects listed in **Table 3-1** would impact airspace specifically at the training locations. When considered in conjunction with the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts to airspace would occur with implementation of the Proposed Action.

3.5 AIR QUALITY

3.5.1 Definition of Resource

Ambient air quality refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) that occurs at a particular geographic location. The ambient air quality levels measured at a particular location are determined by the interaction of emissions, meteorology, and chemistry. Meteorological considerations include wind and precipitation patterns affecting the distribution, dilution, and removal of pollutant emissions. Chemical reactions can transform pollutant emissions into other chemical substances.

Air pollution is a threat to human health and damages trees, crops, other plants, lakes, and animals. It creates haze or smog that reduces visibility in national parks and cities and interferes with aviation. To improve air quality and reduce air pollution, Congress passed the *Clean Air Act* (42 USC § 7401) (CAA) and its amendments in 1970 and 1990, which set regulatory limits on air pollutants and help to ensure basic health and environmental protection from air pollution.

Figures 2-2 through **2-7** show the training sites under consideration. The boundaries shown for each training site make up the ROI for this air quality analysis."

3.5.1.1 Criteria Pollutants

In accordance with CAA requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. Measurements of these “criteria pollutants” in ambient air are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter. Regional air quality is a result of the types and quantities of atmospheric pollutants and pollutant sources in an area. Surface topography and prevailing meteorological conditions also can affect air quality.

The CAA directed the USEPA to develop, implement, and enforce environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, the USEPA developed numerical concentration-based standards, the National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to impact human health and the environment and established both primary and secondary NAAQS under the provisions of the CAA. NAAQS are currently established for the following air pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter (including particulates equal to or less than 10 microns in diameter [PM_{10}] equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead. The primary NAAQS represent maximum levels of background air

pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources in addition to maintaining visibility standards. The primary and secondary NAAQS for the criteria pollutants are presented in **Table 3-3.**

The criteria pollutant ozone is not usually emitted directly into the air but is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants, or "ozone precursors." These ozone precursors consist primarily of nitrogen oxides and volatile organic compounds that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies limit atmospheric ozone concentrations by controlling volatile organic compounds pollutants (also identified as reactive organic gases) and nitrogen oxides.

Table 3-3
National Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Primary/Secondary[a,b]	Averaging Time	Level
Carbon monoxide	Primary	8 hours	9 ppm
	Primary	1 hour	35 ppm
Nitrogen dioxide	Primary	1 hour	100 ppb
	Primary and Secondary	1 year	53 ppb
Ozone	Primary and Secondary	8 hours	0.070 ppm
$PM_{2.5}$	Primary	1 year	9.0 µg/m^3
	Secondary	1 year	15 µg/m^3
	Primary and Secondary	24 hours	35 µg/m^3
PM_{10}	Primary and Secondary	24 hours	150 µg/m^3
Sulfur dioxide	Primary	1 hour	75 ppb
	Secondary	3 hours	0.5 ppm
Lead	Primary and Secondary	Rolling 3-month average	0.15 µg/m^3

Source: USEPA NAAQS table
Notes:
[a] Primary Standards: the levels of air quality necessary, with an adequate margin of safety, to protect public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.
[b] Secondary Standards: the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
µg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; ppm = parts per million; ppb = parts per billion.

The USEPA has recognized that particulate matter emissions can have different health affects depending on particle size and, therefore, developed separate NAAQS for coarse particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$). The pollutant $PM_{2.5}$ can be emitted from emission sources directly as very fine dust and/or liquid mist or formed secondarily in the atmosphere as condensable particulate matter, typically forming nitrate and sulfate compounds. Secondary (indirect) emissions vary by region depending upon the predominant emission sources located there and thus which precursors are considered significant for $PM_{2.5}$ formation and identified for ultimate control.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. As such, each state must develop air pollutant control programs and promulgate regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels.

3.5.1.2 General Conformity Rule for Criteria Pollutants

When a region or area meets NAAQS for a criteria pollutant, that region or area is classified as in "attainment" for that pollutant. When a region or area fails to meet NAAQS for a criteria pollutant, that region or area is classified as "nonattainment" for that pollutant. In cases of nonattainment, the affected state, territory, or local agency must develop a state implementation plan (SIP) for USEPA review and approval. The SIP is an enforceable plan developed at the state level that lays out a pathway for how the state will comply with air quality standards. If air quality improves in a region that is classified as nonattainment, and

the improvement results in the region meeting the criteria for classification as attainment, then that region is reclassified as a "maintenance" area.

Federal actions are required to conform with the approved SIP for those areas of the US designated as nonattainment or maintenance areas for any criteria air pollutant under the CAA (40 CFR § 93.158). The purpose of the General Conformity Rule is to ensure that applicable federal actions, such as the Proposed Action, would not cause or contribute to a violation of an air quality standard and that the Proposed Action would not adversely affect the attainment and maintenance of any NAAQS. A conformity applicability analysis must be completed to determine and document whether the Proposed Action complies with the General Conformity Rule for every DAF action that would be located in or include a nonattainment or maintenance area and that generates emissions. The analysis must consider the total direct and indirect emissions, including all emission increases and decreases that are practicably controllable through an agency's continuing program responsibility and that are reasonably foreseeable at the time that the conformity applicability analysis is conducted.

The first step in a conformity applicability analysis involves evaluating the total direct and indirect emissions caused by the Proposed

In the conformity applicability analysis, the emissions thresholds that trigger the conformity requirements are called *de minimis* thresholds. The net change emissions calculated for the direct and indirect emissions are compared to these thresholds. If the emissions are below *de minimis* thresholds, the Proposed Project is presumed to conform to the SIP. If the net change in emissions equals or exceeds the *de minimis* conformity applicability threshold values, then a formal Conformity Determination must be prepared to demonstrate conformity with the approved SIP. *De minimis* levels are shown in **Table 3-4.**

Table 3-4
***De Minimis* Thresholds for Conformity Determinations**

Pollutant	Nonattainment or Maintenance Area Type	*De Minimis* Threshold (tpy)
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
Ozone (NO_x)	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
CO, SO_2, and NO_2	All nonattainment and maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$	All nonattainment and maintenance	100
Lead	All nonattainment and maintenance	25

Source: 40 CFR 93.153

CO = carbon monoxide; NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

3.5.1.3 Hazardous Air Pollutants

In addition to the NAAQS for criteria pollutants, national standards exist for hazardous air pollutants (HAPs), which are regulated under Section 112(b) of the 1990 CAA amendments. USEPA has identified 187 HAPs known or suspected to impact human health. HAPs are emitted by both man-made and naturally occurring sources, including combustion at mobile and stationary sources. However, in contrast to NAAQS for criteria pollutants, federal ambient air quality standards do not exist for non-criteria pollutants.

In a document entitled *Select Source Materials and Annotated Bibliography on the Topic of Hazardous Air Pollutants Associated with Aircraft, Airports, and Aviation* (FAA, 2003), the FAA concluded that aircraft do not meet the definitions of the source types that are regulated under CAA Section 112, *Hazardous Air Pollutants*. As such, HAPs are not evaluated as part of this assessment.

3.5.1.4 Greenhouse Gases

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere helps regulate the earth's temperature and contributes to global climate change. GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. The global warming potential of a particular gas provides a relative basis for calculating its carbon dioxide-equivalent (CO_2e) or the amount of CO_2e to the emissions of that gas. Carbon dioxide has a global warming potential of 1 and is therefore the standard by which all other GHGs are measured. The GHGs are multiplied by their global warming potential, and the resulting values are added together to estimate the total CO_2e.

The USEPA regulates GHG primarily through a permitting program known as the GHG Tailoring Rule. This rule applies to GHG emissions from larger stationary sources. Additionally, the USEPA promulgated a rule for large GHG emission stationary sources, fuel and industrial gas suppliers, and carbon dioxide injection sites if they emit 25,000 metric tons or more of CO_2e per year (40 CFR § 98.2(a)(2)). The DAF, however, has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 tons per year of CO_2e as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator provides a threshold to identify actions that are insignificant or too trivial or minor to merit consideration. Actions with a net change in GHG (CO_2e) emissions below the PSD threshold are considered too insignificant on a global scale to warrant any further analysis. Actions with a net change in GHG (CO_2e) emissions above the PSD threshold are considered potentially significant and require further assessment to determine if the action poses a significant impact (Air Force Civil Engineer Center [AFCEC], 2024a).

3.5.2 Existing Conditions

3.5.2.1 Regional Climate

Arizona has a diverse range of climates and topography. The desert Southwest has some of the hottest and driest areas in the country, while the higher terrain of the Colorado Plateau in the northeast portion of the state has a cooler climate, with cold winters and mild summers. Much of Arizona is characterized as arid to semi-arid, with annual average precipitation ranging from less than 4 inches in the southwest to around 40 inches in the White Mountains in the east-central region. Arizona is currently in a long-term drought that has lasted more than 20 years. Long-term droughts increase the risk of wildfires, which are already a concern for this dry state. In 2011, the Wallow Fire consumed more than 500,000 acres in eastern Arizona, making it the state's largest wildfire on record (Frankson et al., 2022).

Pima County is known for extreme heat in the summer months and mild conditions during the winter. The average high and low temperatures during the summer months at DMAFB range from about 100 to 68 degrees Fahrenheit (°F). The average high and low temperatures during the winter months range from 74

to 39°F. Cochise County has average high and low temperature in June of 94 to 61°F. The average high and low temperatures during the winter months range from 56 to 35°F.

3.5.2.2 Affected Environment

The Proposed Action includes training activities at six locations around the Tucson area as shown in **Figures 2-2** through **2-7**. Three of the proposed training sites, the Benson DZ, Willcox Playa, and the Shi-Ka-She Training Complex, are located in Cochise County. The remaining three sites are located within Pima County. Cochise County is located within the Southeast Arizona Interstate Air Quality Control Region (SAIAQCR), whereas Pima County is situated within the Pima County AQCR.

The Pima County AQCR as a whole is in attainment with all of the NAAQS, with the exception of the Rillito PM_{10} nonattainment area just northwest of Tucson, the Ajo PM_{10} and sulfur dioxide maintenance areas, approximately 100 miles west of DMAFB, and a small area designated as maintenance for sulfur dioxide in the northeast area of Pima County, near San Manuel, which is an extension of the Pinal County sulfur dioxide maintenance area. The PM_{10} area designations are the result of drought and local winds that have sporadically resulted in elevated PM_{10} levels when meteorological conditions were conducive to dust entrainment. From 2019 to 2021, the Rillito planning area averaged an estimated 6.1 annual exceedances of the PM_{10} NAAQS (USEPA, 2022). The sulfur dioxide areas were designated as the result of copper smelter emissions; in both areas, the smelters have ceased operations (USEPA, 2003, 2008).

Cochise County (SAIAQCR) is also in attainment with all NAAQS, with the exception of the Paul Spur/Douglas planning area PM_{10} nonattainment area and the Douglas sulfur dioxide maintenance area approximately 100 miles southeast of DMAFB.

None of the training sites are located within the aforementioned designated nonattainment or maintenance areas and, as such, the General Conformity Rule would not apply.

3.5.3 Environmental Consequences

3.5.3.1 Evaluation Criteria

The environmental impact methodology for air quality impacts from flight operations presented in this EA is derived from AFMAN 32-7002, *Environmental Compliance and Pollution Prevention* (February 2020) and the *DAF Air Quality Environmental Impact Analysis (EIAP) Guide – Fundamentals, Volume 1 of 2* (AFCEC, 2024b). The air quality impacts analysis only evaluates flight operations within the boundaries of the training location that occur at or below the mixing layer, which is defined as the default value of 3,000 feet AGL (USEPA, 1972).

Flight operations data for fixed-wing aircraft, such as aircraft type, engine, flight duration, and power setting, are input into the DAF's Air Conformity Applicability Model (ACAM). ACAM uses this data to calculate estimates for direct and indirect emissions of criteria pollutants and GHGs.

ACAM is not able to model rotary aircraft flight operations; therefore, emissions from the HH-60 helicopter are calculated manually outside of ACAM using the methods described in the *Air Emissions Guide for DAF Mobile Sources (*AFCEC, 2024b). This guide contains a table that lists air emission factors for each power setting of engines used on many military aircraft, including the General Electric T700 turboshaft engines used to power the HH-60. EAS constructed an excel spreadsheet by combining the data derived from said table along with the emissions calculations detailed in Section 2.6 of the guide. The resulting formula was used to calculate estimated emissions during each power setting of a single flight. The results were multiplied by the number of anticipated annual flights in order to represent the estimated annual emissions from the HH-60 portions of the Proposed Action's aircraft operations.

The manually calculated estimated emissions were combined with the ACAM output and compared against relevant pollution standards to assess the impact of potential increases in pollutant concentrations.

Potential impacts to air quality are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. For attainment area criteria pollutants, the Proposed Action's air quality analysis used the USEPA's PSD permitting threshold of 250 tons per year as an initial indicator of the local significance of potential impacts to air quality for all criteria pollutants except lead. Due to the toxicity of lead, the use of the PSD threshold as an indicator of potential air quality impact significance is not protective of human health or the environment. Therefore, the *de minimis* value of 25 tons per year is used instead. The DAF has also adopted a PSD value of 75,000 tons per year for CO_2e. If the calculations show that the increase in emissions from the Proposed Action would be anticipated to be less than these thresholds, the indication is that air quality impacts are not significant for that pollutant, and no further evaluation is required.

3.5.3.2 Proposed Action

The six training sites included in the Proposed Action are not contiguous and potential emissions would be spread across two separate AQCRs: the SAIAQCR and the Pima County AQCR. While it would be defensible to consider each of the six training sites as six individual ROIs, this evaluation takes a more conservative approach by combining the portions of the Proposed Action in each AQCR and evaluating the sum of estimated emissions from the combined actions against the thresholds described above. A brief description of modeling assumptions are described in **Appendix B.**

The proposed training sites located within the SAIAQCR are Willcox Playa, Shi-Ka-She Training Complex, and the Benson DZ. The proposed training sites located within the Pima County AQCR are the Mount Lemmon and Redington Pass HLZs and Sentinel DZ.

Tables 3-5 and **3-6** summarize the results of the ACAM analysis combined with the manual calculations of emissions from proposed HH-60 helicopter operations. Because the operations would be reoccurring, each of the tables represents both the highest annual calculated emissions and steady-state emissions.

Table 3-5
Proposed Action Highest Annual Air Emissions and PSD Thresholds,
Southeast Arizona Interstate AQCR

Pollutant	Highest Annual Emissions (tons/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (yes or no)
VOCs	3.23	250	No
Nitrogen oxides	1.04	250	No
Carbon monoxide	4.58	250	No
Sulfur oxides	0.22	250	No
PM_{10}	0.17	100	No
$PM_{2.5}$	0.15	250	No
Lead	0.00	25	No
Ammonia	0.01	250	No
Carbon dioxide-equivalent	589.53	75,000	No

N/A = not applicable; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOCs = volatile organic compounds.

Table 3-6
Proposed Action Highest Annual Air Emissions and PSD Thresholds, Pima County AQCR

Pollutant	Highest Annual Emissions (tons/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (yes or no)
VOCs	0.04	250	No
Nitrogen oxides	0.08	250	No
Carbon monoxide	0.09	250	No
Sulfur oxides	0.01	250	No
PM_{10}	0.02	100	No
$PM_{2.5}$	0.01	250	No
Lead	0.00	25	No
Ammonia	0.01	250	No
Carbon dioxide-equivalent	27.18	75,000	No

N/A = not applicable; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOCs = volatile organic compounds.

The results presented in **Tables 3-5** and **3-6** demonstrate that emissions from the Proposed Action would be anticipated to be below the associated thresholds. As such, the Proposed Action would have a negligible impact to air quality.

3.5.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of available, appropriate training sites. There would be no impacts to air quality beyond baseline conditions.

3.5.3.4 Cumulative Impacts

Two proposed actions with the potential to impact airspace in and around the ROI are the Regional SUA Optimization EIS and the 492 SOW Beddown EIS (see **Table 3-1**). The Regional Special Use Airspace Optimization EIS is ongoing and proposes changes to the size and location of various SUAs. These proposed changes would not impact air quality around the training locations. The 492nd SOW Beddown EIS proposes to relocate the 492nd SOW aircraft and personnel to DMAFB and to retire all remaining A-10 aircraft at DMAFB. The increase in emissions that would result from implementation of the 492 SOW Beddown would not exceed any significance indicator threshold. None of the remaining reasonably foreseeable projects listed in **Table 3-1** would impact air quality specifically at the training locations. Air quality impacts associated with past actions listed in **Table 3-1** are reflected in the description of existing conditions for air quality. When considered in conjunction with the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts to air quality would occur with implementation of the Proposed Action.

3.6 NOISE

3.6.1 Definition of the Resource

Sound is a physical phenomenon consisting of minute vibrations exhibited as waves, measured in frequency and amplitude, which travel through a medium, such as air or water, and are sensed by the human ear. Noise is generally described as unwanted sound. Unwanted sound can be grounded in objectivity (e.g., hearing loss or damage to structures) or subjectivity (e.g., an individual's level of tolerance or annoyance to different sounds). Noise events elicit varying responses within a population or area based on the activity generating noise and its perceived importance and related factors, such as setting, time of

day, exposure period or duration, and receptor sensitivity. In addition to humans, noise may also affect wildlife as indicated by behavioral changes during nesting, foraging, migration, or other life-cycle activities (USEPA, 1978)

Figures 2-2 through **2-7** show the training sites under consideration. The areas surrounding these sites comprise the ROI for this noise analysis.

3.6.1.1 Noise Metrics

Noise and sound levels are expressed in logarithmic units measured by decibels (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 equates to a sound level of approximately 60 dB, sound levels above 120 dB begin to be felt inside the human ear as discomfort, and sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall, 1995).

All sound contains a spectral content, which means the magnitude or level differs by 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, or dBA, that de-emphasizes very low and very high frequencies to better replicate human sensitivity. This EA uses "dB" to refer to A-weighted sound levels as all sound levels presented in this document are A-weighted unless otherwise noted.

In accordance with DoD guidelines and standard practice for environmental impact analysis documents, this noise analysis uses Sound Exposure Level (SEL) and Day-Night Average Sound Level (DNL). SEL is a single event metric that describes the noise level of a single fly-over event. DNL is a cumulative measure of multiple flight activities throughout an average year.

3.6.2 Existing Conditions

The six proposed training sites are located in sparsely populated areas with generally low average noise levels. The current noise sources affecting these sites consist of minimal noise from human recreation and light motor vehicle traffic at the Coronado National Forest, Mount Lemmon, and Redington Pass training areas; occasional noise from Fort Huachuca-sponsored training at Willcox Playa; distant civil aircraft noise at the Sentinel DZ site; moderate human noise and some motor vehicle traffic at the Shi-Ka-She Training Complex; and moderate civil aircraft noise at the Benson DZ site.

3.6.3 Environmental Consequences

3.6.3.1 Evaluation Criteria

The assessment of noise examines how the Proposed Action would impact the noise environment in the vicinity of all the proposed training sites. An adverse impact to noise would comprise significant increases to noise exposure levels at a proposed training site due to the implementation of the action.

To accomplish the impact analysis, noise modeling using DNL is based on annual average day aircraft operations, which are determined by dividing the total yearly airfield operations by 365 days per year. DNL has two time periods of interest: daytime (0700–2200) and nighttime (2200–0700).

Noise modeling was accomplished by determining the use of each airspace unit and building each aircraft's flight profile based on the aircraft's configuration (airspeed and power setting) and the amount of time spent at various altitudes throughout the airspace. This information was developed iteratively with a team primarily made up of representatives from DMAFB's flying squadrons. These data were combined with information about the numbers of each type of operation and local climate.

A noise impact analysis typically evaluates potential changes to existing noise environments that would result from implementation of a proposed action. The following types of noise changes are specified in FAA Order 1050.1f as changes that should be reported for aviation activities:

- For DNL 65 dB and higher, a 1.5-dB increase is reportable;
- For DNL 60 dB to less than 65 dB, a 3-dB increase is reportable; and
- For DNL 45 dB to less than 60 dB, a 5 dB increase is reportable.

The evaluation of noise impacts to DMAFB were considered out of scope for this EA since the overall number of operations at the Installation would not change; just the location of the training would change.

3.6.3.2 Proposed Action

Coronado National Forest Sites

Redington Pass HLZ

The Redington Pass HLZ training site would support FMP training consisting of a team being inserted by helicopter or via ground transportation. Approximately six HH-60 training operations would occur annually. FMP operations were modeled distributing HH-60 operations evenly throughout the HLZ with a maximum altitude of 500 ft AGL and an average operation duration of 45 minutes. Each FMP ground event would last between 12 and 24 hours and would include the firing of approximately 10,000 blanks annually. sUAS designated Group 1 or 2 would be also used at the HLZ. Operating altitudes for sUAS would be below 1,000 ft AGL. The average duration of an individual sUAS training session would be 90 minutes. sUAS training frequency would consist of 5 days of training, up to 20 times per year, for 20 participants each session. Training at the Redington Pass HLZ site would occur 80 percent of the time during the daytime (0700–2200) and 20 percent during nighttime (2200–0700).

The firing of blanks would be the largest contributor to the cumulative noise level at the Redington Pass HLZ training site. The maximum impulse sound level for an M16 rifle firing blanks is 134 dB. The maximum cumulative noise resulting from firing 10,000 annual blanks is 92 dB DNL. Noise contours for firing are shown in **Figure 3-3**.

The maximum SEL for a single HH-60 operation is 92 dB at a distance of 100 ft, 76 dB at 1,000 ft, and 54 dB at 10,000 ft. The area in the vicinity of the Redington Pass HLZ would be exposed to these noise levels for a combined 4.5 hours per year.

A single sUAS designated Group 1 or 2 creates a high-pitched buzzing sound with potential noise levels from 64 to 98 dB (Jokisch et al., 2020). The maximum sound level of sUAS can differ greatly depending on model specifications. The area in the vicinity of the Redington Pass HLZ training site would be exposed to noise levels from sUAS for 5 days of training up to 20 times per year.

The Proposed Action would introduce new military noise sources at the Redington Pass HLZ training site. As there are no nearby residences or other noise-sensitive receptors, these noise impacts would be expected to be negligible.

Mount Lemmon HLZ

The Mount Lemmon HLZ training site would support the instructor/student camp near Windy Point. Approximately six HH-60 training operations would occur annually at the HLZ. Helicopters would fly in the same manner as at the proposed Redington Pass HLZ training site. Blanks also would be used to simulate gun fire during training. Approximately 10,000 blanks would be fired annually at this proposed training site. sUAS Group 1 or 2 training would be conducted in a similar manner to training at the Redington Pass HLZ. Training at the proposed Mount Lemmon HLZ would occur 80 percent of the time during the daytime (0700–2200) and 20 percent during nighttime (2200–0700).

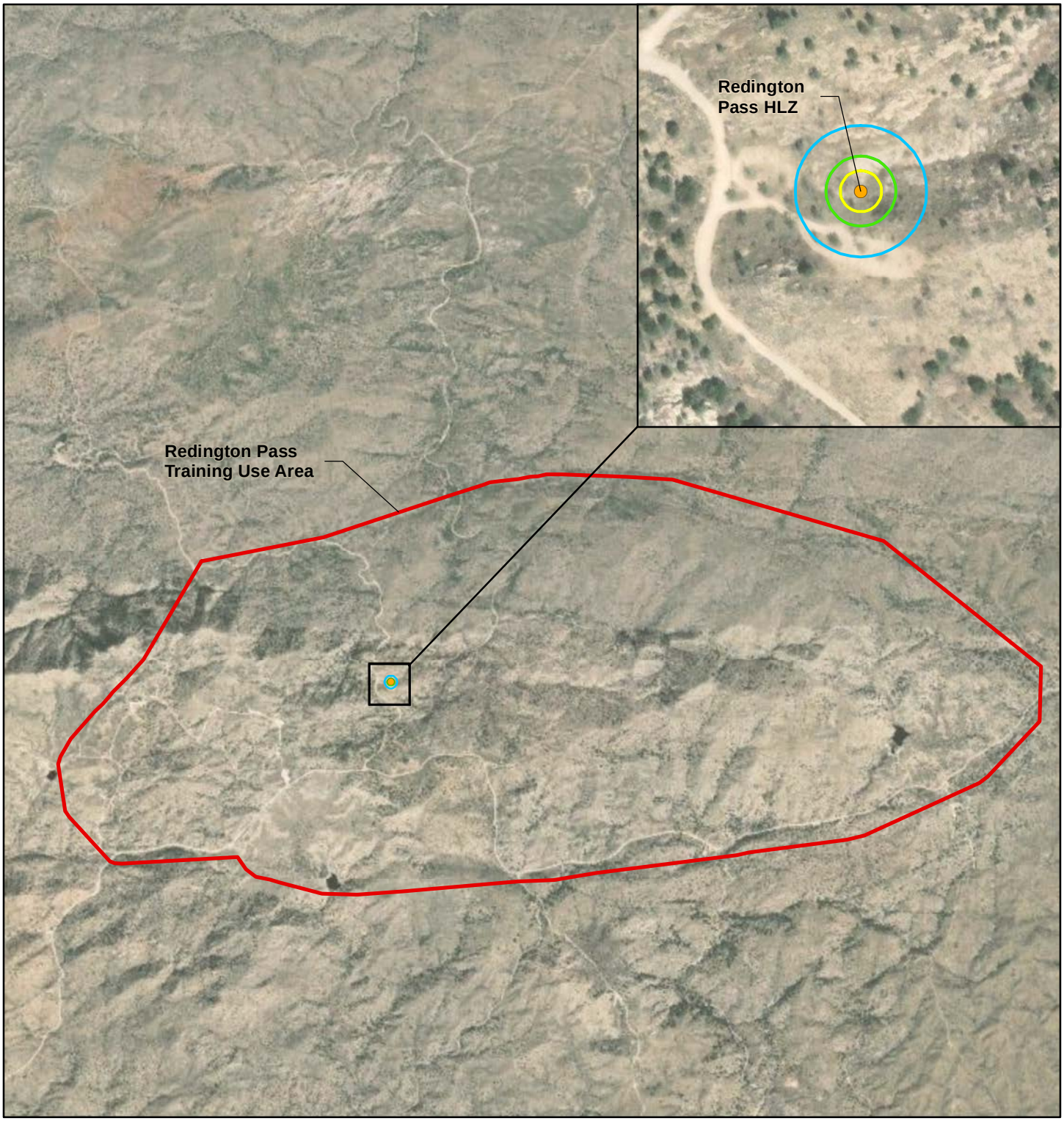


FIGURE 3-3
DNL for Redington Pass HLZ Due to Blanks Firing

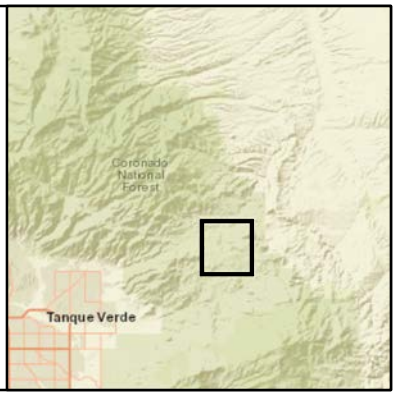
Training Site Location
Training Use Area

Noise Contours DNL (dBA)
65
70
75

N

0 0.5 Miles

Imagery: Maxar 2022, 2023
Coordinate System: WGS 1984 UTM Zone 12N



dBA = A-weighted decibel; DNL = Day Night Average Sound Level; HLZ = Helicopter Landing Zone

Noise levels at the proposed Mount Lemmon HLZ training site would be approximately identical to those at the proposed Redington Pass HLZ training site. Noise contours for firing are shown in **Figure 3-4**.

The Proposed Action would introduce new military noise sources at the proposed Mount Lemmon HLZ training site. As there are no nearby residences or other noise-sensitive receptors, these noise impacts would be expected to be negligible.

Willcox Playa DZ

The Willcox Playa DZ would be used up to 120 times per year by the HC-130 and 4 times per year by the HH-60. HC-130 operations would be flown at altitudes between 150 and 14,000 AGL at a maximum of 150 knots. HH-60 helicopter operations were modeled as being evenly distributed throughout the site. Each helicopter operation would last an average of 45 minutes, with an average altitude of 300 ft AGL. Training at the Willcox Playa DZ would occur 80 percent of the time during the daytime (0700–2200) and 20 percent during nighttime (2200–0700).

The maximum SEL for a single HC-130 operation is 106 dB at a distance of 150 ft, 94 dB at 1,000 ft, 72 dB at 10,000 ft, and 67 dB at 14,000 ft. The HC-130 is the loudest of the aircraft that would use this DZ and would be the largest contributor to the DNL. The maximum DNL for all flights at the Willcox Playa DZ would be approximately 46 dB.

The Proposed Action would introduce new military noise sources at the Willcox Playa DZ. As there are no nearby residences or other noise-sensitive receptors and the Willcox Playa DZ training site already experiences noise from periodic Fort Huachuca training, these noise impacts would be expected to be negligible.

Sentinel DZ

Under the Proposed Action, the proposed Sentinel DZ training site would be used 125 times per year by the HC-130, 45 times per year by contract air (modeled as C-23), and 2 times per year by the HH-60. HC-130 airdrops would occur between 150 ft AGL and 6,000 AGL with air speeds up to 150 knots. During parachute training, C-23 flyovers would occur between 800 ft AGL and 8,000 ft AGL, with airspeeds up to 130 knots. HH-60 flyovers would occur around 150 ft AGL, with airspeeds up to 100 knots. HC-130, C-23, and HH-60 flyovers were modeled as being evenly distributed throughout this altitude range; similarly, flight-path headings over the DZ would be evenly distributed from all directions. HC-130 and HH-60 operations at the proposed Sentinel DZ training site would occur 80 percent of the time during the daytime (0700–2200) and 30 percent during nighttime (2200–0700). C-23 operations at the proposed Sentinel DZ training site would occur 70 percent of the time during the daytime (0700–2200) and 30 percent during nighttime (2200–0700).

The C-23 is only slightly louder than the HH-60, but the HC-130 is the loudest aircraft that would use this proposed DZ and is the largest contributor to the DNL. The maximum DNL for all flights at the proposed Sentinel DZ training site is approximately 47 dB.

The Proposed Action would introduce new military noise sources at the proposed Sentinel DZ training site, although infrequently. However, as there are no nearby residences or other noise-sensitive receptors, these noise impacts would be expected to be negligible.

Shi-Ka-She Training Complex

Under the Proposed Action, each of the seven proposed DZs and five proposed HLZs would be used once a year by contracted helicopter air support. The entire complex would be used two times per year by the HH-60. Helicopters would fly in the same manner as at the proposed Redington Pass HLZ training site, with all operations occurring during the daytime (0700–2200).

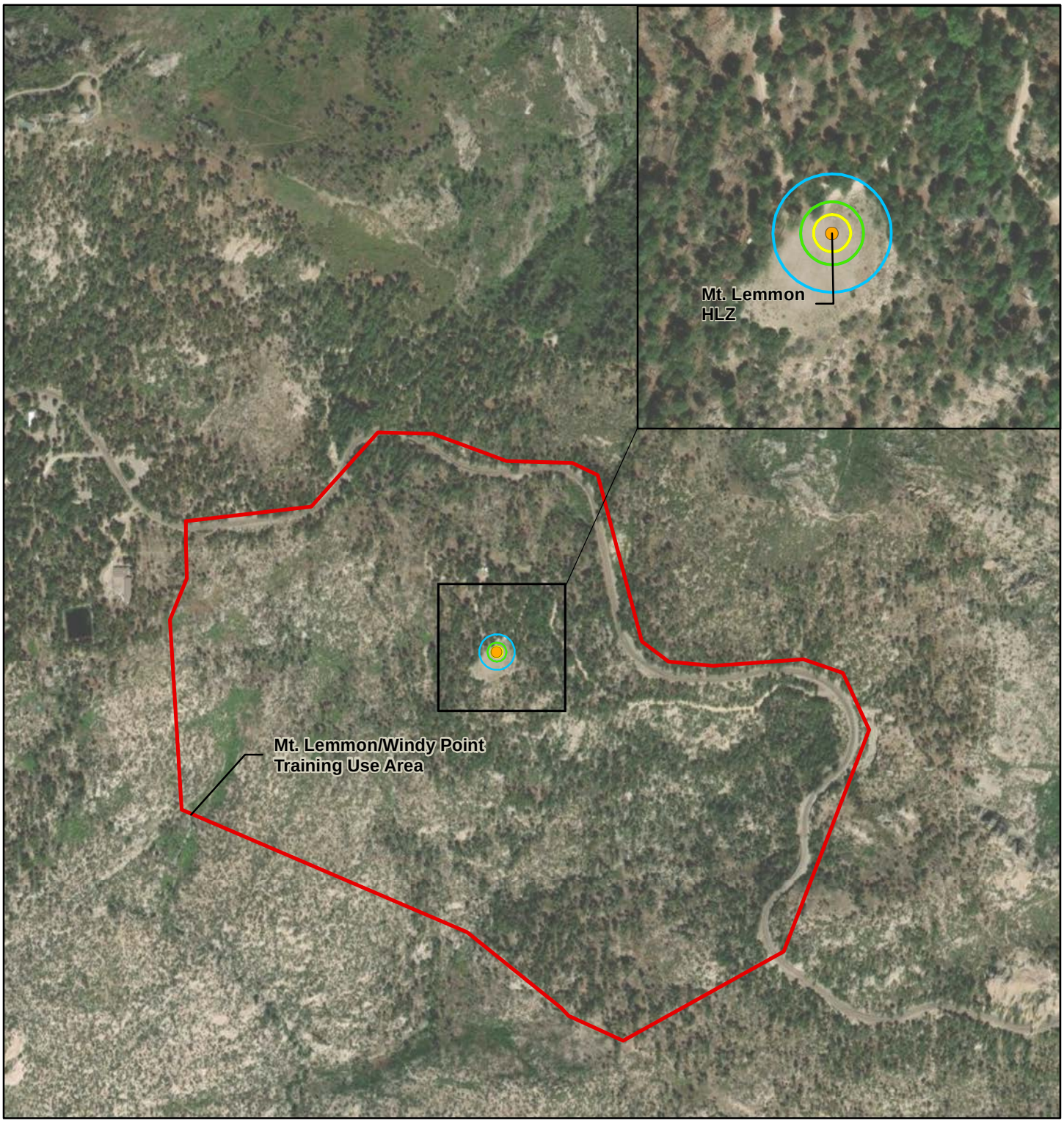


FIGURE 3-4
DNL for Mt. Lemmon/Windy Point HLZ Due to Blanks Firing

Training Site Location
Training Use Area

Noise Contours DNL (dBA)
65
70
75

N

0 1,000 Feet

Imagery: Maxar, 2024
Coordinate System: WGS 1984 UTM Zone 12N

dBA = A-weighted decibel; DNL = Day Night Average Sound Level; HLZ = Helicopter Landing Zone

The maximum SEL for a single HH-60 operation is 92 dB at a distance of 100 ft, 76 dB at 1,000 ft, and 54 dB at 10,000 ft. The area in the vicinity of the proposed DZs and HLZs would be exposed to these noise levels for only a few hours per year.

The Proposed Action would introduce new military noise sources at the Shi-Ka-She Training Complex as a result of infrequent training. As there are no nearby residences or other noise-sensitive receptors and there is already training occurring at the site, these noise impacts would be expected to be infrequent and negligible.

Benson DZ

Under the Proposed Action, the proposed Benson DZ training site would be used five times per year by the HC-130. Flyovers would occur between 800 ft AGL and 25,000 ft AMSL with air speeds up to 150 knots. For modeling, it was assumed that flyovers would be evenly distributed throughout this altitude range and flight-path headings would match the Benson runway. HC-130 operations at the proposed Benson DZ training site would occur 80 percent of the time during the daytime (0700–2200) and 30 percent during nighttime (2200–0700).

The maximum SEL for a single HC-130 operation is 91 dB at a distance of 800 ft, 72 dB at 10,000 ft, 67 dB at 14,000 ft, and 55 dB at 25,000 ft.

The Proposed Action would introduce new military noise sources at the proposed Benson DZ training site. As there are no nearby residences or other noise-sensitive receptors and the proposed Benson DZ training site already experiences regular civil aviation noise, any noise impacts would be expected to be negligible.

3.6.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of available, appropriate training sites. There would be no impacts to noise beyond baseline conditions.

3.6.3.4 Cumulative Impacts

Recent proposed actions that involve DMAFB airspace and associated SUA include the Regional Special Use Airspace Optimization EIS (expected completion 2025), the 492nd SOW Beddown EIS, and the Personnel Recovery Training Program (see **Table 3-1**). The Regional SUA Optimization EIS examines expanding low-altitude flight in 10 MOAs overlying Arizona and New Mexico. The number of sorties projected to occur in each MOA would be increased by approximately 10 percent to conservatively account for the fluctuations in training activity. The Personnel Recovery Training Program EA (DMAFB, 2020) examined training events with low-altitude flight zones in the Fuzzy, Outlaw, Sells Low, and Tombstone MOAs.

As noise levels associated with the Regional SUA Optimization EIS and the Personnel Recovery Training Program EA would be driven by low-altitude aircraft operations, increases in noise due to the Proposed Action would be expected to be minor to imperceptible when combined with noise from these other actions. Each noise analysis for a future proposed action, including the 492nd SOW Beddown EIS, would be built upon the previous baseline of the most recent NEPA document, as was done for this EA (i.e., in the description of existing conditions for noise). Estimated increase in noise for a given action would incorporate previous activities at the Base. When considered in conjunction with the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts related to noise would occur with implementation of the Proposed Action.

3.7 CULTURAL RESOURCES

3.7.1 Definition of the Resource

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes. These resources are protected and identified under several federal laws and EOs including the *Archaeological and Historic Preservation Act of 1960*, as amended (54 USC § 300101 et seq.), the *American Indian Religious Freedom Act of 1978* (42 USC § 1996), the *Archaeological Resources Protection Act of 1979*, as amended (16 USC §§ 470aa–470mm), the *Native American Graves Protection and Repatriation Act of 1990* (25 USC §§ 3001–3013), and the NHPA and associated regulations (36 CFR Part 800). The NHPA requires federal agencies to consider effects of federal undertakings on historic properties prior to deciding or taking an action and integrate historic preservation values into their decision-making process. Federal agencies fulfill this requirement by completing the NHPA Section 106 consultation process, as set forth in 36 CFR Part 800. NHPA Section 106 also requires agencies to consult with federally recognized American Indian tribes with a vested interest in the undertaking. NHPA Section 106 requires all federal agencies to seek to avoid, minimize, or mitigate adverse effects to historic properties (36 CFR § 800.1(a)).

Cultural resources include the following subcategories:

- Archaeological (i.e., prehistoric or historic sites where human activity has left physical evidence of that activity, but no structures remain standing);
- Architectural (i.e., buildings, structures, groups of structures, or designed landscapes that are of historic or aesthetic significance); and
- Traditional Cultural Properties (TCPs) (resources of traditional, religious, or cultural significance to American Indian tribes).

Significant cultural resources are those listed on the National Register of Historic Places (NRHP) or determined to be eligible for listing. To be eligible, properties must be 50 years old and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They must possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance and meet at least one of four criteria for evaluation:

1) Associated with events that have made a significant contribution to the broad patterns of our history (Criterion A);
2) Associated with the lives of persons significant in our past (Criterion B);
3) Embody distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); and/or
4) Have yielded or be likely to yield information important in prehistory or history (Criterion D).

Properties that are less than 50 years old can be considered eligible for the NRHP under Criterion G if they possess exceptional historical importance. Those properties must also retain historic integrity and meet at least one of the four NRHP criteria (Criteria A, B, C, or D). The term “historic property” refers to National Historic Landmarks, NRHP-listed, and NRHP-eligible cultural resources.

For cultural resources analyses, the ROI is defined by the Area of Potential Effect (APE). The APE is defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist,” (36 CFR § 800.16(d)) and thereby diminish their historic integrity. The direct and indirect APE for this EA is defined under the existing conditions for each project location.

3.7.2 Existing Conditions

Cultural resources and previous investigations are discussed for each of the six trainings sites. The following data were obtained from DAF, cultural resource subconsultants, and AZSITE, Arizona's cultural resource inventory.

3.7.2.1 Coronado National Forest Sites

Redington Pass HLZ

The 17.3-acre APE for the proposed Redington Pass HLZ training site, as shown in **Figure 2-2**, was surveyed for cultural resources in January 2025. The Redington Pass location contains a single newly recorded site, National Forest System Road (NFSR) 36 (AR-03-05-05-00488). No cultural resources have been previously recorded within the APE for the proposed Redington Pass HLZ training site (Desert Archaeology, Inc., 2025).

NFSR 36 consists of a single-lane dirt road that averages 14.8–16.4 ft in width. NFSR 36 follows the contours of the landscape with minimal cutting and filling. The roadbed surface is composed entirely of local material, including areas of exposed bedrock, with minimal modifications to the surface from mechanical grading. No artifacts or features are associated with the road.

Mount Lemmon Helicopter Landing Zone

The 11.2-acre APE for the proposed Mount Lemmon HLZ training site, as shown in **Figure 2-3**, was surveyed for cultural resources in January 2025. The Mount Lemmon location contains three cultural sites: the previously recorded historic Sollers Cabin (AR-03-05-05-00416), a previously recorded historic foundation and trash scatter (AR-03-05-05-00419), and newly recorded NFSR 13 (AR-03-05-05-00487) (Desert Archaeology, Inc., 2025). Due to several episodes of building renovations, Sollers Cabin was recommended not eligible for inclusion in the NRHP in 2017 due to the loss of feeling, setting, and design (Schrager, 2017, as referenced in Desert Archaeology, Inc., 2025). The Arizona SHPO gave concurrence on 12 May 2017. The Sollers Cabin is currently available for the public to reserve through the Forest Service's "Rooms with a View" program.

AR-03-05-05-00419 consists of four features and a diffuse scatter of nondiagnostic historic metal and glass artifacts. Most artifacts are within a small drainage across the northern side of the site, flowing from the west downslope toward the southeast. The site measures 98 meters (322 ft) (northwest-to-southeast) and 46 meters (151 ft) (northeast-to-southwest). The artifact scatter includes Artifact Concentration 1, which is about 12 meters (39 ft) in length and is composed of a rusted, mangled, and partly buried car chassis, a partially buried Goodyear tire with no visible identifiers, the accessory portion of an engine, a partially buried steel rod of unknown length, and several other small scraps of metal and tire rubber.

AR-03-05-05-00487 (NFSR 13) is an unimproved dirt road that provides access to Sollers Cabin in an undeveloped, mountainous area. As such, it retains integrity of location, setting, feeling, and association. Within the project APE, NFSR 13 still retains the same characteristics it had historically when it was built; therefore, it retains integrity of design, materials, and workmanship. NFSR 13 is associated with the development of modern recreational use patterns and infrastructure improvements within the Catalina Mountains.

3.7.2.2 Willcox Playa DZ

The APE for actions within the proposed Willcox Playa DZ training site, as shown in **Figure 2-4**, includes proposed dirt landing strip locations, DZs, and LZs. According to AZSITE, 11 previous cultural resource surveys have occurred within small portions of the Willcox Playa along its periphery, nearly all of which were large linear projects that extend many miles away from Willcox Playa (**Table 3-7**). Over 90 percent of the playa has not been subject to survey. Two archaeological sites are recorded within the Willcox Playa near its boundary (AZ CC:13:69 and AZ CC:13:57), neither of which are eligible for listing in the NRHP.

Table 3-7
Cultural Resource Projects within Willcox Playa

Project No.	Author	Project Name	Date
2020-300.ASM	Charest, Jeffrey P.	A Cultural Resources Inventory of 206 Acres of Private, State Trust, and Bureau of Land Management Lands South of Willcox in Cochise County, Arizona	2020
2011-32.ASM	Doak, David P.	The Apache-Redtail Survey: A Class III Archaeological Survey of a 24-Mile-Long Electric Transmission Line Right-of-Way Near the Willcox Playa, Cochise County, Arizona	2010
2006-1.ASM	Ravesloot, John C.	SFPP, LP, El Paso to Phoenix Expansion Project, Arizona Portion: Cochise and Pima Counties	2006
2000-732.ASM	Becker, Kenneth, Edgar K. Huber, Scott O'Mack, and Stephanie Whittlesey	The AEPCO Survey: A Class III Cultural Resources Inventory of Existing Line and Access Roads in the Sulphur Springs and San Simon Valleys, Arizona	2001
1997-209.ASM	William Self Associates	Cultural Resources Assessment Santa Fe Pacific Pipeline Partners, L.P. Pipeline Reconditioning Project Pinal and Cochise Counties, Arizona	1997
1993-192.ASM	Douglas, Diane L.	An Archaeological Survey Near Kansas Settlement, Cochise County: Replacement for El Paso Natural Gas Company 1103 Line	1993
1993-260.ASM	Bierer, Susan B.	Archaeological Survey of 640 Acres (T16S, R24E, Section 2) near Cochise, Cochise County, Arizona: The Willcox Playa Survey, State Land Lease No. 03-31795	1993
1985-126.ASM	Woosley, Anne I., D. Carol Kriebel, and Michael Waters	Amerind Pleistocene Lake Studies I. The Archaeology of the Willcox Playa. Dragoon, Arizona: The Amerind Foundation, Inc	1985
1977-6.ASM	Westfall, Rozen, and Davidson	The AEPCO Project, Vol II, ASM, CRMS, Archaeological Series No. 117	1979
1976-3.ASM	Simpson, Kay, Carol Coe, Carole McClellan and Kathryn Ann Kamp	The AEPCO Project Volume I	1978
1955-3.ASM	Comerska, Breternitz, McConville, and Holzkamper	Southern Pacific Pipeline Survey	1955

Source: AZSITE, 2025

3.7.2.3 Sentinel Drop Zone

The 400-acre APE for the proposed Sentinel DZ training site, as shown in **Figure 2-5**, includes areas proposed for airdrops of equipment and personnel. There have been no previous surveys or cultural resources recorded within the proposed Sentinel DZ training site (AZSITE, 2025).

3.7.2.4 Shi-Ka-She Training Complex

The APE for the Shi-Ka-She Training Complex, as shown in **Figure 2-6**, includes specific areas where seven DZs and five HLZs are proposed. A desktop review of cultural resources was performed for the APE. There are no previous surveys or previously recorded cultural resources at or immediately adjacent to the proposed DZs and HLZs (AZSITE, 2025).

3.7.2.5 Benson Drop Zone

The APE for the proposed Benson DZ training site, as shown in **Figure 2-7**, includes the approximate 40-acre boundary for the proposed DZ. There are five previous cultural resources surveys with 100-percent coverage of the proposed Benson DZ training site APE (**Table 3-8**). There are no previously recorded

cultural resources within the APE (AZSITE, 2025). Therefore, there are no historic properties within the APE for the proposed Benson DZ training site.

Table 3-8
Cultural Resource Projects within Benson Drop Zone APE

Project No.	Author	Project Name	Date
2022-437.ASM	Peterson, Eric	Cultural Resources Survey for the Proposed Hangar Pads Projects at the Benson Municipal Airport in Benson, Cochise County, Arizona	2022
2018-96.ASM	Barr, David M. R.	Archaeological Survey for the Proposed Benson Municipal Airport Perimeter Fence Line Improvement Project, Cochise County, Arizona	2018
2018-124.ASM	Barr, David M. R.	Archaeological Survey for the Proposed Benson Municipal Airport T Hangar and Fuel Farm Projects, Cochise County, Arizona	2018
2014-609.ASM	Barr, David M. R.	Archaeological survey of 1.65 acres for the Proposed Benson Municipal Airport Beacon, Taxiway Lighting, Threshold Lights, and Helipad Project, Cochise County, Arizona	2014
1991-102.ASM	Stone, Connie	Benson Airport and Access Road	1991

Source: AZSITE, 2025

3.7.3 Environmental Consequences

3.7.3.1 Evaluation Criteria

Adverse impacts to cultural resources would occur if the Proposed Action results in the following:

- physically alters, damages, or destroys all or part of a resource;
- alters characteristics of the surrounding environment that contribute to the resource's significance;
- introduces visual or audible elements that are out of character with the property or alter its setting;
- neglects the resource to the extent that it deteriorates or is destroyed; or
- involves the sale, transfer, or lease of the property out of agency ownership (or control) without adequate enforceable restrictions or conditions to ensure preservation of the property's historic significance.

For the purposes of this EA, an impact is considered significant if it alters the integrity of a NRHP-listed, eligible, or potentially eligible resource or potentially impacts TCPs. Under the Proposed Action, effects on cultural resources would include indirect impacts due to minor changes in visual and subsonic noise intrusions and direct impacts resulting from unlikely airplane crashes. The potential for a direct impact due to an aircraft crash within the APE is extremely low, and the potential for direct impacts of a crash on any specific resource is not considered reasonably foreseeable. In the case of unanticipated or inadvertent discoveries, the DAF would comply with the procedures outlined in Section 7.4 of the *Integrated Cultural Resources Management Plan* (DAF, 2021).

3.7.3.2 Proposed Action

Coronado National Forest Sites

Redington Pass HLZ

Under the Proposed Action, the Redington Pass HLZ training site would support FMP training consisting of a team being inserted by helicopter or via ground transportation. No ground-disturbing activities are

included as part of the Proposed Action. NFSR 36 would not be altered by the Proposed Action. Therefore, the Proposed Action would have no impact to cultural resources at this proposed training site.

Mount Lemmon HLZ

Under the Proposed Action, the Mount Lemmon HLZ training site would support the instructor/student camp near Windy Point. Approximately six HH-60 training operations would occur annually at the proposed HLZ. Helicopters would fly in the same manner as at the proposed Redington Pass HLZ training site. No ground-disturbing activities are included as part of the Proposed Action. NFSR 13 would not be altered by the Proposed Action. Therefore, the Proposed Action would have no impact to cultural resources at this proposed training site.

Willcox Playa DZ

Under the Proposed Action, activities at the Willcox Playa DZ training site would include establishing LZs and dirt landing airstrips for helicopter and HC-130 aircraft operations, as well as establishing DZs for both personnel and equipment. No ground-disturbing activities would occur as part of the Proposed Action. To date, no cultural resources listed or eligible for listing in the NRHP have been identified within the Willcox Playa APE. However, there are parts of the APE that have not been surveyed for cultural resources. While activities at the Willcox Playa DZ training site would not be anticipated to result in significant ground disturbance, the dropping/landing of heavy equipment could disturb unidentified archaeological resources if present. Overall, the Proposed Action would have negligible impacts to cultural resources.

Sentinel DZ

Under the Proposed Action, the Sentinel DZ training site would be used for helicopter Pararescue Specialist jump operations support one to two times per year and would only involve overflight. The Proposed Action includes up to 125 HC-130 operations per year. Contract aircraft, most likely C-23 Sherpas and Skyvans, would perform a maximum of 45 flyovers annually. There are no records of previous cultural surveys being conducted at the proposed Sentinel DZ training site, and no cultural resources have been identified within the proposed Sentinel DZ APE. If unknown NRHP-eligible cultural resources are present within the APE, such resources could be impacted by disturbance caused by heavy equipment airdrops. Implementation of the Proposed Action would not be expected to impact cultural resource at the proposed Sentinel DZ training site.

Shi-Ka-She Training Complex

Under the Proposed Action, seven DZs and five HLZs would be established for training activities within the Shi-Ka-She Training Complex. This proposed site would be used for helicopter landing training and Pararescue Specialist support up to two times per year. One fixed-wing LZ would be established within the training complex to be used for FARP operations up to six times per year (three each day and night) for up to 4 hours per event. While no cultural resources have been identified beneath or immediately adjacent to the DZs, HLZs, and the fixed-wing LZ, there also are no records of previous cultural surveys at these locations. If unknown NRHP-eligible cultural resources are present within the Shi-Ka-She APE, such resources could be impacted by disturbance caused by impact of airdrops. Implementation of the Proposed Action would not be expected to impact cultural resources at the proposed Shi-Ka-She Training Complex site.

Benson DZ

Under the Proposed Action, HC-130 aircrews would use the Benson DZ up to five times per year. Implementation of the Proposed Action would not result in any ground disturbance at the proposed Benson DZ. The entire APE for the proposed Benson DZ training site has been surveyed, and no cultural resources have been recorded from this area. Therefore, the Proposed Action would have no impact to cultural resources at the proposed Benson DZ training site.

3.7.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of available, appropriate training sites. There would be no impacts to cultural resources beyond baseline conditions.

3.7.3.4 Cumulative Impacts

Two proposed actions with the potential to impact cultural resources in and around the APEs for the proposed training sites are the Willcox Playa Lithium Mine Project and the construction of a new terminal at Benson Municipal Airport (see **Table 3-1**). Lithium mining at Willcox Playa would involve brine extraction via wells drilled throughout the location. No other details are available at this time. The Benson Municipal Airport, where the proposed Benson DZ training site would be located, has previously been surveyed in its entirety, and no cultural resources were identified. None of the remaining reasonably foreseeable projects listed in **Table 3-1** would impact cultural resources specifically at the training locations. Cultural resources impacts associated with past actions listed in **Table 3-1** are reflected in the description of existing conditions for cultural resources. When considered in conjunction with the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts to cultural resources would occur with implementation of the Proposed Action.

3.8 BIOLOGICAL RESOURCES

3.8.1 Definition of the Resource

Biological resources include native or invasive plants and animals; sensitive and protected floral and faunal species; and the associated habitats, such as wetlands, forests, grasslands, cliffs, and caves in which they exist. Habitat can be defined as the resources and conditions in an area that support a defined suite of organisms. The following is a description of the primary federal statutes that form the regulatory framework for the evaluation of biological resources.

Figures 2-2 through **2-7** show the training sites under consideration. The boundaries shown for each training site make up the ROI for this biological resources analysis.

3.8.1.1 Endangered Species Act

The ESA established protection for threatened and endangered species and the ecosystems upon which they depend. Sensitive and protected biological resources include plant and animal species listed as threatened, endangered, or special status by USFWS. The ESA also allows the designation of geographic areas as critical habitat for threatened or endangered species. Under the ESA, an “endangered species” is defined as any species in danger of extinction throughout all, or a large portion, of its range. A “threatened species” is defined as any species likely to become an endangered species in the foreseeable future. USFWS maintains a list of candidate species under evaluation for possible listing as threatened or endangered under the ESA. Although candidate species receive no statutory protection under the ESA, USFWS encourages cooperative conservation efforts for these species because they are species that may warrant protection in the future under the ESA.

3.8.1.2 Migratory Bird Treaty Act

The *Migratory Bird Treaty Act* (16 USC §§ 703–712) (MBTA) makes it unlawful for anyone to take migratory birds or their parts, nests, or eggs unless permitted to do so by regulations. Per the MBTA, “take” is defined as “ pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect” (50 CFR § 10.12). Birds protected under the MBTA include nearly all species in the US except for non-native/human-introduced species and some game birds.

EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires all federal agencies undertaking activities that may negatively impact migratory birds to follow a prescribed set of actions to further implement MBTA. EO 13186 directs federal agencies to develop a Memorandum of Understanding with USFWS that promotes the conservation of migratory birds.

The *National Defense Authorization Act for Fiscal Year 2003* (Public Law 107-314) provided the Secretary of the Interior the authority to prescribe regulations to exempt the US Armed Forces from the incidental take of migratory birds during authorized military readiness activities. Congress defined military readiness activities as all training and operations of the US Armed Forces that relate to combat and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use. Further, in October of 2012, the Authorization of Take Incidental to Military Readiness Activities was published in the *Federal Register* (50 CFR § 21.42), authorizing incidental take during military readiness activities unless such activities may result in significant adverse effects on a population of a migratory bird species.

In December 2017, the US Department of the Interior issued M-Opinion 37050, *The Migratory Bird Treaty Act Does Not Prohibit Incidental Take*, which concluded that the take of migratory birds from an activity is not prohibited by the MBTA when the purpose of that activity is not the take of a migratory birds, eggs, or nests. On 11 August 2020, the US District Court, Southern District of New York, vacated M-37050. Thus, incidental take of migratory birds is again prohibited. The interpretation of the MBTA remains in flux, and additional court proceedings are expected.

3.8.1.3 Bald and Golden Eagle Protection Act

The *Bald and Golden Eagle Protection Act of 1940* (16 USC §§ 668–668d) (BGEPA) prohibits actions to "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof." Further, the BGEPA defines "take" as:

> Pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.

The BGEPA defines "disturb" as:

> To agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, injury to an eagle, a decrease in productivity by substantially interfering with the eagle's normal breeding, feeding or sheltering behavior, or nest abandonment by substantially interfering with the eagle's normal breeding, feeding, or sheltering behavior.

The BGEPA also prohibits activities around an active or inactive nest site that could result in disturbance to returning eagles.

3.8.1.4 Invasive Species

Invasive species are non-native species whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health. EO 13751, *Safeguarding the Nation from the Impacts of Invasive Species*, requires federal agencies to identify actions that may affect invasive species; use relevant programs to prevent introductions of invasive species; detect, respond, and control such species; monitor invasive species populations; and provide for restoration of native species. Invasive species damage native habitat and impede management by outcompeting native species.

3.8.2 Existing Conditions

The vegetation characteristics and wildlife species that may occur in each of the six proposed training sites are discussed below. Federally listed species with the potential to occur are discussed in **Section 3.8.2.6** by species in relation to their potential occurrence in the Proposed Action areas.

3.8.2.1 Coronado National Forest Sites

Redington Pass HLZ

Vegetation

The proposed Redington Pass HLZ training site is located in the Coronado National Forest at approximately 4,300 feet AMSL. The topography consists of ridges and ravines with ephemeral washes that create a variety of topographic exposures that in turn support a mix of vegetation associations. Vegetation associations include semi-desert grassland, pine-oak woodland, and Encinal woodland (see **Figure 3-5** at the end of this section). North-facing exposures have more trees and shrubs, and south-facing slopes have more grassland vegetation. Common semi-desert grassland species include grama grasses (*Bouteloua* spp.), tanglehead (*Heteropogon contortus*), plains lovegrass (*Eragrostis intermedia*), spidergrass (*Aristida ternipes*), purple threeawn *(Aristida purpurea),* slim tridens (*Tridens muticus*), spreading ratany (*Krameria lanceolata*), false mesquite (*Calliandra eriophylla*), prickly pear (*Opuntia* spp.), shin-dagger (*Agave schottii*), and sotol (*Dasylirion* spp.). The Encinal, or oak, woodland occurs discontinuously at elevations between 3,600 to 6,500 feet AMSL. Where present, common species include Emory oak (*Quercus emoryi*), Arizona white oak (*Quercus arizonica*), manzanita (*Arctostaphylos* spp.), silktassel (*Garrya elliptica*), ceanothus (*Ceanothus* spp.), skunkbush sumac (*Rhus trilobata*), catclaw acacia (*Acacia greggii*), mountain mahogany (*Cercocarpus* spp.), and rosewood (*Vauquelinia californica*). The proposed Redington Pass HLZ training site occurs below the typical elevational range of pine-oak woodland, but some species such as border piñon (*Pinus discolor*) and juniper (*Juniperus* spp.) may occur.

Wildlife

With a mixture of vegetation associations at the proposed Redington Pass HLZ training site, a variety of wildlife species are likely to be present. **Table 3-9** lists some of the more common species expected in the vicinity of the proposed training site.

Mount Lemmon HLZ

Vegetation

The Mount Lemmon HLZ training site is located in the Coronado National Forest at approximately 7,660 feet AMSL. The surrounding area is mountainous with peaks that exceed 8,000 feet AMSL. The primary vegetation association is pine-oak woodland with areas of ponderosa pine-evergreen shrub and dry mixed-conifer communities (US Department of Agriculture [USDA], 2018) (**Figure 3-5**). Parts of the forest area burned in wildfires as recently as 2020 (ArcGIS Online 2025; USFWS, 2023). Common herbaceous species include grama grasses, plains lovegrass, deergrass (*Muhlenbergia rigens*), mountain muhly (*Muhlenbergia montana*), Texas bluestem (*Schizachyrium cirratum*), prairie junegrass (*Koeleria macrantha*), and piñon ricegrass (*Piptochaetium fimbriatum*). Common shrub and tree species include silktassel, manzanita, Parry's and Palmer's agave (*Agave palmeri* and *A. parryi*), mountain mahogany, ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), oak (*Quercus* spp.), piñon, and juniper species.

Wildlife

Wildlife species that occur in pine-oak woodland communities include Coues' white-tailed deer (*Odocoileus virginianus couesii*), the Arizona gray squirrel (*Sciurus arizonensis*), the Chiricahua squirrel (*Sciurus nayaritensis*), the common hog-nosed skunk (*Conepatus leuconotus*), Gould's wild turkey (*Meleagris gallopavo mexicana*), the painted redstart (*Myioborus pictus*), the acorn woodpecker (*Melanerpes formicivorus*), the red-faced warbler (*Cardellina rubrifrons*), the whiskered screech-owl (*Megascops trichopsis*), the mountain skink (*Plestiodon callicephalus*), the striped plateau lizard (*Sceloporus virgatus*), the ridge-nosed rattlesnake (*Crotalus willardi*), the Sonoran mountain kingsnake (*Lampropeltis pyromelana*), and the Huachuca giant skipper (*Agathymus evansi*).

Table 3-9
Species in Vicinity of the Coronado National Forest Sites

Common Name	Scientific Name	Vegetation Association
Mammals		
American badger	*Taxidea taxus*	Semi-arid grassland
Pronghorn	*Antilocapra americana*	Semi-arid grassland
Plains harvest mouse	*Reithrodontomys montanus*	Semi-arid grassland
Coues' white-tailed deer	*Odocoileus virginianus couesii*	Encinal woodland
Yellow-nosed cotton rat	*Sigmodon onchrognathus*	Encinal woodland
Lesser long-nosed bat	*Leptonycteris yerbabuenae*	Encinal woodland
White-nosed coati	*Nasua narica*	Encinal woodland
Birds		
Scaled quail	*Callipepla squamata*	Semi-arid grassland
Black-throated sparrow	*Amphispiza bilineata*	Semi-arid grassland
Botteri's sparrow	*Aimophila botterii*	Semi-arid grassland
Acorn woodpecker	*Melanerpes formicivorus*	Encinal woodland
Mexican jay	*Aphelocoma ultramarina*	Encinal woodland
Hepatic tanager	*Piranga flava*	Encinal woodland
Reptiles		
Mexican hog-nosed snake	*Crotalus willardi obscurus*	Semi-arid grassland
Round-tailed horned lizard	*Phrynosoma modestum*	Semi-arid grassland
Desert grassland whiptail	*Aspidoscelis uniparens*	Semi-arid grassland
Sonoran spotted whiptail	*Aspidoscelis sonorae*	Semi-arid grassland
Clark's spiny lizard	*Sceloporus clarkii*	Encinal woodland
Gila spotted whiptail	*Aspidoscelis flagellicauda*	Encinal woodland
Eastern patch-nosed snake	*Salvadora grahamiae*	Encinal woodland
Green ratsnake	*Senticolus triaspis*	Encinal woodland
Amphibians		
Great Plains toad	*Anaxyrus cognatus*	Semi-arid grassland
Plains spadefoot	*Spea bombifrons*	Semi-arid grassland
Invertebrates		
Horse lubber grasshopper	*Taeniopoda eques*	Semi-arid grassland
Arizona eyed click beetle	*Alaus lusciosus*	Encinal woodland
Great purple hairstreak	*Atlides halesus*	Encinal woodland

Source: USFWS IPaC (**Appendix A**)

3.8.2.2 Willcox Playa DZ

Vegetation

The proposed Willcox Playa DZ training site is a broad, dry, alkaline lakebed located south of Interstate 10 (I-10), approximately 4 miles south of the community of Willcox, Arizona. Willcox Playa sits at an elevation of approximately 4,138 feet AMSL and has flat terrain with alluvial, or loose, deposits that are largely devoid of vegetation. It is seasonally flooded from either winter rains or summer monsoon storms and is fringed by semi-desert grassland and salt desert scrub vegetation with areas of mesquite shrubland (**Figure 3-5**) (Arizona Important Bird Areas Program, 2025). Common species in these vegetation associations include saltgrass (*Distichlis spicata*), alkali sacaton (*Sporobolus airoides*), saltbush (*Atriplex* spp.), and mesquite (*Prosopis* spp.).

Wildlife

Due to the lack of vegetation, Willcox Playa training site does not contain resident wildlife except on its perimeter. Because it is seasonally flooded, the presence of satellite lakes/wetlands (Cochise lakes and Crane Lake) on the northeast side of the playa and the surrounding agricultural lands in the Sulphur Springs Valley allow the playa and the region surrounding it to sustain seasonal populations of migratory birds. The region has been identified as an Important Bird Area (IBA) (Arizona Important Bird Areas Program, 2025) and supports a large over-wintering population of wintering sandhill cranes (*Grus canadensis*). The Willcox Playa and adjacent lakes/wetlands also support a substantial in-migration spring and late summer shorebird

population. As is typical in fresh waterbodies, the edges of the Willcox Playa may be used by shorebirds as foraging areas. Waterfowl are more abundant in the adjacent Cochise lakes but use the playa during unusually wet winters. Predatory birds, such as the peregrine falcon and merlin, may frequent the area in winter.

3.8.2.3 Sentinel DZ

Vegetation

The elevation of the proposed Sentinel DZ training site is approximately 2,115 feet AMSL on the broad, flat alluvial floodplain of Brawley Wash, 17 miles west of Tucson and 3 miles from the west boundary of the Saguaro National Park West. The vegetation in the ROI is classified as Sonoran Desertscrub in the Lower Colorado River Valley Subdivision (**Figure 3-5**). The primary plant community is creosotebush-white bursage (*Larrea tridentata-Ambrosia dumosa*) (Bureau of Land Management, 2011). Saltbush is also a common species. In areas where soils are more alluvial and have a finer texture, the plant community transitions to more mesquite-saltbush (*Prosopis-Atriplex*) scrub (Brown et al., 2017). Vegetation on the eastern side and at the northern end of the Sentinel DZ site is relatively sparse. The western side has more vegetation, consisting of desert scrub with more mesquite.

Wildlife

The sparse vegetation in parts of the proposed Sentinel DZ training site ROI provides minimal habitat for wildlife. The western side of the proposed DZ contains more desert shrub cover and may provide better habitat. The most abundant mammal species are burrowing rodents including Merriam's kangaroo rats (*Dipodomys merriami*), pocket mice (*Perognathus* spp., *Chaetodipus* spp.), the southern grasshopper mouse (*Onychomys torridus*), and Botta's pocket gopher (*Thomonys bottae*). A wide variety of bird species have the potential to occur in the region surrounding the ROI. Many species occur as seasonal winter migrants. A variety of raptor species may also be observed seasonally. Most raptors use the ROI and surrounding area to hunt for prey. Amphibians may not be common but may occur in areas that seasonally collect rain and provide breeding areas. The Sonoran Desert toad (*Incilius alvarius*) and Woodhouse's toad (*Anaxyrus woodhousei*) are amphibian species that may occur in the vicinity of the Sentinel DZ site.

3.8.2.4 Shi-Ka-She Training Complex

Vegetation

The proposed FMP training area (**Figure 2-7**) in the Shi-Ka-She Training Complex is characterized by the paloverde-cacti-mix shrub plant community that is part of the Sonoran Desert Scrub, Arizona Upland Subdivision (**Figure 3-5**) (Brown, 1982). This vegetation series occurs at elevations above the creosotebush-white bursage association that occurs on the valley floors but may retain some creosotebush and white bursage, although not as dominant species. Foothill paloverde (*Cercidium microphyllum*) is a common dominant species. Mesquite may also be a common shrub. Other species may include ironwood (*Olneya tesota*), whitethorn acacia (*Acacia constricta*), ocotillo (*Fouquieria splendens*), jojoba (*Simmondsia chinensis*), little leaf ratany (*Krameria parvifolia*), desert hackberry (*Celtis pallida*), and bush buckwheat (*Eriogonum fasciculatum*). The terrain in the proposed FMP training site consists of a series of low ridges dissected by multiple ephemeral washes that contribute to the diversity of vegetation and habitats. The ephemeral washes contain larger shrubs or small trees such as mesquite because of the greater availability of water.

The North and South River training areas are on private land parcels located along the San Pedro River adjacent to the northern boundary of the San Pedro River National Conservation Area (Escalante Crossing Road) (Bureau of Land Management, 2019). Vegetation within the North Training Area includes mesquite upland shrubland and riparian woodland. The riparian woodland contains willow (*Salix* spp.), cottonwood (*Populus* spp.), and mesquite trees. Other species that may occur in this area include desert hackberry, acacia, and saltbush. The South Training Area occurs within the riparian woodland vegetation association. Adjacent properties contain areas that could be classified as mesquite bosques or forests (i.e., sites with thick stands of riparian mesquite trees). However, the mesquite vegetation on the private land parcels in

the proposed training areas has been thinned and is relatively sparse or has been cleared on some sites. The deciduous willow and cottonwood trees still exist on the banks of the San Pedro River.

Wildlife

The proposed FMP training site is an upland site that provides habitat for a variety of wildlife species. Mammal species may include desert mule deer (*Odocoileus hemionous crooki*), black-tailed jackrabbit, desert cottontail (*Sylvilagus audubonii*), California leaf-nosed bat (*Macrotus californicus*), California myotis (*Myotis californicus*), Arizona pocket mouse (*Perognathus amplus*), Bailey's pocket mouse (*P. baileyi*), cactus mouse (*Peromyscus eremicus*), Merriami's kangaroo rat, white-throated woodrat (*Neotoma albigula*), and Harris antelope ground squirrel (*Ammospermophilus harrisii*). Birds are relatively diverse and include the Harris hawk (Parabuteo unicinctus), white-wing dove (*Zenaida asiatica*), Inca dove (*Columbina inca*), mourning dove (*Zenaida macroura)*, greater roadrunner (*Geococcyx* spp.), pyrrhuloxia (*Cardinalis sinuatus*), curve-bill thrasher (*Toxostoma curvirostre*), and cactus wren (*Campylorhynchus brunneicapillus*). Reptiles include the Regal horned lizard (*Phrynosoma solare*), zebra-tailed lizard (*Callisaurus draconoides)*, desert iguana (*Dipsosaurus dorsalis*), western whiptail (*Aspidoscelis tigris*), and Arizona glossy snake (*Arizona elegans noctivaga*).

The North and South training areas contain many of the same wildlife species that occur in the FMP training site. The abundance of wildlife is likely lower than other adjacent land parcels along the San Pedro River because the thicker mesquite bosque-like vegetation has been thinned or cleared. Other wildlife species that may occur in or near the North and South training areas include the orange-crown warbler (*Vermivora celata*), Lucy's warbler (*V. luciae*), the Vermilion flycatcher (*Pyrocephalus rubinus*), Abert's towhee (*Melozone aberti*), the cardinal (*Cardinalis cardinalis*), the varied bunting (*Passerina versicolor*), and the great blue heron (*Ardea herodias*).

3.8.2.5 Benson DZ

Vegetation

The proposed Benson DZ training site is located at the Benson Municipal Airport, where much of the native vegetation has been disturbed and portions of the ground have been paved over with asphalt/cement to create taxiways, runways, and parking areas for aircraft. The vegetation surrounding the airport is classified as Sonoran Desert Scrub, Arizona Upland Subdivision (**Figure 3-5**). The plant community in the Benson DZ site is the same as the Shi-Ka-She site; i.e., paloverde-cacti-mix shrub series (Brown, 1982).

Wildlife

Wildlife species are widely diverse in the undisturbed paloverde-cacti-mix shrub surrounding the proposed Benson DZ training site (Brown, 1982). Within the proposed Benson DZ ROI, wildlife species are limited because the area has been disturbed and does not support much native vegetation and habitat. Several species of small mammals may occur on the perimeter of the proposed training site in patches of native vegetation. These species may include the Arizona pocket mouse, Bailey's pocket mouse, the cactus mouse, and the Harris antelope ground squirrel. Birds are relatively uncommon because of the absence of suitable habitat. Turkey vultures (*Cathartes aura*) may use the area for foraging, and mourning doves, white-winged doves, and common ravens may use the periphery of the ROI.

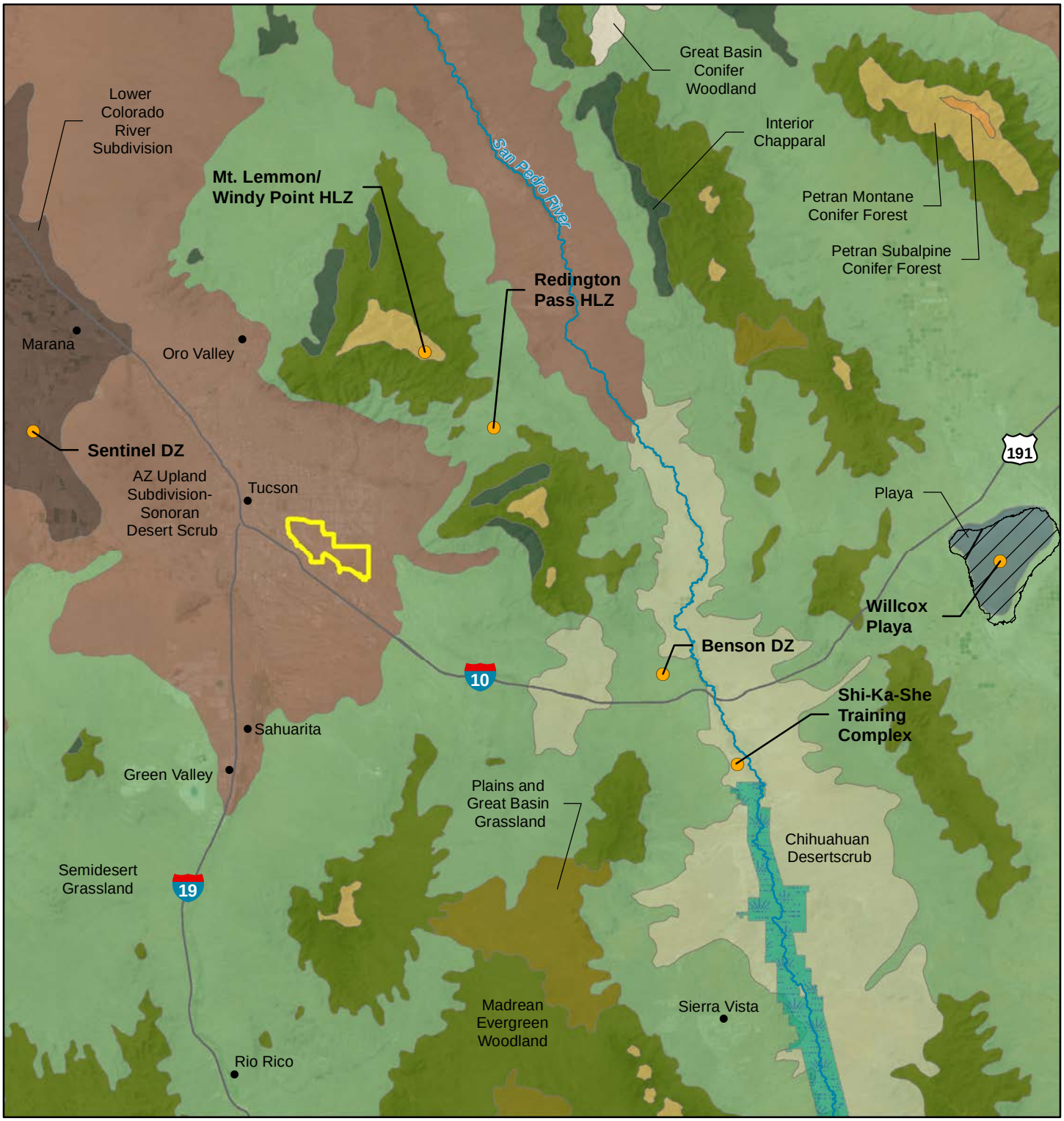


FIGURE 3-5
Vegetation

- Training Site Location
- Installation Boundary
- Willcox Playa
- AZ Upland Subdivision- Sonoran Desert Scrub
- Chihuahuan Desertscrub
- Great Basin Conifer Woodland
- Interior Chapparal
- Lower Colorado River Subdivision- Sonoaran Desertscrub
- Madrean Evergreen Woodland
- Petran Montane Conifer Forest
- Petran Subalpine Conifer Forest
- Plains and Great Basin Grassland
- Playa
- San Pedro Riparian NCA
- Semidesert Grassland

N

0 20 Miles

Imagery: Maxar 2022, 2023, 2024
Coordinate System: WGS 1984 UTM Zone 12N

AZ = Arizona; NCA = National Conservation Area

3.8.2.6 Federally Listed Threatened and Endangered Species

The DAF used the USFWS IPaC web service to identify the federally listed species that may occur in the vicinity of the six proposed training sites under the Proposed Action.

Mexican Gray Wolf – The Mexican wolf (*Canis lupus baileyi*) occupies mountain forest, grasslands, and shrublands where populations of elk and deer serve has their primary prey (USFWS, 2022a). Any population of Mexican gray wolves in southern Arizona (south of I-40) are classified as experimental populations under Section 10(j) of the ESA (87 FR 39348) based on "experimental" releases of Mexican gray wolves to aid species recovery efforts. There is habitat in the vicinity of the proposed Redington Pass HLZ and Mount Lemmon HLZ training sites that is similar to habitat used by Mexican gray wolves, although wolves are not known to occupy the area.

Ocelot – Ocelots (*Leopardus paradalis*) are federally listed as endangered and are known to occur in southern Arizona (USFWS, 2016). However, observations have been rare and most recently have occurred only south of Tucson and the I-10 corridor. The most recent observation occurred in 2024 on a trail camera in the Sky Island Mountain ranges in the Nogales, Arizona, region near the Mexico-US border (Phoenix Zoo, 2024). The ocelot uses a wide range of habitats including desert shrublands, pine-oak and fir forests, and grasslands. Habitats similar to these occur at the proposed Redington Pass HLZ and Mount Lemmon HLZ training sites and the Shi-Ka-She Training Complex.

Cactus Ferruginous Pygmy-Owl – The cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) is federally listed as threatened and occurs in the region in which the Proposed Action would occur. Most pygmy-owls live in Sonoran Desert Scrub communities in southern Arizona including xeroriparian vegetation (i.e., dense thickets along dry desert washes) with palo verde, mesquite, and saguaro cactuses (*Carnegiea gigantean*) (USFWS, 2022b). Of the proposed training sites, only the Shi-Ka-She Training Complex contains habitat that would potentially support the pygmy-owl. Vegetation in the North and South Training areas has been thinned or cleared, resulting in habitat that is not suitable for pygmy-owls. Adjacent mesquite thickets along the San Pedro River provide potential habitat. However, saguaro cactuses do not occur in the surrounding upland areas.

Mexican Spotted Owl – The Mexican spotted owl (*Strix occidentalis lucida*) is federally listed as threatened. The Mexican spotted owl occupies a wide range of habitats in southern Arizona including the Santa Catalina Mountains and the Rincon Mountains within the Coronado National Forest (USFWS, 2012). Habitats include oak woodlands, pine-oak woodland, mixed-conifer, riparian forests, and rocky canyons. The proposed Redington Pass HLZ and Mount Lemmon HLZ training sites contain Mexican spotted owl habitat. The Santa Catalina and Rincon Mountains have been designated as critical habitat for the owl. Features considered primary components of critical habitat include a range of tree sizes, 30–45 percent of which have a diameter greater than or equal to 12 inches; a shaded canopy providing greater than or equal to 40-percent groundcover; large, dead snag trees; and high volumes of fallen trees or woody debris that support prey species.

Yellow-billed Cuckoo – The yellow-billed cuckoo (*Coccyzus americanus*) is federally listed as threatened. Habitat of the yellow-billed cuckoo in the western US is typically considered to be wooded habitat, such as willows with dense cover along streams and rivers with cottonwoods nearby. Recent survey efforts have documented yellow-billed cuckoos occupying xeroriparian habitat during the nesting season in southern Arizona. Nests were found in oak, desert hackberry, mesquite, juniper, acacia, ash (*Fraxinus velutina*), willow, and cottonwood. These sites were described as areas with scattered individual trees to small clumps to continuous bands along the edges of the drainage course. These findings expanded the definition of suitable yellow-billed cuckoo habitat. Occupied sites were located in the Santa Catalina Mountains (Beauregard et al., 2024). Yellow-billed cuckoo habitat could be present at the proposed Redington Pass HLZ training site and the North and South training areas along the San Pedro River at the proposed Shi-Ka-She Training Complex. The riparian zone along the San Pedro River, which extends from the Mexico-US border to the confluence with the Gila River, has been designated as critical habitat for the yellow-billed cuckoo. This includes parts of the North and South training areas.

Fish – Two fish species, the Gila chub (*Gila intermedia*) and the Gila topminnow (*Poeciliopsis occidentalis*) were identified as potentially occurring in the ROI for the Shi-Ka-She Training Complex, which is the only proposed site that contains aquatic habitat (i.e., the San Pedro River). Both species are federally listed as endangered. The Gila chub commonly inhabits pools in smaller streams, springs, and desert wetlands. The chub prefers quiet, deeper waters with nearby cover such as vegetation, boulders, and logs. Designated critical habitat for the Gila chub is located approximately 18 miles west of the Shi-Ka-She Training Complex and 13 miles west of the proposed Benson DZ training site. The Gila topminnow prefers shallow, warm, fairly quiet waters in ponds, desert wetlands, pools, springs, small streams and the margins of larger streams (USFWS, 1998). Mats of algae and debris along the edges of habitats are an important component for cover and foraging. Critical habitat has not been designated for the Gila topminnow.

Monarch Butterfly – The monarch butterfly (*Danaus plexippus*) is proposed for listing under the ESA (89 FR 100662). The monarch is best known for its long-distance, multi-generational migration during the spring and summer (USFWS, 2024a). During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (*Asclepias* spp.) with the emerging larvae feeding on the milkweeds before pupating into chrysalises and later emerging as adults that continue the migration. Adults typically live 2–5 weeks during the spring and summer and feed on nectar from flowers, unlike the larvae, which feed exclusively on milkweeds. During fall in North America, monarch butterflies undergo a long-distance migration during which the migratory generation of adults journey to winter areas in California and Mexico, where they enter a period of reproductive diapause and live for an extended time until the following spring.

Plants – Three plant species were identified as potentially occurring in the ROI of the Proposed Action. These include the Arizona eryngo (*Eryngium sparganophyllum*), Bartram's stonecrop (*Graptopetalum bartramii*), and Huachuca water-umbel (*Lilaeopsis schaffneriana* var. *recurva*). The Huachuca water-umbel is a semi-aquatic-to-fully aquatic herbaceous perennial. The species is restricted to desert wetlands, rivers, streams, and springs in permanently wet (or nearly so) muddy or silty substrates with some organic content. The Huachuca water-umbel is found in shallow and slow-flowing waters that are relatively stable, or in active stream channels in locations not subject to flooding or periodic flows (USFWS 2017, 2024b). The Arizona eryngo requires perennially moist, organic alkali soils found in spring-fed desert wetlands supported by adequate groundwater (USFWS, 2022c). Bartram's stonecrop is a succulent in the stonecrop family. This species typically occurs on rocky outcrops in deep, narrow canyons in heavy cover of litter and shade and typically in close proximity to streambeds, springs, or seeps (USFWS, 2020). No habitat for any of these species occurs within the Proposed Action.

3.8.3 Environmental Consequences

3.8.3.1 Evaluation Criteria

The level of impact to biological resources is based on the following:

- importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource;
- proportion of the resource that would be affected relative to its occurrence in the region;
- sensitivity of the resource to the proposed activities; and
- duration of potential ecological impact.

Adverse impacts to biological resources would occur if the Proposed Action negatively affects species or habitats of high concern over relatively large areas, or if estimated disturbances cause reductions in population size or distribution of a species of high concern.

As a requirement under the ESA, federal agencies must provide documentation that ensures that the agency's proposed action would not adversely affect the continued existence of any threatened or endangered species. The ESA requires that all federal agencies avoid "taking" federally threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). Section 7 of the ESA establishes a consultation process with USFWS that ends with either a "no effect" determination by the federal agency or informal consultation with a "may affect, but not likely to adversely affect"

determination and request for concurrence from USFWS or formal consultation via a biological assessment by the federal agency and a biological opinion from USFWS that the Proposed Action would or would not jeopardize the continued existence of a species. For a proposed candidate species or its proposed critical habitat in the project area, if there is a plausible chance of an adverse effect, the federal agency requests a conference with USFWS.

3.8.3.2 Proposed Action

Five species of federally listed species would not be adversely affected by the Proposed Action at any of the sites evaluated in this EA. Two of the plant species, the Arizona eryngo and the Huachuca water-umbel, are associated with aquatic or semi-aquatic habitat that does not occur in the ROI. There is also no habitat in the ROI for the third plant species, Bartram's stonecrop. Aquatic habitat for the two fish species, Gila chub and Gila topminnow, does not occur in the ROI. These five species are dismissed from further evaluation in this EA.

Coronado National Forest Sites

Redington Pass HLZ

Vegetation

Under the Proposed Action, PR teams would travel along existing USFS roads. There would be the potential for some trampling of shrubs and herbaceous plants during PR training operations due to student foot traffic. Implementation of the Proposed Action at the proposed Redington Pass HLZ training site would result in long-term, adverse but negligible impacts to vegetation.

Wildlife

Impacts to wildlife could result from human activity disturbance during training operations, including noise from helicopters and simulated combat noise from the use of propane cannons, ground burst simulators, and the firing blank rounds. These activities would be anticipated to impact larger and more mobile species that would avoid the local area of human activity and helicopter operations. Typical helicopter operations would have a duration of approximately 45 minutes. Land navigation training, during which participants would practice field navigation skills, would involve human activity similar to the recreational hiking that already occurs throughout the area. Land navigation training would take place during the cooler months and would therefore avoid potential impacts to nesting birds. Implementation of the Proposed Action at the proposed Redington Pass HLZ training site would result in short-term, adverse, but negligible impacts to wildlife.

Federally Listed Threatened and Endangered Species

Habitat for the threatened cactus ferruginous pygmy-owl and Mexican spotted owl does not occur in the proposed Redington Pass HLZ training site and neither species would be adversely affected by the Proposed Action. The Mexican gray wolf is not known to occur in the Santa Catalina Mountains, although the mountains do contain potential suitable habitat. Known populations occur east and northeast of the Santa Catalina Mountains in areas where wolves have been released to establish and recover the species.[2]

The definition of what is considered typical yellow-billed cuckoo habitat has recently been expanded by studies in southern Arizona (Beauregard et al., 2024). The yellow-billed cuckoo is now known to nest in xeroriparian habitat along ephemerally dry washes. Two occupied sites have been identified in the general area of the proposed Redington Pass HLZ training site between the Rincon and Santa Catalina mountains (Beauregard et al., 2024). Yellow-billed cuckoos are typically only present from mid-May through early September during the breeding and nesting season. By restricting training activities in ephemeral washes

[2] https://www.arcgis.com/home/webmap/viewer.html?webmap=dbcc9960867948aea225fc53c50d0ed0&extent=-110.6313,32.9752,-106.5746,34.932

during the breeding and nesting season, PR training activities at the proposed Redington Pass HLZ training site would not affect the yellow-billed cuckoo.

The monarch butterfly is closely linked to the presence of milkweed. A variety of milkweed species occurs in the desert Southwest. The PR training activities proposed for the Redington Pass HLZ training site would result in minimal impacts to vegetation and disturbance of milkweed populations that could be present in the ROI would not occur. Therefore, implementation of the Proposed Action at the proposed Redington Pass training site would not adversely affect the monarch butterfly.

Mount Lemmon HLZ

Vegetation

Under the Proposed Action, PR teams would travel along existing USFS roads. There would be the potential for some trampling of shrubs and herbaceous plants during PR training operations due to student foot traffic. Implementation of the Proposed Action at the proposed Mount Lemmon HLZ training site would result in long-term, adverse but negligible impacts to vegetation.

Wildlife

Impacts to wildlife could result from human activity disturbance during training operations including noise from helicopters and simulated combat noise from firing blank rounds. These activities would be anticipated to impact larger and more mobile species that would avoid the local area of human activity and helicopter operations. Typical helicopter operations would have a duration of approximately 45 minutes. Land navigation training where participants would practice field navigation skills would involve human activity similar to the recreational hiking that already occurs throughout the national forest. Implementation of the Proposed Action at the proposed Mount Lemmon HLZ training site would result in short-term, adverse, but negligible impacts to wildlife.

Federally Listed Threatened and Endangered Species

Habitat for the threatened cactus ferruginous pygmy-owl and yellow-billed cuckoo does not occur in the proposed Mount Lemmon HLZ training site and neither species would be adversely affected by the Proposed Action. The Mexican gray wolf is not known to occur in the Santa Catalina Mountains, although the mountains do contain potential suitable habitat. Known populations occur northeast of the Santa Catalina Mountains in areas where wolves have been released to establish and recover the species. The ocelot is a rare species in Arizona and is seldom seen. Most recent observations have occurred south of I-10 in southern Arizona in the Nogales, Arizona region. Therefore, implementation of the Proposed Action at the Mount Lemmon HLZ training site would not adversely affect either species.

The Mexican spotted owl is known to occur in the Santa Catalina Mountains (Ganey and Balda, 1989). Critical habitat for the Mexican spotted owl has been designated in the Santa Catalina and Rincon mountains. Some of the area surrounding the proposed Mount Lemmon HLZ training site was burned in the 2020 Bighorn Fire, although unburned ponderosa pines remain around the landing zone. If this species is present, the proposed helicopter training operations and land navigation training could cause the Mexican spotted owl to avoid these areas and affect daily activities, movement and breeding behavior, resulting in direct, short-term effects to the species. Research conducted on the effects of military helicopters on flushing responses of Mexican spotted owls indicates that a buffer distance of 105 meters for helicopter overflights would minimize flushing responses and potential effects to nesting activity (Delaney et al., 1999). Helicopter training flights would last approximately 45 minutes and occur about six times annually. With the identification of specific areas to avoid and maintaining an appropriate buffer distance during the Mexican spotted owl nesting season, implementation of the Proposed Action at the Mount Lemmon HLZ training site may affect but likely not adversely affect the Mexican spotted owl.

The monarch butterfly is closely linked to the presence of milkweed. A variety of milkweed species occurs in the desert Southwest. The PR training proposed for this site would result in minimal impacts to vegetation and disturbance of milkweed populations that could be present in the ROI would not occur. Therefore, implementation of the Proposed Action at the Mount Lemmon HLZ training site would not adversely affect the monarch butterfly.

Willcox Playa DZ

Vegetation

PR training activities that would take place at the Willcox Playa DZ training site under the Proposed Action would include establishing LZs and dirt landing airstrips for helicopter and HC-130 aircraft operations. DZs would be established for both personnel and equipment airdrops. Ground crews would be present at the LZs. The Willcox Playa is a large area encompassing approximately 50 square miles. Vegetation is sparse over most of the playa. Implementation of the Proposed Action at the Willcox Playa DZ training site would not adversely affect vegetation.

Wildlife

Due to the sparse density of vegetation, the Willcox Playa provides minimal wildlife habitat. The only potential wildlife habitat in the ROI is around the perimeter. The Cochise Lake area on the northeast side of the playa and the Willcox Playa, itself, when flooded, are IBAs. The Willcox Playa is used by waterfowl, shorebirds, and wading birds during wet winters when precipitation collects in the playa. Because of the large size of the proposed Willcox Playa DZ training site, the LZs and DZs would occupy only a small proportion of the overall playa. Avoiding areas in the northeast would minimize potential impacts to migratory birds using the Cochise Lake area and adjacent agricultural fields. The playa remains dry for much of the year and impacts to birds would be negligible. Conditions conducive to bird use, such as standing water and wet soil, would also be conditions that would prevent or limit use of the playa as LZs and DZs. Implementation of the Proposed Action at the Willcox Playa DZ training site would not adversely affect wildlife, including migratory birds.

Federally Listed Threatened and Endangered Species

None of the threatened or endangered species discussed in **Section 3.8.2.6** would occur in the Willcox Playa. Therefore, implementation of the Proposed Action at the Willcox Playa DZ training site would not adversely affect threatened or endangered species.

Sentinel DZ

Vegetation

The proposed Sentinel DZ training site would be used for Pararescue Specialist training and equipment drops. Overflights of this area would be the only aircraft operations. The vegetation, primarily mesquite shrubs, is relatively sparse in much of the ROI. Equipment drops that would have the potential to land on individual shrubs could result in negligible, adverse impacts to vegetation. Therefore, implementation of the Proposed Action at the Sentinel DZ training site would result in long-term, adverse but negligible impacts to vegetation.

Wildlife

PR training at the proposed Sentinel DZ site would be short in duration and wildlife species would temporarily avoid areas of human activity during training. Implementation of the Proposed Action at the Sentinel DZ would result in short-term, adverse but negligible impacts to wildlife.

Federally Listed Threatened and Endangered Species

None of the threatened or endangered species discussed in **Section 3.8.2.6** occur at the proposed Sentinel DZ training site. Therefore, implementation of the Proposed Action at the Sentinel DZ training site would adversely affect threatened or endangered species.

Shi-Ka-She Training Complex

Vegetation

The PR training activities proposed at the Shi-Ka-She Training Complex would include helicopter landing training on five proposed HLZs and Pararescue Specialist training on seven proposed DZs. The activities would be short in duration and occur a maximum of two times per year. The three HLZs in the FMP training area would be established on previously disturbed sites. The HLZ on the North Training Area would be

established in an area where native vegetation has been previously removed and disturbed and which contains mostly weedy species. The HLZ in the South Training Area would occur on a land parcel along the San Pedro River. The parcel contains several large cottonwood and willow trees and could contain Russian olive. Most of the shrub understory vegetation has been previously removed and up to a 1,600-ft^2 HLZ could be established without removal of any trees. Therefore, implementation of the Proposed Action at the Shi-Ka-She Training Complex would result in adverse but negligible impacts to vegetation.

Wildlife

The proposed DZs would be established in close proximity to the proposed HLZs or would be established in previously disturbed areas. All the proposed HLZs and DZs would be accessible from existing dirt roads. Because most of the activity would occur in previously disturbed areas, impacts to wildlife would be expected to be adverse but negligible. Human activity from landings of personnel and ground support during Pararescue Specialist training could cause some avoidance responses from wildlife species, but the effect would be temporary and short term. Therefore, implementation of the Proposed Action at the Shi-Ka-She Training Complex would result in short-term, adverse, but negligible impacts to wildlife.

Federally Listed Threatened and Endangered Species

Based on known distributions and/or habitat requirements, the Mexican gray wolf, ocelot, and Mexican spotted owl do not occur in the Shi-Ka-She Training Complex.

The cactus ferruginous pygmy-owl uses dense thickets of mesquite and palo verde in xeroriparian areas. Although mesquite thickets occur along the San Pedro River, which extends through both the North and South training areas, the land parcels within these areas along the river have been previously cleared of dense stands of mesquite and palo verde, including those sites planned for HLZs and DZs. With the absence of saguaro cactus in the adjacent upland areas and the previous thinning and clearing of scrub thickets in the training areas, the pygmy-owl would not be expected occur in the sites proposed for the establishment of HLZs and DZs. Therefore, the Proposed Action would have not affect the cactus ferruginous pygmy-owl.

The yellow-billed cuckoo has the potential to occur along the San Pedro River in the vicinity of the North and South training areas. The riparian zone along the San Pedro River has been designated critical habitat for the yellow-billed cuckoo. Most of the mesquite shrub thickets on the land parcels in the North and South training areas have been cleared or thinned. However, cottonwood and other riparian trees remain along the banks of the San Pedro River. The two DZs proposed in the North Training Area would not affect the yellow-billed cuckoo because the vegetation has been previously cleared or disturbed. Potential adverse impacts to the yellow-billed cuckoo would be avoided by not conducting training activities during the nesting season (mid-May through early September) in the riparian areas along the San Pedro River in the South Training Area and parts of the North Training Area. However, the majority of training at the Shi-Ka-She Training Complex would occur in the FMP training area, which is approximately 1.5 miles from the riparian zone. Therefore, the Proposed Action would not affect the yellow-billed cuckoo.

The monarch butterfly is closely linked to the presence of milkweed. A variety of milkweed species occurs in the desert Southwest. The PR training activities proposed for the Shi-Ka-She Training Complex would result in minimal impacts to vegetation, and disturbance of milkweed populations that could be present in the ROI would not occur.

Benson DZ

Vegetation

The PR training activities planned for the proposed Benson DZ training site are similar to those planned for the proposed Sentinel DZ training site with personnel and equipment airdrops. Aircraft operations would be limited to overflights. The proposed PR activities would occur within the previously developed area of Benson Municipal Airport; therefore, implementation of the Proposed Action at the Benson DZ training site would not adversely affect vegetation.

Wildlife

The proposed PR activities would occur within the previously developed area of Benson Municipal Airport; therefore, implementation of the Proposed Action at the Benson DZ training site would not adversely affect wildlife.

Federally Listed Threatened and Endangered Species

None of the threatened or endangered species discussed in **Section 3.8.2.6** are known to occur in the area of the proposed Benson DZ training site. Therefore, implementation of the Proposed Action at Benson DZ training site would not adversely affect threatened or endangered species.

Summary

The DAF has determined that the Proposed Action would not adversely affect any threatened or endangered species if the following environmental protection measures are implemented to avoid conflicts with the yellow-billed cuckoo and Mexican spotted owl:

- **Redington Pass HLZ** – To avoid potential impacts to the yellow-billed cuckoo, proposed PR training activities would not be performed in xeroriparian areas from mid-May through early September.
- **Mount Lemmon HLZ** – To avoid potential impacts to the Mexican spotted owl, proposed PR training activities would be scheduled outside of the owl nesting season (March–August).
- **Shi-Ka-She Training Complex** – To avoid potential impacts to the yellow-billed cuckoo, proposed PR training activities in the North and South training areas along the riparian areas of the San Pedro River would be not occur from mid-May through early September during the nesting season.

3.8.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of available, appropriate training sites. There would be no impacts to biological resources beyond baseline conditions.

3.8.3.4 Cumulative Impacts

Two proposed actions with the potential to impact biological resources in and around the APEs for the proposed training sites are the Willcox Playa Lithium Mine Project and the construction of a new terminal at Benson Municipal Airport (see **Table 3-1**). Lithium mining at Willcox Playa would involve brine extraction via wells drilled throughout the location. No other details are available at this time. The Benson Municipal Airport, where the proposed Benson DZ training site would be located, has .been previously developed with no suitable habitat for wildlife. None of the remaining reasonably foreseeable projects listed in **Table 3-1** would impact biological resources specifically at the training locations. Biological resources impacts associated with past actions listed in **Table 3-1** are reflected in the description of existing conditions for biological resources. When considered in conjunction with the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts to biological resources would occur with implementation of the Proposed Action.

3.9 LAND USE

3.9.1 Definition of the Resource

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws; however, no nationally recognized convention or uniform terminology has been adopted for describing land use categories. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions.

Land use describes the natural or developed condition of a given parcel of land or area and the type of functions and structures it supports. Land use designations vary by jurisdiction, but commonly used terms include residential, commercial, industrial, agricultural, and recreation/open space. Land use is typically guided and regulated by management plans, policies, regulations, and ordinances that determine the type and extent of land use allowable in specific areas, including specially designated land uses or environmental conservation lands. Land use for both Pima and Cochise counties is shown on **Figures 3-6** and **3-7.**

Figures 2-2 through **2-7** show the proposed training sites under consideration. The areas surrounding these sites make up the ROI for this land use analysis.

3.9.2 Existing Conditions

3.9.2.1 Coronado National Forest Sites

Redington Pass HLZ

The Redington Pass HLZ training site is located in Pima County northeast of the city of Tucson in the Coronado National Forest. The site is owned by the USFS and zoned as Institutional Reserve by Pima County, which is intended to hold lands, specifically federal, state, city, county, Indian, and other publicly owned lands, as a reserve until released to the private sector (**Figure 3-6**) (Pima County Code of Ordinances, 2024). Under the Coronado National Forest Land and Resource Management Plan (Forest Plan), the land use zone of the Redington Pass HLZ training site is defined as 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. Remote areas are roadless and have no facilities other than trails. (USFS, 2018).

A wide variety of year-round recreational opportunities are available within the Coronado National Forest, including over 1,100 miles of trails (including the Arizona Trail, a national scenic trail), three scenic byways, five lakes, rental cabins, a state park, and dozens of developed campgrounds and picnic areas. The Redington Pass HLZ training site is located near hiking trails and is publicly accessible. No cabins or campgrounds are situated near the proposed Redington Pass HLZ training site.

The 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 proposed Redington Pass HLZ training site. Special use permits for PR training would be issued based on a determination by USFS of the general suitability of the location depending on the land classification and proposed activities. However, USFS' determination of an area as suitable for a given use acts merely as guidance for project and activity decision-making and is not indicative of a resource commitment or final decision approving the project and/or activities.

Mount Lemmon HLZ

The Mount Lemmon HLZ training site is also located in Pima County, northeast of Tucson in the Coronado National Forest. The site is owned by the USFS and zoned as Institutional Reserve by Pima County (**Figure 3-6**). Under the Forest Plan, the land use zone of the area encompassing the proposed Mount Lemmon HLZ training site is defined as 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. Some of the main roads are designated as scenic byways. The Mount Lemmon HLZ training site is located near hiking trails and is publicly accessible. Visitors often spend the day traversing the national forest via these roads, and destinations include campgrounds, picnic areas, vista points, visitor centers, and lakes (USFS, 2018). The Mount Lemmon HLZ training site is located less than 600 feet from Sollers Cabin, which is available to the public for rent. No other cabins or campgrounds are located near or adjacent to the training site.

As with the Redington Pass HLZ training area, a special use permit would be required for PR training activities at the Mount Lemmon HLZ training site.

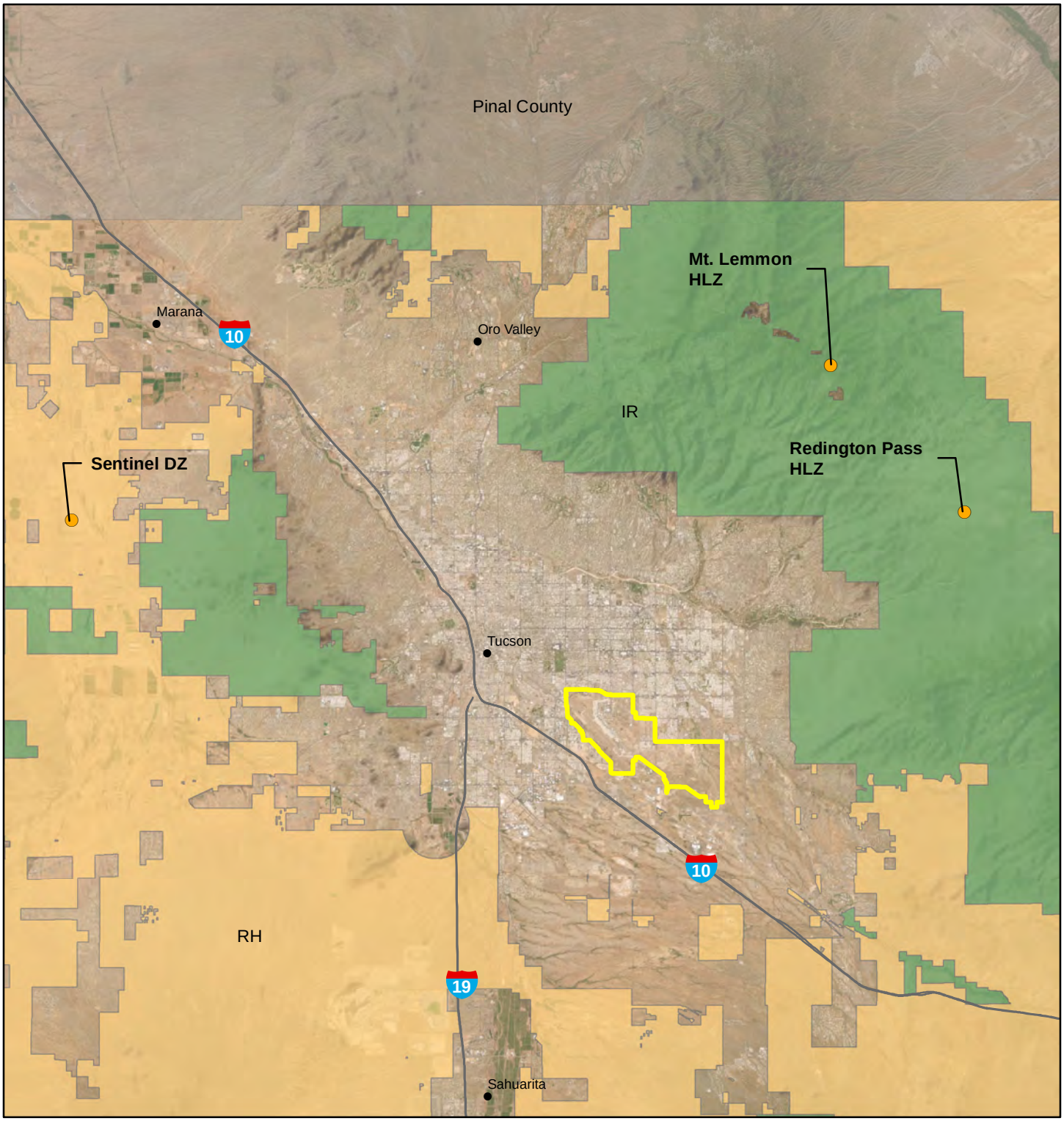


FIGURE 3-6
Pima County Land Use

Training Site Location
Installation Boundary
IR
RH

N

0 9.5 Miles

Imagery: Maxar 2022, 2023
Coordinate System: WGS 1984 UTM Zone 12N

DZ = Drop Zone; HLZ = Helicopter Landing Zone; IR = Institutional Reserve; RH = Rural Homestead

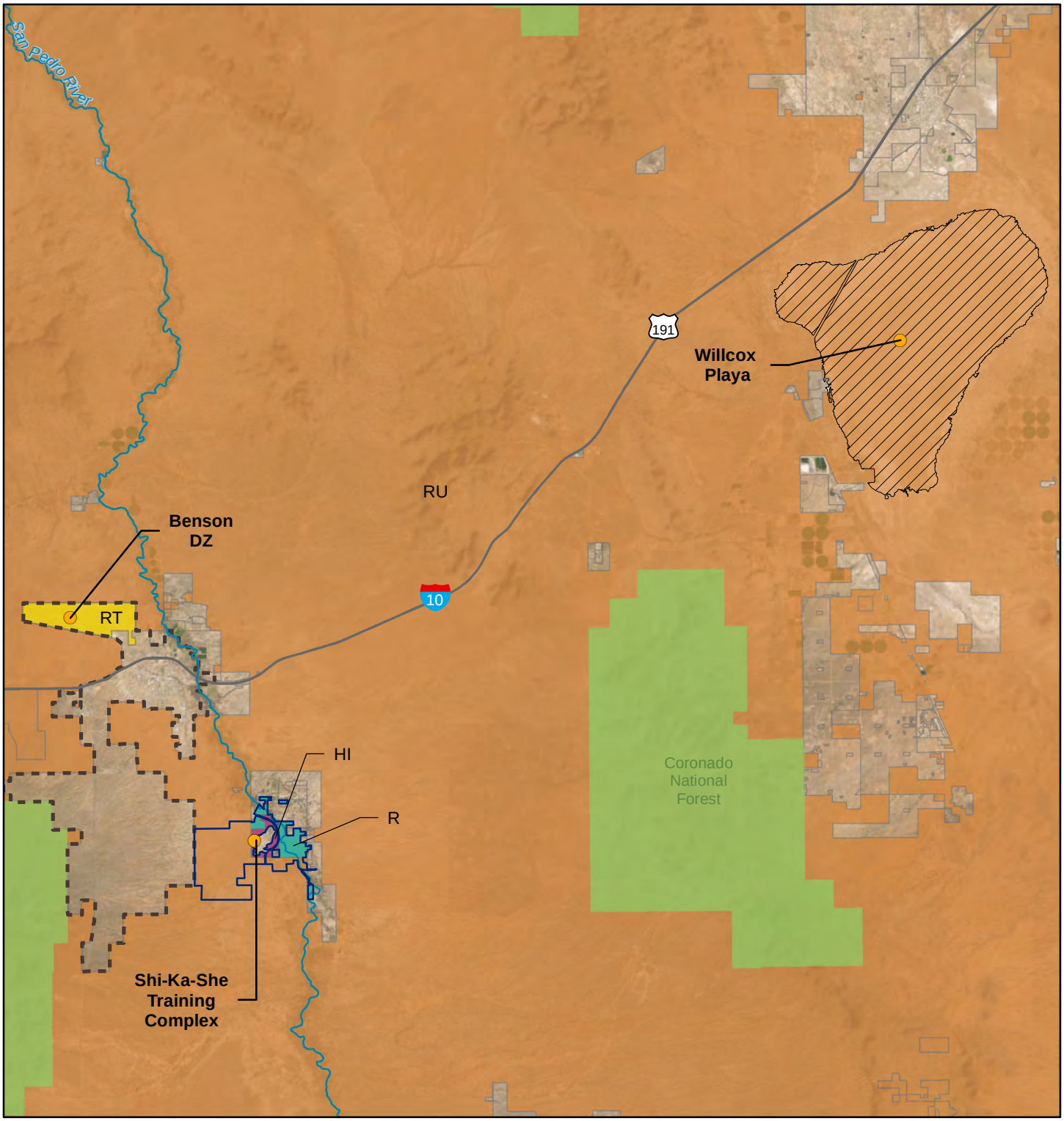


FIGURE 3-7
Cochise County Land Use

Training Site Location
City of Benson Boundary
Ranch Boundary
Willcox Playa

City of Benson Zoning
RT

Cochise County Zoning
HI
RU
R

N
0 10 Miles

Imagery: Maxar 2022, 2024
Coordinate System: WGS 1984 UTM Zone 12N

HI = Heavy Industrial; R = Residential; RT = Rural Transition; RU = Rural.

3.9.2.2 Willcox Playa DZ

The Willcox Playa DZ training site is located south of the town of Willcox, in Cochise County, Arizona. The area is zoned Rural (RU) by Cochise County (see **Figure 3-7**). The RU Zoning District encompasses approximately 90 percent of the unincorporated are within Cochise County and mainly permits residential uses (all single and multiple household dwellings) on large acreages. The county further subdivides the RU Zoning District into specific districts with differing minimum lot size requirements measured in acres (Cochise County, 2024). Willcox Playa was designated a National Natural Landmark in 1966 and is accessible to the public. It is also a former bombing range and is owned by DoD and administered by the US Army Corps of Engineers. Willcox Playa also includes 23,000 acres of land leased by the US Army to support missions at Fort Huachuca. The 555-acre Willcox Playa Wildlife Area is located on the upper east side of the playa and is managed by the Arizona Game and Fish Department.

3.9.2.3 Sentinel DZ

The Sentinel DZ training site is located southwest of the town of Marana, Arizona, in Pima County. This proposed training site is within Pima County's Rural Homestead (RH) zoning designation, which is intended to preserve the character and encourage the orderly growth of rural areas (Tucson, 2024) (see **Figure 3-6**). The RH Zone also permits governmental uses (Pima County, 2019a). The Sentinel DZ training site is located on privately owned land and surrounded by vacant land except to the east, where residential homes are approximately 275 feet from the eastern boundary of the proposed training site.

3.9.2.4 Shi-Ka-She Training Complex

The Shi-Ka-She Training Complex is located on a privately owned ranch called Elquen Ranch land, directly southwest of the city of St. David in Cochise County. The Elquen Ranch land is located in four separate Cochise County general zoning districts: RU (approximately 72.8 percent of the Ranch's total land area), Residential (R; approximately 18.8 percent), Heavy Industrial (approximately 8.3 percent), and Single-Household Residential (approximately 0.1 percent). Like the RU Zoning District, the R Zoning District permits all single and multiple household dwellings, but the minimum lot size requirements in specific R districts are smaller and are measured in square feet versus acres. The Heavy Industrial Zoning District permits general heavy-industrial uses, such as manufacturing, recycling centers, and junkyards. The Single-Household Residential Zoning District allows only single-household dwellings, not including mobile and manufactured homes (Cochise County, 2024).

3.9.2.5 Benson DZ

The Benson DZ training site is located 3 miles northwest of the Benson, Arizona, in Cochise County. The land is zoned by the City of Benson as Rural Transitional Residential, which permits a maximum of one residence per 4 acres (City of Benson, 2015). The Benson DZ training site is fully within the property lines of the Benson Municipal Airport, owned by the City of Benson.

The Benson Municipal Airport is a general aviation airport with a single paved runway that is 4,002 feet long and 75 feet wide. The airport's tenant, Southwestern Aviation, offers a variety of general aviation services such as flight training, aircraft rentals, aircraft repair, and tow pilot services (Arizona Department of Transportation, 2021).

3.9.3 Environmental Consequences

3.9.3.1 Evaluation Criteria

Potential impacts on land use are based on the level of land use sensitivity in areas potentially affected by a Proposed Action as well as compatibility of the action with existing conditions. In general, a land use impact would be adverse if the Proposed Action

- is inconsistent or noncompliant with existing land use plans or policies,
- precludes the viability of existing land use,
- precludes continued use or occupation of an area,
- is incompatible with adjacent land use to the extent that public health or safety is threatened, or
- conflicts with planning criteria established to ensure the safety and protection of human life and property.

3.9.3.2 Proposed Action

Coronado National Forest Sites

Redington Pass HLZ

Under the Proposed Action, PR training activities would occur at the Redington Pass HLZ training site, where land is publicly accessible. All activities would occur within the proposed training site to minimize interaction with the public. Vehicle travel would occur on previously established USFS roads. All PR training activities would comply with the special use permit issued by the USFS and would be consistent with existing land use. In addition, the proposed PR training activities would not restrict the ability of individuals to use or access recreational areas. Implementation of the Proposed Action at the Redington Pass HLZ training site would not result in significant impacts to land use.

Mount Lemmon HLZ

Under the Proposed Action, PR training activities would occur at the Mount Lemmon HLZ training site to support the instructor/student camp located near Windy Point. All activity would occur in the established training area and travel would occur on previously established USFS roads. All PR training activities would comply with the special use permit issued by the USFS and would be consistent with existing land use. In addition, the proposed PR training activities would not restrict the ability of the public to use or access recreational areas. Implementation of the Proposed Action at the Mount Lemmon HLZ training site would not result in significant impacts to land use.

Willcox Playa DZ

Implementation of the proposed PR training activities at the Willcox Playa DZ training site, including air drops, could result in short-term, adverse impacts to recreation. However, this area has been extensively used for training by the US Army, and the proposed PR training would be consistent with previous military training activities in this area. Since much of the land is currently used for military training operations, the addition and use of LZs and DZs as well as dirt landing strips at the Willcox Playa DZ training site would have no impact on land use. Implementation of the Proposed Action at the Willcox Playa DZ training site would not result in significant impacts to land use.

Sentinel DZ

The proposed Sentinel DZ training site is undeveloped and zoned as RH, which allows for government use. The proposed PR training activities would be consistent with existing land uses. The maximum DNL for all proposed aircraft operations at the Sentinel DZ training site is approximately 47 dB (see **Section 3.6.3.2**), which is consistent with residential land use and permissible in the RH land use area. Implementation of the Proposed Action at the Sentinel DZ training site would not result in significant impacts to land use.

Shi-Ka-She Training Complex

The Shi-Ka-She Training Complex is located on private land that is not accessible to the public. Noise levels would temporarily increase during training to non-significant levels. DNL levels at this site were not able to be calculated due to the infrequency of training operations that would occur under the Proposed Action see Section 3.6.3.2). Training activities would comply with all special use permit requirements (as directed by Cochise County. Because this land is privately owned and is currently

used for military training, no impacts to land use would be expected. Therefore, implementation of the Proposed Action at the Shi-Ka-She Training Complex would not result in significant impacts to land use.

Benson DZ

The Benson DZ training site is located on the Benson Municipal Airport on land owned by the City of Benson. The proposed PR training activities would not change land use designations and training activities would be consistent with the current zoning regulations. Noise levels would temporarily increase to non-significant levels during training activities. DNL levels at this site were not able to be calculated due to the infrequency of the aircraft operations that would occur under the Proposed Action (see **Section 3.5.3**). Implementation of the Proposed Action at the Benson DZ training site would not result in significant impacts to land use.

3.9.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB. PR training events would remain limited due to the lack of available, appropriate training sites. There would be no impacts to land use beyond baseline conditions.

3.9.3.4 Cumulative Impacts

None of the reasonably foreseeable projects listed in **Table 3-1** would impact land use at the proposed training locations. Noise would continue to be modeled and evaluated for each future activity, building on previous modeling efforts. No impacts to land use within the ROI would be anticipated. Land use impacts associated with past actions listed in **Table 3-1** are reflected in the description of existing conditions for land use. When considered in conjunction with the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts to land use would occur with implementation of the Proposed Action.

3.10 EARTH RESOURCES

3.10.1 Definition of the Resource

Earth resources include geology, topography, and soils. Geology refers to the structure and configuration of the earth's surface and subsurface features. Characteristics of geology include geomorphology,[3] subsurface rock types, and structural elements. Topography refers to the shape, height, and position of the land surface. Soil refers to the unconsolidated materials overlying bedrock or other parent material. Soils are defined by their composition, slope, and physical characteristics. Attributes of soil, such as elasticity, load-bearing capacity, shrink-swell potential, and erodibility determine its suitability to support a particular land use.

Prime farmland, as defined by the USDA in the *Farmland Protection Policy Act* (FPPA) (7 USC §§ 4201–4209), is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses.

The ROI for earth resources (excluding soil analysis for the HLZs at Redington Pass and Mount Lemmon) includes the areas of the proposed training sites: Redington Pass HLZ training use area, Mount Lemmon HLZ training use area, Willcox Playa DZ, Sentinel DZ, Shi-Ka-She Training Complex, and the Benson DZ (**Figures 2-2–2-7)**.

[3] Geomorphology refers to the physical features and processes of landforms and their relation to geologic structures (NPS, 2017)

For the HLZs at the proposed Redington Pass and Mount Lemmon training sites, potential impacts to soils were analyzed using a ROI defined as a circular buffer zone with a diameter of approximately 321.6 feet surrounding each HLZ. This area, referred to in the analysis as the rotor wash zone, is the area where soil would have the most potential to be impacted by rotor wash, or the vertical downwash of air produced by the spinning of helicopter rotors (USFS, 2005). Helicopters in a stationary hover near the surface create rotor wash that reaches a distance equal to approximately three times the diameter of the rotor blades (FAA, 2024c). The helicopter that would be used for training under the Proposed Action, the HH-60, has a rotor diameter of 53.6 feet and would therefore produce rotor wash that could reach approximately 160.8 feet in any given direction. This would result in the buffer diameter of 321.6 feet, and a circular rotor wash zone with an area of approximately 82,764 ft^2, or 1.9 acres (DMAFB 2020, 2025). Helicopters must also be within that same distance (three times the diameter of their rotors) AGL for the effects of rotor wash to be felt on the ground. Training exercises proposed for the Redington and Mount Lemmon HLZ training areas would involve insertion/extraction of personnel by helicopter via fast rope, rappel, rope ladder, or hoist (FMP and high-angle ropes training). These activities require helicopters to hover between 10 and 70 feet above the HLZ (within the 160.8-ft distance AGL necessary for rotor wash have the potential to effect soils) for approximately 60 percent of the aircraft's time at each site. Extractions could also be conducted via actual helicopter landings to pick up personnel. This action would typically be completed in 2 minutes or less (DMAFB, 2020).

3.10.2 Existing Conditions

3.10.2.1 Coronado National Forest Sites

Redington Pass HLZ

Geology

Redington Pass is a high mountain pass located between the Santa Catalina and Rincon mountains. Geologically, these mountains contain a single metamorphic core complex and range in elevation from approximately 2,800 feet to 9,100 feet AMSL. Both mountain ranges are part of the Sonoran Desert and are within the southern portion of the Basin and Range physiographic province, a large geologic unit characterized by northwest-to-southwest-trending mountain ranges separated by wide, alluvial basins that extend from eastern California to central Utah and from southern Idaho into the Mexican state of Sonora (DMAFB, 2021; National Park Service [NPS], 2020). The proposed Redington Pass HLZ training site is located on a smaller geologic unit, referred to as Early Tertiary to Late Cretaceous Muscovite-bearing Granite rocks. (University of Arizona, 2022; USFS, 2009).

Topography

The terrain of the Redington Pass HLZ training site generally features elevated plains and hills and ranges in elevation from approximately 4,260 to 6,900 feet ASL (USFS, 2009). The proposed Redington Pass HLZ training site is located on a flat area surrounded by sloped terrain of varying steepness.

Soils

The rotor wash zone ROI for the proposed Redington Pass HLZ training site is located in USFS Generalized Terrestrial Ecosystem (GES) Unit 490, which consists of soils characterized as very cobbly, sandy loam with 0-to-25-percent average slopes and a moderate-to-severe erosion hazard (USFS, 2009).

Mount Lemmon HLZ

Geology

Similar to the Redington Pass HLZ, the Mount Lemmon HLZ training site is also located in the Santa Catalina Mountains within a geologic unit referred to as Early Tertiary to Late Cretaceous Granite rocks. (University of Arizona, 2022; USFS, 2009).

Topography

The terrain of the Mount Lemmon HLZ training site generally features hills, mountains, and escarpments with elevations ranging from approximately 4,600 to 7,200 feet AMSL (USFS, 2009). The proposed Mount Lemmon HLZ training site is located on a flat portion of land with steep downward slopes to the south, east and west, and an upward slope to the north.

Soils

The rotor wash zone ROI for the Mount Lemmon HLZ training site is located in USFS GES Unit 476, which consists of soils characterized as very cobbly, sandy loam with 60 to 100 percent average slopes and a moderate erosion hazard (USFS, 2009).

Prime Farmland

Agriculture and irrigation are not current operations in the Coronado National Forest and are not planned for future operations. Given the Coronado National Forest's historical use, soils would not be suitable for agricultural uses, are not considered prime farmland, and do not warrant future designation under the FPPA. Therefore, prime farmland at the proposed Coronado National Forest sites is not discussed further in this EA.

3.10.2.2 Willcox Playa DZ

Geology

The Willcox Playa DZ training site, located in the Willcox Basin, is a remnant of the pluvial Lake Cochise, which was one of many lakes that existed in the Basin and Range province of the western US during the late Pleistocene Epoch. Situated in the Sonoran Desert, the Willcox Playa is within a geologic unit referred to as Holocene surficial deposits, which are unconsolidated deposits associated with modern fluvial systems. This unit consists primarily of fine-grained, well-sorted sediment on alluvial plains, but also includes gravelly channel, terrace, and alluvial fan deposits on middle and upper piedmonts (University of Arizona, 2022). The alluvial deposits that have built up in the Willcox Basin over time are made up of consolidated conglomerate, sandstone, and mudstone (Tertiary age); poorly consolidated gravel, sand, silt, and clay (Quaternary-Tertiary age); unconsolidated stream deposits of gravel, sand, silt, and clay (Quaternary age); and lake muds and associated sediments of the Playa (Quaternary age) (Schreiber, 1978).

Topography

Within the Willcox Basin, the Willcox Playa is at the northern end of the Sulphur Springs Valley, which trends roughly north-to-northwest and is bordered by mountain ranges to the east and west. The playa is situated in the lowest part of the Willcox Basin, at an elevation of approximately 4,135 feet AMSL. The basin is bounded on its east side by the Pinaleno, Dos Cabezas, and Chiricahua mountains and on its west side by the southern Galiuro, Winchester, Little Dragoon, and Dragoon mountains (Schreiber, 1978). The playa itself is a flat expanse of land encompassing approximately 53 square miles (33,920 acres).

Soils

Soil types in the ROI at the Willcox Playa DZ training site consist mainly of "water", making up approximately 81.5 percent of the ROI. However, the playa only inundates to a shallow depth during seasonal precipitation events with surface soils consisting of sandy loam. The remaining 18.5 percent is composed of Torriorthents, hummocky, 0 to 10 percent slopes (16.5 percent of the ROI), and Crot sandy loam, 0 to 1 percent slopes (2 percent of the ROI) (USDA, 2024a).

Prime Farmland

No soil types in the ROI are classified as prime farmland (USDA, 2024a). Therefore, prime farmland at the Willcox Playa DZ training site is not discussed further in this EA.

3.10.2.3 Sentinel DZ

Geology

The Sentinel DZ training site is located in the Sonoran Desert within the Basin and Range province. The area is characterized by a geologic unit referred to as Quaternary Surficial deposits, undivided, which consists of unconsolidated to strongly consolidated alluvial and eolian deposits. This unit includes coarse, poorly sorted alluvial fan and terrace deposits on middle and upper piedmonts and along large drainages, sand, silt and clay on alluvial plains and playas, and wind-blown sand deposits (University of Arizona, 2022).

Topography

The terrain of the area that encompasses the Sentinel DZ training site is characterized by a slight incline that slopes gradually upwards toward the south.

Soils

The primary soil types present in the ROI at the Sentinel DZ training site are silty clay loams (Vekol silty clay loam and Anway silty clay loam) with the remaining soils consisting of Anway loam, Mohave clay loam, and Trix silty clay loam.

Prime Farmland

Anway loam, Anway silty clay loam, Mohave clay loam, and Vekol silty clay loam are classified as prime farmland if irrigated. Trix silty clay loam is classified as prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season (USDA, 2024b). The FPPA protects prime farmland from federal programs that could adversely impact soils classified as prime farmland. Federal programs, as defined by the FPPA, do not include "federal permitting, licensing, or rate approval programs for activities on private or non-Federal lands" (7 CFR Part 658.2(b)(1)(i)). All of the training activities planned for the Sentinel DZ training site are considered permitted activities on private, non-federal land and would therefore not be subject to the FPPA. Therefore, prime farmland at the Sentinel DZ training site is not discussed further in this EA.

3.10.2.4 Shi-Ka-She Training Complex

Geology

The Shi-Ka-She Training Complex site is located in the Sonoran Desert within the Basin and Range province in an area characterized by geologic unit Quaternary Surficial deposits, undivided (University of Arizona, 2022) (see **Section 3.10.2.1** for the characteristics of this geologic unit).

Topography

The terrain of the area that encompasses the Shi-Ka-She Training Complex site is characterized by a slight incline that slopes gradually upwards toward the southwest.

Soils

Soil types at the locations of the proposed DZs and HLZs specifically consist of soil map units 35, 85, and 97, which make up approximately 77.2 percent of the ROI overall (**Table 3-10**). Soils in parts of the Shi-Ka-She Training Complex have been previously disturbed by cattle ranching activities and the construction of fencing, roads, and off-road vehicle trails.

Prime Farmland

No soil types in the ROI are classified as prime farmland (USDA, 2024c). Therefore, prime farmland at the Shi-Ka-She Training Complex is not discussed further in this EA.

Table 3-10
Proposed Shi-Ka-She Training Complex Soil Types

SMU Symbol	Soil Name	Acres in ROI	Percent of ROI
2	Anthony-Maricopa complex, 0 to 5 percent slopes	200.9	4.1%
3	Arizo family-Riverwash complex, 0 to 3 percent slopes	215.7	4.4%
35	Contention, Crystalgyp, Monzingo, and Redington soils, breaks, 5 to 60 percent slopes	2,118.5	43.6%
36	Contention-Ugyp soils complex, 0 to 5 percent slopes	406.2	8.4%
40	Courtland-Sasabe-Diaspar complex, 1 to 8 percent slopes	33.4	0.7%
72	Glendale very fine sandy loam, 0 to 2 percent slopes	60.5	1.2%
85	Hantz silt loam, saline-sodic, 0 to 3 percent slopes	829.9	17.1%
97	Libby-Gulch complex, 0 to 10 percent slopes	799.5	16.5%
123	Quiburi-Fluvaquents-Riverwash complex, 0 to 5 percent slopes	164.1	3.4%

Source: USDA, 2024c
SMU = Soil Map Unit

3.10.2.5 Benson DZ

Geology

The Benson DZ training site is located in the Sonoran Desert within the Basin and Range province. The proposed DZ is in a geologic unit referred to as Pliocene to middle Miocene deposits, which are moderately to strongly consolidated conglomerate and sandstone deposited in basins during and after faulting that occurred during the late Tertiary period. These deposits are generally tan or light gray in color, commonly create high rounded hills and ridges in modern basins, and locally (in southern Arizona) form prominent bluffs (University of Arizona, 2022).

Topography

The terrain of the area that encompasses the Benson DZ training site is characterized by a slight incline that slopes gradually upwards toward the southwest.

Soils

Soil types in the Benson DZ training site ROI consist of two types: Libby-Gulch complex soils, 0 to 10 percent slopes, which make up approximately 99.3 percent of the ROI, and Courtland-Sasabe-Diaspar complex soils, 1 to 8 percent slopes, which make up the remaining 0.7 percent of the ROI (USDA, 2024d). Soils in the ROI previously have been disturbed for uses at the Benson Municipal Airport, which includes an actively used paved runway. The paved runway accounts for approximately 21 percent of the surface area of the Benson DZ training site, while the remaining approximately 79 percent of the surface area consists of bare soil and sparse vegetation.

Prime Farmland

Neither of the soil types in the ROI are classified as prime farmland (USDA, 2024d). Therefore, prime farmland at the Benson DZ training site is not discussed further in this EA.

3.10.3 Environmental Consequences

3.10.3.1 Evaluation Criteria

The DAF defines a significant effect on earth resources within the ROI as one or more of the following:

- substantial alteration of unique or valued geologic or topographic conditions;
- substantial soil erosion, sedimentation, and/or loss of natural function (e.g., compaction); and
- development on soils with characteristics that do not support the intended land use.

3.10.3.2 Proposed Action

Coronado National Forest Sites

Redington Pass HLZ

Geology

The Proposed Action does not include construction activities at the Redington Pass HLZ training site and would not be anticipated to result in substantial alteration of underlying geologic conditions. Implementation of the Proposed Action at the Redington Pass HLZ training site would not impact geology.

Topography

The Proposed Action does not include construction activities at the Redington Pass HLZ training site and would not result in alteration of topography. Implementation of the Proposed Action at the Redington Pass HLZ training site would not impact topography.

Soils

Under the Proposed Action, helicopter operations in support of FMP training could potentially disturb soil within the rotor wash zone ROI at the Redington Pass HLZ training site. Since the primary soil type in the rotor wash zone is characterized as having a moderate-to-severe erosion hazard, there would be a potential for soil erosion to occur because of the strong winds created by helicopters during takeoff, landing, and hovering. That erosion could change soil coverage, eventually resulting in bare rock conditions at the location of the HLZ depending on the length of time the training site would remain in use. While there would be the potential for soil erosion to occur around the proposed Redington Pass HLZ training site, the rotor wash zone would comprise less than 0.01 percent of the total 1,780,000-acre area of the Coronado National Forest. Additionally, native vegetation surrounding the proposed Redington Pass HLZ training site would help prevent erosion by adding to the structural integrity of the soil and serving as a slight buffer from the rotor wash for soils farther away from the HLZ (Beasley et al., 1984, as cited in Jasa, 2018; NPS, 2021). Given the small size of the rotor wash zone in the context of the total area of the Coronado National Forest and the low frequency of training activities, impacts to soil from rotor wash at the Redington Pass HLZ would be direct, long term, minor, and adverse.

Foot traffic in the Redington Pass HLZ training site during FMP and land navigation training would have the potential to cause minimal increases in soil erosion. During FMP training activities, teams would be inserted and/or extracted by helicopter using the Redington Pass HLZ or by vehicle using pre-existing USFS roads. During land navigation and FMP training activities, students would travel off-trail on foot throughout the proposed training use area. FMP and land navigation training would be limited to the proposed training use area, resulting in a higher potential for soil erosion due to the concentration of off-trail foot traffic in one place. However, students would not take the same paths every time and any potential impacts to soils from foot traffic would be dispersed over large areas. As a result, impacts to soil from on-the-ground FMP and land navigation training exercises would be direct, long term, adverse, but negligible.

FMP training activities would also involve firing approximately 10,000 blank rounds annually as a part of simulating a realistic combat-related scenario. Blank rounds leave behind empty shell casings typically made of brass that must be ejected from the weapon and which would have the potential to contaminate

soil if left behind (Rodríguez-Seijo et al., 2024). All spent shell casings from blank rounds fired during FMP training activities would be collected and removed at the end of the training exercise and would not impact soils.

In summary, implementation of the Proposed Action at the Redington Pass HLZ training site would result in long-term, adverse, negligible-to-minor impacts to soils.

Mount Lemmon HLZ

Geology

The Proposed Action does not include construction activities at the Mount Lemmon HLZ training site and would not result in substantial alteration of underlying geologic conditions. Implementation of the Proposed Action at the Mount Lemmon HLZ training site would not impact geology.

Topography

The Proposed Action does not include construction activities at the Mount Lemmon HLZ training site and would not alter the topography of the area. Therefore, implementation of the Proposed Action at the Mount Lemmon HLZ training site would not impact topography.

Soils

As with the Redington Pass HLZ training site, rotor wash at the Mount Lemmon HLZ training site could potentially disturb soils in the rotor wash zone of the ROI. Since the primary soil type in the rotor wash zone is characterized as having a moderate erosion hazard, there would be potential for minimal soil erosion to occur because of the strong winds created by the helicopter during takeoff, landing, and hovering. There would be potential for that erosion to eventually result in bare rock conditions at the location of the proposed HLZ depending on the length of time the training site would remain in use. While there would be potential for soil erosion to occur around the Mount Lemmon HLZ, the rotor wash zone would comprise less than 0.01 percent of the total 1,780,000-acre area of the Coronado National Forest. Additionally, the trees and shorter vegetation surrounding the Mount Lemmon HLZ would help to prevent erosion by supporting the structural integrity of the soil and acting as a buffer between the rotor wash and soils that lie further out from the HLZ (Beasley et al. 1984, as cited in Jasa, 2018; NPS, 2021). Given the small size of the rotor wash zone in the context of the total area of the national forest and the low frequency of training activities, impacts from rotor wash at the Mount Lemmon HLZ training site would be direct, long term, minor, and adverse.

Under the Proposed Action, impacts to soils from student foot traffic during land navigation and high-angle ropes training exercises in the ROI of the Mount Lemmon HLZ training site would be expected to be the same as those that would occur at the Redington Pass HLZ training site. As with the Redington Pass HLZ training site, spent casings from the firing of blank rounds would be recovered resulting in no impacts to soils in the Mount Lemmon HLZ training site.

Willcox Playa DZ

Geology

The Proposed Action does not include construction activities at the Willcox Playa DZ training site and would not alter any geologic conditions. Implementation of the Proposed Action at the Willcox Playa DZ training site would not impact geology.

Topography

The Proposed Action does not include construction activities at the Willcox Playa DZ training site and would not alter topography. Implementation of the Proposed Action at the Willcox Playa DZ training site would not impact topography.

Soils

Under the Proposed Action, the use of DZs for airdrops of personnel and equipment would have the potential to compact soil in the ROI at the Willcox Playa DZ training site. However, equipment and/or

personnel would not land in the same spot each time and any soil compaction that would occur would be distributed throughout a given DZ. Airdrops would also occur only within the designated DZ, limiting potential effects to soils to those specific areas within the ROI. Therefore, impacts to soils from the use of DZs in the Willcox Playa DZ training site would be expected to be direct, long term and adverse but negligible.

The use of LZs and dirt landing strips in the ROI would have the potential to result in soil compaction because of aircraft movement during taxiing, takeoff, and landing, as well as vehicle traffic from the ground crew supporting LZ operations and the on/offloading of personnel and equipment. Aircraft and ground vehicles could follow the same paths multiple times over the course of various LZ operations, which would increase the potential for soil compaction. However, LZ operations would be limited to four times per week and soil in the proposed LZs would not be subject to constant compaction. Further, LZ operations would occur only within the designated LZs or on the dirt landing strips, limiting potential soil effects beyond these areas. As a result, impacts to soils from the use of LZs and dirt landing strips in the Willcox Playa DZ training site would be expected to be direct, long term and adverse but minor.

In summary, implementation of the Proposed Action at the Willcox Playa DZ training site would result in long-term, adverse, minor-to-negligible impacts to soils.

Sentinel DZ

Geology

The Proposed Action does not include construction activities at the Sentinel DZ training site and would not alter geologic conditions. Implementation of the Proposed Action at the Sentinel DZ training site would not impact geology.

Topography

The Proposed Action does not include construction activities at the Sentinel DZ training site and would not alter topography. Implementation of the Proposed Action at the Sentinel DZ training site would not impact topography.

Soils

Under the Proposed Action, airdrops of equipment and/or personnel would have the potential to disturb soil in the ROI at the Sentinel DZ training site. As airdrops of equipment and/or personnel would land at various locations within the DZ during each operation, impacts to soils in the ROI from airdrops would be anticipated to be direct, long term and adverse but negligible. Fixed-wing aircraft would be utilized for airdrops and aircraft operations would be limited to overflight. No impacts to soils from aircraft operations would occur at the Sentinel DZ training site.

In summary, implementation of the Proposed Action at the Sentinel DZ training site would result in long term, adverse, but negligible impacts to soils.

Shi-Ka-She Training Complex

Geology

The Proposed Action does not include construction activities at the Shi-Ka-She Training Complex site and would not alter geology. Implementation of the Proposed Action at the Shi-Ka-She Training Complex would not impact geology.

Topography

The Proposed Action does not include construction activities at the Shi-Ka-She Training Complex site and would not alter topography. Implementation of the Proposed Action at the Shi-Ka-She Training Complex would not impact topography.

Soils

Under the Proposed Action, the establishment and use of five HLZs would have the potential to impact soils in the ROI at the Shi-Ka-She Training Complex site because of rotor wash generated by helicopters during helicopter landing training. Soils in some areas of the Shi-Ka-She Training Complex ROI have been disturbed previously and additional use by helicopters could make soils more vulnerable to erosion. However, this site would only be used for helicopter landing training up to two times per year (Magdoff and van Es, 2021). The establishment of the HLZs would not include construction activities and would only involve the designation of locations. Given the low frequency of helicopter operations at the proposed HLZs and the lack of construction activity, impacts to soils in the ROI due to the establishment and use of HLZs at the Shi-Ka-She Training Complex would be direct, long term and adverse but negligible.

The establishment and use of seven DZs, and one fixed-wing LZ at the Shi-Ka-She Training Complex would have the potential to impact soils through compaction caused by the ground impact of airdropped equipment and/or personnel and aircraft movement during taxiing, takeoff, and landing. The establishment of the DZs and LZ would not include construction activities and would only involve the designation of locations. As with the HLZs, the DZs would be used no more than two times per year and the LZ would be used no more than six times per year for 4 hours per event. DZ and LZ operations would occur only within the DZs and LZ, limiting any potential effects on soils to those specific areas within the ROI. Due to the low frequency of training activities and the localized nature of potential soil compaction, as well as the lack of construction activity, impacts to soils in the ROI from the establishment and use of DZs and LZ at the Shi-Ka-She Training Complex would be direct, long term and adverse but negligible.

In summary, implementation of the Proposed Action at the Shi-Ka-She Training Complex would result in long-term, adverse, but negligible impacts to soils.

Benson DZ

Geology

The Proposed Action does not include construction activities at the Benson DZ training site and would not alter geologic conditions. Implementation of the Proposed Action at the Benson DZ training site would not impact geology.

Topography

The Proposed Action does not include construction activities at the Benson DZ training site and would not alter topography. Implementation of the Proposed Action at the Benson DZ training site would not impact topography.

Soils

Under the Proposed Action, airdrops of equipment and/or personnel in the ROI at the Benson DZ training site would have the potential to compact soil over time. However, the proposed training site is located at the Benson Municipal Airport, which is already actively used for aircraft operations. Approximately 21 percent of the proposed DZ consists of pre-existing paved runway surface; any airdrops of equipment and/or personnel that land outside of the paved area would impact the ground at different locations during each drop. Due to the current use of the Benson DZ training site as an active airport and the localized nature of potential soil compaction, impacts to soils in the ROI would be anticipated to be direct, long term and adverse but negligible. Therefore, implementation of the Proposed Action in the Benson DZ training site would result in long-term, adverse, but negligible impacts to soils.

3.10.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations or landing strips would be established for PR training activities near DMAFB, and PR training events would remain limited due to the lack of available, appropriate training sites. Under the No Action Alternative, there would be no changes to geology, topography, or soils at the proposed training areas beyond baseline conditions.

3.10.3.4 Cumulative Impacts

Two proposed actions with the potential to impact earth resources (specifically geology and soils) in and around the ROI for the proposed training sites are the Willcox Playa Lithium Mine Project and the construction of a new terminal at Benson Municipal Airport (see **Table 3-1**). Lithium mining at the Willcox Playa would involve brine extraction via wells drilled throughout the location. No other details are available at this time. Future impacts to soil and geologic resources at Benson Municipal Airport would be adverse but negligible. Earth resources impacts associated with past actions listed in **Table 3-1** are reflected in the description of existing conditions for earth resources. When considered in conjunction with the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts to earth resources would occur with implementation of the Proposed Action.

3.11 Safety and Occupational Health

3.11.1 Definition of the 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. The analysis of safety and occupational health addresses the safety of all personnel involved in PR training activities and the general public during training events.

DAFI 91-202, *The Department of the Air Force (DAF) Mishap Prevention Program,* also establishes mishap prevention program requirements (including bird/wildlife-aircraft strike hazards [BASH]) (Air Force Safety Center [AFSEC], 2018a). In addition, DAFI 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, implements DAF Policy Document (DAFPD) 91-2, *Safety Programs*, along with parts of OSHA Title 29 CFR and additional requirements not addressed by the OSHA standard (AFSEC, 2018b). DAFI 91-203 compliments DAFI 91-202 and assigns responsibilities to individuals and functions to help Commanders manage their safety and health program, ensuring they comply with OSHA and DAF guidance. These DAFIs ensure all DAF workplaces meet federal safety and health requirements and apply to all DAF activities. DAFMAN 13-217, *Nuclear, Space, Missile, or Command and Control – Drop Zone, Landing Zone, and Helicopter Landing Zone Operations*, implements AFPD 13-2, *Air Traffic Control, Airfield, Airspace, 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

The ROI for safety consists of the locations of the six proposed training sites. This section discusses safety of all personnel involved in the proposed PR training activities and the safety of the general public during proposed PR training events. Potential impacts to the safety resource area apply to all the proposed training sites and are not site specific. Therefore, the potential impacts to safety are not described for each of the proposed training sites.

3.11.2 Existing Conditions

3.11.2.1 Ground and Flight Safety

The primary concern with ground safety is the safety of the military personnel participating in training activities and the safety of the public that live or use areas near the proposed training sites. There are numerous safety and operational policies that would be followed by all users of the various training sites. DAFIs 91-202 and 91-203 also apply to all personnel involved in the PR training activities on private property. In addition, DAFMAN 13-217 applies to standoff distances during HLZ, DZ, and LZ use to ensure safety to personnel and the general public. In addition, all terms and agreements prepared between the DAF and the property landowner would be followed when training in these areas.

The primary public concern with regard to flight safety is the potential for aircraft accidents. Such mishaps may occur as a result of midair collisions, collisions with man-made structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird/wildlife-aircraft collisions. Flight risks apply to all aircraft;

they are not limited to those operated by the military. Flight safety considerations addressed in this section include aircraft mishaps and bird/wildlife-aircraft strikes.

The DAF defines four categories of aircraft mishaps: Classes A, B, C, and D, as shown in **Table 3-11**. Class A mishaps are of primary concern because of their potentially catastrophic results (DoD, 2011).

Table 3-11
Aircraft Class Mishaps

Mishap Class	Total Property Damage	Fatality/Injury
A	$2,000,000 or more and/or aircraft destroyed	Fatality or permanent total disability
B	$500,000 or more but less than $2,000,000	Permanent partial disability or three or more persons hospitalized as inpatients
C	$50,000 or more but less than $500,000	Nonfatal injury resulting in loss of one or more days from work beyond day/shift when injury occurred
D	$20,000 or more but less than $50,000	Recordable injury or illness not otherwise classified as A, B, or C

Source: DoD, 2011

Class A mishaps, the most severe, provide an indicator of aircraft safety. Based on historical data on mishaps at all installations and under all conditions of flight, the DoD calculates Class A mishap rates per 100,000 flying hours for each type of aircraft to provide the basis for evaluating risks among different aircraft and levels of operations. These mishap rates do not consider combat-related losses (DoD, 2011). **Table 3-12** shows some sample aircraft types and their mishap rates for the lifetime of the aircraft, as well as the rate over the last 10-year period (through the most recent complete fiscal year).

Table 3-12
Representative Class A Mishap Rates for DAF Aircraft

Aircraft	Number of Lifetime Hours	Year Introduced	Class A Mishap Rate – Lifetime	Class A Mishap Rate – Last Ten Years
H-60	850k +	1982	3.52	1.29
C-130	20 Million +	1955	34.98	0.59

Source: AFSEC 2023a, 2023b

Bird/Wildlife-Aircraft Strike Hazards

Bird-aircraft strikes constitute a safety concern because they can result in damage to aircraft or injury to aircrews or local populations if they result in an aircraft crash. However, most birds fly near the ground. The number and severity of BASH mishaps for Fiscal Years 2015–2019 is provided in **Table 3-13**. Over 98 percent of reported bird-aircraft strikes occur below 5,000 feet AGL (AFSEC, 2023a). Approximately 49 percent of bird-aircraft strikes happen in the airport environment (i.e., climb-out, traffic pattern, approach and landing), and approximately 42 percent occur during low-altitude flight training (AFSEC, 2023b).

Table 3-13
BASH Mishaps by Fiscal Year

Fiscal Year	Class A	Class B	Class C	Class D	Destroyed Aircraft
2015	3	4	59	39	0
2016	3	9	55	35	1
2017	1	6	60	44	0
2018	2	2	60	50	1
2019	0	5	74	40	0
Totals	**9**	**26**	**308**	**203**	**2**

Source: DMAFB, 2020
BASH = bird/aircraft strike hazard

Migratory waterfowl (e.g., ducks, geese, and swans) are the most hazardous birds to low-flying aircraft because of their size and their tendency to migrate in large flocks at a variety of elevations and times of day. Waterfowl vary considerably in size, from 1 to 2 pounds for ducks, 5 to 8 pounds for geese, and up to 20 pounds for most swans. There are two normal migratory seasons: fall and spring. Waterfowl are usually only a hazard during migratory seasons. These birds typically migrate at night and generally fly between 1,500 and 3,000 feet AGL during the fall migration and from 1,000 to 3,000 feet AGL during the spring migration.

In addition to waterfowl, raptors (e.g., hawks, falcons, eagles), shorebirds, gulls, herons, songbirds, and other birds also pose hazards. In considering severity, the results of bird-aircraft strikes show that strikes involving raptors result in the majority of Class A and Class B BASH-related mishaps. Peak migration periods for raptors, especially eagles, are from October to mid-December and from mid-January to the beginning of March. In general, flights above 1,500 feet AGL would be above most migrating and wintering raptors.

Songbirds are small birds, usually weighing less than 1 pound. During nocturnal migration periods, they navigate along major rivers, typically between 500 and 3,000 feet AGL. The potential for bird-aircraft strikes is greatest in areas used as migration corridors (flyways) or where birds congregate for foraging or resting (e.g., open water bodies, rivers, and wetlands).

Crash Response

DMAFB maintains detailed emergency and mishap response plans to respond to an aircraft accident, should one occur. These plans assign agency responsibilities and prescribe functional activities necessary to respond to major mishaps, whether on or off Base. Response would normally occur in two phases. The initial response focuses on rescue, evacuation, fire suppression, safety, elimination of explosive devices, ensuring security of the area, and other actions immediately necessary to prevent loss of life or further property damage. This involves the following personnel: the Fire Chief, who will normally be the first on-scene commander, fire-fighting and crash-rescue personnel, medical personnel, security police, and crash-recovery personnel. The second response involves a team composed of personnel from relevant organizations based on the circumstances of the mishap and actions required. After the initial response, the investigation phase is conducted.

DMAFB also maintains Mutual Aid Agreements with local cities, towns, and counties. Under these Mutual Aid Agreements, the DAF agrees to provide fire protection and hazardous materials response to the given city or county upon request. Likewise, the local municipalities agree to respond to a military aircraft mishap if one were to occur in proximity to that municipality. DMAFB Fire Emergency Service responds to any DAF aircraft incident within a 25-mile radius of the Installation. If an incident occurs outside of the 25-mile radius, DMAFB Fire Emergency Service would establish a convoy and respond to the incident if warranted. Proposed training sites under the Proposed Action within the 25-mile radius include the Redington Pass and Mount Lemmon HLZs and the Sentinel DZ.

3.11.3 Environmental Consequences

3.11.3.1 Evaluation Criteria

Impacts from the Proposed Action are analyzed according to the potential to increase or decrease safety risks to personnel, the public, property, or the environment. Impacts to safety would be significant if the Proposed Action

- results in exceedance of a DAF safety criterion;
- results in improper implementation of established or proposed safety measures; or
- results in a major variance from baseline conditions.

3.11.3.2 Proposed Action

Ground Safety

Under the Proposed Action, both DAF personnel involved in the proposed PR training activities and the general public could be exposed to safety risks associated with the proposed training activities. Four of the six proposed training sites (Redington Pass HLZ, Mount Lemmon HLZ, Willcox Playa DZ, and Benzon DZ) could be used by the public during the training activities, potentially resulting in the exposure of the public to associated safety risks. Operations at the proposed training sites would include a ground crew and a certified LZ Control Officer to ensure the safety of aircraft and personnel, as well as the general public. Ground crews would also clear the ground before any personnel drops would occur, and would maintain contact with aircraft pilots via radio during training exercises.

Impacts on public safety would be negligible under the Proposed Action. The type of training proposed would be similar to that performed currently throughout the Tucson area, as initially described by the 2020 EA (DMAFB, 2020), and there would be no aspects of the Proposed Action that would increase the accident rate, including aircraft mishaps. Proposed PR training activities would occur on weekdays when members of the public are less likely to use areas such as national forests and wildlife preserves. DAF guidelines and protocols for standoff distances, including those set out in DAFI 13-217, would be followed during LZ use to ensure the safety of the public.

During routine training exercises, PR personnel could be exposed to hazards as well as potential accident scenarios. PR training activities would require DAF personnel to work in remote outdoor locations with increased chances of exposure to mechanical (e.g., slips, trips, and falls), health (e.g., dehydration, blisters), and biological hazards (e.g., animal bites and stings). These remote locations are intended to simulate real-life conditions that military personnel may experience during their service careers. Operations at the proposed training sites involving DZs would include a certified DZ Safety Officer and a medical team for personnel drops to ensure personnel safety.

The proposed PR training activities would result in military personnel being better prepared for deployment, which would result in a long-term, beneficial impact on military personnel safety. Therefore, implementation of the Proposed Action and exposure to short-term, adverse safety risks would result in long-term, beneficial impacts to military personnel safety.

Flight Safety

Major considerations in any aircraft accident is loss of life and damage to property. The aircrew's ability to exit from a malfunctioning aircraft is dependent on the type of malfunction encountered. The probability of an aircraft crashing into a populated area is extremely low, but it cannot be totally discounted.

The training schedule developed by DMAFB for the PR training that would occur under the Proposed Action would distribute aircraft "flow" to the proposed training sites with HLZs to avoid too many aircraft being at a given HLZ simultaneously. Additionally, flight followers maintain a log sheet to track the progress of each sortie. Aircrews radio the flight followers with updates on training sortie progress and provide aircraft position. Adherence to these procedures during proposed training exercises would minimize the potential for overcrowding at an HLZ and the potential for aircraft collisions.

DMAFB has the capability to provide crash response; this capability would remain in place under the Proposed Action. In the unlikely event of a crash, local first responders would likely be first on the scene given the distance of the proposed training sites from DMAFB. DMAFB crash response would follow standard procedures and plans as described in **Section 3.11.2**. Implementation of the Proposed Action would not affect crash-response procedures.

Should a mishap occur, response and recovery operations could require such activities as the use of motorized vehicles and excavation to contain contamination. When responding to a crash site, the DAF would consult with the appropriate land use manager to minimize direct damage and coordinate actions. Due to the myriad factors in such an occurrence, detailed steps cannot be foreseen. Each crash response would be considered on a case-by-case basis to minimize intrusiveness to the maximum extent practicable,

consistent with national security considerations and the need to protect life and property from further risk. The extent of secondary effects from a crash or mishap is situationally dependent and is therefore difficult to quantify. Land would continue to be managed for fire risk by local owners and agencies.

Bird/Wildlife-Aircraft Strike Hazards

Under the Proposed Action, DAF aircrews would operate in the same general airspace environments in Arizona as they do currently. As such, the overall potential for bird-aircraft strikes would not be anticipated to be statistically different than under current conditions. Aircrews would be required to follow applicable procedures outlined in the BASH plans of their respective Wings. Adherence to these programs has successfully minimized bird-aircraft strikes. When safety procedures identify an increased risk, limits are placed on low-altitude flights and some types of training (e.g., multiple approaches, closed pattern work). Therefore, with continued implementation of these procedures, implementation of the Proposed Action would not impact safety from BASH concerns.

3.11.3.3 No Action Alternative

Under the No Action Alternative, no additional training areas, HLZs, LZs, DZs, FARP operation locations, or landing strips would be established for PR training activities at DMAFB, and PR training events would remain limited due to the lack of available, appropriate training sites. There would be no impacts to safety beyond baseline conditions.

3.11.3.4 Cumulative Impacts

Two proposed actions with the potential to impact safety in and around the ROI are the Regional SUA Optimization EIS and the 492 SOW Beddown EIS (see **Table 3-1**). The Regional Special Use Airspace Optimization EIS is ongoing and proposes changes to the size and location of various SUAs. These proposed changes would not impact safety around the training locations. The 492 SOW Beddown EIS proposes to relocate the 492 SOW aircraft and personnel to DMAFB and to retire all remaining A-10 aircraft at DMAFB, which also would not impact safety around the training locations. None of the remaining reasonably foreseeable projects listed in **Table 3-1** would impact safety specifically at the training locations. If future actions increase the number of planes and sorties, flight safety could be impacted proportionally to the increase in operations. Future actions will be evaluated for impacts separately. When considered in conjunction with the incremental effects of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions within the six training locations, no significant cumulative impacts related to safety would occur with implementation of the Proposed Action.

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7474 S Camino De Oeste
Tucson, AZ 0

Karl Hoerig, THPO
Pascua Yaqui Tribe
7474 S Camino De Oeste
Tucson, AZ 0

Arden Kucate
Governor
Pueblo of Zuni
P.O BOX 339
1203B State HWY 53
Zuni, NM 97327

Kurt Dongoske, THPO
Pueblo of Zuni
P.O BOX 339
1203B State HWY 53
Zuni, NM 97327

Martin Harvier, President
Salt River Pima-Maricopa Indian Community of the Salt River Reservation
10005 E Osborn Road
Scottsdale, AZ 0

Shane Anton, THPO
Salt River Pima-Maricopa Indian Community of the Salt River Reservation
10005 E Osborn Road
Scottsdale, AZ 0

Terry Rambler, Chairman
San Carlos Apache Tribe of the San Carlos Reservation
P.O. BOX O
San Carlos, AZ 85550

Vernelda Grant, THPO
San Carlos Apache Tribe of the San Carlos Reservation
P.O. BOX O
San Carlos, AZ 85550

Verlon Jose, Chairman
Tohono O'odham Nation
P.O. BOX 837
Sells, AZ 85634

Peter Steere, THPO
Tohono O'odham Nation
P.O. BOX 837
Sells, AZ 85634

Calvin Johnson
Chairman
Tonto Apache Tribe
Tonto Apache Reservation 30
Payson, AZ 85541

Jeri Decola
NAGPRA Coordinator
Tonto Apache Tribe
Tonto Apache Reservation 30
Payson, AZ 85541

Kasey Velasquez
Chairman
White Mountain Apache Tribe of the Fort Apache Reservation
P.O. BOX 700
Whiteriver, AZ 85941

Mark Altaha, THPO
White Mountain Apache Tribe of the Fort Apache Reservation
P.O. BOX 700
Whiteriver, AZ 85941

Tanya Lewis, Chairwoman
Yavapai-Apache Nation of the Camp Verde Indian Reservation
2400 West Datsi
Camp Verde, AZ 86322

Ricardo Pacheco, Vice Chairman
Yavapai-Apache Nation of the Camp Verde Indian Reservation
2400 West Datsi
Camp Verde, AZ 86322

Kathryn Leonard
State Historic Preservation Officer
AZ State Historic Preservation Office
1110 W Washington Street
Suite 100
Phoenix, AZ 85007

Tom Finley, Director
Arizona Game and Fish Department
555 N Greasewood Road
Tucson, AZ 85745

Robin Sahid, Director
Arizona State Trust Lands
1110 West Washington Street
Phoenix, AZ 85007
Alysa Hansen
Coronado National Forest
300 W. Congress Street
Tucson, AZ 85701

Kerwin Dewberry
Forest Supervisor
Coronado National Forest
300 W. Congress Street
Tucson, AZ 85701

Regina Romero, Mayor
City of Tucson
201 N. Stone Avenue
Suite 6
Tucson, AZ 85701

Lexy Wellott, Chair
Tucson Planning Commission
2 East Congress Street
Tucson, AZ 85701

Scott DiBiase, Director
Pima County Department of Environmental Quality
33 N. Stove Avenue
Suite 700
Tucson, AZ 85701

Amanda Stone
Arizona Department of Environmental Quality
South Regional Office
400 W. Congress, Suite 433
Tucson, AZ 85701

Christine McLachlan
Cochise County Planning and Zoning Division
1416 Melody Lane
Bldg. F
Bisbee, AZ 85604

Bradley Hamilton
Public Works Director
City of Benson
P.O. Box 2223
Benson, AZ 85602

Terry Rozema
Town Manager
City of Marana
11555 W Civic Center Drive
Marana, AZ 85653

Owen Lonsdale
Elquen Ranch
1376 S Lee Street
Saint David, AZ 85630

Jason Chavez, Director
Governors Office of Tribal Relations
1700 W Washington Street
Suite 235
Phoenix, AZ 85007

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

10 December 2024

Kevin Wakefield
Environmental Section Chief
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012

Mr. Chris Poirier
Deputy Director/Planning Official
Pima County
Development Services
201 N. Stone Ave
Tucson AZ 85701

SUBJECT: Environmental Assessment for the Personnel Recovery Update at Davis-Monthan Air Force Base

Dear Mr. Poirier

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with personnel recovery (PR) training and activities to enhance readiness of forces at Davis-Monthan Air Force Base (DMAFB). DMAFB previously evaluated PR training and activities at locations throughout the southern Arizona region in the *Final Environmental Assessment for the Davis-Monthan AFB Personnel Recovery Training Program*, dated January 2020. The Air Force is now proposing to establish new helicopter landing zones (HLZs), landing zones (LZs), drop zones (DZ) and full-mission profile (FMP) training locations. The Proposed Action includes the establishment of two training areas within the Coronado National Forest, designated the Mt. Lemmon/Windy Vista Summer Training Area and the Reddington Pass Training Area.

We ask your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal. We intend to provide your organization with a hyperlink of the Draft EA when the document is completed. Please inform us if someone else within your agency other than you should receive the Draft EA. Should you have any questions about the project or want to arrange a meeting for consultation, please contact my point of contact via postal mail, email, or telephone listed below. So that we remain on schedule to complete the environmental impact analysis process in a timely manner, please provide your response no later than 30 days from receipt of this correspondence.

ATTN: Ms. Barbara Long, PMAES, DAFC
Cultural/Natural Resources & NEPA Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: barbara.long.3@us.af.mil; Phone: 520-228-4035

The Air Force appreciates your interest in and support of its military mission at Davis-Monthan AFB. We thank you in advance for your assistance and look forward to your response.

Sincerely

KEVIN L. WAKEFIELD, GS-13, DAFC
Environmental Section Chief

Attachment:
1. Site Location Figure

DEPARTMENT OF THE AIR FORCE
355TH CIVIL ENGINEER SQUADRON (ACC)
DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

10 December 2024

Kevin Wakefield
Environmental Section Chief
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012

Ms. Amanda Stone
Arizona Department of Environmental Quality
Southern Regional Office
400 W. Congress, Suite 433
Tucson AZ 85701

SUBJECT: Environmental Assessment for the Personnel Recovery Update at Davis-Monthan Air Force Base

Dear Ms. Stone

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with personnel recovery (PR) training and activities to enhance readiness of forces at Davis-Monthan Air Force Base (DMAFB). DMAFB previously evaluated PR training and activities at locations throughout the southern Arizona region in the *Final Environmental Assessment for the Davis-Monthan AFB Personnel Recovery Training Program*, dated January 2020. The Air Force is now proposing to establish new helicopter landing zones (HLZs), landing zones (LZs), drop zones (DZ) and full-mission profile (FMP) training locations. The Proposed Action includes the establishment of two training areas within the Coronado National Forest, designated the Mt. Lemmon/Windy Vista Summer Training Area and the Reddington Pass Training Area.

We ask your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal. We intend to provide your organization with a hyperlink of the Draft EA when the document is completed. Please inform us if someone else within your agency other than you should receive the Draft EA. Should you have any questions about the project or want to arrange a meeting for consultation, please contact my point of contact via postal mail, email, or telephone listed below. So that we remain on schedule to complete the environmental impact analysis process in a timely manner, please provide your response no later than 30 days from receipt of this correspondence.

ATTN: Ms. Barbara Long, PMAES, DAFC
Cultural/Natural Resources & NEPA Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: barbara.long.3@us.af.mil; Phone: 520-228-4035

The Air Force appreciates your interest in and support of its military mission at Davis-Monthan AFB. We thank you in advance for your assistance and look forward to your response.

Sincerely

KEVIN L. WAKEFIELD, GS-13, DAFC
Environmental Section Chief

Attachment:
1. Site Location Figure

DEPARTMENT OF THE AIR FORCE
355TH WING (ACC)
DAVIS-MONTHAN AIR FORCE BASE ARIZONA

20 November 2024

Colonel Scott C. Mills
Commander
355th Wing
3405 South Fifth Street
Davis-Monthan AFB AZ 85707-3012

Robert Miguel
Chairman
Ak-Chin Indian Community
42507 W. Peters and Nall Rd
Maricopa AZ 85138

Dear Chairman Miguel

The purpose of this letter is to give you an opportunity to review and comment on a proposed action and to invite the Ak-Chin Indian Community to participate in government-to-government consultation with the United States Air Force (Air Force) pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Previously in the *Final Environmental Assessment for the Davis-Monthan AFB Personnel Recovery Training Program* (2020), DMAFB evaluated personnel recovery training and activities at locations throughout the southern Arizona region. The Air Force is now proposing to establish new helicopter landing zones (HLZs), landing zones (LZs), drop zones (DZs), and full-mission profile (FMP) training locations. The Proposed Action includes the establishment of two training areas within the Coronado National Forest, designated the Mt. Lemmon/Windy Vista Summer Training Area and the Reddington Pass Training Area. The Air Force is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate associated potential impacts of these new proposed activities.

Pursuant to Section 106 of the NHPA, implementing regulations at 36 CFR Part 800, and Department of Defense Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, we request government-to-government consultation on this Proposed Action. In particular, we invite you, pursuant to 36 CFR § 800.4(a)(4), to provide information on any properties of historic, religious, or cultural significance that may be affected by our proposed undertaking. The Air Force will comply with the *Native American Graves Protection and Repatriation Act* by informing you of any inadvertent discovery of archaeological or human remains and consulting on their disposition.

We ask your assistance in identifying any issues or concerns of which we may be unaware, particularly those that may be affected by this proposal. We intend to provide you with a hyperlink of the Draft EA, when the document is completed. Please reach out to my point of contact provided below, on any issues or concerns you have in the development of this EA.

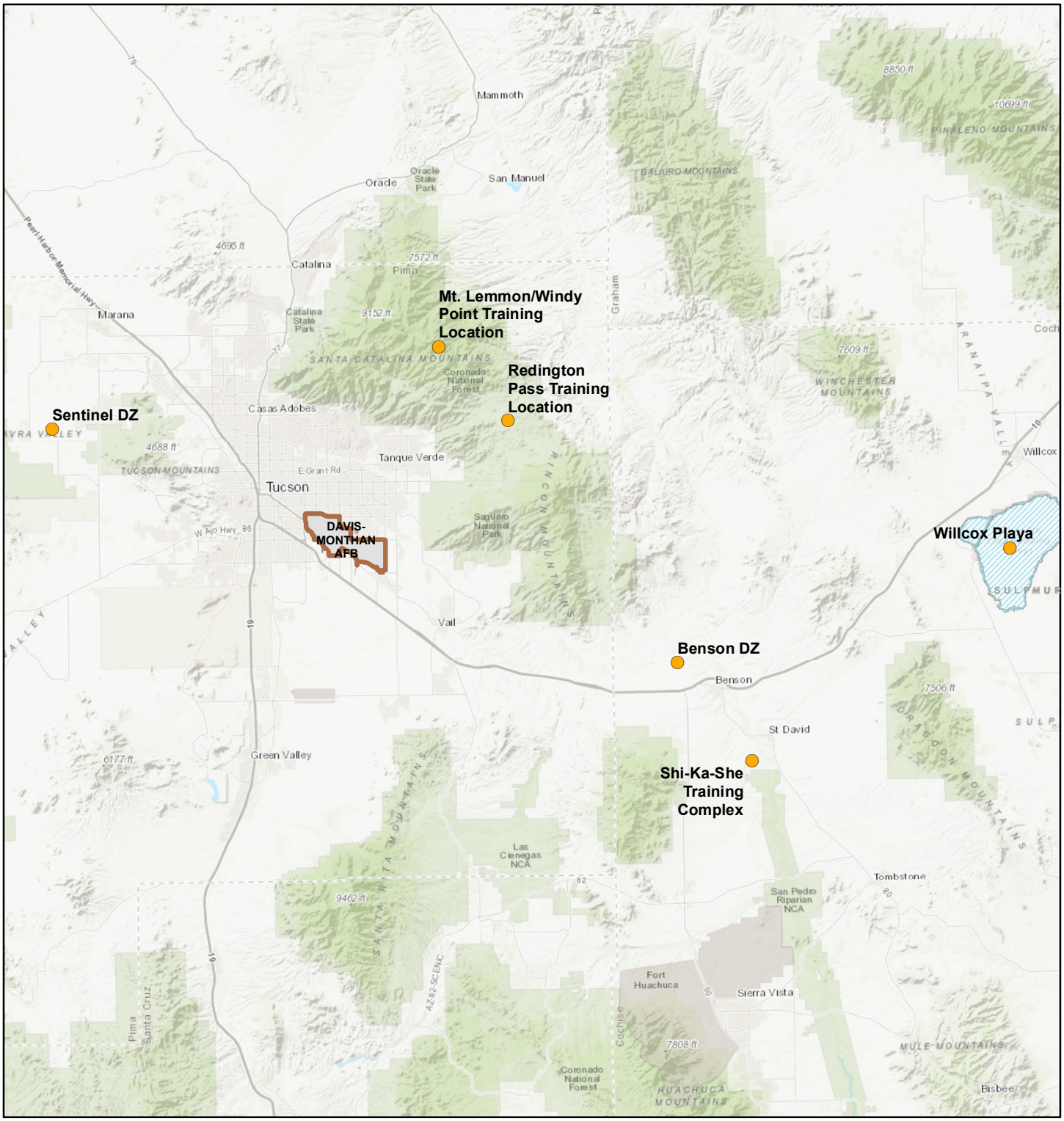
ATTN: Ms. Barbara Long, PMAES, DAFC
Cultural/Natural Resources & NEPA Manager
355 CES/CEIE
3775 South Fifth Street
Davis-Monthan AFB AZ 85707-3012
Email: barbara.long.3@us.af.mil; Phone: 520-228-4035

I look forward to receiving any input you may have regarding this endeavor. Thank you in advance for your assistance in this effort.

Sincerely

SCOTT C. MILLS, Colonel, USAF
Commander

Attachment:
Regional Overview of Project Locations



Attachment 1
Regional Overview of Project Locations

Project Location

Installation Boundary

N

0 20 Mile

Coordinate System: WGS 1984 UTM Zone 12N

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arizona Ecological Services Field Office
9828 North 31st Ave
#c3
Phoenix, AZ 85051-2517
Phone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer To: 05/22/2025 17:49:08 UTC
Project Code: 2025-0100546
Project Name: Davis-Monthan AFB Personnel Recovery Training

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The Fish and Wildlife Service (Service) is providing this list under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The list you have generated identifies threatened, endangered, proposed, and candidate species, and designated and proposed critical habitat, that *may* occur within the One-Range that has been delineated for the species (candidate, proposed, or listed) and it's critical habitat (designated or proposed) with which your project polygon intersects. These range delineations are based on biological metrics, and do not necessarily represent exactly where the species is located. Please refer to the species information found on ECOS to determine if suitable habitat for the species on your list occurs in your project area.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect federally listed species and/or designated critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.
If the Federal action agency determines that listed species or critical habitat *may be affected* by a federally funded, permitted or authorized activity, the agency must consult with us pursuant to 50 CFR 402. Note that a "may affect" determination includes effects that may not be adverse and that may be beneficial, insignificant, or discountable. An effect exists even if only one individual

or habitat segment may be affected. The effects analysis should include the entire action area, which often extends well outside the project boundary or "footprint." For example, projects that involve streams and river systems should consider downstream affects. If the Federal action agency determines that the action may jeopardize a *proposed* species or may adversely modify *proposed* critical habitat, the agency must enter into a section 7 conference. The agency may choose to confer with us on an action that may affect proposed species or critical habitat.

Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event they become proposed or listed prior to project completion. More information on the regulations (50 CFR 402) and procedures for section 7 consultation, including the role of permit or license applicants, can be found in our Endangered Species Consultation Handbook at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf.

We also advise you to consider species protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668 *et seq.*). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the Service. The Eagle Act prohibits anyone, without a permit, from taking (including disturbing) eagles, and their parts, nests, or eggs. Currently 1,026 species of birds are protected by the MBTA, including the western burrowing owl (*Athene cunicularia hypugaea*). Protected western burrowing owls can be found in urban areas and may use their nest/burrows year-round; destruction of the burrow may result in the unpermitted take of the owl or their eggs.

If a bald eagle or golden eagle nest occurs in or near the proposed project area, our office should be contacted for Technical Assistance. An evaluation must be performed to determine whether the project is likely to disturb or harm eagles. The National Bald Eagle Management Guidelines provide recommendations to minimize potential project impacts to bald eagles (see https://www.fws.gov/law/bald-and-golden-eagle-protection-act and https://www.fws.gov/program/eagle-management).

The Division of Migratory Birds (505/248-7882) administers and issues permits under the MBTA and Eagle Act, while our office can provide guidance and Technical Assistance. For more information regarding the MBTA, BGEPA, and permitting processes, please visit the following web site: https://www.fws.gov/program/migratory-bird-permit. Guidance for minimizing impacts to migratory birds for communication tower projects (e.g. cellular, digital television, radio, and emergency broadcast) can be found at https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation.

The U.S. Army Corps of Engineers (Corps) may regulate activities that involve streams (including some intermittent streams) and/or wetlands. We recommend that you contact the Corps to determine their interest in proposed projects in these areas. For activities within a National Wildlife Refuge, we recommend that you contact refuge staff for specific information about refuge resources, please visit this link or visit https://www.fws.gov/program/national-

wildlife-refuge-system to locate the refuge you would be working in or around.

If your action is on tribal land or has implications for off-reservation tribal interests, we encourage you to contact the tribe(s) and the Bureau of Indian Affairs (BIA) to discuss potential tribal concerns, and to invite any affected tribe and the BIA to participate in the section 7 consultation. In keeping with our tribal trust responsibility, we will notify tribes that may be affected by proposed actions when section 7 consultation is initiated. For more information, please contact our Tribal Coordinator, John Nystedt, at 928/556-2160 or John_Nystedt@fws.gov.

We also recommend you seek additional information and coordinate your project with the Arizona Game and Fish Department. Information on known species detections, special status species, and Arizona species of greatest conservation need, such as the western burrowing owl and the Sonoran desert tortoise (*Gopherus morafkai*) can be found by using their Online Environmental Review Tool, administered through the Heritage Data Management System and Project Evaluation Program (https://www.azgfd.com/wildlife-conservation/planning-for-wildlife/project-evaluation-program/).

We appreciate your concern for threatened and endangered species. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If we may be of further assistance, please contact our Flagstaff office at 928/556-2118 for projects in northern Arizona, our general Phoenix number 602/242-0210 for central Arizona, or 520/670-6144 for projects in southern Arizona.

Sincerely,
/s/

Heather Whitlaw
Field Supervisor
Attachment

Attachment(s):

* Official Species List
* USFWS National Wildlife Refuges and Fish Hatcheries
* Bald & Golden Eagles
* Migratory Birds
* Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arizona Ecological Services Field Office
9828 North 31st Ave
#c3
Phoenix, AZ 85051-2517
(602) 242-0210

PROJECT SUMMARY

Project Code: 2025-0100546
Project Name: Davis-Monthan AFB Personnel Recovery Training
Project Type: Military Maneuvers
Project Description: Under the Proposed Action, the Air Force is proposing to improve PR training conducted throughout the Tucson region. Improvements would involve increasing suitable training site access and expanding training activities at some sites. Currently, there are 175 PR training sites already evaluated in the 2020 EA that may be utilized during PR training. Under the Proposed Action in this EA, six additional sites, located in Pima and Cochise counties, would be authorized for use, including the establishment of two training areas within the Coronado National Forest, designated the Mt. Lemmon/Windy Vista Summer Training Area and the Reddington Pass Training Area.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.130838350000005,-109.851619625,14z

Counties: Cochise and Pima counties, Arizona

ENDANGERED SPECIES ACT SPECIES

There is a total of 19 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Jaguar *Panthera onca* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3944	Endangered
Mexican Wolf *Canis lupus baileyi* Population: U.S.A. (portions of AZ and NM)see 17.84(k) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3916	Experimental Population, Non-Essential
Ocelot *Leopardus (=Felis) pardalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4474	Endangered
Sonoran Pronghorn *Antilocapra americana sonoriensis* Population: U.S.A. (AZ), Mexico No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4750	Experimental Population, Non-Essential

BIRDS

NAME	STATUS
Cactus Ferruginous Pygmy-owl *Glaucidium brasilianum cactorum* There is **final** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1225	Threatened
California Least Tern *Sternula antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Northern Aplomado Falcon *Falco femoralis septentrionalis* Population: U.S.A (AZ, NM) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Experimental Population, Non-Essential
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Northern Mexican Gartersnake *Thamnophis eques megalops* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7655	Threatened
Sonoyta Mud Turtle *Kinosternon sonoriense longifemorale* There is **final** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/7276	Endangered

AMPHIBIANS

NAME	STATUS
Chiricahua Leopard Frog *Rana chiricahuensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1516	Threatened

FISHES

NAME	STATUS
Gila Chub *Gila intermedia* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/51	Endangered
Gila Topminnow (incl. Yaqui) *Poeciliopsis occidentalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1116	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Arizona Eryngo *Eryngium sparganophyllum* Population: There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/10705	Endangered
Bartram's Stonecrop *Graptopetalum bartramii* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/8382	Threatened
Huachuca Water-umbel *Lilaeopsis schaffneriana var. recurva*	Endangered

NAME	STATUS

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1201

CRITICAL HABITATS

There are 2 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Mexican Spotted Owl *Strix occidentalis lucida* https://ecos.fws.gov/ecp/species/8196#crithab	Final
Yellow-billed Cuckoo *Coccyzus americanus* https://ecos.fws.gov/ecp/species/3911#crithab	Final

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

BALD & GOLDEN EAGLES INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

MIGRATORY BIRD INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

* R4SBCx
* R4SBJ
* R2UBF
* R4SBC
* R5UBH
* R2USC
* R2UBH

FRESHWATER POND

* PUBFx
* PUSC
* PUSJ
* PUBHx
* PUSAh

- PUBF

FRESHWATER EMERGENT WETLAND

- PEM1Ax
- PEM1A
- PEM1Fx
- PEM1C

LAKE

- L2USA

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1A
- PSS1C
- PFO1C

APPENDIX B. AIR QUALITY ANALYSIS

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Appendix B: Air Quality Analysis

The six training sites included in the Proposed Action are not contiguous and potential emissions would be spread across two separate AQCRs: the SAIAQCR and the Pima County AQCR. While it would be defensible to consider each of the six training sites as six individual ROIs, this evaluation takes a more conservative approach by combining the portions of the Proposed Action in each AQCR together and evaluating the sum of estimated emissions from the combined actions against the thresholds described above. A brief description of the components of the Proposed Action, their context as it relates to air quality, and assumptions are described below.

Southeast Arizona Interstate AQCR

The proposed training sites located within the SAIAQCR are Willcox Playa, Shi-Ka-She Training Complex, and Benson DZ. The following bullet points outline how model inputs were determined. Portions of the Proposed Action that are not relevant to air quality are not included in the bulleted items below.

- **Willcox Playa**
  - DZ used up to 120 times per year by HC-130
    - Evenly distributed between 150 and 14,000 ft AGL. Equates to 25 flights per year below 3,000 ft AGL.
    - Speed of 150 knots.
    - For fly-over flights below 3,000 ft AGL, assume that aircraft would descend below 3,000 ft at the boundary of the training area and ascend above 3,000 ft at the opposite boundary.
  - Landing Zone
    - 208 annual HC-130 landing and takeoff cycles per year.
- **Shi Ka-She Training Complex**
  - Used once per year by contracted helicopter and twice per year by HH-60.
    - 45-minute duration for each event.
    - Contracted helicopter operations are presumed to have the same emission factors as HH-60.
- **Benson DZ**
  - Used 5 times per year by HC-130
    - Evenly distributed between 800 and 25,000 ft AGL. Equates to 1 flight per year below 3,000 ft AGL.
    - Speed of 150 knots.
    - For fly-over flights below 3,000 ft AGL, assume that aircraft descends below 3,000 ft at the boundary of the training area and ascends above 3,000 ft at the opposite boundary.

Pima County AQCR

The proposed training sites located within the Pima County AQCR are the Mount Lemmon and Redington Pass HLZs and Sentinel DZ. The following bullet points outline how model inputs were determined. Portions of the Proposed Action that are not relevant to air quality are not included in the bulleted items below.

- **Mount Lemmon HLZ**
  - 6 helicopter training operations annually using HH-60 helicopter:
    - Max altitude of 500 ft AGL.
    - Duration of 45 mins per exercise.

- **Redington Pass HLZ**
  - 6 helicopter training operations annually using HH-60 helicopter:
    - Max altitude of 500 ft AGL.
    - Duration of 45 mins per exercise.
- **Sentinel DZ**
  - Used 125 times per year by HC-130:
    - Operations evenly distributed between 150 and 6,000 ft AGL. Equates to 63 flights per year below 3,000 ft AGL.
    - Speed of 150 knots.
  - Used 45 times per year by contracted air:
    - Modeled as C-23 Sherpa.
    - Evenly distributed between 150 and 8,000 ft AGL. Equates to 10 flights per year below 3,000 ft AGL.
    - Speed of 130 knots.
  - Used 2 times per year by HH-60 for flyovers:
    - Occur at 150 ft AGL.
    - Speed of 100 knots.
    - For fly-over flights below 3,000 ft AGL, assume that aircraft descends below 3,000 ft at the boundary of the training area and ascends above 3,000 ft at the opposite boundary.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

a. Action Location:

Base: DAVIS-MONTHAN AFB
State: Arizona
County(s): Pima
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: PERSONNEL RECOVERY UPDATE, DAVIS-MONTHAN AIR FORCE BASE, ARIZONA, Pima County AQCR Portion

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2026

e. Action Description:

Under the Proposed Action, the DAF is proposing to improve PR training conducted throughout the Tucson region. Improvements would involve increasing suitable training site access and expanding training activities at some sites. Currently, there are 175 PR training sites already evaluated under the 2020 EA that may be utilized during PR training. Under the Proposed Action in this EA, six 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 involves the following activities with locations shown in Figure 2-1:
• Establishment of two HLZs and Pararescue training areas within the Coronado National Forest: the Mount Lemmon/Windy Vista Summer training area and the Reddington Pass training area;
• Establishment of a dirt landing strip on the Willcox Playa;
• Establishment of the Sentinel DZ in Marana, Arizona;
• Establishment of HLZs, fixed-wing LZs, and DZs at the Shi-Ka-She training complex in St. David, Arizona; and
• Establishment of the Benson DZ at Benson Municipal Airport in Benson, Arizona.

Air calculations were divided into 2 regions of influence. This model represents emissions that occurred in the Pima AQCR Portion.

f. Point of Contact:

Name: Ryan Sauter
Title: Project Manager
Organization: EAS LLC
Email: ryan.sauter@easbio.com
Phone Number: 6513419955

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (hsba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (hsba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.043	250	No
NOx	0.013	250	No
CO	0.068	250	No
SOx	0.003	250	No
PM 10	0.003	250	No
PM 2.5	0.003	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2027 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.043	250	No
NOx	0.013	250	No
CO	0.068	250	No
SOx	0.003	250	No
PM 10	0.003	250	No
PM 2.5	0.003	250	No
Pb	0.000	25	No
NH3	0.000	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Ryan Sauter, Project Manager	Jan 30 2025
Name, Title	**Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to estimate GHG emissions associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions.

a. Action Location:

Base: DAVIS-MONTHAN AFB
State: Arizona
County(s): Pima
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: PERSONNEL RECOVERY UPDATE, DAVIS-MONTHAN AIR FORCE BASE, ARIZONA, Pima County AQCR Portion

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2026

e. Action Description:

Under the Proposed Action, the DAF is proposing to improve PR training conducted throughout the Tucson region. Improvements would involve increasing suitable training site access and expanding training activities at some sites. Currently, there are 175 PR training sites already evaluated under the 2020 EA that may be utilized during PR training. Under the Proposed Action in this EA, six 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 involves the following activities with locations shown in Figure 2-1:
• Establishment of two HLZs and Pararescue training areas within the Coronado National Forest: the Mount Lemmon/Windy Vista Summer training area and the Reddington Pass training area;
• Establishment of a dirt landing strip on the Willcox Playa;
• Establishment of the Sentinel DZ in Marana, Arizona;
• Establishment of HLZs, fixed-wing LZs, and DZs at the Shi-Ka-She training complex in St. David, Arizona; and
• Establishment of the Benson DZ at Benson Municipal Airport in Benson, Arizona.

Air calculations were divided into 2 regions of influence. This model represents emissions that occurred in the Pima AQCR Portion.

f. Point of Contact:

Name: Ryan Sauter
Title: Project Manager
Organization: EAS LLC
Email: ryan.sauter@easbio.com
Phone Number: 6513419955

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year or 20 years beyond SS emissions year for aircraft operations related actions.

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (NO2). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2026	9	0.00037209	0.00007259	9	68,039	No
2027 [SS Year]	9	0.00037209	0.00007259	9	68,039	No
2028	9	0.00037209	0.00007259	9	68,039	No
2029	9	0.00037209	0.00007259	9	68,039	No
2030	9	0.00037209	0.00007259	9	68,039	No
2031	9	0.00037209	0.00007259	9	68,039	No
2032	9	0.00037209	0.00007259	9	68,039	No
2033	9	0.00037209	0.00007259	9	68,039	No
2034	9	0.00037209	0.00007259	9	68,039	No
2035	9	0.00037209	0.00007259	9	68,039	No
2036	9	0.00037209	0.00007259	9	68,039	No
2037	9	0.00037209	0.00007259	9	68,039	No
2038	9	0.00037209	0.00007259	9	68,039	No
2039	9	0.00037209	0.00007259	9	68,039	No
2040	9	0.00037209	0.00007259	9	68,039	No
2041	9	0.00037209	0.00007259	9	68,039	No
2042	9	0.00037209	0.00007259	9	68,039	No
2043	9	0.00037209	0.00007259	9	68,039	No
2044	9	0.00037209	0.00007259	9	68,039	No
2045	9	0.00037209	0.00007259	9	68,039	No
2046	9	0.00037209	0.00007259	9	68,039	No
2047	9	0.00037209	0.00007259	9	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2026	90,756,232	249,199	22,164	91,027,596
2027 [SS Year]	90,756,232	249,199	22,164	91,027,596
2028	90,756,232	249,199	22,164	91,027,596
2029	90,756,232	249,199	22,164	91,027,596
2030	90,756,232	249,199	22,164	91,027,596
2031	90,756,232	249,199	22,164	91,027,596
2032	90,756,232	249,199	22,164	91,027,596
2033	90,756,232	249,199	22,164	91,027,596
2034	90,756,232	249,199	22,164	91,027,596
2035	90,756,232	249,199	22,164	91,027,596
2036	90,756,232	249,199	22,164	91,027,596
2037	90,756,232	249,199	22,164	91,027,596
2038	90,756,232	249,199	22,164	91,027,596
2039	90,756,232	249,199	22,164	91,027,596
2040	90,756,232	249,199	22,164	91,027,596
2041	90,756,232	249,199	22,164	91,027,596
2042	90,756,232	249,199	22,164	91,027,596
2043	90,756,232	249,199	22,164	91,027,596
2044	90,756,232	249,199	22,164	91,027,596
2045	90,756,232	249,199	22,164	91,027,596
2046	90,756,232	249,199	22,164	91,027,596
2047	90,756,232	249,199	22,164	91,027,596

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2026	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2027 [SS Year]	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2028	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2029	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2030	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2031	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2032	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2033	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2034	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2035	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2036	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2037	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2038	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2039	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2040	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2041	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2042	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2043	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2044	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2045	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2046	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2047	5,136,454,179	25,626,912	1,500,708	5,163,581,798

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (yGba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2026-2047	State Total	1,996,637,108	5,482,389	487,614	2,002,607,111
2026-2047	U.S. Total	113,001,991,938	563,792,057	33,015,568	113,598,799,563
2026-2047	Action	195	0.008186	0.001597	195
Percent of State Totals		0.00000975%	0.00000015%	0.00000033%	0.00000976%
Percent of U.S. Totals		0.00000017%	0.00000000%	0.00000000%	0.00000017%

Ryan Sauter, Project Manager — Jan 30 2025

Name, Title — **Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

a. Action Location:

Base: DAVIS-MONTHAN AFB
State: Arizona
County(s): Cochise
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: PERSONNEL RECOVERY UPDATE, DAVIS-MONTHAN AIR FORCE BASE, ARIZONA, Southeast Arizona Interstate AQCR Portion

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2026

e. Action Description:

Under the Proposed Action, the DAF is proposing to improve PR training conducted throughout the Tucson region. Improvements would involve increasing suitable training site access and expanding training activities at some sites. Currently, there are 175 PR training sites already evaluated under the 2020 EA that may be utilized during PR training. Under the Proposed Action in this EA, six 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 involves the following activities with locations shown in Figure 2-1:
• Establishment of two HLZs and Pararescue training areas within the Coronado National Forest: the Mount Lemmon/Windy Vista Summer training area and the Reddington Pass training area;
• Establishment of a dirt landing strip on the Willcox Playa;
• Establishment of the Sentinel DZ in Marana, Arizona;
• Establishment of HLZs, fixed-wing LZs, and DZs at the Shi-Ka-She training complex in St. David, Arizona; and
• Establishment of the Benson DZ at Benson Municipal Airport in Benson, Arizona.

Air calculations were divided into 2 regions of influence. This model represents emissions that occurred in the Southeast Arizona Interstate AQCR Portion

f. Point of Contact:

Name: Ryan Sauter
Title: Project Manager
Organization: EAS LLC
Email: ryan.sauter@easbio.com
Phone Number: 6513419955

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (hsba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (hsba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.228	250	No
NOx	1.028	250	No
CO	4.571	250	No
SOx	0.215	250	No
PM 10	0.164	250	No
PM 2.5	0.147	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2027 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.228	250	No
NOx	1.028	250	No
CO	4.571	250	No
SOx	0.215	250	No
PM 10	0.164	250	No
PM 2.5	0.147	250	No
Pb	0.000	25	No
NH3	0.000	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Ryan Sauter, Project Manager	Jan 30 2025
Name, Title	**Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to estimate GHG emissions associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions.

a. Action Location:

Base: DAVIS-MONTHAN AFB
State: Arizona
County(s): Cochise
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: PERSONNEL RECOVERY UPDATE, DAVIS-MONTHAN AIR FORCE BASE, ARIZONA, Southeast Arizona Interstate AQCR Portion

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2026

e. Action Description:

Under the Proposed Action, the DAF is proposing to improve PR training conducted throughout the Tucson region. Improvements would involve increasing suitable training site access and expanding training activities at some sites. Currently, there are 175 PR training sites already evaluated under the 2020 EA that may be utilized during PR training. Under the Proposed Action in this EA, six 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.
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• Establishment of two HLZs and Pararescue training areas within the Coronado National Forest: the Mount Lemmon/Windy Vista Summer training area and the Reddington Pass training area;
• Establishment of a dirt landing strip on the Willcox Playa;
• Establishment of the Sentinel DZ in Marana, Arizona;
• Establishment of HLZs, fixed-wing LZs, and DZs at the Shi-Ka-She training complex in St. David, Arizona; and
• Establishment of the Benson DZ at Benson Municipal Airport in Benson, Arizona.

Air calculations were divided into 2 regions of influence. This model represents emissions that occurred in the Southeast Arizona Interstate AQCR Portion

f. Point of Contact:

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2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year or 20 years beyond SS emissions year for aircraft operations related actions.

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (NO2). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2026	583	0.02453352	0.00478649	585	68,039	No
2027 [SS Year]	583	0.02453352	0.00478649	585	68,039	No
2028	583	0.02453352	0.00478649	585	68,039	No
2029	583	0.02453352	0.00478649	585	68,039	No
2030	583	0.02453352	0.00478649	585	68,039	No
2031	583	0.02453352	0.00478649	585	68,039	No
2032	583	0.02453352	0.00478649	585	68,039	No
2033	583	0.02453352	0.00478649	585	68,039	No
2034	583	0.02453352	0.00478649	585	68,039	No
2035	583	0.02453352	0.00478649	585	68,039	No
2036	583	0.02453352	0.00478649	585	68,039	No
2037	583	0.02453352	0.00478649	585	68,039	No
2038	583	0.02453352	0.00478649	585	68,039	No
2039	583	0.02453352	0.00478649	585	68,039	No
2040	583	0.02453352	0.00478649	585	68,039	No
2041	583	0.02453352	0.00478649	585	68,039	No
2042	583	0.02453352	0.00478649	585	68,039	No
2043	583	0.02453352	0.00478649	585	68,039	No
2044	583	0.02453352	0.00478649	585	68,039	No
2045	583	0.02453352	0.00478649	585	68,039	No
2046	583	0.02453352	0.00478649	585	68,039	No
2047	583	0.02453352	0.00478649	585	68,039	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2026	90,756,232	249,199	22,164	91,027,596
2027 [SS Year]	90,756,232	249,199	22,164	91,027,596
2028	90,756,232	249,199	22,164	91,027,596
2029	90,756,232	249,199	22,164	91,027,596
2030	90,756,232	249,199	22,164	91,027,596
2031	90,756,232	249,199	22,164	91,027,596
2032	90,756,232	249,199	22,164	91,027,596
2033	90,756,232	249,199	22,164	91,027,596
2034	90,756,232	249,199	22,164	91,027,596
2035	90,756,232	249,199	22,164	91,027,596
2036	90,756,232	249,199	22,164	91,027,596
2037	90,756,232	249,199	22,164	91,027,596
2038	90,756,232	249,199	22,164	91,027,596
2039	90,756,232	249,199	22,164	91,027,596
2040	90,756,232	249,199	22,164	91,027,596
2041	90,756,232	249,199	22,164	91,027,596
2042	90,756,232	249,199	22,164	91,027,596
2043	90,756,232	249,199	22,164	91,027,596
2044	90,756,232	249,199	22,164	91,027,596
2045	90,756,232	249,199	22,164	91,027,596
2046	90,756,232	249,199	22,164	91,027,596
2047	90,756,232	249,199	22,164	91,027,596

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2026	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2027 [SS Year]	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2028	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2029	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2030	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2031	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2032	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2033	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2034	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2035	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2036	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2037	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2038	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2039	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2040	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2041	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2042	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2043	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2044	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2045	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2046	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2047	5,136,454,179	25,626,912	1,500,708	5,163,581,798

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (yGba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2026-2047	State Total	1,996,637,108	5,482,389	487,614	2,002,607,111
2026-2047	U.S. Total	113,001,991,938	563,792,057	33,015,568	113,598,799,563
2026-2047	Action	12,836	0.539737	0.105303	12,881
Percent of State Totals		0.00064288%	0.00000984%	0.00002160%	0.00064321%
Percent of U.S. Totals		0.00001136%	0.00000010%	0.00000032%	0.00001134%

Ryan Sauter, Project Manager — Jan 30 2025

Name, Title — **Date**