

Environmental Overview
State Route 88 (Apache Trail), Milepost 222 to 229

ADOT Project No. F0494
Logan Simpson Number: 225317



April 2023

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
µg/m ³	micrograms per cubic meter
A.R.S.	Arizona Revised Statute
ADA	Americans with Disabilities Act
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
AGFD	Arizona Game and Fish Department
APE	Area of potential effects
ARPA	Archaeological Resources Protection Act
ASM	Arizona State Museum
AZPDES	Arizona Pollutant Discharge Elimination System
BTEX	Benzene, toluene, ethyl benzene, and xylenes
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CO	Carbon monoxide
COA	Conservation Opportunity Area
CWA	Clean Water Act
dba	Decibel
DCR	Design Concept Report
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Environmental Overview
EPA	Environmental Protection Agency

Acronym/Abbreviation	Definition
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Floodplain Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GIS	Geographic information system
GLO	General Land Office
HAER	Historic American Engineering Record
HPT	Historic Preservation Team
ICZ	Important Connectivity Zone
IPaC	Information for Planning and Consultation
JD	Jurisdictional Determination
L _{eq}	Equivalent sound level
LEP	Limited English Proficiency
LRP	Long-range transportation plan
LUST	Leaking underground storage tank
LWCF	Land and Water Conservation Fund
MP	Milepost
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAGPRA	Native American Graves Protection and Repatriation Act
NARs	Noise Abatement Requirement
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System

Acronym/Abbreviation	Definition
NRCS	Natural Resources Conservation Science
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O ₃	Ozone
Pb	Lead
PISA	Preliminary Initial Site Assessment
PM ₁₀	Particulate matter
PM _{2.5}	Particulate matter
ppb	Parts per billion
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
RGP	Regional General Permit
ROW	Right-of-way
RTP	Regional transportation plan
SARA	Superfund Amendments and Reauthorization Act
SHPA	State Historic Preservation Act
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objectives
SIP	State implementation plan
SMS	Scenery Management System
SO ₂	Sulfur dioxide
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Property
TNF	Tonto National Forest
TNW	Traditional Navigable Water
TPH	Total Petroleum Hydrocarbon

Acronym/Abbreviation	Definition
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMS	Visual Management System
VQO	Visual Quality Objective
Waters	Waters of the United States

Introduction

The Arizona Department of Transportation (ADOT) is preparing a Design Concept Report (DCR) for future road improvements along State Route (SR) 88 (also known as Apache Trail) from Milepost (MP) 222 to 229 within Maricopa County, Arizona (Attachment A, Figure A-1). The project begins near the Fish Creek Hill Viewpoint and extends approximately 7 miles generally northeast to Forest Road 79 (also known as Apache Lake Marina Road) (Attachment A, Figure A-2). In June 2019, the Woodbury Fire burned almost 124,000 acres of the Tonto National Forest (TNF), most of which was within the Superstition Wilderness Area (United States [US] Forest Service [USFS] 2019) (Attachment A, Figure A-7). Later that year, the area received heavy rainfall resulting in runoff which contributed to flooding and roadway damage along portions of SR 88. One area near Fish Creek Hill (MP 223.3) was severely damaged from a rockslide (ADOT 2023a) and is impassible for vehicles (Attachment B). As a result, significant closures occurred along SR 88 from MP 222 to 229 for public safety reasons. In October 2022, a 1.7-mile section of SR 88 at the Apache Vista gate (MP 229) was opened to provide recreational access to Reavis Trailhead Road/Forest Road 212. However, the section of SR 88 between the Fish Creek Hill scenic overlook at MP 222 and Reavis Trailhead Road near MP 227.2 remains closed indefinitely due to extensive flood damage that occurred in the burn scar area following the Woodbury Fire (ADOT 2023a). In late 2022, ADOT began making improvements along SR 88 from the Theodore Roosevelt Dam to Apache Lake (immediately east of this project). These improvements consisted of installing base aggregate and chip seal, drainage improvements, and improving visibility and line of sight at five locations. In 2018, improvements were also made to a large portion of SR 88 extending from MP 203-220 which included pavement preservation, safety improvements, and several horizontal and vertical curve reconstructions.

Logan Simpson has prepared this Environmental Overview (EO) to conduct preliminary environmental investigations as part of the overall project development process. This EO is not an environmental clearance document but includes a review of various environmental resources within the area to assess compliance requirements that may be needed in accordance with the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA), and other regulations. The purpose of this EO is to report preliminary findings for various resources and provide recommendations and guidance for compliance requirements and minimizing impacts to the environment. The environmental review area (review area), for the EO consists of an approximately 300-foot-wide corridor centered on SR 88 and extends 8 miles from MP 221.5 to 229.5. The information presented is based on existing data sources from municipal, county, state, and federal agencies and on a field visit of the review area where accessible by vehicle (Attachment C). This overview identifies obstacles and issues associated with the review area; however, it does not meet the requirements of the NEPA.

The NEPA process requires environmental analysis of proposed actions prior to making decisions, including constructing highways and other publicly owned facilities. The project is expected to require the use of federal transportation funds and thus require compliance with NEPA, as amended (42 United States Code [U.S.C.] §§ 4321 et seq.), and other federal regulations. The ADOT would be the acting lead federal agency responsible for administering the federal funds as stipulated by 23 U.S.C. 326 and 23 U.S.C. 327 and a Memorandum of Understanding executed by the Federal Highway Administration (FHWA) and ADOT. Compliance with NEPA would require preparation of an environmental document as determined appropriate by ADOT in accordance with NEPA and Council on Environmental Quality (CEQ) regulations that implement NEPA (40 Code of Federal Regulations [CFR] §§ 1500–1508). The level of environmental documentation is determined based on the type of improvements proposed and whether the project is expected to result in significant environmental impacts. Coordination with ADOT would be necessary once an alternative is selected to confirm the appropriate level of environmental documentation. There are three classes of actions which stipulate the level of documentation required during the FHWA implementation of the NEPA process (23 CFR § 771.115):

- Class I – Environmental Impact Statement (EIS): This level of analysis is needed for actions that significantly affect the environment.

- Class II – Categorical Exclusion (CE): This level of analysis is needed for actions that do not individually or cumulatively have a significant environmental effect are excluded from the requirement to prepare an Environmental Assessment or EIS.
- Class III – Environmental Assessment (EA): This level of analysis is needed for actions in which the significance of the environmental impact is not clearly established and thus an EA is prepared to determine if an EIS is required due to significant impacts or if a Finding of No Significant Impact (FONSI) is to be issued.

Land Jurisdiction and Use

For the purpose of this EO, jurisdiction refers to the authority to regulate land uses. Within the review area, SR 88 is located entirely within ADOT easement on USFS lands managed by the TNF. Lands adjacent to SR 88 are undeveloped and under the jurisdiction of the USFS and managed by the TNF (Attachment A, Figures A-2 through A-7). Management direction is based on the current TNF Plan (USFS 1985). The ADOT Southeast District maintains and operates SR 88 under an existing right-of-way (ROW) agreement. It is functionally classified in the *Maricopa County Functional Classified Roads* as a two-lane rural major collector roadway. It is a narrow, two-lane, unimproved gravel roadway that allows for eastbound and westbound travel. However, there are portions in which the roadway width is insufficient to accommodate two vehicles (one vehicle in each direction). The geometry and alignment of the roadway has been dictated largely by the area's topography. Numerous areas along SR 88 contain sharp curves, steep slopes, and water crossings. The roadway overall is in poor condition and shows signs of erosional damage. The majority of the culverts throughout the area are buried and do not function properly. The western portion of the review area has the most extensive damage and roadway hazards. The steep cliffs near Fish Creek Canyon and along Fish Creek Hill pose rockfall hazards.

Forest Road 79 (Apache Lake Marina Road) is located in the easternmost limits of the project and provides access to the Apache Lake Marina & Resort (Attachment B). The Apache Lake Marina & Resort is a privately operated facility on TNF lands that offers amenities including a marina, lodging, boat rental, and a RV Park (Apache Lake Marina & Resort 2023) (Attachment A, Figure A-3). The only access route to the Apache Lake Marina & Resort is SR 88. Three privately owned parcels are located south of SR 88 near approximately MP 227.25 (Attachment B). These parcels are accessed through an unpaved access road on TNF lands which intersects with SR 88. Three bridges are present along SR 88 within the review area: Fish Creek Bridge (MP 223.50), Lewis and Pranty Creek Bridge (MP 224.60), and Dry Wash Bridge (MP 225.55). According to the TNF, grazing has been previously permitted on allotments within the vicinity and cattle are expected to return to grazing allotments (USFS 2023e). The project development process should consider the potential for cattle to be present along the roadway, potentially during and after construction.

Soil Types and Prime and Unique Farmland

Soils within the review area are characterized as the Lithic Torriothents-Lithic Haplustolls-Rock Outcrop association which consists of shallow, cobbly and gravelly, strongly sloping to very steep soils and rock outcrop on hills and mountains. These soils formed in residuum weathered from many rocks including granite, gneiss, rhyolite, andesite, tuffs, limestone, sandstone and basalt (Hendricks 1985).

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops (Natural Resources Conservation Science [NRCS] 2023). The Farmland Protection Policy Act (FPPA) is intended to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland does not have to be currently used for cropland to be subject to FPPA requirements. It can also be forest land, pastureland, cropland, or other land, but not open water or urban developed land. The US Department of Agriculture (USDA) NRCS online web soil survey

(NRCS 2023) was reviewed to obtain soil data for the review area. Due to the presence of USFS lands, the review area is located within an unmapped area. Therefore, data on specific soil types and prime and unique farmland classification is not available.

Biological Resources

The characteristics of the physical and natural environment were identified based on a site reconnaissance visit and a review of topographic maps and aerial photos of the review area, online resources, and geographic information system (GIS) data. The potential presence of threatened and endangered species listed under the Endangered Species Act (ESA; 16 U.S.C. §§ 1531–1544, as amended) in the review area was evaluated, and the Arizona Game and Fish Department (AGFD) and the TNF were contacted to determine if there are concerns for federally listed species or other special status species that may occur in this area. The results of this biological resources evaluation are below.

Ecological Setting

The review area is located within the Sonoran Desert Ecoregion, which has high summer temperatures, mild winters, and a characteristic bimodal rainfall pattern (Marshall et al. 2000). This portion of SR 88 is located in the Superstition Mountains near Apache Lake, the second of a series of reservoirs along the Salt River which supply water for drinking and irrigation in the Phoenix Basin. The topography in the review area is rugged and mountainous, with steep hill cuts, mountain slopes, and cliffs bordering SR 88 throughout the review area. At its western end, SR 88 climbs up the steep cliff face of Fish Creek Hill. The Superstition Wilderness Area is located south of SR 88. Lands in the vicinity of the review area are primarily undeveloped public lands used for various outdoor recreational activities such as boating, hiking, camping, rock-climbing, and hunting.

The review area is situated within the Arizona Uplands subdivision of the Sonoran Desertscrub Biotic Community (Turner and Brown 1994) with desertscrub vegetation consisting of a paloverde-mixed cacti community dominated by desert trees, shrubs, and succulents. Plant species that were observed in the review area include foothills paloverde (*Parkinsonia microphylla*), velvet mesquite (*Prosopis velutina*), cat-claw acacia (*Senegalia greggii*), triangle-leaf bursage (*Ambrosia deltoidea*), brittlebush (*Encelia farinosa*), jojoba (*Simmondsia chinensis*), shrub live oak (*Quercus turbinella*), desert lavender (*Hyptis emoryi*), pelotazo (*Abutilon incanum*), sweetbush (*Bebbia juncea*), sugar sumac (*Rhus ovata*), canyon ragweed (*Ambrosia ambrosioides*), wishbone bush (*Mirabilis laevis*), and a variety of cacti and other succulents including saguaro cacti (*Carnegiea gigantea*), buckhorn cholla (*Cylindropuntia acanthocarpa*), Graham's pincushion cacti (*Mammillaria grahamii*), prickly pear cacti (*Opuntia* spp.), agaves (*Agave* spp.), desert spoon (*Dasylyrion wheeleri*), rock echeveria (*Dudleya saxosa* ssp. *collomiae*), and California barrel cacti (*Ferocactus cylindraceus*).

Heading from east to west, SR 88 crosses Crabtree Wash and several other unnamed washes, then parallels Lewis and Pranty Creek for a couple of miles before traversing the creek at a bridged crossing. It then crosses Fish Creek at another bridged crossing before climbing steeply up the side of Fish Creek Hill. The riparian vegetation along these drainages is typically not continuous but is present in intermittent stands consisting of Fremont cottonwood (*Populus fremontii*), willow (*Salix* spp.), and Arizona sycamore (*Platanus wrightii*) trees. No emergent wetland vegetation (i.e., cattails [*Typha* spp.], bulrush [*Schoenoplectus* spp.], or sedges [*Scirpus* spp.]) was observed in any of these drainages.

Noxious and invasive species that are present in this area include red brome (*Bromus rubens*), Russian thistle (*Salsola tragus*), and fountaingrass (*Pennisetum setaceum*). Saltcedar (*Tamarix* sp.) is also present along the major drainages but is only a minor component of the streamside vegetation in this area.

Threatened, Endangered, and Sensitive Species

The United States Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) website was accessed to obtain an official species list for the review area on March 10, 2023 (Attachment D). The USFWS

species list was reviewed by a qualified biologist (Ian Tackett, Logan Simpson) to determine if any of these species have the potential to occur in the review area. Table 1 provides an evaluation for each of the species on the USFWS list.

Table 1. Threatened and Endangered Species Potentially Occurring in the Review Area

Species Name	Status ^a	Habitat Requirements	Potential to Occur in the Review Area ^b
Invertebrates			
Monarch butterfly (<i>Danaus plexippus</i>)	ESA C USFS S	In Arizona, frequently occurs near sources of water (rivers, creeks, roadside ditches, irrigated gardens) with an abundance of nectar sources and milkweed. Suitable breeding habitat has host plants (milkweeds) where eggs are laid and larvae feed upon the leaves and stems.	Moderate – This species ranges widely and could occur as a transient during migration.
Fish			
Gila topminnow (<i>Poeciliopsis occidentalis occidentalis</i>)	ESA LE SGCN	Small streams, springs, and cienegas in vegetated shallows below 4,500 feet. The species has been released at almost 200 locations in efforts to reestablish populations. However, the reintroduction program has had limited success, with the majority of populations disappearing almost immediately, or surviving only for a few years.	None – The review area is outside this species' known current distribution (it was reintroduced in nearby Tortilla Creek but does not occur in any of the drainages in the review area).
Birds			
California least tern (<i>Sterna antillarum browni</i>)	ESA LE SGCN	Open, bare, or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems at elevations below 2,000 feet. Breeding occasionally documented in Arizona; migrants may occur more frequently.	None – There is no suitable (i.e., open shoreline) habitat present in the review area.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	ESA LT SGCN	Statewide in mature montane forest and woodland, old growth mixed-conifer, and pine-oak forests on steep slopes and canyons from 4,100 to 9,000 feet.	None – There are no montane forest or woodland, old-growth mixed-conifer forest, or pine-oak forest habitats in the review area
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	ESA LE SGCN	Dense cottonwood-willow and tamarisk vegetation communities along rivers and streams below 8,500 feet.	Low – There is no suitable nesting habitat for this species (i.e., dense riparian vegetation) in the review area, but migrants could occur incidentally during migration.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	ESA LT SGCN	Large contiguous patches of multi-layered riparian habitats such as cottonwood-willow gallery forests along rivers and streams where Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk are dominant. In southern Arizona (south of the Gila River) cuckoos have also been documented breeding along ephemeral and intermittent drainages, and in encinal (oak-dominated) habitats in upland areas.	Low – There is no suitable nesting habitat for this species (i.e., large patches of multi-layered riparian vegetation) in the review area, but migrants could occur incidentally during migration.

Species Name	Status ^a	Habitat Requirements	Potential to Occur in the Review Area ^b
Yuma Ridgway's (clapper) rail (<i>Rallus obsoletus yumanensis</i>)	ESA LE SGCN	Fresh and brackish marshes with dense emergent vegetation and wet substrates along the lower Colorado River and its tributaries below 4,500 feet.	None – There is no suitable nesting habitat (i.e., freshwater marshes with cattail and bulrush) in the review area. There have been isolated occurrences at nearby Roosevelt Lake, but these rails otherwise occur further downstream along the Gila River.
Mammals			
Mexican wolf (<i>Canis lupus baileyi</i>)	ESA LE NEP SGCN	Oak and pine-juniper savannahs in foothills and mixed-conifer woodlands above 4,000 feet.	None – The review area is outside this species' known current distribution
Ocelot (<i>Leopardus pardalis</i>)	ESA LE SGCN	Strongly linked to areas with dense cover, but can use a variety of habitats, from brushy forests and semiarid deserts in the northern part of its range to the tropical forests, mountain slopes, and pampas located throughout its southern range. Its current distribution extends into southern Arizona; dispersing individuals range more widely, as evidenced by the presence of a road-killed ocelot in Gila County	Low – While there is potentially suitable habitat for this species in the review area, there is limited connectivity to suitable habitats within its known range in southern Arizona. Any occurrence in the review area is likely to be only brief and transitory.

Source: US Fish and Wildlife Service Information for Planning and Consultation (IPaC) website, <<https://ipac.ecosphere.fws.gov/>>, 2023a, accessed March 10, 2023.

^aStatus definitions: ESA – Endangered Species Act, C – Candidate, LE – Listed Endangered, LT – Listed Threatened, NEP – Experimental Nonessential Population, SGCN – Species of Greatest Conservation Need (as identified in the AGFD's 2022 Arizona Wildlife Conservation Strategy), USFS S – US Forest Service Sensitive Species (as identified on the 2013 Regional Forester's Sensitive Species List for Region 3)

^bPotential for Occurrence: **None:** Species has not been documented in the review area, the review area is outside the species' known range, and/or no suitable habitat is present.
Low: Species has not recently been documented in the review area, existing habitat conditions in the review area preclude the establishment of viable populations, or the species ranges widely and individuals could incidentally occur in the review area.
Moderate: Species has not been recently documented in the review area, but potentially suitable habitat is present and there is a reasonable likelihood for the species to occur in the review area.
High: Species has been recently documented in the review area or there is a high likelihood of occurrence based on the species' known range and/or the presence of suitable habitat.

The AGFD On-line Environmental Review Tool was queried to obtain a list of special status species that have been documented in the vicinity of the review area (Attachment D). Table 2 lists the species that have been documented within 2 miles of the property by the AGFD.

Table 2. Special Status Species Documented Within 2 Miles of the Review Area by the AGFD or Identified as Potential Species of Concern by the TNF

Common Name	Scientific Name	Status ^a
American peregrine falcon	<i>Falco peregrinus anatum</i>	USFS S SGCN
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA USFS S
Gila longfin dace	<i>Agosia chrysogaster chrysogaster</i>	USFS

Common Name	Scientific Name	Status ^a
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA SGCN
Lowland leopard frog	<i>Lithobates yavapaiensis</i>	USFS S SGCN
Mapleleaf false snapdragon	<i>Mabrya acerifolia</i>	USFS S
Pima Indian mallow	<i>Abutilon parishii</i>	USFS S
Sonoran desert tortoise	<i>Gopherus morafkai</i>	USFS S SGCN
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	ESA LE SGCN

Source: AGFD On-line Environmental Review Tool, <<https://ert.azgfd.gov>>, accessed March 10, 2023.

^aStatus definitions: BGEPA – Bald and Golden Eagle Protection Act, ESA – Endangered Species Act, LE – Listed Endangered, SGCN – Species of Greatest Conservation Need (as identified in the AGFD’s 2022 Arizona Wildlife Conservation Strategy), USFS S – US Forest Service Sensitive Species (as identified on the 2013 Regional Forester’s Sensitive Species List for Region 3)

The TNF was contacted for biological resource concerns as part of this EO. The TNF identified various USFS sensitive species that are known or likely to occur in the review area (Table 3).

Table 3. USFS Sensitive Species Known or Likely to Occur in the Review Area

Common Name	Scientific Name	Status ^a
American peregrine falcon	<i>Falco peregrinus anatum</i>	USFS S SGCN
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA USFS S
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA USFS S SGCN
Fish Creek fleabane	<i>Erigeron piscaticus</i>	USFS S
Mapleleaf false snapdragon	<i>Mabrya acerifolia</i>	USFS S
Pima Indian mallow	<i>Abutilon parishii</i>	USFS S
Sonoran desert tortoise	<i>Gopherus morafkai</i>	USFS S SGCN

Source: Tonto National Forest

^aStatus definitions: BGEPA – Bald and Golden Eagle Protection Act, SGCN – Species of Greatest Conservation Need (as identified in the AGFD’s 2022 Arizona Wildlife Conservation Strategy), USFS S – US Forest Service Sensitive Species (as identified on the 2013 Regional Forester’s Sensitive Species List for Region 3)

Critical Habitat

Critical habitat designated or proposed by the USFWS for the conservation of threatened and endangered species receives special legal protection under the ESA. There is no critical habitat that has been designated or proposed for any federally listed threatened or endangered species in the review area.

Agency Coordination

The TNF's biology staff indicated that several USFS sensitive plant species may be present in the review area including Fish Creek fleabane (*Erigeron piscaticus*), Mapleleaf false snapdragon (*Mabrya acerifolia*), and Pima Indian mallow (*Abutilon parishii*). There are also known bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) breeding areas in the vicinity of the review area, although impacts from any future project activities are not expected due to the distance to the known breeding areas. American peregrine falcons (*Falco peregrinus anatum*) are also known to nest near Apache Lake. There are documented occurrences of the Sonoran desert tortoise (*Gopherus morafkai*) in the review area. Additional coordination with TNF is warranted to develop appropriate mitigation measures that would minimize potential impacts to USFS sensitive species during construction of any future roadway improvements.

The AGFD's Senior Terrestrial Wildlife Specialist indicated that the western end of the review area (Fish Creek Canyon) is used extensively as a travel corridor for desert bighorn sheep (*Ovis canadensis mexicana*) throughout the year, and the rocky outcrops to the south of SR 88 are used as a lambing area (primarily during December-January and in some years again during June-July). Additional coordination with AGFD is warranted to determine opportunities for supporting wildlife movement in this area and to develop appropriate mitigation measures which may include seasonal restrictions on construction activities, particularly for loud/impactful activities such as blasting.

The AGFD's Regional Aquatics Wildlife Program Manager indicated that there are currently no native fish concerns in the review area. There were no fish detected in Fish Creek during recent surveys (from the bridge upstream roughly 0.5 mile), though numerous tadpoles were present. The AGFD is interested in putting in a physical barrier at or near the Fish Creek Bridge to prevent green sunfish moving upstream from the reservoir into Fish Creek. The AGFD is currently evaluating Fish Creek for a potential release of roundtail chub (*Gila robusta*) and will survey Fish Creek again in June 2023 to obtain additional data. A past proposal to list the roundtail chub as a threatened species was withdrawn by the USFWS in 2017 following a taxonomic revision that concluded the available evidence did not support species-level status for the headwater chub (*G. nigra*) and the Gila chub (*G. intermedia*), collapsing them into roundtail chub (*G. robusta*). However, despite this taxonomic revision, the existing federally listed status of Gila chub was unaffected by the 2017 withdrawal and remains listed under the ESA as an endangered species. The roundtail chub that would be introduced into Fish Creek are of the Gila chub lineage so there is the potential for a federally listed species to be present in the review area at some point in the future depending on 1) the timing of any future roadway improvements, 2) AGFD's decision on whether to reintroduce roundtail chub into Fish Creek, and 3) the timing of any future listing decision by the USFW.

Wildlife Movement Corridors and Other Special Land Designations

The entire review area is located within the Superstition Mountains-Mazatzal Mountains Wildlife Linkage that was identified by the AGFD during stakeholder workshops and documented in the *Maricopa County Wildlife Connectivity Assessment: Report on Stakeholder Input* (AGFD 2012). This wildlife linkage connects the Superstition Wilderness Area to the Four Peaks Wilderness Area. Threats and barriers to this linkage include the expansion of SR 88, dams and lakes along the Salt River, and associated recreational development. Target species for this wildlife linkage are bighorn sheep, mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), javelina (*Dicotyles tajacu*), black bear (*Ursus americanus*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), numerous birds, reptiles and amphibians.

An Important Connectivity Zone (ICZ) identified in the *Arizona Landscape Integrity and Wildlife Connectivity Assessment* (Perkl 2013) extends across SR 88 at the eastern end of the review area. The ICZs represent general areas throughout the landscape which contribute the most to permeability of the whole landscape, and may be used to help identify, in part, areas where more discrete corridor modeling ought to occur. Project planning and implementation efforts in ICZs should focus on maintaining and improving opportunities for wildlife permeability.

Fish Creek (Salt River-Apache, Canyon, and Saguaro Lake) is identified as an Aquatic Conservation Opportunity Area (COA) in the AGFD's *Arizona Wildlife Conservation Strategy* (AGFD 2022). The COAs reflect the best areas for conservation and are considered voluntary guidance for specific areas where conservation efforts would be most effective based on species and habitat expertise and wildlife and spatial data. Target species for this COA are the roundtail chub, longfin dace (*Agosia chrysogaster*), and Gila topminnow (*Poeciliopsis occidentalis occidentalis*).

Logan Simpson's preliminary review indicates that there are currently no federally listed threatened or endangered species that are likely to occur in the review area. The AGFD is considering introducing a federally listed fish species (Gila chub) into the review area at Fish Creek, and there is potential for the monarch butterfly, which is currently a candidate for listing under the ESA, to occur in the review area. No critical habitats that have been designated or proposed for any federally listed species are present in the review area. Based on agency coordination, a variety of sensitive species including bighorn sheep, Sonoran desert tortoise, bald and golden eagles, and several rare plant species are known to occur in the vicinity of the review area. The following recommendations are provided as a result of this preliminary evaluation of biological resources in the review area:

- There are currently no threatened or endangered species present in the review area. However, the AGFD is in the process of evaluating the reintroduction of Gila chub into Fish Creek, so there is potential for this federally listed endangered fish species to be present at some point in the future. The monarch butterfly, which is currently a candidate for listing under the ESA, may be found in the review area. Therefore, future decisions of the AGFD and USFWS with regard to these species will need to be tracked to verify the need for ESA consultation during planning for any future roadway improvements.
- A bighorn sheep movement corridor is known to occur in the review area (at Fish Creek Canyon) and there are also lambing areas in the vicinity of SR 88. The AGFD should be consulted during planning for any future roadway improvements to determine the project-specific mitigation measures which need to be implemented to minimize/avoid impacts to bighorn sheep movement and disturbance to lambing areas (e.g., seasonal restrictions).
- The Sonoran desert tortoise is known to occur within the review area, bald and golden eagles are known to occur in the vicinity of the review area, and several other USFS sensitive plant and wildlife species are either known or likely to occur in this area. Project-specific mitigation measures that may include preconstruction surveys and monitoring will need to be developed in coordination with the TNF during planning for any future roadway improvements.
- The AGFD would like to continue discussions on the possibility of constructing a physical barrier at the Fish Creek Bridge to prevent non-native green sunfish from moving further upstream into protected areas of Fish Creek.
- Permeability of the roadway corridor for wildlife movements should be considered during the design of any future roadway improvements. For example, riprap that may be placed in drainages to control erosion should not prohibit access to culverts and any additional fencing that is planned should be used to direct wildlife to appropriate crossing structures.

Hazardous Materials

Hazardous materials are regulated by the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Arizona Department of Environmental Quality (ADEQ) implements CERCLA, commonly known as the Superfund, and its amendment, the Superfund Amendments and Reauthorization Act (SARA) of 1986. The inherent environmental concerns associated with hazardous materials and solid waste landfills require a preliminary investigation into the location of permitted and non-regulated hazardous material sites and solid waste facilities within the review area.

- The US Environmental Protection Agency (EPA) NEPAassist database (EPA 2023b) and the ADEQ eMaps tool (ADEQ 2023) were reviewed to identify potential sources of hazardous materials in the vicinity of the review

area. The Luke Waterdog Recreation Annex is a designated superfund site located approximately 2.18 miles north-northeast of the review area and includes 26 acres of land. The US Airforce is currently remediating this site due to prior contamination associated with a leaking underground storage tank discovered in 1991 (facility ID 0-005339). Contaminants include Total Petroleum Hydrocarbon (TPH) and benzene, toluene, ethyl benzene, and xylenes (BTEX) in groundwater. Due to the distance of this site, it is not expected to pose a risk within the review area.

- Additionally, a documented leaking underground storage tank (LUST) site is located at the ADOT Maintenance Yard (MP 226.6) immediately south of SR 88; this facility has a closed status as of 1996. Due to this facility's closed status, it is not expected to pose a risk within the review area.

As part of the environmental clearance a Preliminary Initial Site Assessment (PISA) would need to be prepared to identify the presence of any hazardous materials sites within the vicinity of the review area. The PISA should include a review of the Luke Waterdog Recreation Annex and ADOT Maintenance Yard sites. Additionally, any painted surfaces would need to be tested for the presence of lead-based paint, and potential asbestos-containing materials would need to be tested for the presence of asbestos. During a field review conducted on January 6, 2023, several painted structures were observed including bridges and guardrail and numerous concrete structures including culverts were observed.

Cultural and Historical Resources

Because this project is expected to be funded using federal transportation funds, it constitutes a federal undertaking subject to compliance with Section 106 (54 U.S.C. § 306108) of the NHPA (54 U.S.C. § 300101 et seq.) and its implementing regulations (36 CFR Part 800) and Section 4(f) of the Department of Transportation Act (DOT Act; 49 U.S.C. 303) and its implementing regulations (23 CFR Part 774). Since the project involves an ADOT easement on USFS lands managed by the TNF, it is also subject to compliance with the State Historic Preservation Act (SHPA; Arizona Revised Statute [A.R.S.] § 81-861), the Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C. § 3001-3013), and the Archaeological Resources Protection Act (ARPA; 16 U.S.C. § 470aa-470mm). The area of potential effects (APE) (previously referred to as the review area) for the proposed undertaking is an approximately 300-foot-wide corridor centered on SR 88 that extends 8 miles from MP 221.5 to 229.5.

Logan Simpson conducted background research (Class I cultural resources inventory) of the APE and a half-mile buffer (collectively the "study area") by checking archaeological site files and inventory reports at the Arizona State Historic Preservation Office (SHPO) and Arizona State Museum (ASM) using AZSITE, the state's electronic inventory of cultural resources, and TNF archaeological site files and inventory reports. The background research also included records searches using the National Register Information System database, an online inventory of National Register of Historic Places (NRHP)-listed properties; the ADOT Historic Preservation Team (HPT) Portal online database; historic United States Geological Survey (USGS) maps; and historic General Land Office (GLO) maps, which were reviewed electronically.

The site file search indicates that 18 cultural resource sites and five in-use historical structures are located within or touch the APE (Table 4). Prehistoric cultural resources include prehistoric artifact scatters, artifact scatters with associated features, and prehistoric rock shelters with associated artifact scatters. Multi-component (prehistoric/historic) cultural resources include a prehistoric habitation and a historic work camp, a prehistoric artifact scatter and a historic habitation, a prehistoric and historic artifact scatter with historic retaining walls and trail, and a prehistoric and historic artifact scatter with a historic tent platform. Protohistoric cultural resources include a Yavapai habitation, and an artifact scatter with an associated embankment wall and rock alignment. Historic sites include one telephone line, a historic trash scatter and tent platform, a historic artifact scatter and possible privy mound, and abandoned segments of a transmission line and SR 88. The majority of cultural resource sites within or touching the APE have been determined eligible under Criterion D for their information potential. Seven cultural resource sites have been determined eligible under Criteria A and D, including abandoned segments

of two in-use historical structures (SR 88/AR-03-12-06-218/AZ U:7:2[ASM] and the Eastern Mining Area transmission line/AR-03-12-03-555/AZ U:7:7[ASM]).

In-use historical structures within or touching the APE include SR 88, which is considered a “Crown Jewel” of the Historic State Highway System and has been determined National Register-eligible under Criteria A, C, and D (FHWA and Arizona SHPO 2002). Historical SR 88-related features such as culverts, guardrails, and retaining walls, as well as at least one abandoned segment of SR 88 (AR-03-12-06-218/AZ U:7:2[ASM]), have also been identified within the APE (Barz 1996). In addition to SR 88 and associated features, one in-use historic transmission line is located within the APE and has been determined eligible under Criteria A and D; abandoned segments of the line are also present (AR-03-12-03-555/AZ U:7:7[ASM]). Three in-use bridge structures along the SR 88 alignment within the APE are listed in the National Register or eligible for listing under Criteria A and C; two are listed in the NRHP (ADOT 0027/Fish Creek Bridge and ADOT 0028/Lewis and Pranty Creek Bridge) and one (ADOT 0015/Dry Wash Bridge) is eligible for listing.

The site file search also determined that eleven archaeological sites are located outside of the APE but within the half-mile study area. These include prehistoric habitations with associated artifact scatters, a multi-component (prehistoric/historic) rock shelter with an associated artifact scatter, a multi-component (prehistoric/historic) artifact scatter with an associated fire ring, and a multi-component (prehistoric/proto-historic/historic) artifact scatter and historic camp; a historic trash scatter, and a historic foundation with associated features; one site is currently unknown site type due to missing TNF site records.

Approximately 98.78% of the 283.4-acre APE has previously been surveyed. Per SHPO Guidance Point No. 5 *SHPO Position on Relying on Old Archaeological Survey Data*, cultural resources surveys more than 10 years old should be assessed using a series of SHPO guidelines to ensure that they meet modern professional standards. Based on these guidelines, 81% (229.6 acres) of the APE has been surveyed to modern standards, as the surveys were conducted by professional archaeologists using a minimum of 20-meter transects and providing 100% survey coverage. Although these previous surveys meet adequacy standards for transect spacing and field methods, it should be noted that the cut-off date for historical features would have been pre-1950 based on the latest survey conducted in 1999. Specifically, the historical cut-off date for SR 88 road features documented by the Barz 1996 study would have been approximately 1945, which suggests that additional road features constructed post-1945, as well as abandoned segments of SR 88, may be present within the APE but not previously documented.

Fieldwork is recommended to determine if additional road features or abandoned segments of SR 88 are located within the APE. Because previous surveys were conducted between 20-30 years ago, it is recommended that cultural resource sites and road features be revisited to confirm site/feature boundaries and general condition of the cultural resources. In addition, a Class III (intensive) pedestrian cultural resource survey is recommended for the portion of the APE for which previous surveys could not be confirmed to meet current standards and the portion of the APE not previously surveyed.

In general, avoidance is recommended for historical features of SR 88, eligible or unevaluated cultural resources, and the three NRHP-eligible/listed bridges within the APE. If the resources cannot be avoided, project design parameters should be evaluated with the goal of minimizing impacts to cultural resources. Mitigation of adverse effects may include data recovery for sites eligible under Criterion D and eligibility testing for sites with unknown eligibility. For cultural resource sites also eligible under Criterion A, archival research and historical context development may be appropriate for addressing impacts. Effects to historical bridges and road features of SR 88 should be considered in the context of those features and characteristics that contribute to eligibility of the resources; impacts to those features should be avoided. Historic American Engineering Record (HAER) documentation may be recommended depending on impacts to the structures. Finally, it is currently unknown if Traditional Cultural Places/Properties (TCPs) are located within the APE. If an inventory of TCPs has not been previously conducted, it is recommended that a study be completed with Tribes that claim cultural affiliation with the APE. Government-to-government consultation would be required to determine the presence, nature, and potential effects to any TCPs in the APE. Consultation with the TNF, SHPO, ADOT, Tribes, and other consulting parties will be required to determine the adequacy of previous cultural resource studies, the need for additional

research, and resolution of adverse effects, including obtaining a *de minimus* finding for resources afforded additional considerations under Section 4(f).

Table 4. Previously Recorded Cultural Resources Identified Within or Touching the APE

Site Number ^a	Site Type	Concurrence date	Eligibility ^b (Criterion)	Reference(s)
AZ U:7:7(ASM) ³ 3120300555	<i>Eastern Mining Area historic transmission line</i>	<i>TNF ISA, Howard (SHPO), August 20, 1998</i>	<i>Determined eligible (Criteria A and D)</i>	(Barz 1996; Craig 1999; Duff 1993)
AZ U:7:8(ASM) AZ U:11:61(ASM) 03120300556	Historic telephone poles	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criteria A and D)	(Barz 1996; Duff 1993)
AZ U:7:26(ASM) 03120300584	Prehistoric artifact scatter	No concurrence letter available	Not evaluated	(Motsinger et al. 1996)
AZ U:7:27(ASM) 03120300192	Prehistoric artifact scatter and historic habitation	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criteria A and D)	(Barz 1996; Craig 1999; Motsinger et al. 1996)
AZ U:7:28(ASM) 03120300586	Prehistoric artifact scatter	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996; Craig 1999; Motsinger et al. 1996)
AZ U:7:29(ASM) 03120300587	Prehistoric artifact scatter and rock ring	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996; Craig 1999; Motsinger et al. 1996)
AZ U:7:40(ASM) 03120300594	Prehistoric habitation and historic workcamp	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criteria A and D)	(Barz 1996; Motsinger et al. 1996)
AZ U:7:52(ASM) 03120300611	Prehistoric and historic artifact scatter with historic retaining walls and trail	No concurrence letter available	Recommended eligible (Criteria A and D)	(Motsinger et al. 1996)
AZ U:7:53(ASM) 03120300612	Prehistoric rock shelter and artifact scatter	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996)
AZ U:7:54(ASM) 03120300193	Prehistoric rock shelter and artifact scatter	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996)
AZ U:7:55(ASM) 03120300613	Prehistoric and historic artifacts and an historic tent platform	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criteria A and D)	(Barz 1996)
AZ U:7:56(ASM) 03120300614	Historic trash scatter and a tent platform	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996)
AZ U:7:57(ASM) 03120300615	Prehistoric artifact scatter	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996)
AZ U:7:58(ASM) 03120300616	Historic artifact scatter and possible privy mound	TNF ISA, Howard (SHPO), August 20, 1998	Determined not eligible	(Barz 1996)
AZ U:7:59(ASM) 03120300617	Protohistoric Yavapai habitation	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996)
AZ U:7:60(ASM) 03120300628	Historic trash scatter	TNF ISA, Howard (SHPO), August 20, 1998	Determined not eligible	(Barz 1996)
AZ U:7:61(ASM) 03120300629	Protohistoric/prehistoric artifact scatter with an embankment wall and rock alignment	TNF ISA, Howard (SHPO), August 20, 1998	Determined eligible (Criterion D)	(Barz 1996)
AZ U:7:62(ASM) 03120602700	Historic trash scatter	TNF ISA, Howard (SHPO), August 20, 1998	Determined not eligible	(Barz 1996)
AR-03-12-06- 218/AZ U:7:2(ASM) ³	<i>SR88/Apache Trail</i>	<i>TNF ISA, Howard (SHPO), August 20, 1998</i>	<i>Determined eligible (Criteria A, C, and D)</i>	(Arizona SHPO and FHWA 2002)
	<i>ADOT 0015/Dry Wash Bridge</i>	No concurrence letter available	<i>Determined eligible (Criteria A and C)</i>	(FRASERdesign 2008)
	<i>ADOT 0027/Fish Creek Bridge</i>	<i>TNF ISA, Howard (SHPO), August 20, 1998</i>	<i>Listed (Criteria A and C); National Register ID# 88001600</i>	(FRASERdesign 2008)

Site Number ^a	Site Type	Concurrence date	Eligibility ^b (Criterion)	Reference(s)
	<i>ADOT 0028/Lewis and Pranty Creek Bridge</i>	<i>TNF ISA, Howard (SHPO), August 20, 1998</i>	<i>Listed (Criteria A and C); National Register ID# 88001601</i>	<i>(FRASERdesign 2008)</i>

Acronyms: ASM – Arizona State Museum, SHPO – State Historic Presentation Office, TNF – Tonto National Forest

^a *Italics* indicate historical in-use structures.

^b Recommended=Archaeologist's opinion; Determined: SHPO concurrence with recommendation.

^c SR 88/Apache Trail and the Eastern Mining Area transmission line include both in-use and abandoned segments of the cultural resource.

Section 4(f)/6(f) Resources

For federally funded transportation projects, an analysis of properties afforded protection under Section 4(f) of the Department of Transportation Act of 1966 (23 CFR § 774) is required. Section 4(f) properties include publicly owned parks; recreation areas (including trails and multiuse paths); waterfowl and wildlife refuges; and historic sites of national, state, or local significance. Section 4(f) also applies to all historic sites that are listed, or eligible for inclusion, in the NRHP at the local, state, or national level of significance regardless of whether or not the historic site is publicly owned or open to the public. Historic properties are typically identified when federal agencies are carrying out their responsibilities under Section 106 of the NHPA.

Upon the identification of a Section 4(f) resource, a “use” assessment must be made to determine the impact as a result of the project. A “use” of a Section 4(f) property, as defined in 23 CFR § 774, occurs: 1) when land is permanently incorporated into a transportation facility (direct use); 2) when there is a temporary occupancy of land that is adverse in terms of the statute’s preservationist purposes; or 3) when there is a constructive use of the Section 4(f) property (FHWA 2023). Under Section 4(f) of the Department of Transportation Act, FHWA may approve of a transportation program or project requiring the use of a Section 4(f) property only if there is no prudent and feasible alternative and efforts are made to minimize harm. A desktop review was conducted to review potential Section 4(f) recreational resources within one mile of the review area (Table 5). Additionally, cultural/historic resources that are eligible for Section 4(f) protection are included.

Table 5. Potential Section 4(f) Resources

Resource	Location and General Information
Recreational Resources	
Apache Lake	Apache Lake was formed in 1927 upon completion of the Horse Mesa Dam and offers non-motorized and motorized boating. The lake offers trout and warm-water fishing. The canyon walls offer a scenic backdrop. Tonto National Forest permit passes are required for some areas and vary based on activities (USFS 2023b).
Tortilla Trailhead	This trailhead is located approximately 0.22 mile southwest of the review area (approximately MP 221.1). It offers a parking area and trail access.
Crabtree Wash Shoreline	Located immediately southwest of the Apache Lake Marina & Resort and offers shoreline parking/camping area and boat access. Nearby are views of mountains with abundant wildlife (USFS 2023b).
Forest Road 212/Reavis Trailhead Road	Located at MP 227.6, this road provides access to Reavis Ranch Trailhead which is located approximately 1.76 miles northeast of the review area.
Fish Creek Hill Viewpoint/Overlook and Fish Creek Vista	Day-use area located immediately north of SR 88 at MP 222. It offers a parking area, hiking, access to Fish Creek Vista, and wildlife viewing including big horn sheep.
Apache Lake Vista	Day-use area located at the intersection of Forest Road 79 and SR 88 near MP 229.2. It offers view of the Apache Lake area and nearby mountains.
Fish Creek Canyon	Located near Fish Creek Bridge (MP 223.50) and offers views of wildlife and the canyon.
Vista Point	Day-use area located approximately 1 mile west of the review area along SR 88 and offers a parking area and access to hiking.
Wildlife Refuges	

Resource	Location and General Information
The Four Peaks Wilderness Area	Located north of the review area and immediately north of Apache Lake and the Salt River. The Four Peaks Wilderness Area was established in 1984 includes 60,740 acres and is managed by the USFS. The Four Peaks are widely recognized landmarks in central Arizona (USFS 2023d).
The Superstition Wilderness Area	Located within/immediately south of the review area outside of the existing ADOT easement. It was designated as a Wilderness Area in 1939 and was expanded to its current 160,200 acres in 1984. It contains a well-developed trail system and its primary purpose is for recreation. It is also managed by the Forest Service (USFS 2023e).
Cultural Resources	
SR 88/Apache Trail	SR 88 was constructed by the Bureau of Reclamation in 1903 as part of the Roosevelt Lake Dam. It became a state highway in 1922 and was designated as a historic road in 1986. Additionally, the TNF designated it as a scenic byway due to its impressive slopes, cliff faces, lake vistas, and historical importance; its primary purpose is for recreation (USFS 2023a). It is eligible in the NRHP under Criterion A (associated with events), Criterion C (distinctive characteristics of construction or period), and Criterion D (yield important information). It has also been listed on the Arizona Register of Historic Places. Therefore, it is subject to protection under Section 4(f).
ADOT 0015	Dry Wash Bridge; determined eligible (Criteria A and C)
ADOT 0027	Fish Creek Bridge; listed (Criteria A and C); National Register ID# 88001600
ADOT 0028	Lewis and Pranty Creek Bridge; listed (Criteria A and C); National Register ID# 88001601
AZ U:7:7(ASM) 3120300555	Eastern Mining Area historic transmission line; determined eligible (Criteria A and D)
AZ U:7:8(ASM) AZ U:11:61(ASM) 03120300556	Historic telephone poles; recommended eligible (Criteria A and D)
AZ U:7:27(ASM) 03120300192	Prehistoric artifact scatter and historic habitation; determined eligible (Criteria A and D)
AZ U:7:40(ASM) 03120300594	Prehistoric habitation and historic work camp; determined eligible (Criteria A and D)
AZ U:7:52(ASM) 03120300611	Prehistoric and historic artifact scatter with historic retaining walls and trail; recommended eligible (Criteria A and D)
AZ U:7:55(ASM) 03120300613	Prehistoric and historic artifacts and a historic tent platform; determined eligible (Criteria A and D)

The Land and Water Conservation Fund (LWCF) Act provides a means for state and local governments to obtain grants to acquire or make improvements to parks and recreation areas. Section 6(f) of this act prohibits the conversion of property acquired or developed with LWCF grants to a non-recreational purpose without the approval of the Department of the Interior's National Park Service. Section 6(f) requires that replacement land of equal value, location, and usefulness are provided as conditions to the conversion. A list of Section 6(f) projects is available on the National Park Service's Land and Conservation Fund website (LWCF 2023). The TNF acquired Doll Baby Ranch using Land and Water Conservation Funds in 2018. However, this ranch is not located in the review area. Therefore, there are no known Section 6(f) properties in the review area.

In addition to the above resources, there are numerous other potential Section 4(f) resources outside of the review area and within the geographic area in which access SR 88 provides access. These include Canyon Lake (which offers boating, swimming, fishing, day-use areas, and wildlife viewing), Tortilla Flat, Theodore Roosevelt Lake (which offers boating, swimming, fishing, a marina, camping, day-use areas, and wildlife viewing), Theodore Roosevelt Dam, numerous shoreline areas to access Apache Lake and the Salt River, and other resources within TNF lands.

Although these resources are located well outside of the review area, restrictions associated with constructed along SR 88 within the review area still have the potential to result in Section 4(f) impacts if access to these resources is interrupted. Coordination with the official having jurisdiction (TNF) for each potential Section 4(f) property would need to occur to confirm Section 4(f) eligibility. Resources or properties subject to Section 4(f) protection would then require a review based on the project design to determine if the project would result in any impacts to the Section 4(f) property.

Air Quality

The Clean Air Act of 1970 required the EPA to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The six principal pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and sulfur dioxide (SO₂). Vehicle emissions are major sources of CO, NO₂, and O₃. Sources of PM₁₀ and PM_{2.5} include the suspension of dust through ground-disturbing activities, road dust from vehicles, and emissions from internal combustion engines. Table 6 lists the current standards.

Table 6. National Ambient Air Quality Standards for Criteria Pollutants

Pollutant/Averaging Time	National Standard^a	Form
Ozone 8-hour (primary and secondary)	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Carbon monoxide 8-hour (primary) 1-hour (primary)	9 ppm 35 ppm	Not to be exceeded more than once per year
Nitrogen dioxide 1-hour (primary)	100 ppb	98 th percentile, averaged over 3 years
Annual mean (primary and secondary)	53 ppb	Annual mean
Sulfur dioxide 1-hour (primary)	75 ppb	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
3-hour (secondary)	0.5 ppm	Not be exceeded more than once per year
Lead Rolling 3-month average (primary and secondary)	0.15 µg/m ³	Not to be exceeded
Particulate matter less than 10 microns 24-hour (primary and secondary)	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Particulate matter less than 2.5 microns Annual (primary)	12 µg/m ³	Annual mean, averaged over 3 years
Annual (secondary)	15 µg/m ³	Annual mean, averaged over 3 years
24-hour (primary and secondary)	35 µg/m ³	98 th percentile, averaged over 3 years

Source: EPA. <<https://www.epa.gov/criteria-air-pollutants/naqs-table>>. Accessed March 27, 2023.

^appm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter

Nonattainment/Attainment Areas

The EPA defines attainment areas as geographic areas that meet or exceed the NAAQS. Nonattainment areas refer to areas that do not meet this standard (EPA 2023b). Maintenance areas are those that were once in nonattainment, but now meet the current standards. According to the ADEQ eMaps and EPA NEPAassist databases (ADEQ 2023; EPA 2023b), the review area is located within a nonattainment area for O₃.

Conformity

Under the Clean Air Act amendments, proposed federally funded transportation projects must be derived from a long-range transportation plan (LRP) or regional transportation plan (RTP) that conforms with the state air quality plans (state implementation plan [SIP]). The EPA requires that conformity determinations for proposed transportation projects are made before project approval. Federal activities may not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment. Although improvements along SR 88 would likely improve the roadway surface and thereby reduce particulate matter (PM₁₀ and PM_{2.5}), the project has the potential to result in increased traffic volumes from the improved surface. Therefore, some level of air quality analysis, as determined appropriate by ADOT, would be needed to determine if the proposed project is likely to cause or contribute to the severity or number of violations of NAAQS in the review area and if the project meets transportation conformity requirements.

Noise

The Federal-Aid Highway Act of 1972 requires FHWA to develop a noise standard for new federal-aid highway projects. The standard provides national criteria for all highway agencies but also gives state Departments of Transportation flexibility in managing highway traffic and construction noise. In addition to defining traffic noise impacts, the FHWA Noise Standard requires that noise abatement be considered when traffic noise levels that exceed a defined threshold are identified during noise analysis, planning, and project design (ADOT 2023b).

The FHWA has established Noise Abatement Criteria (NAC) for land use categories (Table 7). A-weighted decibel (dBA) measurements emphasize certain frequencies to approximate how sound is perceived by human hearing. The equivalent sound level (Leq) refers to the equivalent, steady-state sound level which, in a stated period of time, contains the same acoustic energy as the time-varying sound level during the same period.

In coordination with the FHWA Arizona Division, ADOT has developed the Noise Abatement Requirements (NARs) in compliance with 23 CFR § 772. Per 23 CFR § 772 and ADOT NARs, traffic noise analysis is required for any projects that receive federal-aid funds or are otherwise subject to FHWA approval. In addition to federal projects, ADOT NARs apply to other ADOT-funded projects that involve construction of a highway on a new alignment, a significant change in the horizontal or vertical alignment of an existing highway, or adding new through lanes to an existing highway.

Table 7. FHWA Noise Abatement Criteria

Activity Category	dBA (Leq1h) ^a	Activity Description
A	57	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	Residential
C	67	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios,

Activity Category	dBA (L_{eq1h}) ^a	Activity Description
		schools, and television studios.
E	72	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	N/A	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	N/A	Undeveloped lands that are not permitted.

Acronyms: dBA – Decibel. N/A – Not applicable

Source: FHWA 2011, 23 CFR 772

^a The 1-hour equivalent loudness in A-weighted decibels, which is the logarithmic average of noise over a 1-hour period.

The predominant source of noise within the vicinity of the review area is from vehicle traffic along the open portions of SR 88. The review area is located within ADOT easement on TNF lands and nearly all lands within the vicinity are under the jurisdiction of the TNF. Therefore, these lands would fall within the land use activity category “A” and there are numerous recreational resources which would be considered potential sensitive noise receivers. Noise abatement is considered if the anticipated sound levels approach or exceed the appropriate NAC for each of the land use categories. During design, ambient noise levels may need to be monitored at specific locations. The future sound environment for the review areas would need to be compared to gathered noise data and mitigation identified, if warranted, to conform to the ADOT Noise Abatement Policy and TNT standards.

Scenery Resources

The USFS defines scenery as the arrangement of the natural elements of the landscape along with components of the built environment. Scenery resources can vary depending on existing natural features including vegetation, water features, landforms and geology, cultural features, and human alterations (e.g., buildings, structures, manipulations of the land or vegetation). Managing scenery resources is important to protecting the naturalness of the existing scenic character. Although not yet finalized, the TNF Land Management Plan provides an understanding of the desired conditions, guidelines, and management approaches that the USFS intends for the implementation of proposed facilities and infrastructure on USFS lands (USFS 2022).

The USFS’s Scenery Management System (SMS) is used to inventory and analyze scenery in a national forest, to assist in establishment of overall resource goals and objectives, and to monitor scenic resources. The SMS is described in detail in USFS Agriculture Handbook 701 Landscape Aesthetics: A Handbook for Scenery Management (USFS 1995). In practice, the USFS has taken a flexible approach to how SMS is implemented. Currently, the SMS is under review as the TNF Plan is being finalized. The TNF still manages scenery resources under the prior Visual Management System program (USFS 1974).

Scenery Management System (SMS)

The segment of the SR 88 within the review area is located in a viewshed that is visually and culturally distinctive. Within a five-mile radius of the review area, the character of the landscape is a mix of front country, wilderness, backcountry, and linear adventures. Scenic Attractiveness classes are developed to determine the relative scenic value of lands within a particular landscape character. The three Scenic Attractiveness classes are: Class A, Distinctive; Class B, Typical; and Class C, Indistinctive. The review area is within a Class A are areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality.

The landscape character description is used as a reference for the scenic integrity of all USFS lands. Scenic Integrity Objectives (SIOs) indicates the degree of intactness and wholeness of the landscape character. A landscape with very minimal visual disruption is considered to have high SIO level. Landscapes with increasingly

discordant relationships among scenic attributes are viewed as having diminished scenic integrity. The SIO levels are defined in terms of very high, high, moderate, low, very low, and unacceptably low. Within the review area, the SIO levels vary with the levels ranging from moderate (slightly altered), high (appears unaltered), and very high (unaltered). In the viewshed, infrastructure exists with low scenic integrity.

Part of the SMS management approach includes understanding the public's visual expectations and levels of concerns for the scenic qualities within a national forest. Forest visitor analysis (also referred to as constituent analysis) serves as a guide to perceptions of attractiveness and helps to define the meaning people give to the subject landscape. This forest visitor analysis leads to a determination of the relative importance of aesthetics to the public and is expressed as a Concern Level value of 1, 2, or 3 to reflect the relatively high, medium, or low importance of aesthetics. The review area is considered to have a high level of importance, Concern Level 1. A Concern Level 1 generally includes all seen areas from primary travel routes, use areas, and water bodies whereas a minimum, at least 1/4 of the forest visitors have a major concern for scenic qualities. Concern Level 1 areas also include all seen areas from secondary travel routes use areas, and water bodies where at least 3/4 of the forest visitors have a major concern for the scenic qualities.

Visual Management System (VMS)

The TNF currently uses the VMS to manage scenery resources on USFS lands, but is transitioning to the SMS as noted above. In the current Tonto National Forest Plan, the Visual Quality Objective (VQO) for this segment is a mix of retention and preservation (USFS 1985). Retention means man's activities are not evident to the casual forest visitor and preservation provides for ecological changes only.

Apache Trail Historic Road

State Route 88 is designated as the Apache Trail Historic Road, one of three designated historic roads within Arizona. This historic road state designation reflects a roadway (or segment of a roadway) that offers historical importance to the cultural heritage of the state, nation, or region; contributes to a historical area or exploration/settlement of Arizona; is easily accessible; and is unique.

Analysis of Scenery Resource Changes

An analysis of the potential changes in scenery resource would be required to determine if the established VQO/SMS objectives for the scenic values and characteristics would be met and if the defined objectives to manage scenery resources would be altered. The proposed roadway improvements would need to define the degree of acceptable alteration permitted in the natural landscape. In addition, discussions with ADOT and the TNF would be required to determine if the values of the historic road designation would be modified and/or if mitigation measures would be required to minimize any degradation of scenic and/or historic values.

Based on preliminary coordination with the TNF, consideration should be given to installing guardrail that is weathered or concrete barrier that is colored to blend into the existing environment. The *National Forest Landscape Management, Volume 2, Chapter 4 Roads*, discusses guidance on reducing visual impacts from roadways (USFS 1977). Techniques and guidance include but are not limited to:

- Reducing the size of cut/fill scopes and the contrast of earthwork modification (i.e., slope rounding)
- Conducting "aging" techniques to freshly cut/blasted rock
- Using blasting techniques that result in a more broken-face rock look (that looks more natural and less visible man-made cuts)
- Mulching/seeding disturbed areas to assist with revegetation and other efforts to minimize erosion
- Developing planting holes or pockets in steep slopes to allow for vegetation to grow, etc.

- Minimizing vegetation removal, tree removal, and earthwork
- Minimizing visible structures (i.e., signs, guardrail, cattleguards, bridges, fences, culverts)
 - Painting culverts or using texturing techniques such as sand on the surfaces
 - Blending in retaining walls with existing landforms
 - Incorporating guardrail that is “self-weathering steel” or galvanized steel or even given dip treatment that results in a dark gray/brown finish
 - Incorporating techniques when preparing the roadway surface/shoulder to achieve a desired color or look

Water Resources

The Clean Water Act (CWA) is the primary federal statute governing discharge of pollutants into jurisdictional Waters of the US (Waters). The current rule (published on January 18, 2023) includes watercourses that are considered traditional navigable waters (TNWs), territorial seas; interstate waters, their tributaries that meet either the relatively permanent standard or significant nexus standard; and adjacent waters, including certain wetlands, lakes, ponds, and impoundments. Because this is a fairly new ruling that goes into effect on March 20, 2023, guidance from the United States Army Corps of Engineers (USACE) has not been issued and the rule may be petitioned and/or vacated, which may affect the amount of eligible jurisdictional watercourses within the review area. The principal goal of the CWA is to establish water quality standards to restore and maintain the chemical, physical, and biological integrity of the nation’s Waters by preventing point (concentrated output) and nonpoint (widely scattered output) pollution sources (ADOT 2016).

Water resources assessed in this EO include Waters, wetlands, sole source aquifers, unique waters, impaired waters, and/or floodplains. Logan Simpson completed a desktop review to identify potential Waters in the review area. The desktop review included available data such as aerial photographs dated from 2018 through 2022 (via Google Earth and ESRI aerial imagery), topographic maps, ADOT’s bridge inventory for the Southeast District, EPA WATERS GeoViewer (EPA 2023c), and USFWS National Wetland Inventory (NWI) maps (USFWS 2023b). The results of the desktop review are presented below.

Potential Jurisdictional Features

Several potential features are present in the review area, including Barranca Creek, Lewis and Pranty Creek, Crabtree Wash, and several unnamed washes that parallel and intersect SR 88 (Attachment B). Lewis and Pranty Creek appears to be a notable feature within the review area, flowing to the west and eventually north, abutting SR 88 for a large portion of the review area. It crosses SR 88 via Lewis and Pranty Creek Bridge at MP 224.60. Flowing surface water was observed in Lewis and Pranty Creek during the January 2023 field visit and within all bridged washes within the review area, including Barranca Creek at the Fish Creek Bridge (MP 223.50) and an unnamed wash at Dry Wash Bridge (MP 225.55). Whether or not these features meet the relatively permanent or significant nexus standards has yet to be determined, but due to the proximity to Apache Lake and the Salt River, it is likely these features are jurisdictional Waters under the 2023 definition.

The NWI identified several wetlands classified as Freshwater Forested/Shrub Wetland (Cowardin Code: PSSC) along Barranca Creek and Lewis and Pranty Creek. Scattered cottonwood trees were also observed along Lewis and Pranty Creek during the January 2023 field visit, but they did not form a dense riparian corridor. No special aquatic sites were observed during the field visit; however, a closer investigation is recommended to determine if wetlands are present. No potential features are classified as an Outstanding Arizona Water, an Impaired Water, or a Not Attaining Water. However, Apache Lake is listed as a 303(d) Impaired Lake and at its closest location, it is 1.18 miles downstream from the review area (ADEQ 2023).

Section 404 of the CWA

Section 404 of the CWA regulates the discharge of earthen fill, concrete, and other construction materials into Waters, and authorizes the USACE to issue permits regulating the discharge of dredge or fill material into Waters. The jurisdictional limits for Waters are defined through a preliminary or approved jurisdictional determination (JD) accepted by USACE. A preliminary JD documents all drainages in a given area and is submitted to the USACE to confirm which drainages are subject to USACE jurisdiction. An approved JD definitively determines whether a drainage is jurisdictional by proving it has a significant nexus to a downstream TNW. Due to the presence of potential features in the review area, it is recommended that a preliminary JD be completed since it is likely the drainages within the review area have a significant nexus and the preliminary JD will act as a first start in the permitting process. Impacts to Waters would require a Section 404 permit which requires associated biological and cultural documentation. The use of ADOT's Regional General Permit (RGP) No. 96 for Routine Linear Transportation Projects would be appropriate for this project if the following thresholds and stipulations are met:

- Permanent impacts to each Waters or Waters crossing remain under 1.0 acre;
- If present, cumulative impacts (temporary and permanent) do not exceed 0.025 acre within jurisdictional wetlands; and
- The project is constructed within ADOT's existing ROW/easement (or immediately adjacent)

If the improvements to SR 88 require a new alignment to be constructed, the use of a Nationwide Permit No. 14 (Linear Transportation Projects) would be appropriate for this project if permanent impacts to each Waters or Waters crossing remain under 0.5 acre and impacts to wetlands remain under 0.10 acre. If the thresholds mentioned above are exceeded for either RGP 96 or NWP 14, an individual permit would be required for permanent impacts to Waters. Individual permits require compensatory mitigation to minimize or offset the impacts to Waters with no net loss of the functions and values of the water resource.

Section 401 of the CWA

Section 401 of the CWA requires any applicant requesting a federal permit or license for activities that may result in discharge into Waters to first obtain a Section 401 certification from the state in which the discharge originates. ADEQ is responsible for the Section 401 certification when the project occurs on non-tribal lands. If it is determined that a RGP No. 96 or NWP No. 14 is appropriate for this project, it would be conditionally certified and notification to ADEQ would not be required. An Individual Permit would require an individual Section 401 certification and notification to ADEQ would be required.

Section 402 of the CWA

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES), which regulates pollutant discharges, including stormwater, into Waters. A NPDES permit sets specific discharge limits for point-source pollutants into Waters and outlines special conditions and requirements for a particular project to reduce impacts on water quality. In 2002, EPA authorized the ADEQ to administer the NPDES program at the state level, which is called the Arizona Pollutant Discharge Elimination System (AZPDES). AZPDES permits require that the project be designed to protect surface waters and that the contractor comply with all plans and requirements of the permit during construction. If more than one acre of land were disturbed for this project, an AZPDES Construction General Permit authorization and associated Storm Water Pollution Prevention Plan (SWPPP) would be required.

It is recommended that a preliminary JD and wetland delineation be completed for this project to assist in the future permitting requirements. If it is determined that Waters are present in the review area and will be impacted by the proposed design, a Section 404 permit and Section 401 Water Quality Certification would be required. If ground disturbance is more than 1 acre, an AZPDES Construction General Permit authorization and a SWPPP are also required.

Floodplain

The review area is located on Federal Emergency Management Agency (FEMA) Floodplain Insurance Rate Map (FIRM) Panel Nos. 04013C1900L and 04013C1925L (FEMA 2023). The FEMA FIRMs indicate that the entire review area is located within Zone D, an area of undetermined flood hazard (Attachment A, Figure A-5). No impacts to floodplains are expected to occur as a result of this project.

Sole Source Aquifer

The EPA defines a sole source aquifer as one that provides at least 50 percent of the drinking water for its service area. This project is not located within a sole source aquifer (EPA 2023a) and would therefore not impact a sole source aquifer.

Social and Economic

Socioeconomics describes the combination of economic and social level of a specific population of people and is based on income, education, demographics, and occupation. Social and economic considerations related to project impacts may include but are not limited to relocations and displacements, access to existing properties, emergency access, impacts on existing businesses, and impacts on neighborhood continuity, community services, schools, and recreation facilities. As part of NEPA compliance, projects must be evaluated for potential social and economic impacts which may result from the project, such as acquisition of new ROW and permanent or temporary easements, alternative selection, and temporary traffic and construction impacts.

From MP 222 to 227.2, SR 88 is currently closed to vehicles, which has resulted in adverse impacts to the general public. SR 88 traverses through the TNF from Apache Junction, extending generally northeast to Roosevelt Lake. Therefore, motorists traveling from the Phoenix area to Apache and Roosevelt lakes must use alternative routes to reach these destinations. Motorists can choose to use SR 87 and SR 188 as an alternative route to access SR 88 or they can use US 60 and SR 188 to access SR 88. In addition to the closure limiting recreational activities and access, stakeholder groups have expressed that economic impacts to several businesses (i.e., Apache Lake Marina) are ongoing.

Involving the public and stakeholders early on during the design process is necessary to allow opportunities to receive feedback and input on the project which may assist with project development and minimizing impacts to the public. Since the review area is almost entirely surrounded by TNF, it is not anticipated to result in impacts or land acquisition associated with residential properties. Consideration should be given to the three privately owned parcels are located near approximately MP 227.25. If new ROW or temporary construction easement are needed, it is expected to be from the surrounding TNF public lands.

Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964 states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Further, Executive Order 12898 was issued to identify and address Environmental Justice (EJ) in minority and low-income populations and to achieve an equitable distribution of benefits and burdens within a review area.

Federally funded projects are required to identify and address any disproportionate project effects on Title VI and EJ populations, which may include minority, low-income, and limited English-speaking proficiency populations. The review area is entirely surrounded by TNF lands and is not expected to result in disproportionate impacts to protected populations. As part of the public involvement process, all public outreach efforts and materials would need to comply ADOT Communications standards as outlined in the current 2017 Public Involvement Plan which includes compliance with Title VI of the Civil Rights Act of 1964, EJ, Limited English Proficiency (LEP), the Americans with Disabilities Act (ADA), and NEPA (ADOT 2017). Title VI language would need to be displayed on all public advertisements.

Public and Agency Involvement

As part of the NEPA process, agencies must evaluate the environmental and related social and economic effects of their proposed actions and provide opportunities for public review and comment on those evaluations. The purpose of public and agency involvement is to notify agencies, stakeholders, and the local public of the proposed project and any alternatives being considered. Agencies and the public should be afforded a comment period to provide any specific concerns or suggestions pertaining to this proposed project that may be useful as part of the project development. This can reduce the need for changes in the project development process because it reduces the chances of overlooking a critical social, economic, environmental, or preliminary design input (ADOT 2023b). The scoping process will assist in inviting participation, determining important issues and levels of analysis needed, identifying past studies, determining project timing, and assessing public controversy (ADOT 2023b). Public and agency involvement should also include known information on any temporary impacts during, and permanent impacts following construction.

Due to the use of federal transportation funds and ADOT involvement, at a minimum, public and agency outreach efforts would need to be conducted based on *ADOT Environmental Planning Guidelines for Agency and Public Scoping for Projects with Categorical Exclusions* (ADOT 2021). Once the project development process has established adequate information to engage the public, letters and a mailing list should be prepared. The project is expected to require extensive coordination with agencies including the USFS (TNF), ADOT, Maricopa Association of Governments (MAG), and SHPO. Additional stakeholders for the project may include agencies such as Arizona State Parks, Maricopa County, AGFD, Superstition Fire and Medical, Sierra Club, Lost Dutchman State Park, Maricopa County Sheriff's Office, MAG, and Central Arizona Governments. Private entities that should be considered as part of the design process include Apache Lake Marina & Resort, Roosevelt Lake Marina, Canyon Lake Marina, Tortilla Flat, and nearby private landowners. During a field review conducted on January 6, 2023, various hikers were recreating in the vicinity, many of which inquired about the project and improvements that would result in the opening of the closed segment. Stakeholder groups by the public have been established to express the desire to have the road reopened. Thus, the review area has a high-level of interest by the public.

During project development, it is recommended that public and agency meetings be held as additional outreach. Public and agency meetings would need to be conducted in a manner to allow for effective communication with the public and agencies. Meeting coordination and notification should be conducted in advance (via notification letters, flyers, postcards, website postings). Meetings should be held at location(s) reasonably accessible to the public or near the review area. Ideal locations include schools, government facilities, community centers, libraries and other neutral sites. Meeting facilities should comply with the ADA and be accessible to EJ communities.

Supplemental public outreach methods recommended include social media, media engagement, and website postings. The TNF may require public outreach including but not limited to flyer postings on the TNF website and listing the project in the TNF Schedule of Proposed Actions list.

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**Attachment A
Project Maps**

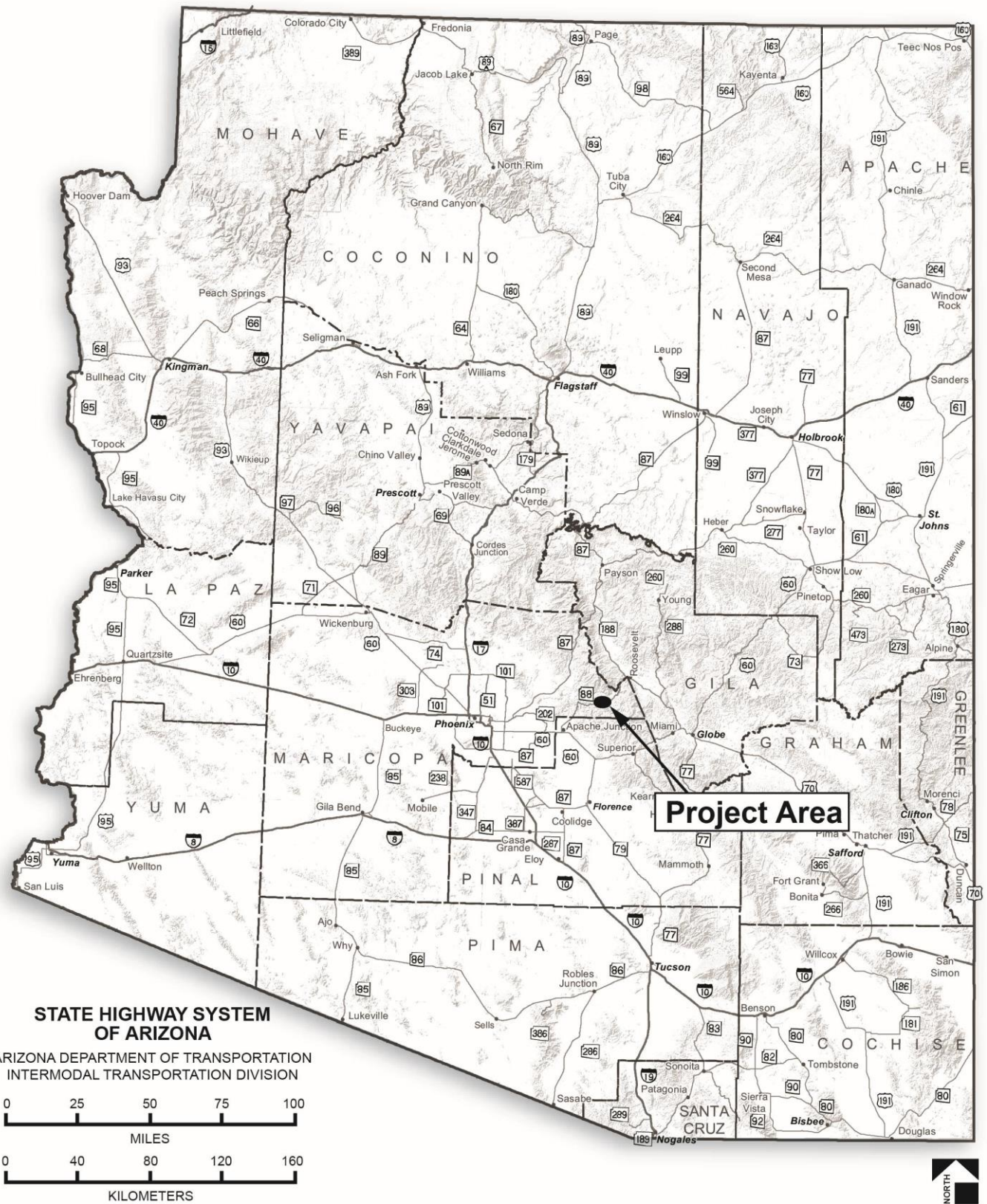


Figure A-1. State Location Map



Source: Land ownership GIS coverage provided by Arizona State Land Department; Arizona Transportation Information System GIS Coverage (2021)

Key

- | | | | |
|---|-------------------------|---|---------------------------|
|  | Review Area |  | Bureau of Land Management |
|  | Private Land |  | Bureau of Reclamation |
|  | State Land Trust |  | Local or State Parks |
|  | Indian Reservation Land |  | National Park Service |
|  | US Forest Service |  | State Wilderness Areas |



Figure A-2. Project Overview Map

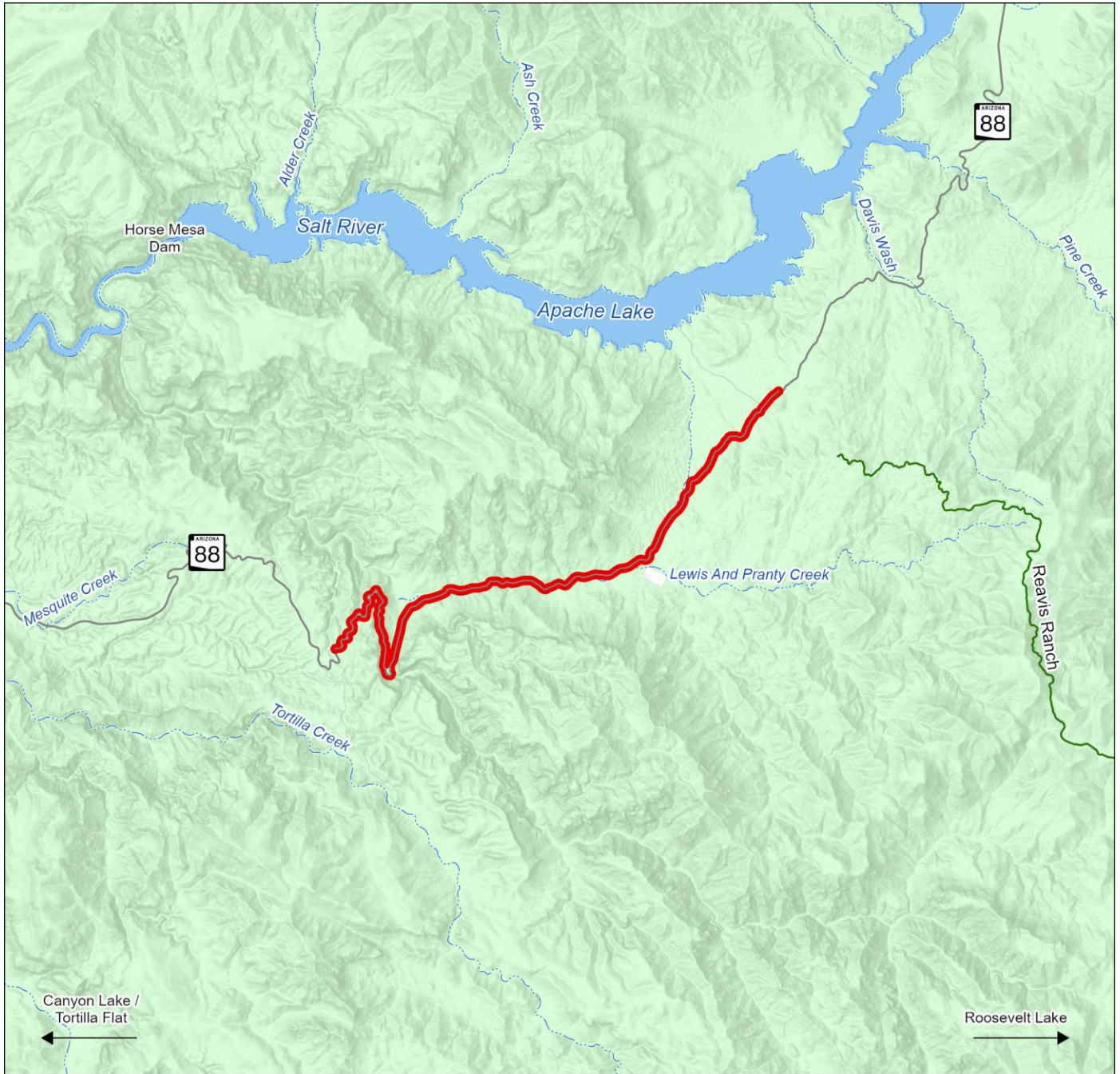


Source: Aerial Photography, Maxar (2021)

Key
 [Red Outline] Review Area



Figure A-3. Project Aerial Map



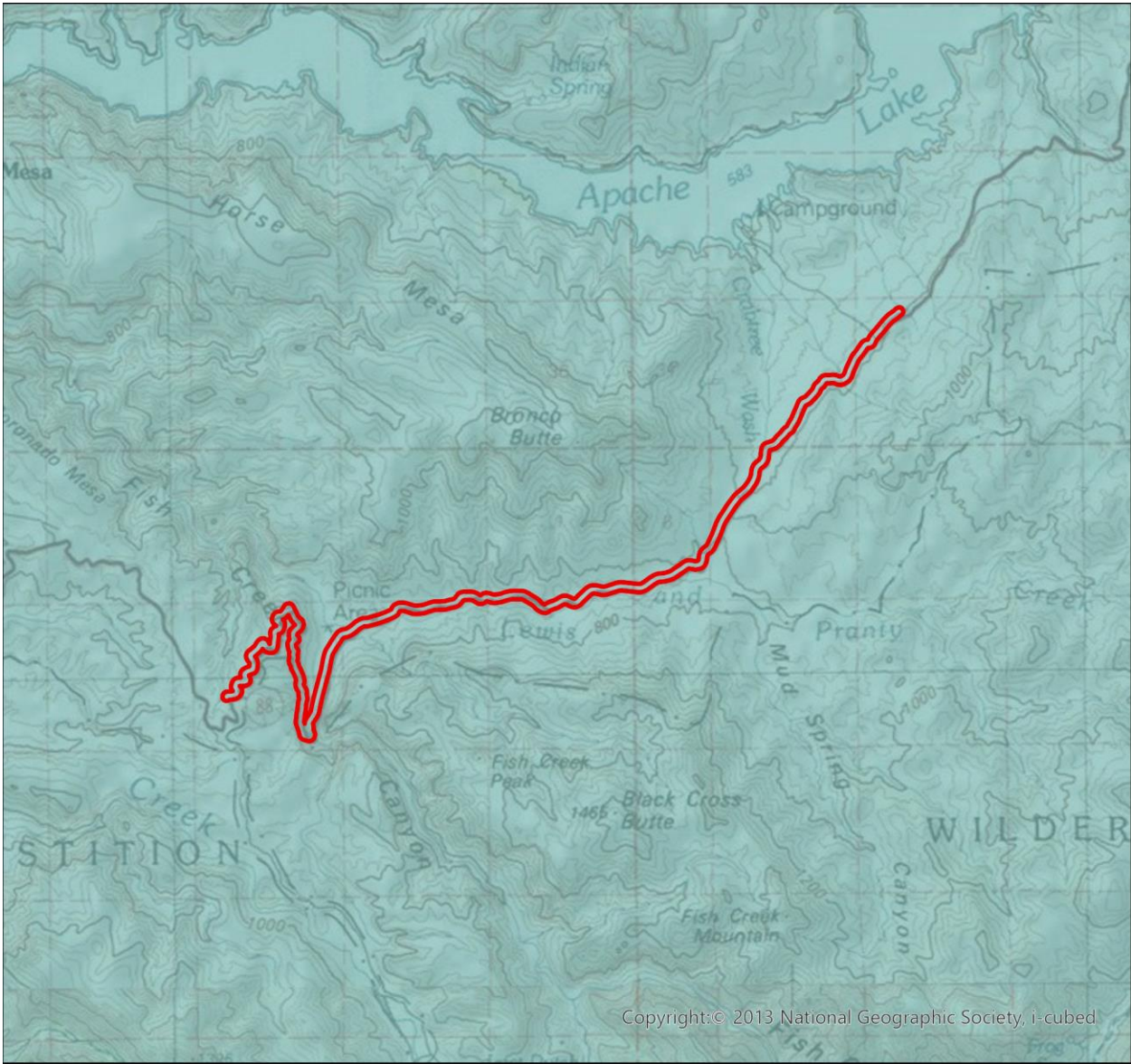
Source: Land ownership GIS coverage provided by Arizona State Land Department; Arizona Transportation Information System GIS Coverage (2021)

Key

-  Forest Trails
-  Review Area
-  Private Land
-  US Forest Service



Figure A-4. Project Land Use Map



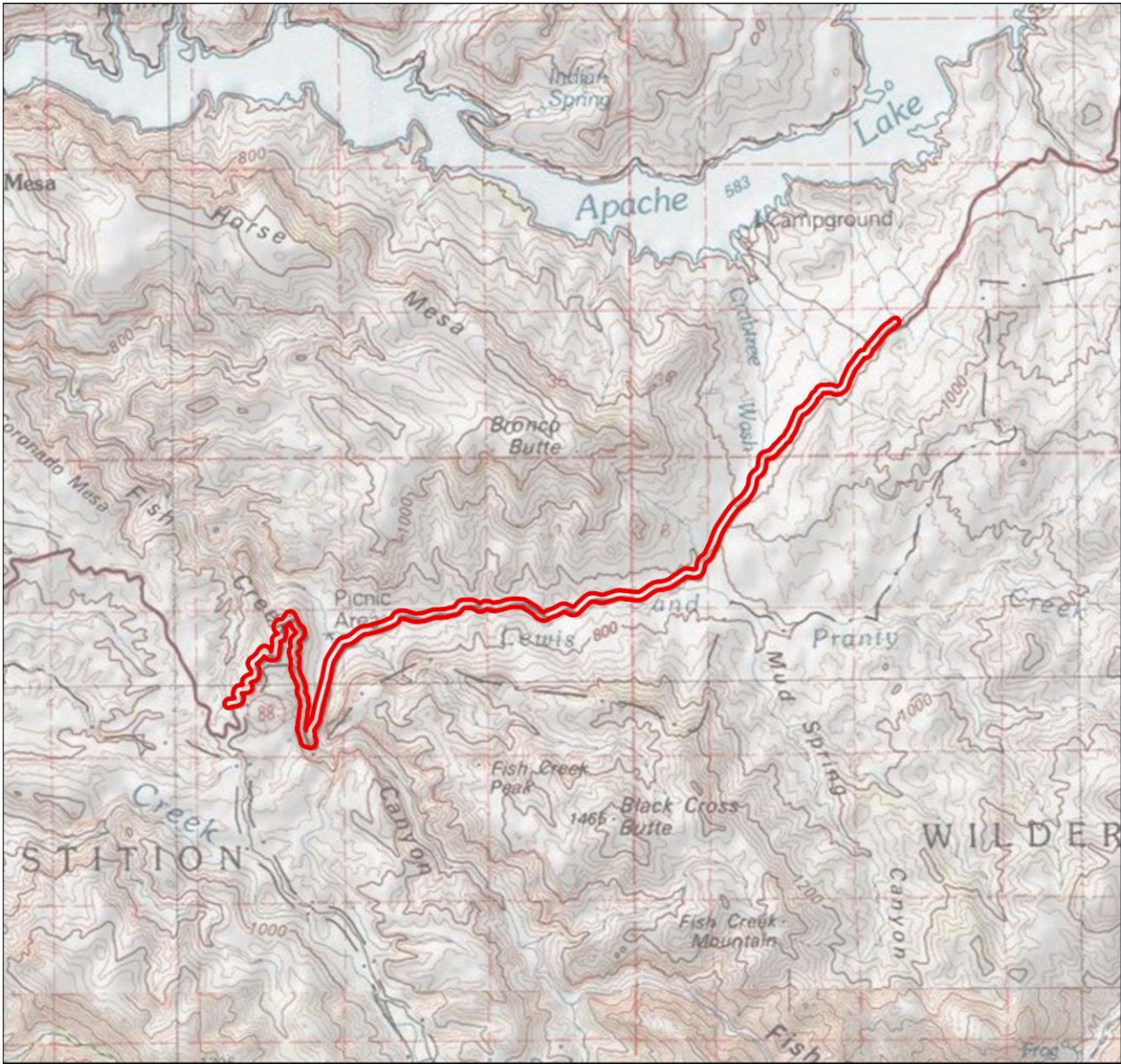
Source: USGS 7.5' Quadrangles, Horse Mesa Dam; Pinyon Mountain; Weavers Needle; Iron Mountain Flood Hazard, FEMA (2016)

Key

- Review Area
- Zone D - Areas of undetermined flood hazard where flooding is possible



Figure A-5. Project Flood Map



Source: USGS 7.5' Quadrangles, Horse Mesa Dam; Pinyon Mountain; Weavers Needle; Iron Mountain

Key

 Review Area



Figure A-6. Project Topographic Map



Source: Tonto National Forest Wilderness Areas provided by USFS (2010)

Key

- Review Area
- Superstition Wilderness
- Four Peaks Wilderness

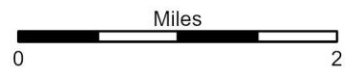
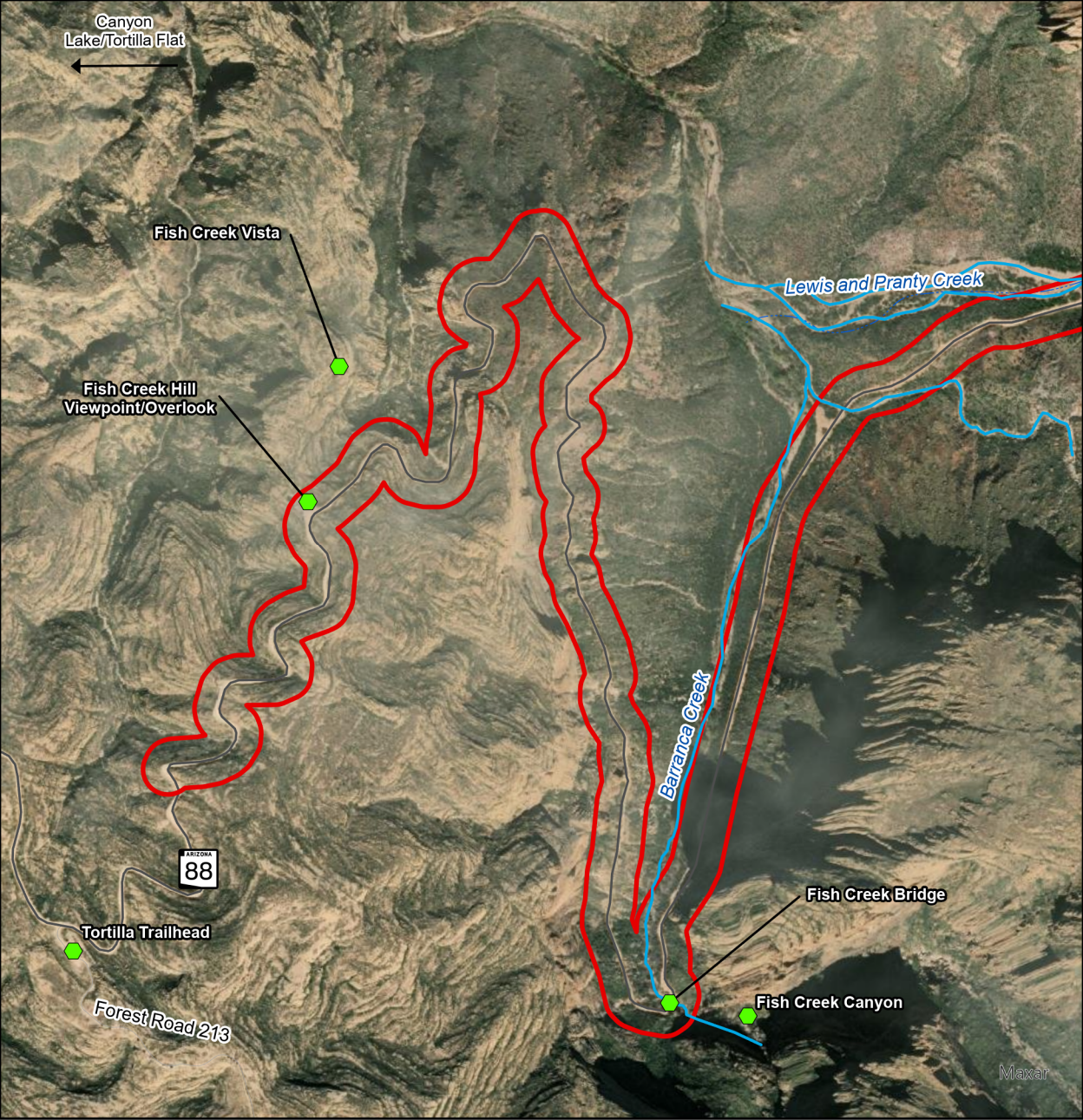
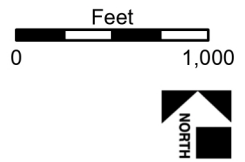
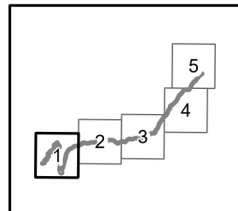
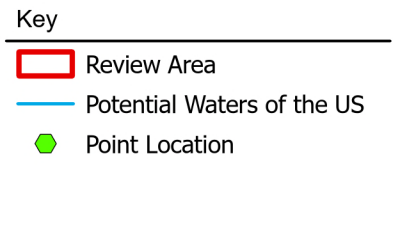


Figure A-7. Wilderness Area Map

Attachment B
Project Detail Exhibits

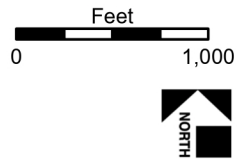
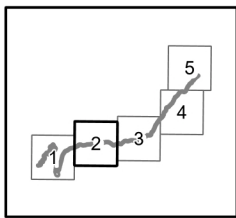
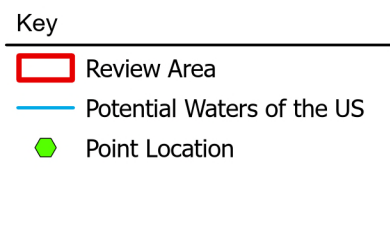


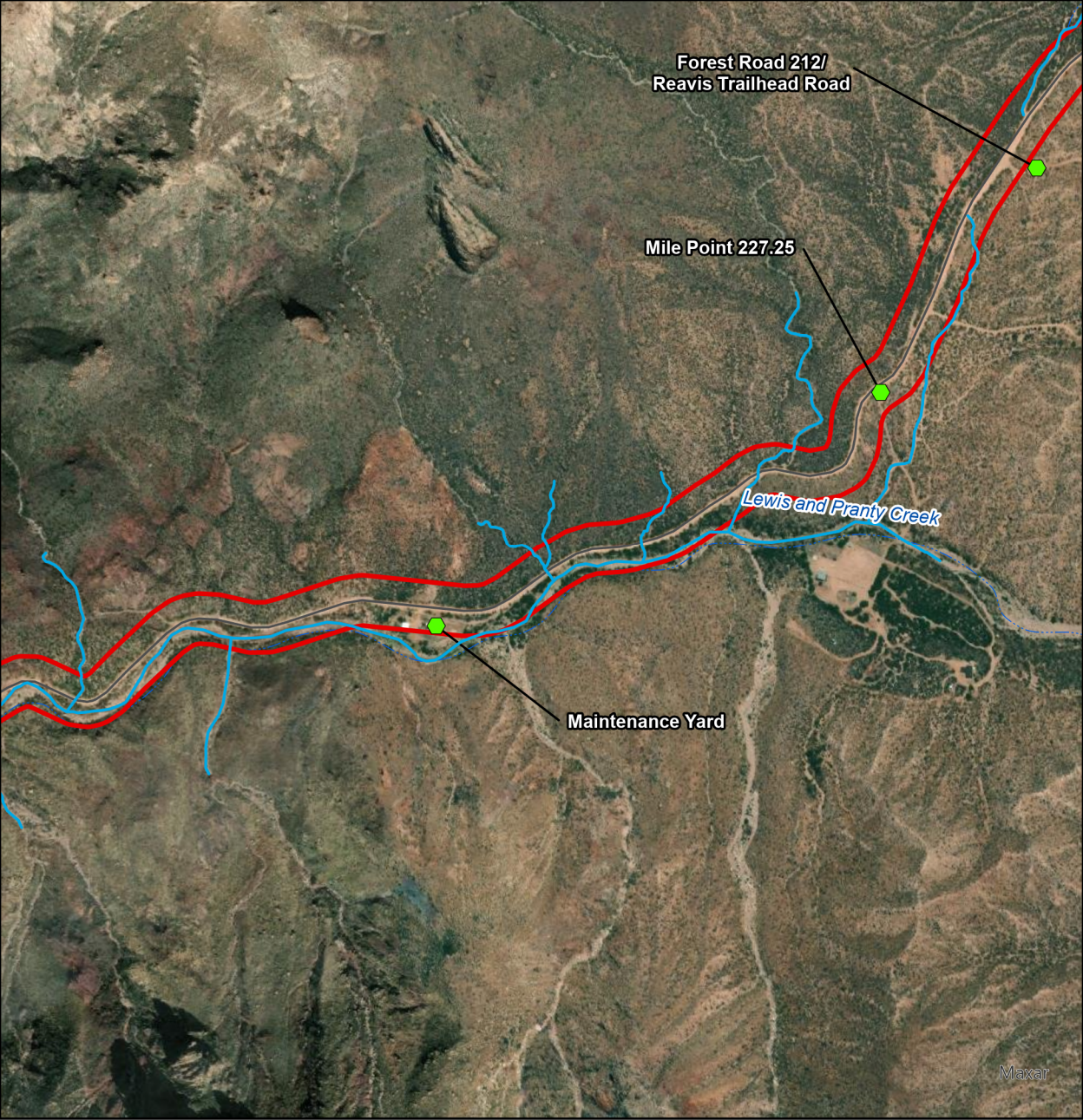
Source: Aerial Photography, Maxar (2021)








Source: Aerial Photography, Maxar (2021)

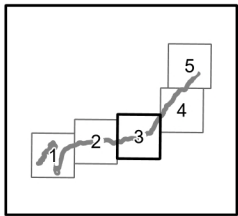


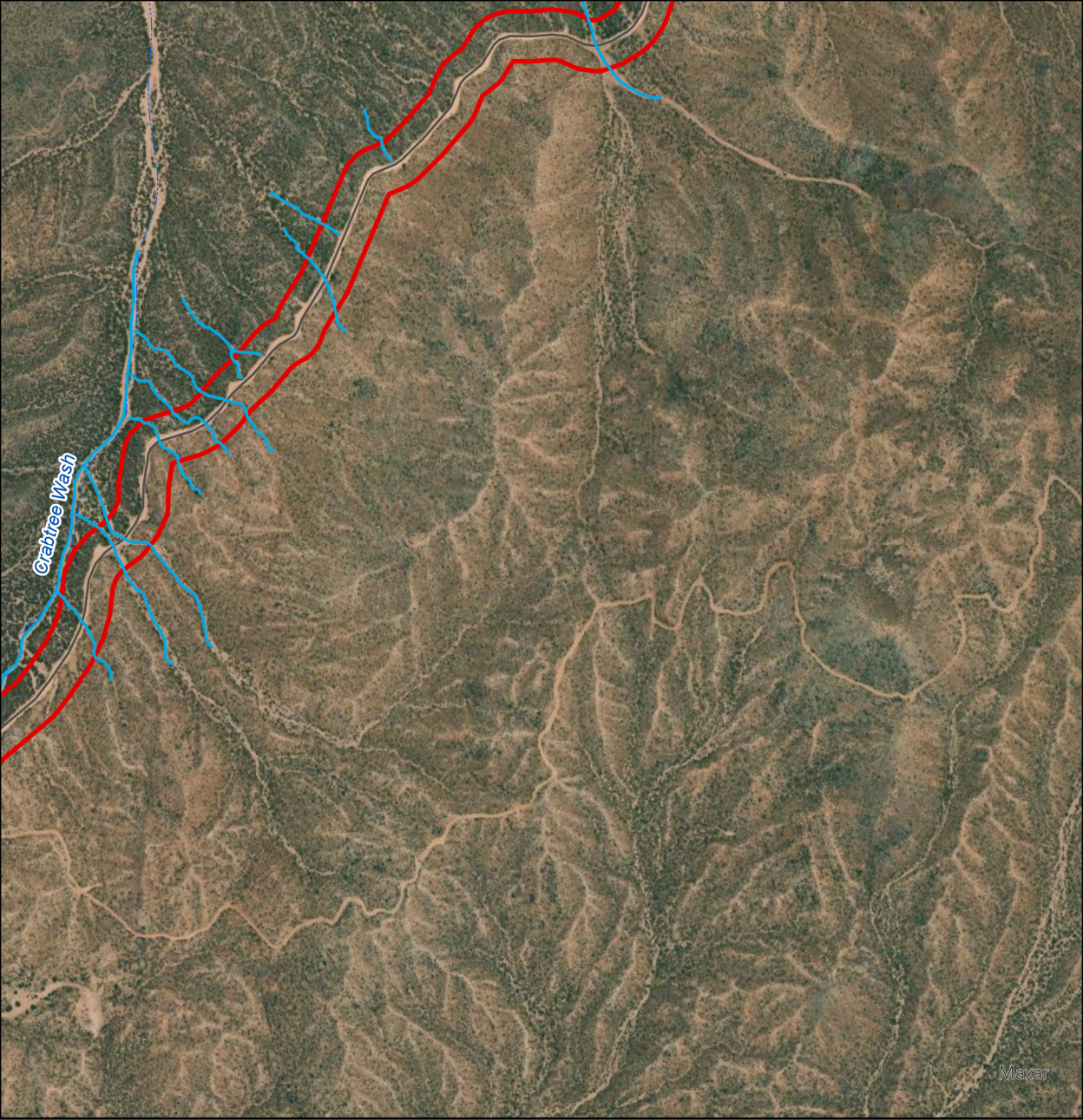


Maxar

Source: Aerial Photography, Maxar (2021)

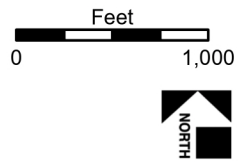
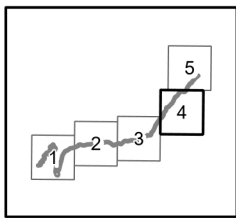
- Key**
-  Review Area
 -  Potential Waters of the US
 -  Point Location

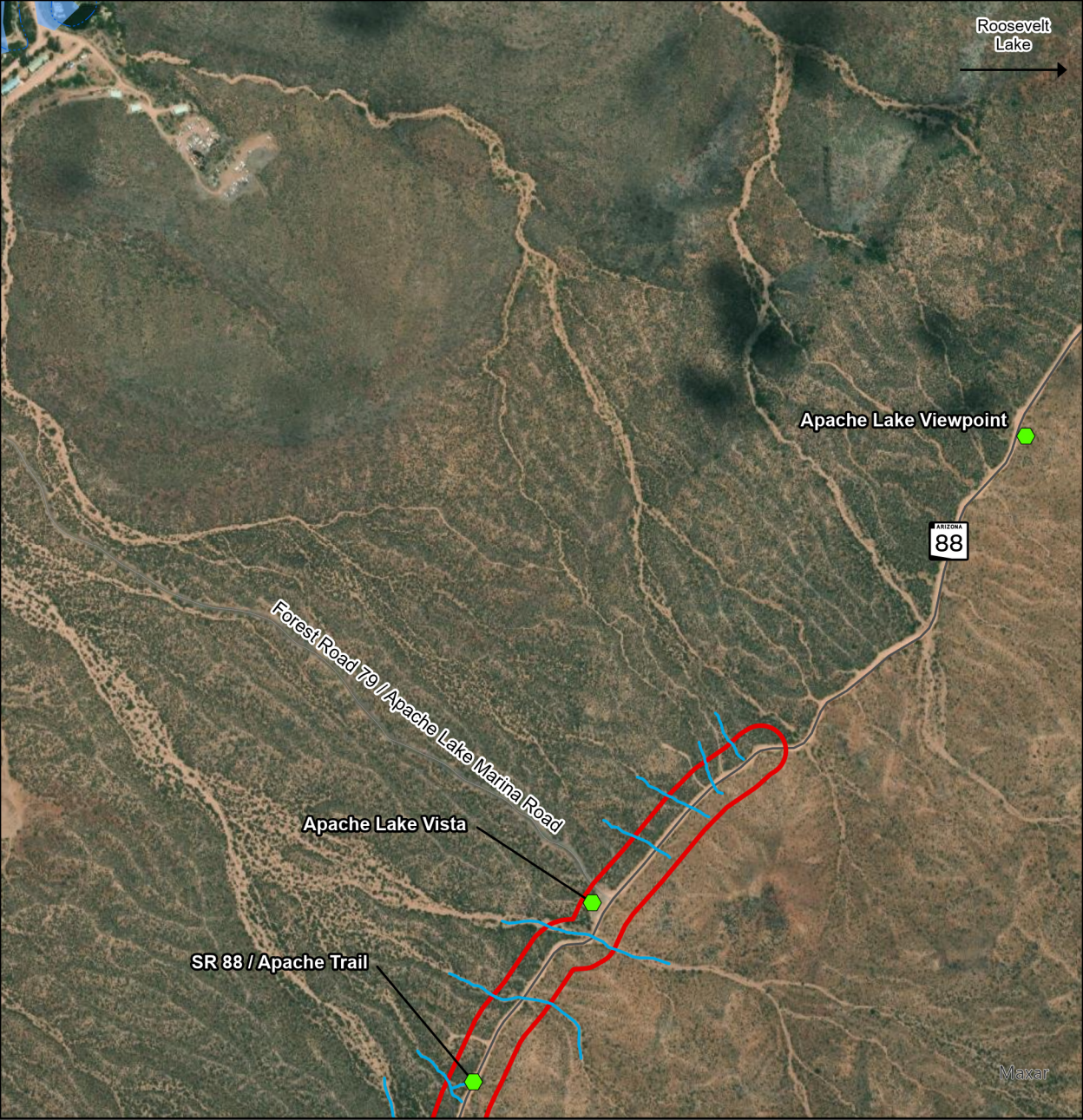




Source: Aerial Photography, Maxar (2021)




- Key**
- Review Area
 - Potential Waters of the US
 - Point Location

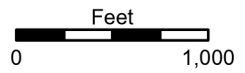
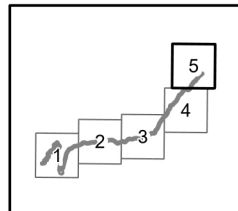




Source: Aerial Photography, Maxar (2021)

Key

-  Review Area
-  Potential Waters of the US
-  Point Location



Attachment C
Photographs

Project Location Photographs



Photograph 1. Overview of the Lewis and Pranty Creek bridge at MP 224.60.



Photograph 2. Facing upstream Lewis and Pranty Creek from the Lewis and Pranty Creek bridge.



Photograph 3. Overview of the Fish Creek bridge at MP 223.5.



Photograph 4. View of the cliffs surrounding Fish Creek Canyon.



Photograph 5. View upstream at the Fish Creek bridge.



Photograph 6. View downstream at the Fish Creek bridge.



Photograph 7. View facing west from the Fish Creek Bridge.



Photograph 8. View of bighorn sheep near the Fish Creek Bridge.



Photograph 9. View of the impasse on Fish Hill at MP 223.3 due to rockslide.



Photograph 10. View of the painted guardrail along SR 88 on Fish Creek Hill.



Photograph 11. View facing east from Fish Creek Hill towards the Lewis and Pranty Bridge.



Photograph 12. View from Apache Lake Vista facing northwest.



Photograph 13. One of the many concrete structures observed.



Photograph 14. One of the many concrete structures observed.

Attachment D Species Lists

Arizona Environmental Online Review Tool Report



Arizona Game and Fish Department Mission

To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:

F0494 Apache Trail

User Project Number:

F0494 Apache Trail DCR and EO

Project Description:

DCR and EO to evaluate reopening SR 88.

Project Type:

Transportation & Infrastructure, Roadway Maintenance (including staging areas), Maintenance of existing roadway facilities

Contact Person:

Justin White

Organization:

ADOT

On Behalf Of:

ADOT

Project ID:

HGIS-18647

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. HDMS data contains information about species occurrences that have actually been reported to the Department. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. Arizona Wildlife Conservation Strategy (AWCS), specifically Species of Greatest Conservation Need (SGCN), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

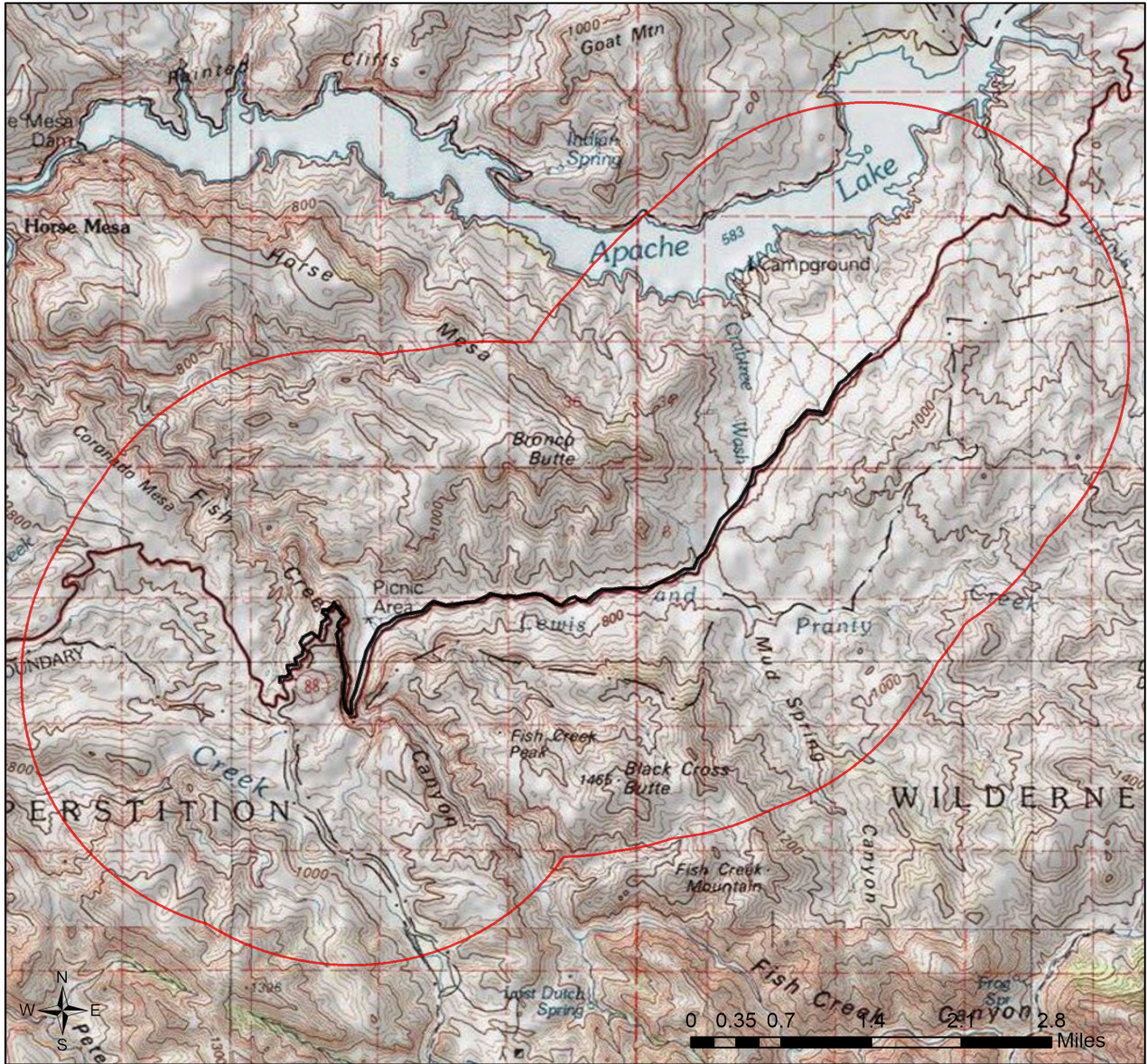
Locations Accuracy Disclaimer:



Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. Recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. Further coordination with the Department requires the submittal of this Environmental Review Report with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send requests to:
Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366
Or
PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

F0494 Apache Trail USA Topo Basemap With Locator Map



-  Buffered Project Boundary
-  Project Boundary

Project Size (acres): 61.47

Lat/Long (DD): 33.5382 / -111.2770

County(s): Maricopa

AGFD Region(s): Mesa

Township/Range(s): T2N, R10E; T2N, R11E; T3N, R11E

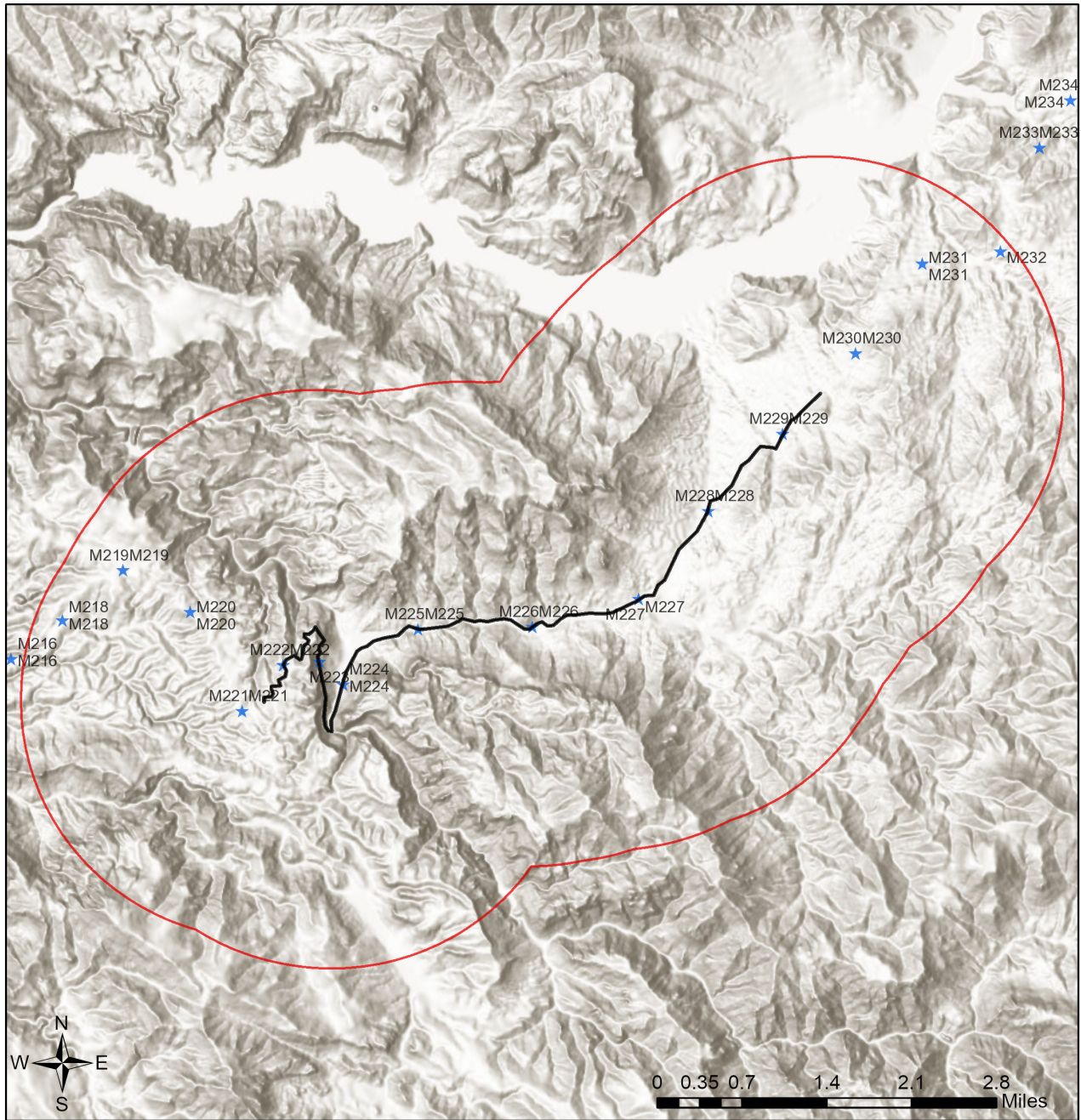
USGS Quad(s): HORSE MESA DAM; PINYON MOUNTAIN

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community



F0494 Apache Trail

Web Map As Submitted By User

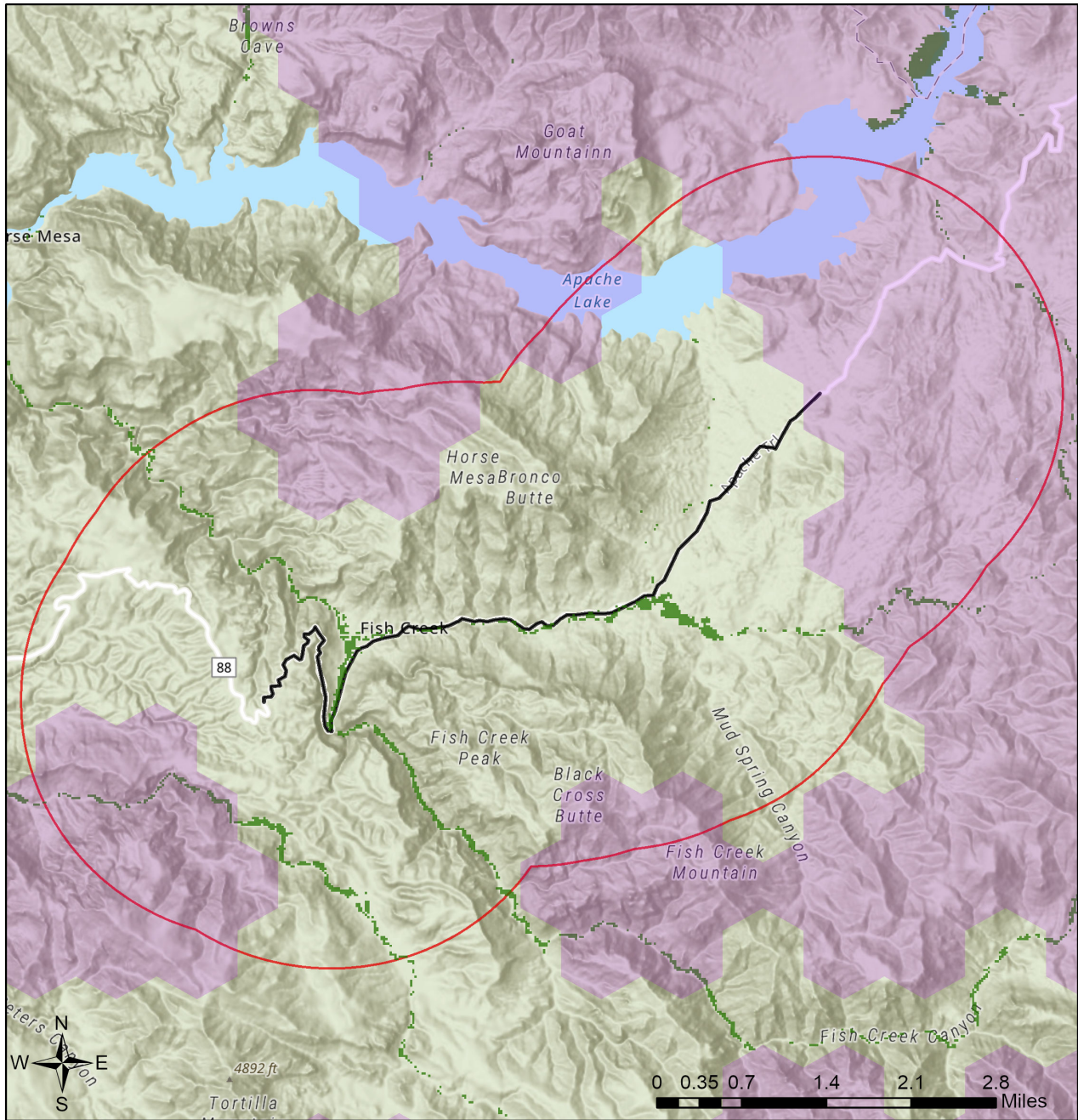


- ★ Milepost
- ▭ Buffered Project Boundary
- ▭ Project Boundary

Project Size (acres): 61.47
Lat/Long (DD): 33.5382 / -111.2770
County(s): Maricopa
AGFD Region(s): Mesa
Township/Range(s): T2N, R10E; T2N, R11E; T3N, R11E
USGS Quad(s): HORSE MESA DAM; PINYON MOUNTAIN

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

F0494 Apache Trail Important Areas

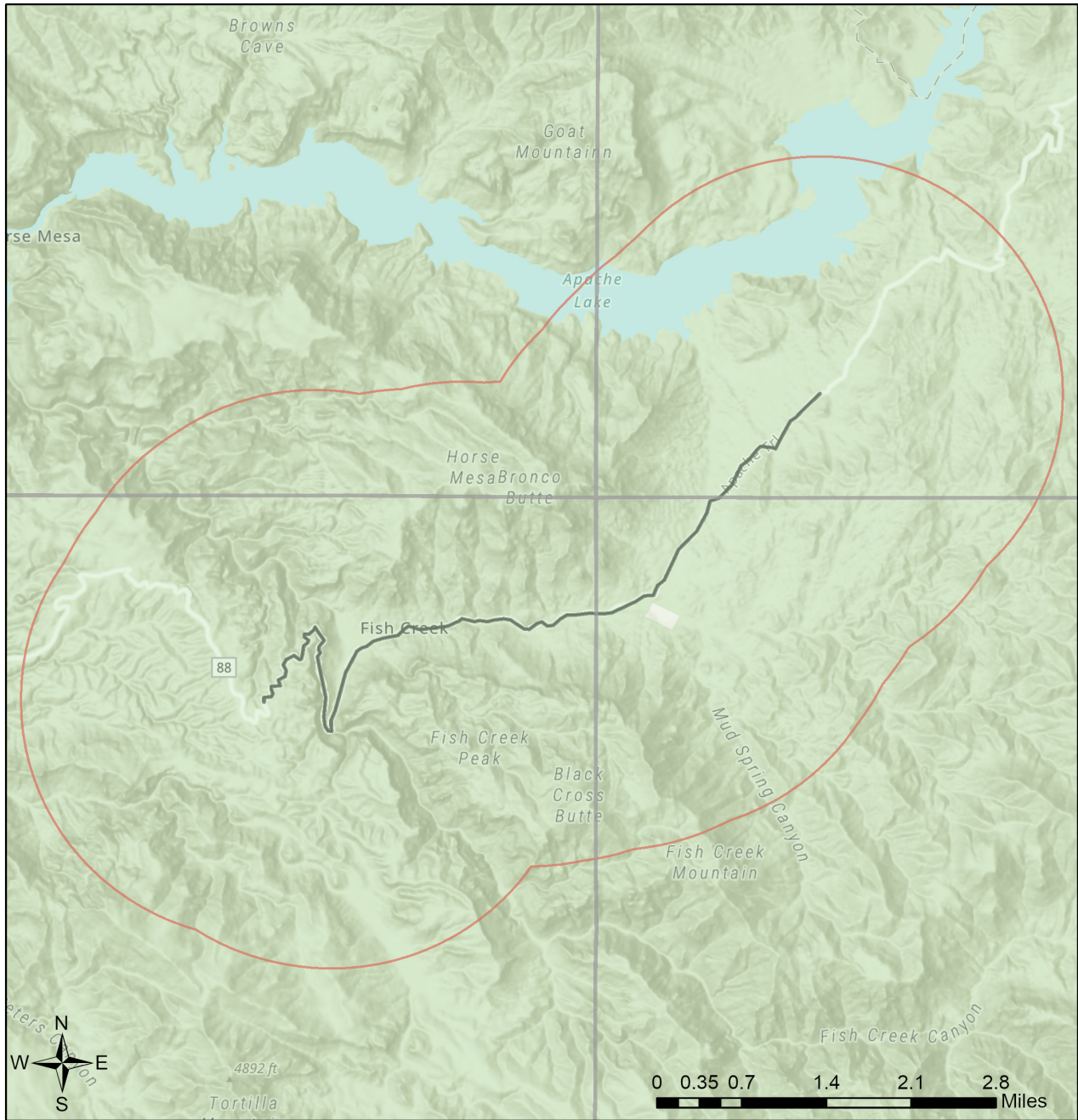


- Buffered Project Boundary
- Project Boundary
- Important Bird Areas
- Critical Habitat
- Pinal County Riparian
- Important Connectivity Zones
- Wildlife Connectivity

Project Size (acres): 61.47
 Lat/Long (DD): 33.5382 / -111.2770
 County(s): Maricopa
 AGFD Region(s): Mesa
 Township/Range(s): T2N, R10E; T2N, R11E; T3N, R11E
 USGS Quad(s): HORSE MESA DAM; PINYON MOUNTAIN

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
 Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

F0494 Apache Trail Township/Ranges and Land Ownership



- | | |
|---|--|
| Buffered Project Boundary | National Park/Mon. |
| Project Boundary | Private |
| AZ Game & Fish Dept. | State & Regional Parks |
| BLM | State Trust |
| BOR | US Forest Service |
| Indian Res. | Wildlife Area/Refuge |
| Military | Township/Ranges |
| Mixed/Other | |

Project Size (acres): 61.47
 Lat/Long (DD): 33.5382 / -111.2770
 County(s): Maricopa
 AGFD Region(s): Mesa
 Township/Range(s): T2N, R10E; T2N, R11E; T3N, R11E
 USGS Quad(s): HORSE MESA DAM; PINYON MOUNTAIN

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
 Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 2 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Abutilon parishii	Pima Indian Mallow	SC	S	S	SR	
Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC		S		
Aquila chrysaetos	Golden Eagle	BGA		S		2
Empidonax traillii extimus	Southwestern Willow Flycatcher	LE				1
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1
Haliaeetus leucocephalus (wintering pop.)	Bald Eagle - Winter Population	SC, BGA	S	S		
Haliaeetus leucocephalus pop. 3	Bald Eagle - Sonoran Desert Population	SC, BGA	S	S		
Lithobates yavapaiensis	Lowland Leopard Frog	SC	S	S		1
Mabrya acerifolia	Mapleleaf False Snapdragon		S			

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Fish Creek (Salt River-Apache, Canyon, and Saguaro Lake)	Conservation Opportunity Area					
Important Connectivity Zone	Wildlife Connectivity					
Riparian Area	Riparian Area					
Superstition Mtns - Mazatzal Mtns	Maricopa County Wildlife Movement Area - Landscape					

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/>

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Accipiter gentilis	Northern Goshawk	SC	S	S		2
Agosia chrysogaster	Longfin Dace	SC		S		2
Ammospermophilus harrisii	Harris' Antelope Squirrel					
Anaxyrus microscaphus	Arizona Toad	SC		S		2
Anthus spragueii	Sprague's Pipit	SC				2
Aquila chrysaetos	Golden Eagle			S		2
Artemisiospiza nevadensis	Sagebrush Sparrow					
Asio otus	Long-eared Owl					2
Aspidoscelis sonorae	Sonoran Spotted Whiptail					2
Auriparus flaviceps	Verdin					2
Baeolophus ridgwayi	Juniper Titmouse					

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Buteo regalis</i>	Ferruginous Hawk	SC		S		2
<i>Buteo swainsoni</i>	Swainson's Hawk					2
<i>Buteogallus anthracinus</i>	Common Black Hawk					2
<i>Calypte costae</i>	Costa's Hummingbird					2
<i>Campylorhynchus brunneicapillus</i>	Cactus Wren					2
<i>Catharus ustulatus</i>	Swainson's Thrush					2
<i>Chaetodipus baileyi</i>	Bailey's Pocket Mouse					2
<i>Chilomeniscus stramineus</i>	Variable Sandsnake					2
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (Western DPS)					
<i>Colaptes chrysoides</i>	Gilded Flicker			S		2
<i>Coluber bilineatus</i>	Sonoran Whipsnake					2
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC	S	S		1
<i>Crotalus tigris</i>	Tiger Rattlesnake					2
<i>Cynanthus latirostris</i>	Broad-billed Hummingbird		S			2
<i>Elgaria kingii</i>	Madrean Alligator Lizard					2
<i>Empidonax wrightii</i>	Gray Flycatcher					2
<i>Eugenes fulgens</i>	Rivoli's Hummingbird					2
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat					
<i>Falco mexicanus</i>	Prairie Falcon					2
<i>Falco peregrinus anatum</i>	American Peregrine Falcon					
<i>Falco sparverius</i>	American Kestrel					2
<i>Glaucidium gnoma californicum</i>	Northern Pygmy-owl					
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1
<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay			S		2
<i>Haemorhous cassinii</i>	Cassin's Finch					2
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC	S	S		1
<i>Heloderma suspectum</i>	Gila Monster					1
<i>Icterus bullockii</i>	Bullock's Oriole					2
<i>Icterus cucullatus</i>	Hooded Oriole					2
<i>Incilius alvarius</i>	Sonoran Desert Toad					2
<i>Kinosternon sonoriense sonoriense</i>	Desert Mud Turtle					
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SC				2
<i>Lasiurus blossevillii</i>	Western Red Bat		S			2
<i>Lasiurus cinereus</i>	Hoary Bat					2
<i>Lasiurus xanthinus</i>	Western Yellow Bat		S			2
<i>Lithobates pipiens</i>	Northern Leopard Frog		S	S		1
<i>Lithobates yavapaiensis</i>	Lowland Leopard Frog	SC	S	S		1
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC		S		2
<i>Megascops kennicottii</i>	Western Screech-owl					

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Melanerpes uropygialis	Gila Woodpecker					2
Melospiza lincolni	Lincoln's Sparrow					2
Melospiza aberti	Abert's Towhee		S			2
Micrathene whitneyi	Elf Owl					
Micruroides euryxanthus	Sonoran Coralsnake					2
Myadestes townsendi	Townsend's Solitaire					2
Myotis auriculus	Southwestern Myotis					2
Myotis thysanodes	Fringed Myotis	SC				2
Myotis velifer	Cave Myotis	SC		S		2
Myotis yumanensis	Yuma Myotis	SC				2
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					2
Nyctinomops macrotis	Big Free-tailed Bat	SC				2
Parabuteo unicinctus	Harris's Hawk					2
Passerculus sandwichensis	Savannah Sparrow					2
Perognathus amplus	Arizona Pocket Mouse					2
Phrynosoma solare	Regal Horned Lizard					2
Phyllorhynchus browni	Saddled Leaf-nosed Snake					2
Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				1
Poocetes gramineus	Vesper Sparrow					2
Setophaga nigrescens	Black-throated Gray Warbler					2
Sonorella ashmuni	Richinbar Talussnail					2
Spizella breweri	Brewer's Sparrow					2
Strix occidentalis lucida	Mexican Spotted Owl	LT				1
Tadarida brasiliensis	Brazilian Free-tailed Bat					
Toxostoma bendirei	Bendire's Thrasher					2
Troglodytes pacificus	Pacific Wren					2
Vireo vicinior	Gray Vireo					
Xantusia bezyi	Bezy's Night Lizard					

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					
Odocoileus hemionus	Mule Deer					
Odocoileus virginianus	White-tailed Deer					
Ovis canadensis mexicana	Mexicana Desert Bighorn Sheep					
Patagioenas fasciata	Band-tailed Pigeon					
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Zenaida asiatica	White-winged Dove					
Zenaida macroura	Mourning Dove					

Project Type: Transportation & Infrastructure, Roadway Maintenance (including staging areas), Maintenance of existing roadway facilities

Project Type Recommendations:

Minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects and pathogens. Precautions should be taken to wash and/or decontaminate all equipment utilized in the project activities before entering and leaving the site. See the Arizona Department of Agriculture website for a list of prohibited and restricted noxious weeds at <https://www.invasivespeciesinfo.gov/unitedstates/az.shtml> and the Arizona Native Plant Society <https://aznps.com/invas> for recommendations on how to control. To view a list of documented invasive species or to report invasive species in or near your project area visit iMapInvasives - a national cloud-based application for tracking and managing invasive species at <https://imap.natureserve.org/imap/services/page/map.html>.

- To build a list: zoom to your area of interest, use the identify/measure tool to draw a polygon around your area of interest, and select "See What's Here" for a list of reported species. To export the list, you must have an account and be logged in. You can then use the export tool to draw a boundary and export the records in a csv file.

Follow manufacturer's recommended application guidelines for all chemical treatments. The U.S. Fish and Wildlife Service, Integrated Pest Management Group has a reference document that serves as their pesticide recommendations for protecting wildlife and fisheries resources, titled "Reducing Risks to Pollinators from Pest Control", https://www.fws.gov/sites/default/files/documents/Reducing_Risks_to_Pollinators_from_Pest_Control_factsheet.pdf. The Department recommends that direct or indirect impacts to sensitive species and their forage base from the application of chemical pesticides or herbicides be considered carefully.

Project Location and/or Species Recommendations:

HDMS records indicate that one or more native plants listed on the **Arizona Native Plant Law and Antiquities Act** have been documented within the vicinity of your project area. Please contact:

Arizona Department of Agriculture
1688 W Adams St.
Phoenix, AZ 85007
Phone: 602.542.4373

<https://agriculture.az.gov/sites/default/files/Native%20Plant%20Rules%20-%20AZ%20Dept%20of%20Ag.pdf> starts on page 44

Analysis indicates that your project is located in the vicinity of an identified Conservation Opportunity Area (COA). While there are many areas in Arizona that present abundant conservation opportunities, COAs are specific areas on the landscape that the Department identified as having the greatest potential for conservation efforts. COAs were identified using species and habitat data, the presence of unique landscape features, and Departmental expertise. COAs range in size, scope, and focal species and/or habitats and are strictly a non-regulatory conservation tool for the public and our conservation partners to consider. For more information regarding this particular COA near your project area and the Department's suggestions for potential conservation efforts, please visit the COA profile at <https://awcs.azgfd.com/conservation-opportunity-areas>.

Analysis indicates that your project is located in the vicinity of an identified **wildlife habitat connectivity feature**. The **County-level Stakeholder Assessments** contain five categories of data (Barrier/Development, Wildlife Crossing Area, Wildlife Movement Area- Diffuse, Wildlife movement Area- Landscape, Wildlife Movement Area- Riparian/Washes) that provide a context of select anthropogenic barriers, and potential connectivity. The reports provide recommendations for opportunities to preserve or enhance permeability. Project planning and implementation efforts should focus on maintaining and improving opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer

to: <https://www.azgfd.com/wildlife/planning/habitatconnectivity/identifying-corridors/>.

Please contact the Project Evaluation Program (pep@azgfd.gov) for specific project recommendations.

HDMS records indicate that one or more **Listed, Proposed, or Candidate** species or **Critical Habitat** (Designated or Proposed) have been documented in the vicinity of your project. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at <https://www.fws.gov/office/arizona-ecological-services> or:

Phoenix Main Office

9828 North 31st Avenue #C3
Phoenix, AZ 85051-2517
Phone: 602-242-0210
Fax: 602-242-2513

Tucson Sub-Office

201 N. Bonita Suite 141
Tucson, AZ 85745
Phone: 520-670-6144
Fax: 520-670-6155

Flagstaff Sub-Office

SW Forest Science Complex
2500 S. Pine Knoll Dr.
Flagstaff, AZ 86001
Phone: 928-556-2157
Fax: 928-556-2121

HDMS records indicate that **Peregrine Falcons** have been documented within the vicinity of your project area. Please review the Peregrine Falcon Management Guidelines at: <https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/peregrineFalconConservGuidelines.pdf>.

This review has identified **riparian areas** within the vicinity of your project. During the planning stage of your project, avoid, minimize, or mitigate any potential impacts to riparian areas identified in this report. Riparian areas play an important role in maintaining the functional integrity of the landscape, primarily by acting as natural drainages that convey water through an area, thereby reducing flood events. In addition, riparian areas provide important movement corridors and habitat for fish and wildlife. Riparian areas are channels that contain water year-round or at least part of the year. Riparian areas also include those channels which are dry most of the year, but may contain or convey water following rain events. All types of riparian areas offer vital habitats, resources, and movement corridors for wildlife. The Pinal County Comprehensive Plan (i.e. policies 6.1.2.1 and 7.1.2.4), Open Space and Trails Master Plan, Drainage Ordinance, and Drainage Design Manual all identify riparian area considerations, guidance, and policies. Guidelines to avoid, minimize, or mitigate impacts to riparian habitat can be found

at <https://www.azgfd.com/wildlife/planning/wildlifeguidelines/>. Based on the project type entered, further consultation with the Arizona Game and Fish Department and Pinal County may be warranted.

HDMS records indicate that **Sonoran Desert Tortoise** have been documented within the vicinity of your project area.

Please review the Tortoise Handling Guidelines found at: <https://www.azgfd.com/wildlife/nongamemanagement/tortoise/>

Analysis indicates that your project is located in the vicinity of an identified **wildlife habitat connectivity feature**. The **Statewide Wildlife Connectivity Assessment's Important Connectivity Zones** (ICZs) represent general areas throughout the landscape which contribute the most to permeability of the whole landscape. ICZs may be used to help identify, in part, areas where more discrete corridor modeling ought to occur. The reports provide recommendations for opportunities to preserve or enhance permeability. Project planning and implementation efforts should focus on maintaining and improving opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer

to: https://s3.amazonaws.com/azgfd-portal-wordpress/azgfd.wp/wp-content/uploads/0001/01/23120719/ALIWCA_Final_Report_Perkl_2013_lowres.pdf.

Please contact the Project Evaluation Program (pep@azgfd.gov) for specific project recommendations.





United States Department of the Interior



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

In Reply Refer To:
Project Code: 2023-0054713
Project Name: F0494 Apache Trail DCR and EO

March 10, 2023

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

To Whom It May Concern:

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect federally listed species and/or designated critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If the Federal action agency determines that listed species or critical habitat *may be affected* by a federally funded, permitted or authorized activity, the agency must consult with us pursuant to 50 CFR 402. Note that a "may affect" determination includes effects that may not be adverse and that may be beneficial, insignificant, or discountable. An effect exists even if only one individual

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

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

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

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

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

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

[wildlife-refuge-system](#) to locate the refuge you would be working in or around.

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

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

We appreciate your concern for threatened and endangered species. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If we may be of further assistance, please contact our Flagstaff office at 928/556-2157 for projects in northern Arizona, our general Phoenix number 602/242-0210 for central Arizona, or 520/670-6144 for projects in southern Arizona.

Sincerely,
/s/

Heather Whitlaw
Field Supervisor
Attachment

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

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

This species list is provided by:

Arizona Ecological Services Field Office

9828 North 31st Ave

#c3

Phoenix, AZ 85051-2517

(602) 242-0210

PROJECT SUMMARY

Project Code: 2023-0054713
Project Name: F0494 Apache Trail DCR and EO
Project Type: Road/Hwy - Maintenance/Modification
Project Description: DCR and EO to evaluate reopening SR 88
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@33.54553185,-111.2584862357391,14z>



Counties: Maricopa County, Arizona

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

MAMMALS

NAME	STATUS
Mexican Wolf <i>Canis lupus baileyi</i> Population: U.S.A. (portions of AZ and NM)see 17.84(k) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3916	Experimental Population, Non- Essential
Ocelot <i>Leopardus (=Felis) pardalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4474	Endangered

BIRDS

NAME	STATUS
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Mexican Spotted Owl <i>Strix occidentalis lucida</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened
Yuma Ridgway"s Rail <i>Rallus obsoletus yumanensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3505	Endangered

FISHES

NAME	STATUS
Gila Topminnow (incl. Yaqui) <i>Poeciliopsis occidentalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1116	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Jul 31
Black-chinned Sparrow <i>Spizella atrogularis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31

NAME	BREEDING SEASON
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

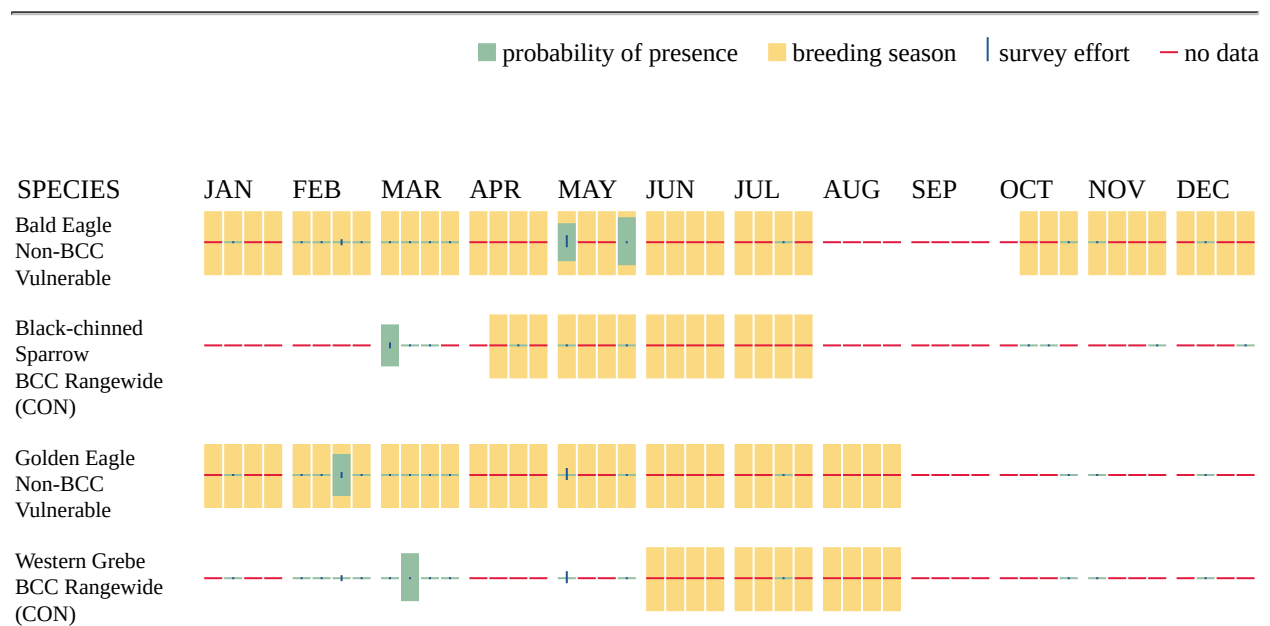
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

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

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Arizona Department of Transportation

Name: Justin White

Address: 1959 South Woodlands Village Blvd Flagstaff, AZ 86001

City: Flagstaff

State: AZ

Zip: 86001

Email: jwhite@azdot.gov

Phone: 6023993233
