FREE MANEUVER TEST AREA ENVIRONMENTAL ASSESSMENT U.S. ARMY GARRISON YUMA PROVING GROUND

AUGUST 2025

ID#: EAXX-007-21-001-1757425838

Prepared by
U.S. Army Garrison Yuma Proving Ground
Environmental Sciences Division
Yuma, Arizona 85365

Draft Finding of No Significant Impact

Project Title

U.S. Army Garrison

Yuma Proving Ground, Arizona

Placeholder text pending completion of analysis and public comment.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
APE	Area of Potential Effect
Army	U.S. Army
AZDEQ	Arizona Department of Environmental Quality
AZGFD	Arizona Game and Fish Department
BLM	Bureau of Land Management
BMP	Best Management Practice
BOR	Bureau of Reclamation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
c-UAS	counter-Unmanned Aerial Systems
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
HEL	High Energy Laser
HPM	High-Powered Microwave
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resource Management Plan
IPaC	Information for Planning and Conservation
km	kilometer
MCOC	Munitions Constituents of Concern
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIA	North Impact Area
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWR	National Wildlife Refuge
OB/OD	Open Burn/Open Detonation
RCRA	Resource Conservation and Recovery Act
RDT&E	Research, Development, Testing, and Evaluation
RMP	Resource Management Plan
ROW	Right-of-Way
SDZ	Surface Danger Zone

SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Officer
SIA	South Impact Area
SWPPP	Stormwater Pollution Prevention Plan
UAS	Unmanned Aerial System
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USACE	U.S. Army Corps of Engineers
USAG	United States Army Garrison
USC	United States Code
USFWS	U.S. Fish & Wildlife Service
UXO	Unexploded Ordnance
WHA	Wildlife Habitat Area
YFO	Yuma Field Office
YPG	Yuma Proving Ground

1 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction and Regulatory Authority

The United States Army Garrison (USAG) Yuma Proving Ground (YPG) has developed this Environmental Assessment (EA) to analyze the impacts that could result from the designation of a free maneuver test area (FMA) suitable for manned and unmanned ground combat vehicles. The maneuver area will cover approximately 6,000 acres, providing a wide array of natural, undulating terrain for operationally relevant maneuvers in a remote area of the range, where the systems under test are not restricted to established course routes.

This EA was initiated in compliance with the National Environmental Policy Act of 1969 (NEPA; Title 42 of the United States Code [USC] § 4321 et seq.) to evaluate and document the potential for effects to the natural and human environment that could result from the Army's Proposed Action of establishing the FMA, as described in detail in Chapter 2. This EA has been prepared IAW the Department of Defense NEPA Implementing Procedures (June 30, 2025).

1.2 Background

YPG is in the southwestern corner of Arizona, near the California-Arizona border (Figure 1). The Colorado River is located to the west of the installation and the Gila River is to the south. The installation lies approximately 23 miles northeast of the city of Yuma and is in both La Paz and Yuma counties. YPG occupies about 1,300 square miles and extends approximately 60 miles north to south and 50 miles east to west. YPG is a general-purpose facility with over 80 years of experience testing weapon systems of all types and sizes. The facility conducts tests on medium and long-range artillery, aircraft target acquisition equipment and armament, armored tracked and wheeled vehicles, a variety of munitions, and personnel and supply parachute systems. Testing programs are conducted for all U.S. military services, friendly nations, and private industry. YPG is the Army's center extreme natural environmental testing for hot/dry desert conditions. YPG boasts the infrastructure for fully and realistically testing all weapons systems in the ground combat arena.

1.3 Purpose of the Proposed Action

The Army relies on YPG's advanced test capabilities to develop, mature, and perform safety testing on new ground and aerial combat systems, weapons systems and munitions. The purpose of the Army's action is to designate a free maneuver range suitable for the operation of manned or unmanned ground combat vehicles while operated individually or in teams. The FMA will cover approximately 6,000 acres, providing a wide array of natural, undulating terrain for operationally relevant maneuvers in a remote area of the range, where the systems under test are not restricted to established courses or routes. The relative isolation of the area provides a significant buffer against electromagnetic interference, or developed or inhabited areas, providing significant safety buffers when testing unmanned or autonomous platforms.

Need for the Proposed Action

This action is needed to meet the demands for testing of future manned and unmanned combat vehicles in a fully operationally relevant environment in solitary or teamed conditions. Current facilities or range areas do not meet the test requirements for several key Acquisition Categories (ACAT I) test programs critical for the modernization of the Army. This is inclusive of manned and unmanned ground vehicles, aircraft, direct and indirect fire systems, and other specialized equipment.

1.4 Scope of the Environmental Analysis

YPG has identified the following resources that are present in the project vicinity, or that potentially could be affected by the Proposed Action, to be considered in the EA. A complete list of resources or uses

that were considered are included in Chapter 3.

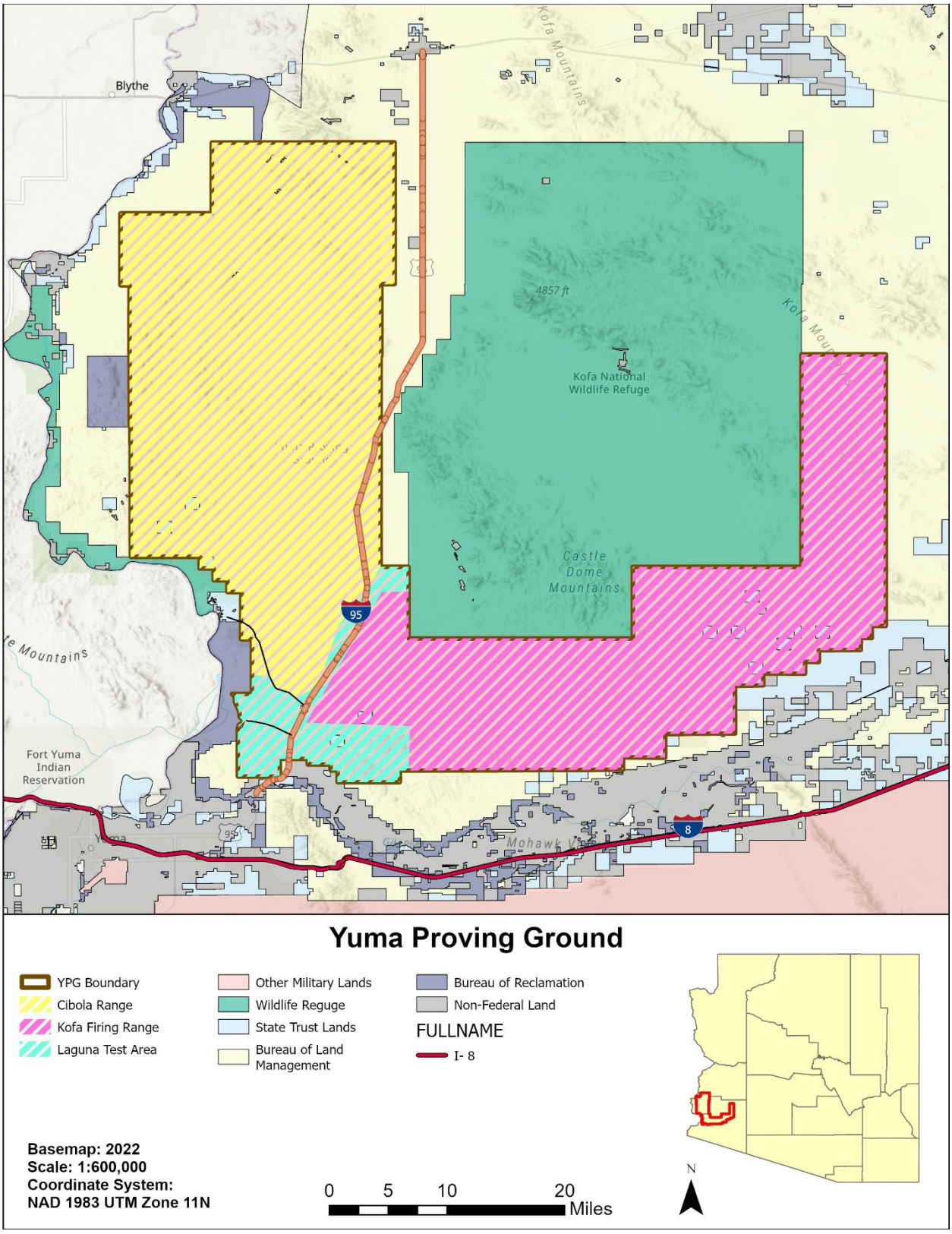

Figure 1. YPG Location.

1.5 Public Involvement and Agency and Tribal Coordination

YPG invites public participation in the proposed federal action through the NEPA process. YPG notified interested parties of the project on *(insert date),* including letters submitted to potentially interested persons; organizations; federal, state, and local agencies; and tribal governments to inform and solicit input from the interested public and stakeholders (a list of individuals, groups, and tribal representatives who were contacted is included in Section 4.1). The Army believes that consideration of all interested persons' views and information provided promotes open communication and enables better decision making. All agencies, organizations, and members of the public having a potential interest in the Proposed Action are urged to participate in the decision-making process by providing comments about important issues and concerns that should be considered in the analysis.

Additional detail will be added here after scoping and other outreach occurs.

YPG would do the following to meet obligations required for interaction with Federally-recognized American Indian and Alaska Native Tribes (American Indian and Alaska Native Policy, 20 October, 1998):

1. Meet its responsibilities to Federally-recognized Tribes as derived from the federal trust doctrine, treaties, and agreements and comply with federal statutes and regulations, presidential memoranda and executive orders governing interactions with Federally-recognized Tribes.
2. Build stable and enduring government-to-government relations with Federally-recognized Tribes in a manner that sustains the Army mission and minimizes effects on protected tribal resources. The Army will communicate with Federally-recognized Tribes on a government-to-government basis in recognition of their sovereignty.
3. Recognize, respect and take into consideration the significance that Federally-recognized Tribes ascribe to protected tribal resources when undertaking Army mission activities and when managing Army lands.
4. Fully integrate the principles of meaningful consultation and communication with Federally-recognized Tribes at all organizational levels including staff officers and civilian officials. The Army will consider the unique qualities of individual Federally-recognized Tribes when applying these principles.

USAG YPG received comments from the following tribes. The Cocopah Tribe (letter dated April 30, 2025), Gila River Indian Tribe (letter dated May 12,2025), Salt River Pima-Maricopa Indian Community (letter dated March 7, 2025), and the San Carlos Apache Tribe (form dated March 24, 2025) sent positive and/or concurring comments regarding the determinations of eligibility and proposed historic property avoidance measures. The Fort Yuma Quechan Indian Tribe (email dated April 30, 2025) stated their Historic Preservation Office had no comment on this project. The SHPO concurred with the determinations of eligibility and effect, and the proposed site avoidance measures by letter dated May 9, 2025.

1.6 Decision to be Made

Based on the results of the NEPA analysis, the Army Authorized Officer will determine if the action would have significant effects; if so, an EIS would be prepared. If the action would not have significant effects, a Finding of No Significant Impact (FONSI) would be prepared, consistent with the regulations for implementing the procedural provisions of the Army NEPA Regulations (32 CFR 651), and other relevant laws, regulations, or directives. The Authorized Officer will decide whether to select the Proposed Action, an alternative to the Proposed Action, or to take no action at all.

2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This chapter describes in detail the Proposed Action and the No Action Alternative. The No Action Alternative is analyzed to provide a baseline against which to compare the Proposed Action's potential environmental consequences.

2.2 Proposed Action

Under the Proposed Action, YPG would designate an FMA suitable for manned and unmanned ground combat vehicles. The area will cover approximately 6,000 acres, providing a wide array of natural, undulating terrain for operationally relevant maneuvers in a remote area of the range, where systems are under test and are not restricted to established courses or routes. The proposed FMA is divided into three separate areas as depicted in Figure 2. Area A would be designated for free maneuvers of both manned and unmanned combat vehicles. Area B falls within existing YPG airspace would be used for free maneuver and fire on the move from combat vehicles into designated impact areas. Area C also falls within YPG airspace but would be used for fixed firing positions from combat vehicles into designated impact areas.

Future Development

Future development of the proposed free maneuver area includes the following support facilities:

Construction of a building (approximately 10,000 square feet) with a main room, four offices, break room, staging area with restroom facilities, optics lab, and a maintenance bay with 2 sets of drive through doors and work area. The support facility will require standard utilities, water, sewer, electric and network access. The support facility will also require security fencing.

Construction of observation towers and the placement of telephone poles to mount instrumentation and data collection systems to support testing.

Construction of reinforced concrete inspection pad with up to 100-ton capacity.

Gravel access roads will also be constructed to allow for ingress for Heavy Equipment Transporters.

Construction of a gravel parking lot to accommodate approximately 30 vehicles.

The location of the proposed FMA is located on the southeast corner of the southern boundary of the installation (Figure 2).

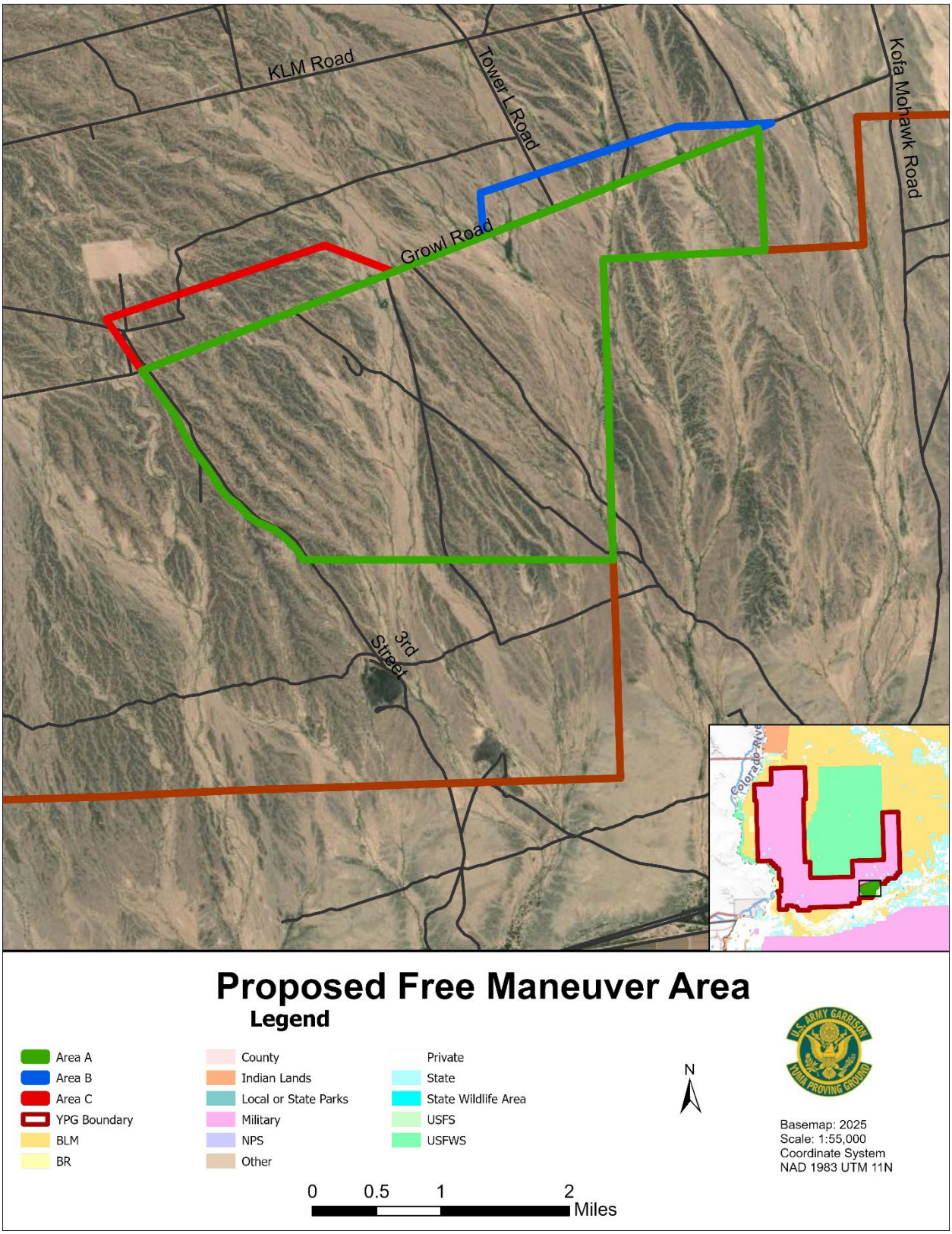

Figure 2. Proposed Action Location.

2.2.1 Design Measures, BMPs, and Mitigation Measures

Design measures are included in the Proposed Action to reduce the potential for adverse effects on safety and natural and cultural resources. These include features of the Proposed Action that were developed by YPG, as well as activities that are anticipated to occur before and during project construction and throughout operation and maintenance of the project. These measures are described in Chapter 3, as applicable, under specific resources. Compliance with listed design features would be required for the implementation of the Proposed Action.

2.3 No Action Alternative

There would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. Vehicle testing would continue to be limited to existing roads, trails, and test courses on YPG. Without this designation of an FMA, YPG would fail to meet the future testing needs of the DoD. This would limit YPG's capability to test new military systems to that which can be supported by existing capabilities. This would create a significant gap in YPG's (and more importantly the Army's developmental test ranges) ability to assess system performance capabilities when deployed as individual systems, or when used cooperatively with other (un)crewed ground systems. The Army does not currently have a developmental test facility with instrumented ranges, airspace, and electronic warfare expertise, to support testing of teamed manned and/or unmanned vehicle platforms in a realistic, unmodified manner. The FMA would provide for a test area adjacent to existing restricted airspace, impact areas, and electronic warfare clearance areas to adequately assess holistic system performance.
Without the establishment of the Free Maneuver Area, YPG would fail to meet the future testing needs of the DoD.

2.4 Alternatives Not Carried Forward for Further Analysis

During the development of alternatives for the FMA, YPG determined that the following alternatives did not meet the purpose and need of the Proposed Action, and the alternatives were not carried forward for further evaluation. Additional Alternatives included the use of the Patton test courses and Laguna Paved test course to support this test requirement but deemed inadequate. Existing facilities and established range areas do not have the ability to allow unmanned platforms to operate in an operationally relevant manner while teamed with other systems with self-driving or remotely operated capabilities. Due to their proximity to existing non-YPG owned land and roads, as well as existing YPG infrastructure, it was deemed that current alternatives are inadequate to support safety standoff required for testing of unmanned vehicles when operating in an operational relevant manner.

3 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter presents the affected environment and environmental consequences related to implementation of the Proposed Action. The affected environment represents the baseline conditions against which the effects that may result from the Proposed Action are evaluated under each alternative. Of the resources considered, ten were not carried forward for further analysis because the potential for environmental impacts to these resources was determined to be nonexistent, unlikely, or negligible (see Section 3.1); therefore, the analysis is focused on the resource areas where there were potential impacts. In addition to a description of the affected resources, this chapter presents an analysis of the potential impacts to the human and natural environment likely to result from implementation of the alternatives described in Chapter 2. The description of the Proposed Action includes all known mitigation measures, and it assumes that the Proposed Action would be implemented as described, using accepted guidelines, standard operating procedures, and best management practices (BMPs) intended to reduce potential impacts.

3.1 Resources and Uses Considered

Table 2 outlines the resources considered by YPG, indicates whether the Proposed Action has the potential to result in a change in each, relative to existing conditions, and provides the rationale for eliminating or carrying each resource forward for further analysis. Those resources or uses determined not to be present, or that are present but would not be affected by the Proposed Action need not be evaluated in detail or discussed further. Only those resources identified as present in the project area and that may be affected are carried forward in the document if there are issues which necessitate a detailed analysis. A brief rationale is provided explaining why some resources were dismissed from further analysis. Resources and resource uses that were determined to warrant detailed analysis are analyzed in sections 3.2 through 3.8.

Table 1. Resources and Rationale for Elimination or Detailed Analysis.

RESOURCE/ USE	PRESENT YES/NO	MAY BE AFFECTED YES/NO	RATIONALE
Air Quality	Yes	Yes	Impacts to Air Quality are analyzed in Section 3.2
Biological Resources	Yes	Yes	Impacts to Biological Resources are analyzed in Section 3.3.

RESOURCE/ USE	PRESENT YES/NO	MAY BE AFFECTED YES/NO	RATIONALE
Cultural Resources	Yes	Yes	Impacts to Cultural Resources are analyzed in Section 3.4.
Farmlands – Prime/Unique	No	No	The Farmland Protection Policy Act protects prime or unique farmlands from unnecessary and irreversible conversion to non-agricultural uses. YPG does not contain prime farmlands and there were no prime or unique farmlands along the BLM ROW; therefore, no activities associated with the Proposed Action would affect any prime farmland and this resource is not carried forward for detailed analysis.
Floodplains	No	No	EO 11988, *Floodplain Management*, restricts federal agencies from constructing in a floodplain. No construction or other modification of a floodplain area is proposed. This resource is not carried forward for analysis.
Hazardous Materials and Wastes	Yes	Yes	Impacts to Hazardous Materials and Wastes are analyzed in Section 3.5.
Health and Safety	Yes	Yes	Impacts to Health and Safety are analyzed in Section 3.6.
Land Use and Recreation	Yes	No	The proposed action will occur on existing military lands and ranges and are subject to routine safety exclusion for YPG personnel. These areas are not available for public access due to the nature of the military testing in the area and safety. There would be no change to the use of the area and this element will not be carried forward for analysis.
Livestock Grazing	No	No	Livestock grazing on BLM land in the YFO is administered through permits held on specific allotments. Land that is available for grazing is located north of the project area, but no grazing management areas cross the BLM ROW portion of the project area (BLM 2010).
Noise	Yes	No	Noise levels would increase temporarily when personnel are in the area preparing for tests and during testing. Personnel would wear appropriate hearing protection and follow Army noise regulations (Army Regulation 200-1). Noise impacts during operation of the impact areas would be intermittent and similar to current ongoing testing activities at YPG. Noise levels at the impact areas would adhere to acoustical limits established by DoD standards, as described in Army Regulation 40-5 and associated noise level compatibility guidelines (Gutierrez-Palmenberg, Inc. & Jason Associates Corp. 2001). According to the guidelines used to assess noise and land use compatibility, the overall noise impact of YPG's current activities would be characterized as minimal due to the remote nature of the proving ground. There are no sensitive receptors within the vicinity of the impact areas that would perceive an increase in noise. Noise impacts from the Proposed Action would be intermittent and minor; therefore, this issue is not carried forward for detailed analysis.

RESOURCE/ USE	PRESENT YES/NO	MAY BE AFFECTED YES/NO	RATIONALE
Socioeconomic Values	No	No	The Proposed Action does not represent a new major military program or a major expansion of existing military programs or infrastructure that could induce additional growth of the local and regional economy. The Proposed Action would take place within the YPG boundaries and would not have potential impacts associated with income, employment, conflicts with county and local plans, population growth, displacement of persons and businesses, or community disruption.
Soil Resources	Yes	Yes	Impacts to Soil Resources are analyzed in Section 3.7.
Transportation Infrastructure	Yes	Yes	Impacts to Transportation Infrastructure are analyzed in Section 3.8.
Visual Resources	Yes	No	Due to the lack of population or development, it would be unlikely for the public to perceive a change from designation and use of the proposed FMA. The Proposed Action would not obstruct, damage, dominate, or substantially modify a scenic view from public viewing areas and would not have a substantial adverse effect on a scenic vista. There would be some short-term, intermittent effects from vehicles and equipment present in staging areas, but the level of change to the characteristic landscape would be low. This resource is eliminated from detailed analysis.
Water Resources, including Wetlands	Yes	No	Impacts to Water Resources are analyzed in Section 3.9.
Wild Horse and Burros	Yes	Yes	Analyzed under Biological Resources 3.3.1.2

3.2 Air Quality

3.2.1 Affected Environment

The Clean Air Act (CAA), as amended, establishes National Ambient Air Quality Standards (NAAQS) for the control of criteria air pollutants to protect human health and the environment, and to prevent adverse effects to national air resources. The Arizona Department of Environmental Quality (ADEQ) is the regulating and enforcing agency for Arizona Air Quality Standards and has adopted the Federal

standards as the Arizona Ambient Air Quality Standards. Air resources are discussed in the RWEIS on pages 35-39 (YPG 2001a).

Several criteria air pollutants are tracked on the installation but particulate matter 10 microns and smaller (PM10) is the air pollutant most likely to be affected by the Proposed Action and therefore is the pollutant covered in this analysis. The Yuma County PM10 Nonattainment Area (NAA) encompasses a small portion of the southwestern section of YPG (in the Laguna Region). An area is designated as a non-attainment area if it does not meet Federal air quality standards for a pollutant. n 2006, EPA determined that the Yuma PM10 NAA had met the 1987 PM10 NAAQS and issued a Clean Data Determination (CDD). This suspended the need for CAA requirements related to NAA planning for as long as the Yuma area continued to meet the PM10 National Ambient Air Quality Standards (NAAQS). On May 17, 2022, EPA took final action to recall the CDD based on recent air quality monitoring data that showed the area violated the PM10 standard. ADEQ is working with Yuma stakeholders to develop a new State Implementation Plan (SIP) revision to reduce PM10 emissions and bring the NAA into compliance with NAAQS. The SIP revision is due to EPA in May 2025. The area is currently classified as Moderate and is at risk of being reclassified as Serious, if the area doesn't attain the PM10 NAAQS by the EPA's action deadline.

In arid regions such as southern Arizona, PM10 occurs at higher levels due to low soil moisture, low humidity, and high winds, resulting in higher dust generation and dispersion rates. Agricultural activities are considered a major contributor to PM10 pollutants, while activities at the installation have been listed as minor contributors (YPG 2001a). Throughout the years YPG has implemented various measures to minimize its impact on air quality. BMPs and preventive measures are implemented to ensure installation activities have the least impact to air quality. The YPG 2024 air emissions inventory indicated levels of criteria air pollutants, including PM10, were well below established Federal and State regulatory standards.

The proposed location for the FMA is located approximately 23 miles east of the Yuma County PM_{10} Nonattainment Area. Since this project is located outside of the Yuma County PM10 Nonattainment Area, the project is not applicable to the General Conformity Demonstration requirements in 40 Code of Federal Regulations (CFR) Part 93, Subpart B. Furthermore, no sensitive receptors such as school, hospitals, and residential areas have been identified near the project site. The purpose of the FMA is to test the effects of dust on manned or unmanned ground combat vehicles and will logically produce dust that becomes elevated in the air. The FMA is located away from populated areas and most dust produced during use of the FMA will remain localized and settle back within the vicinity of the FMA. Some smaller particulate matter will remain suspended however and may drift away from the FMA.

3.2.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. There would be no effect on air quality.

Proposed Action

Under the proposed action, YPG would designate approximately 6,000 acres in the southeast corner of the installation as a free maneuver area for combat vehicle testing and combat vehicle firing into designated impact areas. The purpose of the FMA is to test the effects of the natural environment, including dust, on

manned or unmanned ground combat vehicles and for this purpose, the FMA is located away from populated areas and outside Yuma County PM_{10} NAA.

3.3 Biological Resources

3.3.1 Affected Environment

3.3.1.1 Vegetation

Vegetation across YPG and surrounding lands is in the Lower Colorado Valley Subdivision of the Sonoran Desert, the largest and most arid portion of the desert. The terrain consists of broad, flat valleys covered by a network of desert washes, and scattered mountain ranges of almost barren rock. Due to the extreme aridity of this region, vegetation is sparse and consists of drought-tolerant species of shrubs, grasses, and cacti. In open valleys, creosote bush (*Larrea tridentata*) is dominant, occurring in widespread stands, or mixed with combinations of ocotillo (*Fouquieria splendens*), teddy bear cholla (*Cylindropuntia bigelovii*), bursage (*Ambrosia* spp.), and paloverde (*Parkinsonia* spp.) (Turner and Brown 1994; Shreve and Wiggins 1964). Big galleta grass (*Pleuraphis rigida*) communities along with foothill paloverde trees (*Parkinsonia microphylla*), honey mesquite trees (*Prosopis glandulosa*), or bursage (*Ambrosia deltoidea*) are dominant in areas where more sand has accumulated. Desert washes can support less drought-tolerant trees and shrubs including blue paloverde (*Parkinsonia florida*), ironwood (*Olneya tesota*), smoke tree (*Psorothamnus spinosus*), mesquite (*Prosopis* spp.), and catclaw acacia (*Acacia greggii*). Foothills and mountains provide habitat for mixed shrubs such as brittlebush (*Enceliia farinosa*) in combination with other plants such as saguaro cactus (*Carnegiea gigantea).*

The project area is situated on an alluvial fan covered primarily with desert wash and desert pavement (Kaya 2011). Biological soil crusts are widespread on YPG, including in the Kofa Region, and surrounding lands. These crusts help control soil erosion by wind and water, contribute to nutrients for plant growth, and may help exclude some invasive plants. Photos of typical vegetation and terrain in the area are shown below.

The proposed project is located within the Kofa Range of YPG. A variety of other projects and activities take place in this region such as automotive testing, ground combat systems testing, drop zones, sensor testing, and impact areas.

Invasive, Non-native Plant Species

Non-native or invasive species: Invasive plant species are considered to be one of the most serious threats to the Sonoran Desert ecosystem (Marshall et al. 2000). Plants of concern in the YPG area include buffelgrass (Pennisetum ciliare), Athel tamarisk, (Tamarix aphylla), salt cedar Tamarix spp. and/or hybrids), common Mediterranean grass and Arabian schismus (Schismus barbatus and arabica, respectively), and Sahara mustard (Brassica tournefortii).

Like all annual herbacious vegetation on YPG, invasives such as Sahara mustard and schismus, erupt in large areas in wet years, and are very sparce in drought conditions. Likewise, buffelgrass will remain dormant for long periods in dry conditions and then green-up after rains. The frequent drought cycle limits the spread of some of these invasives.

Sensitive Plant Species

Native Plants in Arizona are protected by the Arizona Native Plant Law (3.A.A.C. 3 Article 11). Under this statute many native plants including, but not limited to, agave, cacti, and ocotillo may be protected from destruction or salvage. Private and state agencies must provide a notice of intent to the Arizona Department of Agriculture to destroy or remove protected native plants. Federal agencies are not required to file notice of intent for removing protected plant species; however, if those plants are being transported outside federal lands, then specific permits or tags would be required for salvage.

Only one federally endangered plant species has been identified within YPG boundaries. The Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*) is a small, barrel cactus that is found on limestone-derived soils on alluvial fans or inclined terraces and saddles at elevations of approximately 3,200 to 3,800 feet. The cactus was documented on YPG land in 1995; however, subsequent surveys to relocate the cactus have been unsuccessful. The 1995 detection is believed to be an error due to lack of suitable habitat and the inability to relocate the cactus. In addition, Nichol's Turk's head cactus is not believed to be present in the project area because the nearest confirmed location is in the Waterman Mountains in Pima County, over 100 miles away (Rebman 1996).

3.3.1.2 Wildlife

Wildlife with the potential to occur within the vicinity of the project area are predominantly associated with Sonoran Desert scrub habitats. Mammal, reptile, and bird species typical of Sonoran Desert scrub habitat likely to be found within or near the project area include:

- **Mammals:** Mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), badger (*Taxidea taxus*), kit fox (*Vulpes macrotis*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), rock pocket mouse (*Chaetodipus intermedius*), Merriam's kangaroo rat (*Dipodomys merriami*), blacktailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), woodrat (*Neotoma* spp.), round-tailed ground squirrel (*Spermophilus tereticaudus*), and multiple bat species.
- **Reptiles:** Western whiptail (*Aspidoscelis tigris*), side-blotched lizard (*Uta stansburiana*), sidewinder rattlesnake (*Crotalus cerastes*), western diamondback rattlesnake (*Crotalus atrox*), coachwhip (*Coluber flagellum*), and western shovel-nosed snake (*Chionactis occipitalis*).
- **Birds:** A wide variety of bird species are found in the region, many of which are migratory birds that may breed or winter in other locations. Common birds in the region include ash-throated flycatcher (*Myiarchus cinerascens*), Audubon's warbler (*Setophaga coronate*), black-tailed gnatcatcher (*Polioptila melanura*), blackthroated sparrow (*Amphispiza bilineata*), Brewer's sparrow (*Spizella breweri*), Eurasian collared dove (*Strepropelia decaocto*), Gambel's quail (*Callipepla gambelii*), LeConte's thrasher (*Toxostoma lecontei*), loggerhead shrike (*Lanius ludovicianus*), northern rough-winged swallow (*Stelgidopteryx serripennis*), phainopepla (*Phainopepla nitens*) and red-tailed hawk (*Buteo jamaicensis*).

Special Status Wildlife Species

Special status wildlife species are subject to regulations under the authority of federal and state agencies. Special status species include those species that are listed by the USFWS as federal endangered, threatened, proposed, or candidate species under the ESA, Section 4, as amended, and those that are ranked as Species of Greatest Conservation Need (SGCN) tiers 1 and 2 listed by Arizona Game and Fish Department (AZGFD). Each of these categories are listed below.

Federally Listed Wildlife

A review for potential occupancy by federally listed wildlife species was performed for the East Arm Impact Areas in the Kofa Range. The list of species considered was derived from the USFWS Information for Planning and Conservation (IPaC) system March 14, 2022 (USFWS 2025a), Project Code: 2025-0090800. This information provided a basis for species that might be present in the vicinity of the project area. The federally listed species identified as potentially occurring in the project area are described in Appendix B. The following section describes those species with suitable habitat present within or adjacent to the project area. These species include the Sonoran pronghorn (*Antilocapra americana sonoriensis*) and monarch butterfly (*Danaus plexippus*), and yellow-billed cuckoo (*Coccyzus americanus*).

Sonoran Pronghorn. The Sonoran pronghorn is a federally endangered subspecies of the pronghorn that

inhabits a variety of Sonoran Desert habitats. Sonoran pronghorn have been released from pens in King Valley on the nearby Kofa NWR as part of a captive breeding program to increase the Sonoran pronghorn population. To facilitate conservation efforts, all Sonoran pronghorn found anywhere they may roam following release from the captive breeding pen, within a defined area bounded by Interstate 10 to the north and Interstate 8 to the south, are designated "nonessential, experimental" by the USFWS (Federal Register Vol. 76, pages 25593–25611). Protections for those species designated as "nonessential, experimental" under Rule 10(j) of the ESA are relaxed including the take prohibitions and consultation requirements of the ESA, easing regulatory burden associated with endangered species.

Pronghorn rely on detecting and fleeing from predators. As such, this species prefers flat to gently rolling terrain with open sightlines. Pronghorn are typically nomadic, requiring large expanses of contiguous habitat to survive. Since the Kofa pronghorn population has been established, there are now over 247 pronghorn occupying the Kofa subunit population. Pronghorn occupy the King Valley to Gila River Valley and East to the Palomas Planes, which encompasses the project area. As the population of pronghorn continue to increase, it is likely that pronghorn will occur in additional areas in the future. Pronghorn are regularly observed at Ivan's well which is approximately 1 mile east and outside of the project area, and native habitat associated with the project area represents potentially suitable habitat for Sonoran pronghorn.

Monarch Butterfly. The monarch butterfly (*Danaus plexippus*) was proposed as threatened on December 12, 2024. In many regions where monarchs are present, monarchs breed year-round. During the breeding season, monarchs lay their eggs on a milkweed host plant (primarily *Asclepias* spp.). There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites. This migration can take monarchs long distances and last for over two months. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again (USFWS 2021).

Lower deserts of Arizona see more breeding monarchs in the fall, especially during September, than in spring. During the time of the spring migration in late March through June, there are small numbers of breeding monarchs migrating through the lower deserts. They leave the lower deserts by mid-May to mid-June, as temperatures soar over 100°F (Morris et al. 2015). Milkweed and flowering plants are needed for monarch habitat. Adult monarchs feed on the nectar of many flowers, but they only breed where there is milkweed. The project area is approximately 2 miles north of the agricultural production region along the Gila River which may provide a seasonal migratory corridor stern edge of seasonal migratory corridor and marginally suitable habitat is present within the project area; sporadic milkweed populations primarily occur along washes within the project area.

The Department of Defense developed a Conservation Strategy for the Monarch Butterfly in December 2024. The purpose of this Strategy is to describe how the DOD will continue to use its authorities to conserve monarchs within the continental U.S. This Strategy was developed in collaboration with the U.S. Fish & Wildlife Service (USFWS) to ensure these programs and policies will serve the purposes of advancing monarch conservation and continuing to fulfill DOD's responsibilities under Section 7(a)(1) of the Endangered Species Act.

In December 2024 USFWS issued a Conference Opinion based on the review of the DOD Conservation

Strategy and military mission sustainment actions addressing the affects to species in accordance with section 7 of the Endangered Species Act. YPG implements the conservation strategy and provisions of the conference opinion through implementation of the Integrated Natural Resource Management Plan (YPG 2023).

Yellow-billed Cuckoo: The western population of yellow-billed cuckoo is listed as a threatened species by the USFWS (79 FR 59991) and Critical Habitat has been designated along the Colorado River north of the border with Mexico (79 FR 71373). This species uses wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, and dense thickets along streams and marshes. Suitable habitat is present along the Colorado River and associated wetlands west of YPG and along the Gila River south of YPG, but this species has not been identified within the installation. There are no wetlands or associated shrublands on YPG that would support yellow-billed cuckoo, including within the project area. The washes in the project area are small and narrow and would not provide adequate foraging area for this species. The proposed action would have no affect on Yellow Billed Cuckoo.

Species of Greatest Conservation Need

A report was generated for the project on May 1, 2025 (Project ID HGIS-24956), using the AZGFD Online Environmental Review Tool (AZGFD 2022). The information was assessed to identify SGCN or other special status species that have the potential to occur within or adjacent to the project area. The Online Environmental Review Tool Report showed that there is the potential for 27 SGCN classified as AZGFD Tier 1, 2 or 3 to occur within or have suitable habitat within or adjacent to the project area. The list of SGCN for Arizona was categorized into tiers reflecting AZGFD's management commitments and priorities; tiers are as follows:

1 – Deemed vulnerable (scored "1") in at least one of the seven categories AND matches at least one of the following:

- Federally listed as endangered or threatened under the Endangered Species Act (ESA)
- Recently removed from ESA and currently requires post-delisting monitoring
- Specifically covered under a signed conservation agreement, CCA, or a CCAA, or a Conservation Strategy and Assessment or Strategic Conservation Plan
- Closed season species (i.e., no take permitted) as identified in Arizona Game and Fish Commission Orders 40, 41, 42 or 43

2 – Deemed vulnerable (scored "1") in at least one of the seven categories above but matched none of the additional criteria for Tier 1.

3 – Species with unknown status in at least one of the seven categories but do not rise to a Tier 2. These species are those for which we are unable to assess status and thus represent priority research and information needs. As more information becomes available, their tier status will be re-evaluated.

Mexican desert bighorn sheep (*Ovis canadensis Mexicana*) occur in the surrounding area but would likely only occur in the project area as occasionally moving through. Other mammal species such as Kit fox, Harris' antelope squirrel, mouse typically inhabit desert shrub communities similar to those found within and surrounding the project area and may be present. Suitable foraging and roosting habitat can also be found within the project area for the bat species listed in Appendix B: Yuma myotis (*Myotis yumanensis*), spotted bat (*Euderma maculatum*), Allen's big-eared bat (*Idionycteris phyllotis*), Arizona myotis (*Myotis occultus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), greater western mastiff bat aka greater western bonneted bat (*Eumops perotis californicus*), California leaf-nosed bat (*Macrotus californicus*),

and Brazilian (or Mexican) free-tailed bat (*Tadarida brasiliensis*). Due to the lack of water present it is anticipated that use of the area is limited for some of these species.

Sonoran Desert tortoise most commonly inhabits rocky (predominantly granitic rock), steep slopes and bajadas and paloverde-mixed cacti associations. The distribution of Sonoran Desert tortoise on YPG is patchy, with typical occupancy limited to rocky hillsides and washes where adequate shelter can be found, and their movements are typical of the species throughout its range. They have been documented with 5 miles of the project area including some of the rocky slopes and washes along the Palomas and Tank mountains near the project area (AZFGD 2022). Low lying habitat present within the proposed impact areas is not identified as containing probable or modeled Sonoran Desert tortoise habitat (YPG 2017).

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 and the Bald and Golden Eagle Protection Act of 1940. The MBTA prohibits taking (i.e., harming, harassing, or pursuing), killing, possessing, transporting, or importing migratory birds, their eggs, parts, and nests except when specifically authorized by the U.S. Department of the Interior. Species protected by the Act include most native, non-game species. Violations of the MBTA associated with projects often occur as a result of destruction of active nests. Federal law prohibits the destruction of a nest that is occupied with eggs, nestlings, or young birds that are still dependent on the nest for survival.

A number of species of migratory birds have the potential to use the project area. Use of habitat within the project area could include nesting, wintering, foraging, and transient use, although habitat for some species is marginal. There are several AZGFD SGCN Tier 1 and 2 bird species with potential to occur in the project area that are migratory species. This includes six bird species identified by USFWS as Birds of Conservation Concern. ((see Appendix B). Both the intermittent wash habitat and scrub/shrub habitats associated with the Sonoran Desert ecosystem are commonly used for foraging and nesting by these and other migratory bird species. The gilded flicker and Gila woodpecker rely heavily on large cacti and trees such as saguaro cactus for nesting while Le Conte's thrasher often uses shrubs and trees such as creosote, mesquite, and ocotillo for foraging and nesting. During wet periods, additional grasses and forbs can occur creating favorable conditions for birds outside the typical washes and even attract additional species such as sparrows. Perch sites and or trees substantial enough to support large raptor nests are limited within and adjacent to the project area; therefore, it is anticipated that golden eagle and ferruginous hawk would not nest within or adjacent to the impact areas.

Wild Horse and Burro

Wild horses have been observed within the project area. These horses roam between Ivan's Well and Kofa NWR to the north and agricultural areas to the south. Their distribution is strongly dependent on rainfall. During dry conditions, they tend to stay near water such as Ivan's well and forage near agriculture to the south. With favorable conditions, horses venture much further into the desert to the North. Wild Burros have not been observed near the project area but are regularly observed approximately 20 miles away to the west.

Wild horses and burros are protected by the Wild Free-Roaming Horse and Burro Act of 1971 (P.L. 92-195), as amended by FLPMA and the Public Rangelands Improvement Act of 1978 (P.L. 95-514). BLM is the managing agency responsible for protecting these animals and their habitat on BLM-administered public lands. The goal of management within Herd Management Areas is to maintain a viable population in balance with the habitat and other multiple uses. The project area is outside the Cibola-Trigo Herd Management Area, but YPG works cooperatively with BLM to manage Horses and Burros on the range.

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

Under the No Action Alternative, there would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. No new ground disturbance and no effects to wildlife or biological resources would occur in response to the project. Thus, there would be no impacts to vegetation resources caused by testing and training activities within the project area. Likewise, there would be no disturbances to wildlife or wildlife habitat within the project area. The No Action Alternative would result in no change from the existing conditions of vegetation and wildlife resources. Other activities at YPG would continue under previously authorized programs and existing conditions would continue with the potential for continued impacts associated with public access and recreational use. Thus, potential impacts to vegetation and wildlife associated with on-going training and testing missions would remain.

3.3.2.2 Proposed Action

Vegetation

The primary impact to vegetation resources under the Proposed Action would be a decrease in representative native plant cover as a result of vehicles traveling off road. Trails in the FMA will proliferate with a mixture of heavily traveled paths at varying density mixed with lighter travel areas with individual tracks of varying intensity. Density of trails will vary based on the terrain features and natural obstacles. Larger trees and shrubs may be avoided, but smaller plants are more susceptible to crushing. Soil may become compacted in some areas which would reduce future germination.

Ground disturbance and increased bare ground can alter hydrologic flow and soil infiltration regimes and increase the potential for non-native and invasive species colonization (Middleton 2017; Kade and Warren 2002). Areas where native vegetation is cleared or where soils are disturbed are more susceptible to colonization by exotic invasive plant species and more frequent human and equipment traffic can accelerate the spread of invasive weeds. Vegetation disturbance that creates conditions favorable to establishment of exotic invasive vegetation can lead to increased fuel loads and increased risk of wildfire. Off-road vehicle testing impacts may disturb biological soil crusts, increasing airborne dust and decreasing the ability for re-colonization by native plants and colonization by annual weeds who utilize the nutrients found in the soil crust (Belnap et al. 2001). The presence of large stands of invasive weeds can increase the risk of fire. In order to keep non-native, invasive plants under control, YPG implements invasive species management through the INRMP. This integrative plan includes cooperation with other agencies, education, detection, and appropriate action. YPG's invasive species management program would mitigate the establishment and spread of non-native, invasive plants within the proposed FMA

The scarcity of vegetation within the proposed FMA makes the risk of wildland fire very low.. The spread of invasive plants can be a concern because it can increase the threat of wildfire. If invasive species are present in high densities, they can carry wildfire, and they recover from fire more readily than native species, thereby choking out the native plants. To reduce the risk and extent of potential wildfires, fire suppression teams would be available during testing, enabling a rapid response to any ignitions that may occur.

Overall, the size of the proposed FMA is small relative to the larger landscape. The amount of native vegetation that could be lost would not be enough to contribute to the extirpation of any species. Further, no threatened or endangered plant species exist within or near the project area; therefore, no impacts to threatened or endangered plant species would occur. From an ecological perspective, the magnitude of the impacts would not be substantial enough to affect ecosystem integrity. The Arizona Native Plant Law was enacted to protect rare plant species and other species subject to over harvesting. A variety of cacti such as saguaro and other species such as paloverde and ironwood are protected by the Arizona Native Plant Law. If necessary, plants would be salvaged in accordance with the Arizona Native Plant Law.

Wildlife

Use of the FMA would result in the temporary and permanent disturbance of wildlife habitat that is within or immediately adjacent to the area. Testing activities could temporarily or permanently displace wildlife. Free maneuver testing would create substantial noise and disturbance depending on the type of vehicle. Vibration, noise, and presence of visual forms during tests would temporarily scatter wildlife into the surrounding area. Mobile animals such as mule deer, foxes, and birds can avoid the activities. Animals may abandon nests or dens in the immediate area of human activities, including abandonment of young. Smaller, less mobile species, such as lizards and snakes, may become injured or killed by vehicles or equipment operating in the FMA. These types of impacts can be minimized by conducting tests outside of the reproductive period, but avoidance of this type may not be practicable for all testing activities. The nearly constant level of testing and training conducted on YPG makes it unlikely that animals would nest or den in proximity to areas used for these purposes unless those animals were already adjusted to increased human activity. Thus, the potential for nest or den abandonment would be minor. In the long term, some vegetation within the impact areas would be altered through off-road driving which would impact habitat; however, there is similar habitat surrounding the proposed impact areas that could be used by wildlife displaced during testing. Ivan's well is an important wildlife habitat feature located approximately 1 mile east of the project area and provides a year-round water source for wildlife. It is far enough from the project area that the proposed action would not interfere with wildlife use of this water source and surrounding habitat.

Potential for direct impacts to wildlife from munition or debris strikes within the FMA is possible, but the probability would be low. Weapons firing in the FMA would be limited to areas B and C to the north of the FMA which is in close proximity to existing impact areas where munitions fire is already occurring. Furthermore, given the open space and vast acreage of undeveloped habitat, the possibility of wildlife being present at specific impact locations at the exact moment of impact is low. Migratory Birds including raptors and eagles would continue to have ample foraging habitat within the FMA as well as the surrounding area. Based on the above, extirpation of local species is unlikely. Furthermore, similar activities have not resulted in any appreciable loss of species richness anywhere else on the range.

Biological resources would be managed under the INRMP and all applicable environmental laws. The intent of the INRMP is to manage military installation lands to support the military mission and provide sustainable populations of biological resources. Overall, testing activities would result in short-term impacts to wildlife and long-term impacts to associated habitat. No habitat necessary for all or part of the life cycle of a species would be lost as a result of the project. Ecological processes would not be damaged to the extent that the ecosystem is no longer sustainable, or biodiversity is impaired. There would be no extirpation of a regional or local species.

Ground disturbance due to military operations has primarily occurred in valley bottom and low hill habitats, so wildlife species that typically occupy creosote bush desert scrub habitats have been exposed to the greatest potential for impacts due to military activities. Military features within training ranges and developed facilities sometimes provide artificial wildlife habitat. For instance, small mammals burrow in target areas where soil has been loosened by target construction and maintenance and/or munitions impacts. Reptiles, small mammals, and invertebrates may use targets (e.g., vehicle bodies and simulated tanks and structures) and/or munitions debris (e.g., expended munitions casings and parachutes) for cover. Also, many disturbed sites near targets exhibit green-up of annual vegetation after rain events which attract some herbivores such as mule deer and Sonoran pronghorn.

Federally Listed Wildlife

Sonoran Pronghorn – The project area is located within the nonessential experimental population (or 10(j)) range of the Sonoran pronghorn, and therefore, for Section 7 consultation purposes, the population of Sonoran pronghorn on YPG is treated as a species proposed to be listed (Federal Register Vol. 76, pages 25593–25611). This population of pronghorn were released from semi-captive breeding pens on Kofa and Cabeza Prieta NWRs in an effort to recover the species. Though unlikely, individuals could be

injured or killed by vehicle strike, munitions strike or explosions from live ordnance on the ground during test firings. Impacts from direct strikes are unlikely because pronghorn will likely avoid the noise and disturbance of test vehicles. Vehicle strikes along roads leading to the impact areas is possible, but the probability is low. Noise from test vehicles as well as noise from firing munitions would result in auditory disturbance. These disturbances affect habitat utilization by occasionally startling pronghorn from food or water sources or other areas and causing them to flee. These impacts to behavior can affect the nutrition and body condition of the animals and could reduce survival rates, particularly in times of drought. Other indirect impacts may include habitat alteration or short-term loss of forage due to fire, however there is little wildland fire fuel within the project area. Ivan's well is an important water source for Sonoran pronghorn and the well is located approximately 1 mile east and outside of the project area. Given this distance and ongoing range activities, pronghorn use of this water source and surrounding habitat are unlikely to be affected.

The FMA is located over 7 miles from Kofa NWR and over 11 miles from pronghorn habitat on the refuge. Military testing on the FMA would have no effect on Sonoran pronghorn on Kofa NWR because the distance is far enough noise from test vehicles would be unnoticeable. The impact from wildland fire generated on the FMA burning onto the refuge and impacting pronghorn would be discountable because wildland fire fuels are extremely sparce in this area. The vegetation community is mostly desert pavement in these areas with large expanses of gravel. Only in extreme wet periods are there enough fuels to carry fire and at 7 miles away, fire is highly unlikely to travel that far.

These animals are very mobile and would be able to avoid most human activity. The probability of death or injury to an individual pronghorn due to military activities is extremely low. The Kofa Sonoran pronghorn population is a nonessential experimental population, established under section 10(j) of the ESA (Federal Register Vol. 76, pages 25593–25611). By definition, it is not essential to the continued existence of the species; therefore, the effects of the Proposed Action would not jeopardize its continued existence.

Monarch Butterfly – The Proposed Action would impact vegetation including milkweed or flowering plants used by monarchs due to their dispersed nature and lack of known dense milkweed populations within the project area. Surface disturbance would be very small in relation to the vast expanse of surrounding desert habitat. No herbicide or insecticide application is proposed for the operation of the FMA. Potential breeding and forage habitat would continue to be present in the project area as well as in the surrounding region to support Monarch migration through the area.

Department of Defense (DOD) developed a Conservation Strategy for Monarch Butterfly in December 2024. USFWS issued Conference opinion for DOD's Conservation Strategy for the Monarch Butterfly for Mission and Sustainment Operations within the Continental United States. The Strategy and Conference Opinion reference conservation measure and best management practices to avoid adverse impacts. YPG would implement these BMPs through implementation of the INRMP.

Impacts to Monarch are minimal due to the sparce nature of milkweed and nectar sources within the FMA and seasonal sporadic occurrence of monarch due to the extreme desert heat. Operation of the FMA would not jeopardize the continued existence of monarch butterfly.

Yellow-billed Cuckoo- There is no suitable habitat for Yellow-billed Cuckoo in proximity to the FMA, therefore the proposed action and alternatives would have no effect on this species.

Species of Greatest Conservation Need

Thirty-four AZGFD SGCN have the potential to occur in the project area (10 mammals – including eight bat species, twenty-one migratory birds, one reptile and one amphibian). See Appendix B for the list of

special status species and their occurrence in the project area. Environmental consequences for sensitive species would be the same as those discussed for general wildlife species. Off-road travel, and human presence associated with testing would impact wildlife. Vehicle testing could alter small portions of habitat or pose a temporary threat to individual animals. Testing-related impacts such as off-road use and increased human activity would be short term and may include temporary loss of habitat and displacement of individuals, temporary impacts on foraging behaviors, and noise-related and other disturbance. Long-term impacts to individuals could result from trail creation and proliferation resulting from off-road use. The magnitude and intensity of these impacts would not eliminate the habitat or use of wildlife in the area. Mitigation measures described below would address concerns for species by minimizing potential impacts that might occur. Minimizing project footprints and implementation of YPG's INRMP would reduce impacts to special status species.

Sonoran Desert tortoise is protected under a Candidate Conservation Agreement. Tortoises have not been observed near the FMA. If an individual tortoise is present within the proposed FMA during testing, there is the potential for loss of that individual through direct impact. In the event that Sonoran Desert tortoises are encountered during testing activities, AZGFD Guidelines for Handling Sonoran Desert Tortoise Encountered on Development Projects (AZGFD 2007) would be followed for the removal of the tortoise(s) from immediate dangers or threats.

Migratory birds may be impacted by noise, activity and vegetation disturbance in the FMA. Some foraging habitat for special status migratory birds would have the potential to be altered by off-road activity. The FMA is small in comparison to the vast surrounding habitat and these impacts are considered minor.

Wild Horses and Burros

Wild Horses and burros may be temporarily displaced by the noise and disturbance from testing within the FMA. Individual animals could be struck by vehicles on roads or trails. Available forage could be reduced by off-road impacts of test vehicles. These impacts are expected to be minor as the area is already subject to human presence and disturbance and vast acres of available habitat and forage for horses and burros exist throughout the area. Horses and burros are large-mobile animals and will avoid areas of active disturbance, furthermore, vehicle speed off road is much slower than on roads thereby reducing the risk of vehicle impact.

Avoidance, Minimization, and Mitigation Measures

- Bio-1: For all operations, implement the Candidate Conservation Agreement for Sonoran Desert tortoise in Arizona.
- Bio-2: All ground personnel would be briefed on the Sonoran pronghorn and Sonoran Desert tortoise. The briefings would cover the status of the species, life history, the importance of reducing impacts to the species, and any mitigation measures the users must comply with while on the range and protocol if species are encountered.
- Bio-3: If a tortoise is found, it would be moved from harm's way prior to testing in accordance with the Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects (AZGFD 2014).
- Bio-4: All vehicles are restricted to the Free Maneuver Area except as required by Explosive Ordnance Disposal, maintenance, emergency response, and environmental sciences personnel including authorized contractors while conducting required mission support activities. Vehicles would stay within pre-existing Explosive Ordnance Disposal clearance areas and adhere to posted speed limits.

- Bio-5: Minimize surface disturbance and restore the area to the previous condition when restoration is practicable. Areas of new construction, staging or other disturbance should be clearly marked.
- Bio-6: Dispose all discarded matter (including but not limited to human waste, trash, garbage, and chemicals) in a manner consistent with federal and State of Arizona regulations. Maintain work sites in a sanitary condition.
- Bio-7: Place temporary containment such as drip pans under vehicles or stationary equipment from which hazardous materials may be spilled or leaked.
- Bio-8: Dispose of hazardous or toxic materials in a manner consistent with federal and State of Arizona guidelines.
- Bio-9: Implement applicable management measures for biological resources pursuant to YPG INRMP.
- Bio-10: Inspect and clean vehicles subsequent to working in or traveling through weed-infested areas.
- Bio-11: Project features that might trap or entangle desert tortoises or other wildlife, such as open trenches, pits, open pipes, etc. should be covered or modified to prevent entrapment. If any hole must remain unattended, then earthen ramps must be incorporated for wildlife escape. Workers must check any excavation for trapped wildlife before backfilling.
- Bio-12: Implement the 2014 Final Incident Response Protocol for Sonoran Pronghorn, which includes: a) notifying USFWS and other appropriate parties as outlined in the protocol as soon as possible if Sonoran pronghorn are observed on YPG that are injured, sick or dead; and b) coordinating range access for USFWS and AZGFD as appropriate for capture of sick or injured pronghorn, as well as recovery of dead individuals if necessary. Coordination will involve adherence to range safety and security procedures.
- Bio-13: Avoid placing activities in proximity to artificial water sources (suitable for Sonoran pronghorn) to the extent that such action is consistent with the military mission.
- Bio-14: YPG will adhere to the terms of the MOU between the Kofa NWR, Imperial NWR, BLM, and YPG which provides procedures and guidance for cooperation and collaboration on wildland fire issues. This includes notifying interagency dispatch of any wildfire on YPG lands.
- Bio-15: YPG would implement applicable BMPs from the DOD 7(a)(1) Conservation Strategy for the Monarch Butterfly through the implementation of YPG's INRMP

3.4 Cultural Resources

Cultural resources are locations of past human activity, occupation, or use on the landscape which may include pre-contact, ethnohistoric, and historic archaeological sites, buildings or structures. These can include heritage assets ranging from small archaeological sites such as lithic scatters and historic trash scatters to large prehistoric villages or logging camps. Cultural resources at YPG are managed in accordance with the YPG Integrated Cultural Resources Management Plan (ICRMP; Versar Inc. 2016) and the Programmatic Agreement between YPG, the Arizona SHPO, and the Advisory Council on Historic Preservation (USAG YPG PA; as amended 2024).

The term "cultural resource" is not defined in NEPA and has no statutory definition, but the related term "historic property" is defined in law (54 U.S.C. § 300308) and regulation (36 CFR § 800.16 - Definitions). In general, a historic property is defined as a cultural resource that has met standards of age, integrity, and significance that qualify it as eligible for listing on the NRHP. The NHPA is the major piece of legislation that mandates that Federal agencies take into account the effects of their

undertakings on historic properties. A "Traditional Cultural Place," a building, structure, object, site, or district that may be listed or eligible for listing in the NRHP for its significance to a living community because of its association with cultural beliefs, customs, or practices that are rooted in the community's history and that are important in maintaining the community's cultural identity (NRHP 2024), is afforded the same consideration as other cultural resources.

USAG YPG consulted with the SHPO and the following federally recognized Tribes: Ak-Chin Indian Community, Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort McDowell Yavapai Nation, Fort Mojave Indian Tribe, Fort Yuma-Quechan Indian Tribe, Gila River Indian Community, Hopi Tribe, Moapa Band of Paiute Indians, Mescalero Apache Tribe, Pueblo of Zuni, Salt River Pima-Maricopa Indian Community, San Carlos Apache Tribe, Tohono O'odham Nation, Yavapai-Apache Nation, and Yavapai-Prescott Indian Tribe.

3.4.1 Affected Environment

The horizontal extent of the APE is approximately 5.4 kilometers (km) north/south by 9.6 km east/west (6,514 acres [ac.]). The vertical APE would be limited to 50 feet (ft.) above and 8 ft. below the existing ground surface at individual pole installations. Ground vehicles could disturb up to 4 inches (in.) of sediment below the surface on a single overland pass and up to 12 in. with continued use of the same path. New road blading could occur and would disturb up to 12 in. of sediment below the current surface. Short range defensive systems and UAS take-offs or landings would cause surface disturbance of less than 3 in. Surface impacts of rare UAS crashes and firing events would disturb the earth to a depth of 6-12 in. The APE is the maximum area which would encompass the proposed test and construction activities and also meet range safety protocols while avoiding adverse effects to historic properties. It incorporates visual, auditory, and atmospheric effects through project modification, physical and GIS barriers, and adherence to Army range safety regulations.

USAG YPG consulted with the Arizona State Historic Preservation Officer (SHPO) and 17 federally recognized Tribes regarding identification of historic properties within previously surveyed areas in the proposed FMA project area totaling approximately 12,000 acres (YPG reports YPG-R-114, -235, and -281). YPG-R-281 was revised per SHPO comments (letter dated August 19, 2019) and an updated copy was sent to all consulting parties on July 27, 2023. The proposed project area was reduced by approximately 5,500 acres in the western area of the YPG-R-281 survey to avoid historic properties, primarily trails. Arizona State Lands originally included in the proposed FMA also were subsequently excluded from the APE and the YPG-R-313 survey area. UXO contaminated areas which are unsafe for pedestrian survey were also excluded from survey per USAG YPG PA Stipulation II.B.2.a.1. The resulting 6,514-ac. APE includes 890 acres within impact and other UXO contaminated areas north of Growl Road; 5,012 acres previously surveyed to current standards; and the 612 acres which were recently surveyed per PA Stipulation II.B.2.d.

The 612-acre survey (YPG-R-313) was conducted by Desert Archaeology, Inc with transects spaced 15 meters (m) apart, using Arizona SHPO (https://azstateparks.com/shpo-forms-and-publications) and Arizona State Museum (ASM) guidance (https://statemuseum.arizona.edu/sites/default/files/site_recording_manual.pdf) to record archaeological sites, features, and isolated occurrences (IOs). In addition to the 612-acre survey, five sites (YPG-S-0658, YPG-S-0659, YPG-S-1375, YPG-S-2659, and YPG-S-2660) within the previously surveyed portions of the FMA APE were relocated and re-evaluated per pre-survey consultation with SHPO and tribal governments (letter dated September 7, 2023). Three archaeological sites (YPG-S-2778, YPG-S-2779, and YPG-S-2780) and 11 isolated occurrences (IOs) were recorded during the recent survey.

Of the three newly recorded sites and 11 IOs, and the five re-evaluated sites, four sites (YPG-S-1375, YPG-S-0659, YPG-S-2660, YPG-S-2779) and IOs 5 and 6 have been determined eligible for listing in the

NRHP under Criterion D. These consist of either likely roasting pit features or rock rings with associated lithic artifact scatters which have potential to provide critical information about pre-contact subsistence strategies and land use patterns. The other two newly recorded sites (YPG-S-2778 and YPG-S-2780), the remaining nine IOs, and two previously recorded sites (YPG-S-0658 and YPG-S-2659) have been determined not eligible for inclusion in the NRHP under any criteria.

Seven sites (YPG-S-2289, YPG-S-2295, YPG-S-2368, YPG-S-2636, YPG-S-2637, YPG-S-2655, and YPG-S-2658) were reassessed by USAG YPG based on previous records and the area context. Six of the seven sites are small artifact scatters with few artifacts, poor integrity, and very limited data potential. The final site consists of two diverging trail segments that have no additional features or artifacts, nor any additional segments visible on aerial photography. This site also lacks integrity and has very limited data potential. USAG YPG reaffirmed the prior determinations that these seven sites are not eligible for listing on the NRHP under any criteria.

Eleven sites (YPG-S-0657 and YPG-S-0660 through YPG-S-0669) were neither revisited nor reassessed. These sites were not relocated during the preceding recent survey and the previous field methods were determined to be adequate during pre-survey consultation (SHPO concurrence dated September 14, 2023).

USAG YPG received comments from the following tribes. The Cocopah Tribe (letter dated April 30, 2025), Gila River Indian Tribe (letter dated May 12, 2025), Salt River Pima-Maricopa Indian Community (letter dated March 7, 2025), and the San Carlos Apache Tribe (form dated March 24, 2025) sent positive and/or concurring comments regarding the determinations of eligibility and proposed historic property avoidance measures. The Fort Yuma Quechan Indian Tribe (email dated April 30, 2025) stated their Historic Preservation Office had no comment on this project. The SHPO concurred with the determinations of eligibility and effect, and the proposed site avoidance measures by letter dated May 9, 2025.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. Therefore, there would be no impacts to cultural resources from the No Action Alternative.

Proposed Action

Under the proposed action, YPG would designate approximately 6,000 acres in the southeast corner of the installation as a free maneuver area for combat vehicle testing and combat vehicle firing into designated impact areas.

Avoidance, Minimization, and Mitigation Measures

USAG YPG proposes to avoid adverse effects to historic properties within the FMA APE through two methods: further reducing the size of the FMA to approximately 6,000[1] acres and restricting construction and testing within 100 meters (328 ft.) of all historic properties in the remaining area using a combination of physical signage and a buffered geographic information system (GIS) layer. Signs and GIS will instruct drivers of manned and unmanned vehicles to remain at least 100 meters from these sensitive environmental areas and provide contact information for cultural resources personnel. Where a buffer of 100 meters is not feasible, physical barriers will be added.

[1] The 5,137 acre area stated in the consultation did not include approximately 890 acres within impact and other UXO contaminated areas north of Growl Road.

To avoid disturbance to historic properties, the following measures would be taken:

- Place k-rail barriers & signs at existing road right-of-way on the western boundary of the FMA to prevent off-road travel.
- Provide GIS avoidance area boundaries for sensitive environmental areas.
- Establish the eastern boundary of the FMA at Universal Transverse Mercator (UTM) line 12S 237,000 meters easting (mE) (see Figure 2).

In addition, the following USAG YPG PA stipulations and ICRMP standard operating procedures would be followed.

- Cultural-1: If a UAS, vehicle, or projectile functions or lands within the sensitive environmental areas, the YPG Cultural Resources Manager/Archaeologist will be notified. An archaeologist will then visit the historic properties within the area within two weeks to assess any potential damage from vibrations or falling fragments.
- Cultural-2: If previously unreported cultural resources are encountered during ground disturbing activities, all work must cease immediately within 20 meters until the YPG Cultural Resources Manager/Archeologist has documented the discovery and evaluated its eligibility for the NRHP in consultation with the SHPO and Tribes per the standard operating procedure (SOP) 5 of the ICRMP. Work must not resume in this area without approval of the YPG Cultural Resources Manager/Archeologist.
- Cultural-3: Per ICRMP SOP 9, if human remains are encountered during ground-disturbing activities, all work must immediately cease within 20 meters of the discovery. The SHPO and appropriate Tribes must be notified of the discovery within 24 hours. All discoveries will be treated in accordance with the Native American Graves Protection and Repatriation Act as it applies to federal lands and per SOP 9. Work must not resume in this area without proper authorization.
- Cultural 4: YPG will integrate periodic monitoring of the historic properties within and adjacent to the FMA into a monitoring plan of all known installation historic properties and included in a report to the SHPO and the consulting Tribes.

3.5 Hazardous Materials and Wastes

3.5.1 Affected Environment

Hazardous materials are broadly defined as materials of general use containing clearly hazardous properties in commercial, military, or industrial applications. In general, these materials pose hazards to human health or the environment due to quantity and concentration, or physical and chemical characteristics. Hazardous constituents are defined as hazardous materials present at low concentrations in a generally non-hazardous matrix, such that their hazardous properties do not produce acute effects. Component hazardous materials are considered hazardous constituents. Components that contain hazardous constituents include propellants, batteries, flares, igniters, jet fuel, diesel fuel, hydraulic fluid, and explosive warheads. Each of these may potentially affect human health and the environment through direct contact with water, soil, or air.

A hazardous waste may be solid, liquid, semi-solid, or contain gaseous material that alone or in combination may: (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed, or otherwise managed. Section 6901 of the Resource Conservation and Recovery Act (RCRA) regulates hazardous waste management.

The rules and regulations regarding the management of military munitions hazards and military munitions waste differ from those regulating other wastes. The Military Munitions Rule (promulgated in *Federal Register* Volume 62, Number 29, Pages 6621-6657), defines when military munitions become waste and how these waste military munitions are to be managed. Military munitions are not a solid waste when used for their intended purposes, which include use in training military personnel in the recovery, collection, and on-range destruction of UXO and munitions fragments during range clearance activities. Used or fired munitions are classified as solid waste when managed off-range or recovered, collected, and subsequently buried or placed in a landfill on the range. In both cases, once the used or fired munition is a solid waste, it potentially is subject to regulation as a hazardous waste.

Use of hazardous materials at dispersed locations, such as manned and tactical ranges, generally is limited to petroleum, oils, and lubricants; however, latex paints used in the construction and repair of simulated targets also are potentially hazardous.

Munitions Constituents of Concern: Munitions constituents of concern (MCOC) are hazardous constituents associated with munitions. Expended munitions such as artillery rounds, obscurants, bombs, missiles, targets, pyrotechnics, flares, as well as small, medium, and large munitions could release contaminants to the environment upon use or leach small amounts of toxic substances as they explode and decompose. MCOC are found in the explosive, propellant, and pyrotechnic elements of munitions. MCOC also may leak from munitions that do not detonate on impact as intended. Most MCOC are located within firing ranges, training ranges, and air-to-ground targeting ranges. Propellants are a potential source of MCOC at gun positions. MCOC associated with each munitions class are summarized below:

- Small Caliber Munitions: Lead is the primary potential MCOC. Other metals, including antimony, copper, and zinc, are MCOC. Nitroglycerin, a component of solid propellant for small caliber munitions is considered a potential MCOC.
- Medium and Large Caliber Munitions: High explosives used in these munitions may result in the release of trinitrotoluene and cyclotetramethylenetetranitramine. The propellants for these munitions may contain 2,4-dinitrotoluene, 2,6- dinitrotoluene, and nitroglycerin.
- Pyrotechnics and Obscurants: Perchlorate compounds are the primary MCOC associated with pyrotechnics. White phosphorous frequently is used as an incendiary and smoke-screening agent in training areas.
- Other Munitions: Pentaerythritol tetranitrate is a component of detonation cord and could be a potential MCOC at ranges where demolition training is performed. Additionally, the explosive components used in some of these munitions may result in the release of trinitrotoluene and cyclotetramethylenetetranitramine.

In addition to the hazardous constituents from energetic chemicals, other hazardous constituents may leach from solid components of munitions such as munitions, targets, and small arms ammunition. These hazardous constituents may include carbon, manganese, phosphorus, sulfur, copper, nickel, chromium, molybdenum, vanadium, columbium, or titanium.

MCOC within YPG are routinely assessed pursuant to DoD Directive 4715.11 (DoD Instruction 4715.11). The Directive requires evaluation of MCOC sources, potential for off-range migration (i.e., wind erosion, surface flows, and ground water plumes), potential human and ecological receptors, and whether such release poses an unacceptable risk to human health or the environment.

Portions of YPG have historically been used as firing ranges starting in 1942. Both the volume of expended munitions decomposing within the range and the amounts of MCOC in the environment have gradually increased over time. Concentrations of some substances in sediments surrounding the expended material also may increase over time.

Due to the presence of operating ranges throughout YPG, the entirety of YPG is a potential source of MCOC. Weapons testing occurs within both the Kofa and Cibola regions of YPG, but the majority of munitions testing occurs within the Kofa Region. Munitions use includes small, medium, and large caliber ammunition; mines; linked and unlinked ammunition; high explosive and ball munitions; pyrotechnics and obscurants; and the potential for aircraft-launched weapons.

Though spent munitions are present within various firing ranges, off-range migration of MCOC is considered unlikely due to the lack of ephemeral surface waters, depth to groundwater (several hundred to over a thousand feet deep), a low annual precipitation (less than 4 inches), and an extremely high evapotranspiration rate (YPG 2017). These factors limit surface water flow off-range and/or recharge into the underlying aquifer, which preclude groundwater from being affected by range activities. Past soil and water sampling as well as periodic evaluations pursuant to DoD Instruction 4715.11 including the 2015 reevaluation of MCOC concluded insufficient evidence of MCOC migration off-range (EA Engineering, Science, and Technology, Inc., 2015). Thus, no complete MCOC exposure pathways to off-installation human and ecological potential exist in the vicinity of YPG.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. Therefore, there would be no effect to hazardous materials and waste.

Proposed Action

Under the proposed action, YPG would designate approximately 6,000 acres in the southeast corner of the installation as a free maneuver area for combat vehicle testing and combat vehicle firing into designated impact areas.

Use of regulated substances as a result of the Proposed Action would be limited to fuel consumption from vehicle use, operation of generators, and firing of munitions, and would be managed in accordance with applicable guidance and regulations. Use of vehicles and supporting equipment such as generators may result in spills or leaks of petroleum, oil, and/or lubricants. Leaks and spills of petroleum, oils, and lubricants would be minimized through implementation of BMPs such as placement of drip pans under parked vehicles and generators; establishment of a designated refueling area, if necessary; or providing secondary containment for non-mobile containers larger than 55 gallons. Transport, use, storage, and disposal of these and other hazardous materials would be managed in compliance with the applicable range rules. Solid waste would be stored in containers and transported to an approved landfill.
Various munitions would be fired from combat vehicles into existing impact areas. Spent munitions and potential sources of MCOC therefore would increase in these locations. All MCOC including UXO, residue or fragments would be limited to YPG lands within the impact area. Migration of MCOC off-range at sufficient concentrations and amounts to affect human and environmental receptors would remain unlikely based on MCOC assessments conducted pursuant to DoD Instruction 4715.11. Based on the above, the Proposed Action would not result in increased and long-term exposure of human and environmental receptors to hazardous materials, MCOC, and wastes.

3.6 Health and Safety

3.6.1 Affected Environment

Military operations and weapons testing on YPG pose some level of hazard to both airspace and ground users by their very nature. YPG operates ranges for testing and training where the types of spent munitions include artillery shells, mines, rockets, bombs, missiles, and projectiles. As a result, UXO represents a ground-based hazard. There is the potential for the presence of UXO within the proposed impact areas due to historical uses of YPG for testing and training.

Numerous unpaved roads traverse the ranges creating driving hazards such as flat tires and vehicle breakdowns. Hazards associated with use of military air space include mid-air collisions; collisions with manmade structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird-aircraft collisions.

Standard protocols are followed on YPG to avoid and minimize safety hazards, including the following:

- Public access to lands managed by YPG is prohibited except in designated areas.
- Locked gates, fencing, and warning signs serve to limit inadvertent entry by unauthorized military personnel or members of the public.
- Public access, where allowed, is controlled through a permitting system and range safety training is required prior to entry.
- Access to and movement within active ranges must be authorized by the respective range management operations on the installation. Range safety training is required for authorized personnel.
- All military operations on active ranges are coordinated through YPG Range Control.

In addition, YPG implements specific safety protocols for military operations including:

- YPG Standing Operating Procedure for Range Operations YPG-RO-P-1000 (August 2023) prescribes general range control procedures, instructions, and information necessary for safe conduct of all types of test operations, demonstrations, training, and ground and airspace utilization at YPG.
- YPG Regulation 385-1 (June 2014) provides specific guidance for all safety programs at YPG and applies to all personnel working and living at YPG to include military, civilian, contractor, tenant personnel, and dependents.
- Army Regulation 385-63 (May 2025) prescribes Army-wide range safety policies and responsibilities for firing ammunition, lasers, guided missiles, and rockets and provides guidance for the application of risk management in range operations.

Military activities such as the use of explosive ordnance, equipment operation, and maintenance can be a wildfire risk. In this region of the Sonoran Desert, wildfires are typically small due to the low density of vegetation. During wet years, there is an increase in vegetation that can carry wildfire. In 2005, the King Valley Fire burned 3,000 acres on YPG and 26,000 acres on Kofa NWR (YPG 2015). The size was attributed to the heavy winter rains that year. Other than the King Valley Fire, there have been approximately 25 small wildfire events on YPG that burned a total of 170 acres from 2003 to 2015 (YPG 2015).

3.6.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. Therefore, there would be no substantial increases in health and safety risks for public and military personnel.

Proposed Action

Under the proposed action, YPG would designate approximately 6,000 acres in the southeast corner of the installation as a free maneuver area for combat vehicle testing and combat vehicle firing into designated impact areas. Construction of support facilities and infrastructure may create short-term increased safety risks for workers. Workers would have the potential for accidents as a result of routine job exposure to heavy equipment during construction. Workers would be exposed to elevated noise levels from construction equipment. Workers would use appropriate protection and comply with appropriate safety standards to minimize potential impacts.

Once established, use of the proposed FMA would present common testing hazards. All tests would be scheduled in advance with the range operations center to ensure that tests do not coincide with other military operations within the same area. Furthermore, observers and technicians within an impact area would be located outside of SDZ's or otherwise under adequate protective cover. YPG protocols related to safety during testing would be implemented to protect testing staff. Testing activities within the project area would be controlled and monitored. With implementation of these measures, less than significant intermittent impacts to health and safety would be expected during construction activities and subsequent operation of the impact areas.

Avoidance, Minimization, and Mitigation Measures

- Safety-1: Coordinate with Kofa NWR, BLM, or any other land manager as appropriate prior to test activity that may encroach outside YPG lands and determine mitigations required to address the potential for personnel to be within the SDZ for the duration of each test. Adhere to the terms of the MOU between YPG and Kofa NWR for Safety Buffer and Line-of-Fire within the Kofa NWR in Support of the Live-Fire Test Mission at YPG
- Safety-2: Implement safety protocols pursuant to YPG Standing Operating Procedure for Range Operations YPY-RO-P-1000; YPG Regulation 385-1; and Army Regulation 385-63.
- Safety-3: Coordinate all scheduled tests with YPG Range Control.
- Safety-4: Any activity that may cause an abnormal increase of risk for a significant fire must be coordinated through the YPG fire department to receive the appropriate monitoring and notification.

3.7 Soil Resources

The surface soils of YPG have been classified as aridic and hyperthermic with lithic and typic torriorthents on the hills and mountains. The majority of soils at YPG, including those in the project area, have been characterized as ranging from extremely gravelly or cobbly sand, to very fine, sandy loam. Soil

depth ranges from moderately deep in alluvial basins to very shallow in the mountain regions where bedrock is often exposed (Cochran 1991).

Soils in the proposed FMA consists of the following:

- 71.4% Gunsight family-Gypsic Haplosalids-Gypsic Haplosalids, eroded complex, dry, 1 to 15 percent slopes.
- 22.7% Carrizo family-Riverbend family-Riverwash complex, dry, 0 to 3 percent slopes.
- 5.6% Gunsight Gunsight-Cristobal complex, dry, 1 to 10 slopes.
- 0.2 Tremant-Harqua gypsum family-Valencia complex, dry, 1 to 2 percent slopes.

The dominant soil, Gunsight family-Gypsic Haplosalids, is described as a sand clay loam and runs fairly deep, more than 80 inches. The available water capacity for all soil units within the proposed FMA is very low, surface runoff is low. The risk of water erosion is slight, and the risk of wind erosion is very slight.

3.7.1 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. Therefore, there would be no effect on soil resources.

Proposed Action

Under the proposed action, YPG would designate approximately 6,000 acres in the southeast corner of the installation as a free maneuver area for combat vehicle testing and combat vehicle firing into designated impact areas. Soil disturbance would occur across the entire footprint of the proposed FMA due to the nature of the proposed use of both tracked and wheeled combat vehicles. Permanent impacts would be associated with the continuous movement of tracked and wheel vehicles across the surface.
Heavy vehicles compress the soil, increasing its bulk density and reducing infiltration rates compared to undisturbed soils. This makes it harder for water to penetrate, affecting plant growth. Compaction restricts plant growth, reducing cover. Species with deep taproots struggle to recover, while shallow-rooted grasses may increase in density Repeated passes by tracked vehicles, especially under dry conditions, can lead to increased sediment loss during intense rainfall events. This can degrade soil stability and hinder recovery. Tracked vehicle maneuvers can reduce the size of surface clasts, altering the natural protective layer of desert pavement. This exposes finer soil particles to erosion. Some disturbances, like those from repeated tank tracks, may take decades or even require climate changes to fully recover. Cryptobiotic crusts, which help stabilize soil, also show slow recovery rates.

Avoidance, Minimization, and Mitigation Measures

Bio-5: Minimize surface disturbance and restore the area to the previous condition when restoration is practicable. Areas of new construction, staging or other disturbance should be clearly marked.

3.8 Transportation Infrastructure

3.8.1 Affected Environment

U.S. Highway 95 is the main route serving YPG. It traverses the installation between the Kofa and Cibola ranges. Facilities on YPG are linked by an internal network of maintained paved and gravel roads. Numerous unimproved roads and trails occur throughout more remote areas of the installation. Road

access within YPG is limited because of security constraints and hazardous conditions due to the test mission. Personnel access is controlled using security registration, checkpoints, range control monitoring, guard posting, signs, and fences. Public access restriction signs are currently placed along public thoroughfares accessing the range area.

Future development of the proposed free maneuver area may include the following support facilities:

Construction of a building (approximately 10,000 square feet) with a main room, four offices, break room, staging area with restroom facilities, optics lab, and a maintenance bay with 2 sets of drive through doors and work area. The support facility will require standard utilities, water, sewer, electric and network access. The support facility will also require security fencing.

Construction of observation towers and the placement of telephone poles to mount instrumentation and data collection systems to support testing.

Construction of reinforced concrete inspection pad with up to 100-ton capacity.

Gravel access roads will also be constructed to allow for ingress for Heavy Equipment Transporters.

Construction of a gravel parking lot to accommodate approximately 30 vehicles.

The location of the proposed FMA is located on the southeast corner of the southern boundary of the installation (Figure 2).

3.8.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no designation of approximately 6,000 acres for the FMA in the southeast corner of the installation. Therefore, there would no effect to transportation infrastructure.

Proposed Action

Under the proposed action, YPG would designate approximately 6,000 acres in the southeast corner of the installation as a free maneuver area for combat vehicle testing and combat vehicle firing into designated impact areas. During test events, sections of Growl Road separating Area A from Areas B and C of the FMA would be temporarily closed. The proposed future construction activities may cause heavy equipment (e.g., dump trucks, loaders, dozers, and graders) on YPG roads. Vehicles would adhere to speed limits on all roads and drive with caution over rough terrain. Access onto YPG requires appropriate authorization and coordination with Range Control and access would be limited during test activity. Furthermore, the following measures would be followed during all test events and future construction activities:

- Implement safety protocols pursuant to YPG Standing Operating Procedure for Range Operations YPY-RO-P-1000; YPG Regulation 385-1; and Army Regulation 385-63.

- Any activity that may cause an abnormal increase of risk for a significant fire must be coordinated through the YPG fire department to receive the appropriate monitoring and notification.

3.9 Water Resources

3.9.1 Affected Environment

The proposed FMA is located in the southeast corner of the installation with no significant land features. One major wash, Winston Wash, runs through the northeast corner of the proposed FMA. Approximately 4 unnamed minor washes run throughout the proposed FMA. Principal drainages near the proposed FMA consist of the Colorado River, located approximately 35 miles to the west, and the lower Gila River, located approximately 6 miles to the south. There are no perennial lakes, streams, or mountain springs

within the project area boundaries.

Desert ephemeral washes are a prevalent feature of the landscape and surface hydrology of YPG. They are produced by localized high intensity thunderstorms resulting in rapid surface runoff and flash floods. The largest of these in the project area is the Winston Wash, which drains south-southeast into the Gila River. This wash is dry most of the year as a result of infrequent rainfall, characteristic of Sonoran Desert precipitation patterns. Average rainfall for YPG is 3.5 inches per year, and the pan evaporation rate is 107 inches per year (YPG 2017). The combination of low precipitation and high evaporation reduces surface water build-up and/or infiltration into the soil minimizing the risk of surface water contamination from actions occurring at YPG. The Arizona Department of Environmental Quality Navigable Waters Protection Rule Screening flow chart was used to determine if the Hoodoo Wash and Raven Wash meet the requirements to be determined "Waters of the United States," which fall under the jurisdiction of the Army Corp of Engineers based on Section 404 of the Clean Water Act (AZDEQ 2020). It was determined that both washes were “likely Non-Waters of the United States” based on them being ephemeral waterbodies with no snowpack, deep groundwater, and limited to no riparian vegetation.” A formal determination of designation would need to be received from USACE prior to any channel fill or disturbance. The Gila River is a water of the U.S. and is subject to the Clean Water Act. Major washes and their tributaries that are hydrologically connected to these rivers and present sufficient evidence of ordinary high-water mark (i.e., physical evidence of surface flows such incised banks, sediment transport, etc.) are likely Waters of the U.S.

The Colorado and Gila rivers replenish groundwater for the Yuma region. Information concerning groundwater resources is limited because most of the groundwater production wells located across YPG are located within the developed areas, but there are some that were constructed in more remote areas. There are no YPG wells located within the FMA. However, there is a well located nearby at Ivan’s Well which is approximately 1 mile East of the FMA. it is roughly 560 feet above mean sea level (amsl) and the depth to water is about 320 feet, so the groundwater elevation is 240 feet amsl. The regional groundwater gradient is 4 to 5 feet per mile and the north impact area is about 20 miles north so the estimated groundwater elevation at the NIA is 340 feet amsl and the depth to water is 1,000 feet. Depth to water at the SIA is approximately 400 to 500 feet (personal communication John Glover, YPG Ecologist, March 15, 2022).

Isotopic composition and general chemistry from 15 of the wells on YPG were investigated in 2019 to determine the age of groundwater and better understand the origin, flow, and recharge of the aquifer system beneath YPG (North Wind Resource Consulting 2019). The results of the investigation were used to evaluate the potential for contaminant migration from past and/or present surface activities at YPG to local groundwater supplies in the subsurface. Based on historical and recent depth to groundwater data, all wells sampled in the study penetrate the deeper water table aquifer. The large depth to groundwater in most areas, low precipitation, and high evaporation rates are all great assets in preventing the migration of possible surface contaminants to the subsurface.

3.9.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no designation of a FMA of approximately 6,000 acres in the southeast corner of the installation. There would be no effect to surface water, groundwater, or wetlands.

Proposed Action

Under the proposed action, YPG would designate approximately 6,000 acres in the southeast corner of the installation as a free maneuver area for combat vehicle testing and combat vehicle firing into designated impact areas. Although there would be increased combat vehicle maneuvers in the FMA, they would not create sufficient disturbance to cause surface water flow to be directed to another groundwater basin.

There would be no change in the amount of water available for groundwater recharge or in the basins where recharge occurs.

Assuming complete disturbance of the site, primarily through soil compaction, a runoff coefficient of 0.25 is used to estimate how much precipitation could generate surface flow if the site is fully disturbed (Runoff Coefficient (C) Fact Sheet 2011). This coefficient reflects unimproved land, generally defined as land without significant improvements, such as buildings, utilities, or infrastructure.

Using and applying the standard runoff equation (Q = C x P x A):

- C = 0.25
- P = 3.5 inches/year
- A = 6,000 acres

The estimated annual runoff volume is approximately 19.05 million cubic feet, equivalent to an average runoff depth of 0.88 inches per year over the 6,000-acre area.

Even under the scenario of full disturbance, the projected runoff remains minimal due to low precipitation and the soils natural absorption. The limited runoff is not expected to contribute to erosion, sedimentation, or surface water impacts. Therefore, no significant impact to water resources is anticipated.

If the site is fully disturbed, mostly due to soil compaction, a runoff coefficient of 0.25 is used to estimate how much rainwater might flow over the surface (Runoff Coefficient (C) Fact Sheet, 2011). This number represents land without major improvements, like buildings, roads, or utilities.
Using the standard runoff equation ($Q = C \times P \times A$), we calculate:

- C = 0.25 (runoff coefficient)
- P = 3.5 inches per year (annual rainfall)
- A = 6,000 acres (land area)

This gives an estimated runoff volume of 19.05 million cubic feet per year, which equals about 0.88 inches of runoff depth spread across the entire site.

Even if the site is completely disturbed, runoff would stay low because of minimal rainfall and the soil's ability to absorb water. As a result, there wouldn't be significant erosion, sediment buildup, or effects on local water sources. No major impact on water resources is expected.

Avoidance, Minimization, and Mitigation Measures

- Water-1: Construction stockpiles would be protected from wind and water erosion.
- Water-2: All lightweight target materials or debris would be removed immediately after test events.
- Water-3: For all construction activities, prepare a Storm Water Pollution Prevention Plan and implement BMPs therein.
- Water-4: Proximity to wildlife waters would be avoided for target placement.
- Water-5: AZGFD would be granted access for maintenance of wildlife waters.

- Water-6: Implement good housekeeping measures, including avoidance of servicing vehicles on-site except for within constructed facilities; collecting litter and debris daily; storing materials in an orderly manner in proper containers; using appropriate spill prevention procedures; using original containers with the original manufacturers label; and following manufacturer recommendations for proper use and disposal.

4 COORDINATION AND PREPARATION

Native American Tribes, agencies, or organizations contacted during scoping are listed below.

TRIBE/AGENCY/ORGANIZATION	
Ak-Chin Indian Community	Natural Resources Conservation District
Arizona Department of Agriculture	Pueblo of Zuni
Arizona Department of Environmental Quality	San Carlos Apache Tribe
Arizona Department of Transportation	Salt River Pima-Maricopa Indian Community
Arizona Deer Association	Sierra Club
Arizona Desert Bighorn Sheep Society	Tohono O'odham Nation
Arizona Game and Fish Department	U.S. Army Corps of Engineers
Arizona Historical Society	U.S. Bureau of Indian Affairs
Arizona Wilderness Coalition	U.S. Bureau of Land Management
Center for Biological Diversity	U.S. Bureau of Reclamation
Chemehuevi Indian Tribe	U.S. Customs and Border Protection
City of Yuma	U.S. Environmental Protection Agency
Cocopah Indian Tribe	U.S. Fish and Wildlife Service
Colorado River Indian Tribes	Western Arizona Council of Governments
Fort McDowell Yavapai Nation	Yavapai-Apache Nation
Fort Yuma-Quechan Indian Tribe	Yavapai-Prescott Indian Tribe
Greater Yuma Economic Development Corp	Yuma Audubon Society
Hopi Tribe	Yuma Chamber of Commerce
La Paz County	Yuma County
Marine Corps Air Station Yuma	Yuma County Chamber of Commerce
Mescalero Apache Tribe	Yuma Metropolitan Planning Organization
Moapa Band of Paiute Indians	Yuma Valley Rod and Gun Club

REFERENCES

Arizona Department of Environmental Quality (AZDEQ). 2020. Navigable Waters Protection Rule Screening flow chart (https://static.azdeq.gov/wqd/swp/screeningtoolkit_flowchart.png).

Arizona Game and Fish Department (AZGFD). 2025. Online Environmental Review Tool Report. Project ID HGIS-24956. ,May 1,2025.

AZGFD. 2014. Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects.

Belnap, J., J.H. Kaltenecker, R. Rosentreter, J. Williams, S. Leonard, and D. Eldridge. 2001. Biological Soil Crusts: Ecology and Management. U.S. Department of the Interior, Technical Reference 1730-2. 110 pp.

Brown, D.E. (editor). 1994. *Biotic Communities: Southwestern United States and Northwestern Mexico*. University of Utah Press, Salt Lake City.

Bureau of Land Management (BLM). 2010. Yuma Field Office Record of Decision and Approved Resource Management Plan. Yuma Field Office. Signed January 29, 2010.

Cochran, C. 1991. Soil Survey of the U.S. Army Yuma Proving Ground, Arizona-parts of La Paz and Yuma Counties in 1991. Yuma, AZ. U.S. Natural Resources Conservation Service.

EA Engineering, Science, and Technology, Inc. 2015. Final Operational Range Assessment Program Phase I Qualitative Assessment Report Addendum – Yuma Proving Ground, Arizona.

Glover, John. Personal Communication. Ecologist, Environmental Sciences Division - Directorate of Public Works, Yuma Proving Ground. March 15, 2022.

Gutierrez Canales Engineering. 2006. U.S. Army Garrison Evaluation of Explosive and Metal Concentrations in Washes Downgradient of 08/00 Operations. Report on file at Environmental Sciences Division, U.S. Army Garrison, Yuma Proving Ground, Yuma, Arizona.

Gutierrez Palmenberg, Inc. and Jason Associates Corporation. 2001. Final Range Wide Environmental Impact Statement, U.S. Army Yuma Proving Ground, Yuma and La Paz Counties, Arizona. Command Technology Directorate. July.

Hendricks, D. M., P. R. Krausman, R.W. Mannan, F.D. Hole., H.W. Pierce, S.J. Levine, D.F. Post, C.W. Guernsey, Y.H. Havens, J.E. Jay, and M.L. Richardson. 1985. Geologic Framework of Arizona. In *Arizona Soils*. Richard A. Haney, Jr. Editor. College of Agriculture, University of Arizona, Tucson, Arizona.

Kade, A., and S.D. Warren. 2002. Soil and plant recovery after historic military disturbances in the Sonoran Desert, USA. Arid Land Research and Management, 16(3), 231-243.

Middleton, N.J. 2017. Desert dust hazards: A global review. Aeolian research, 24, 53-63.

Morris, G.M., C. Kline and S.M. Morris, PSM, PhD. 2015. Status of Danaus plexippus in Arizona, Journal of the Lepidopterists' Society 69(2), 2015, 91–107.NWRC. 2019. Groundwater Age Dating Monitoring and Production Wells. U.S. Army Garrison Yuma Proving Ground. August 2019.

North Wind Resource Consulting 2019

NRHP 2024. Identifying, Evaluating, and Documenting Traditional Cultural Places National Register Bulletin. https://irma.nps.gov/DataStore/DownloadFile/713282.

Rebman, J.P. 1996. Survey for Nichol's Turk's Head Cactus, *Echinocactus horizonthalonius var. nicholii*, on Yuma Proving Ground. Yuma, Arizona: Gutierrez-Palmenberg, Inc.

Rubke, C.A. and D. J. Leavitt. 2017. INRMP Required Species Monitoring: Sonoran Desert Tortoise (*Gopherus morafkai*) Habitat Evaluation of the Tank Mountains and Radio-Telemetry Tracking in the Dome Rock Mountains and Trigo Peaks of the U.S. Army Yuma Proving Ground. Final Report. Arizona Game and Fish Department. Phoenix, Arizona.

Shreve, F., and I.L. Wiggins. 1964. Vegetation and flora of the Sonoran Desert, volume 1. Stanford, California: Stanford University Press.

Turner, R.M., and D.E. Brown. 1994. Sonoran desertscrub. In Biotic Communities: Southwestern United States and Northwestern Mexico. Salt Lake City, Utah: University of Utah Press.

USACHPPM. 1999. Firing Range Study No. 32-EE-5813-99, Field Investigation Report, Munition Test Range Environmental Assessment 39 IED Test Environment Management Project, Yuma Proving Ground, Arizona. September 1999.

U.S. Fish and Wildlife Service (USFWS). 2025. Information for Planning and Conservation (IPaC) system. Consultation Code: 2025-0090800. April 30, 2025.

USFWS. 2022b. National Wetland Inventory (NWI) Wetlands Mapper, U.S. Fish & Wildlife Service (fws.gov).

USFWS. 2021. Species information: monarch butterfly (Danaus plexippus). https://ecos.fws.gov/ecp/species/9743.

Yuma Proving Ground (YPG). 2020. Impact Area A Expansion Environmental Assessment. Yuma Proving Ground, Arizona.

YPG 2023 YPG's Integrated Natural Resource Management Plan (INRMP)

YPG. 2016. Programmatic Environmental Impact Statement for Activities and Operations at Yuma Proving Ground, Arizona.

YPG. 2015. Need this reference.

YPG. 2013. Long Range Munitions Environmental Assessment. Yuma Proving Ground, Arizona.

YPG. 2011. Cibola Impact Areas Environmental Assessment. Yuma Proving Ground, Arizona.

YPG. 2010. Impact Areas Expansion Environmental Assessment. Prepared by: Environmental Sciences Division Directorate of Public Works. The Clean Water Team Guidance Compendium for Watershed Monitoring and Assessment State Water Resources Control Board. Runoff Coefficient (C) Fact Sheet. 2011.

ASCE, and Rossmiller. Appendix A-1: Runoff Peak Discharge Calculations.

NCDENR Stormwater BMP Manual. 2007.

APPENDIX A – MAP BOOK

YPG will revise based on other map comments.

APPENDIX B – USFWS AND AZGFD SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Summary of Federally Listed Species Identified by the IPaC System and Their Potential to Occur within the Proposed Impact Areas

Species Name	Status	Habitat Requirements	Potential to Occur within the Proposed Impact Area
Mammal Species			
Sonoran Pronghorn *Antilocapra americana sonoriensis*	Exp BLMS	Found exclusively in the Lower Colorado River Valley and the Arizona Upland subdivisions of the Sonoran Desert Scrub Biome and currently occur in southwestern Arizona and northwestern Sonora, Mexico.	Nonessential experimental population released from Kofa NWR. More than 150 pronghorn now occupy the refuge and portions of YPG's Kofa Range. There is occasional pronghorn movement onto YPG north Cibola ranges. Documented within 5 miles of the project area.
Bird Species			
Yellow-billed Cuckoo *Coccyzus americanus*	T BLMS	Riparian cottonwood-willow galleries and to a lesser extent willows or isolated cottonwoods with tall mesquites.	No suitable habitat within or adjacent to the proposed impact area. Riparian habitat is limited to the existing intermittent washes within the project area and does not support the habitats for this species.
Insects			
Monarch Butterfly *Danaus plexippus*	C	Fields, roadside areas, open areas wet areas, or urban gardens; milkweed and flowering plants are needed for monarch habitat.	Project area is on the eastern edge of seasonal migratory corridor and has marginally suitable habitat present within the project area.
* E = Federally listed as Endangered under the ESA; T = Federally listed as Threatened under the ESA; C= Federally listed as Candidate under the ESA; Exp = Experimental, Non-Essential Population; BLMS = BLM Sensitive			

AZGFD Tier 1 and 2 Species and BLM Sensitive Species with the Potential to Occur within Habitat Types Present in the Proposed Impact Area.

Name	AZGFD Tier	BLM Sensitive	Habitat Type
Birds			
Verdin *Auriparus flaviceps*	2	x	Common, foraging and breeding along washes within the project area.
Gray Flycatcher *Empidonax wrightii*	2	x	No foraging or nesting habitat present within the FMA, could possibly migrate through the area.

Name	AZGFD Tier	BLM Sensitive	Habitat Type
Abert's Towhee *Melozone aberti*	2		Occur in dense brush and woodlands along Sonoran Desert rivers and streams in AZ. Dense woodlands do not occur within the project area.
Horned Lark *Eremophila alpestris*	2		Foraging and breeding habitat is present in the FMA. Common across YPG.
American Kestrel *Falco sparverius*	2		Foraging and breeding habitat is present in the FMA. Common across YPG.
American Peregrine Falcon *Falco peregrinus anatum*	1	X	In Arizona, breeding sites may be found in a broad range of vegetation types from wetlands, riparian areas, and montane coniferous forests to Mohave and Sonoran desert scrub. Suitable habitat occurs in the project area.
Prairie Falcon Falco mexicanus	2 BCC		The proposed FMA lacks any rocky bluffs or cliffs so there is no nesting habitat present, but there is forage habitat.
Ferruginous Hawk *Buteo regalis*	2 BCC	X	Inhabit semiarid to arid western plains and intermountain regions. Thev occupy open country with scattered trees, plains, and badlands. Suitable foraging habitat for wintering birds is present within the project area, however, there is no nesting habitat present.
Gila Woodpecker *Melanerpes uropygialis*	2 BCC		Desert washes, saguaros, river groves, cottonwoods. Suitable habitat occurs with the project area.
Gilded Flicker *Colaptes chrysoides*	2 BCC	X	Common in Sonoran Desert habitat for nesting and foraging. Suitable habitat occurs within the project area.
Golden Eagle *Aquila chrysaetos*	2	X	Habitat in Arizona includes steep cliffs with sheltered ledges, potholes, or small caves for nest placement that are typically greater than 30 meters in height. Limited suitable habitat occurs within the project area.
Le Conte's Thrasher *Toxostoma lecontei*	2 BCC	X	Desert flats with sparse growth of saltbush and on creosote bush flats; mainly where there are larger mesquites or cholla cactus. Suitable habitat occurs within the proposed project area.
Lincoln's Sparrow *Melospiza lincolnii*	2		Common in riparian and streamside bogs. No suitable habitat within the proposed project area.
Savannah Sparrow *Passerculus sandwichensis*	2		Over most of range, found in open meadows, pastures, edges of marshes, alfalfa fields, pastures; also tundra in summer, shores and weedy vacant lots in winter. Suitable habitat does not occur within the project area.
Western Burrowing Owl *Athene cunicularia hypugaea*	2 BCC	X	Burrowing owls occupy grasslands, shrub steppes, and savannas. Suitable habitat occurs with the project area.
Brewer's Sparrow Spizella breweri	2		Wintering birds may be found along washes or grassy areas (in wet years) within the FMA.
Costa's Hummingbird *Calypte costae*	2		Common across YPG and can be found within the FMA.
Inca Dove *Columbina inca*			Common near agricultural and residential areas. Can be found in the Gila River vicinity south of the FMA. Can be found during migration across YPG and intermittently during migration in grassy areas during wet periods.
Loggerhead Shrike *Lanius ludovicianus*	2		Habitat in Arizona consists of open grasslands and desertscrub with scattered trees and shrubs, along with suitable perch structures such as fence posts, sires, and poles Common across YPG and is present in the FMA.

Name	AZGFD Tier	BLM Sensitive	Habitat Type
Vesper Sparrow *Pooecetes gramineus*	2		Inhabits grasslands and fields. Found in agricultural areas south of the FMA. Wintering birds may migrate through the area.
Bullock's Oriole *Icterus bullockii*	2		Breed in riparian and open woodlands, including urban parks. Can be found along washed in the FMA during migration
Mammals			
Brazilian (or Mexican) Free-tailed Bat *Tadarida brasiliensis*	2		Habitat ranges from lowland deserts, shrublands, woodlands, and forests to high mountains. Suitable habitat for roosting and foraging occurs within the project area.
California Leaf-nosed Bat *Macrotus californicus*	2	X	Roosts are in caves, cliff crevices, bridges, buildings, and tunnels, and forages in open areas. Marginal habitat for roosting and foraging occurs within the proposed project area along intermittent washes. AZGFD identified documented occurrences within 5 miles of project area.
Cave Myotis *Myotis velifer*	2	X	This species generally inhabits evergreen or pine-oak forest and pine forest at mid and high elevations, and riparian habitats near desert scrub at lower elevations. No suitable habitat present in the project area.
Harris' Antelope Squirrel *Ammospermophilus harrisii*	2		Saltbush-creosote bush-bursage, usually in areas with rocky soil or rocky slopes, but in sandy areas in some regions. Suitable habitat occurs within project area.
Bailey's Pocket Mouse *Chaetodipus baileyi*	2		Occur primarily in the lower Sonoran Desert transition zone, often be-tween rocky hill-sides and desert flats. They use areas under large bushes and trees. They can be found within the FMA
Arizona Pocket Mouse Perognathus amplus	2		Found in flat habitats with varying desertscrub vegetation or bunchgrasses, depending on the location in Arizona. The vegetation is most often mesquite bush, creosote bush, cactus, and palo verde. Common on YPG and may be found within the proposed FMA
Pale Townsend's Big-eared Bat *Corynorhinus townsendii pallescens*	1	X	Occur in forested regions and buildings, and in areas with a mosaic of woodland, grassland, and/or shrubland. No suitable habitat occurs within the project area.
Pocketed Free-tailed Bat *Nyctinomops femorosaccus*	2		Occur in rugged canyons, high cliffs, and rock outcroppings in semiarid landscapes. Marginal habitat for roosting and foraging occurs within the project area.
Western Yellow Bat *Lasiurus xanthinus*	2	x	Found in riparian woodlands in arid regions. No suitable habitat occurs within the project area.
Yuma Myotis *Myotis yumanensis*	2		Roosts are in caves, cliff crevices, bridges, buildings, and tunnels, and forages over water and open areas. Marginal habitat for foraging occurs within the project area, possibly at Ivan's Well to the northeast.
Reptile			
Sonoran Desert Tortoise *Gopherus morafkai*	1	X	Most closely associated with the Arizona Upland and Lower Colorado River subdivisions of Sonoran Desert scrub and Mojave Desert-scrub vegetation types. They occur most commonly on rocky, steep slopes and bajadas, and in paloverde-mixed cacti associations. Potentially occur on the mountains and foothills within the Kofa Mountains and Palomas Mountains North of the FMA. Individuals have been documented within 15 miles of the project area (AZGFD 2021).
Amphibian			

Name	AZGFD Tier	BLM Sensitive	Habitat Type
Sonoran Desert Toad *Incilius alvarius*	2		Occurs in close proximity to open water. No suitable habitat exists in the FMA. They could be found at Ivan's well to the Northeast of the project area.