

Biological Assessment/Biological Evaluation for The Red Bluff Uranium Mine Site Reclamation Project



Prepared for:
ENTACT, LLC
101 Old Underwood Rd, Bldg. J
La Porte, TX 77571

Prepared by:
Sundance Consultants, LLC
10400 Academy Rd NE, Suite 200
Albuquerque, NM 87111

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List of Acronyms

ac	acre
APE	area of potential effect
BA/BE	Biological Assessment/Biological Evaluation
BISON-M	Biota Information System of New Mexico
CFR	Code of Federal Regulations
cm	centimeter
CWA	Clean Water Act
ECOS	Environmental Conservation Online System
ESA	Endangered Species Act
FR	Federal Register
ft	feet
ha	hectare
in.	inch
IPaC	Information for Planning and Consultation
km	kilometer
m	meter
MBTA	Migratory Bird Treaty Act
mi	mile
NM 605	New Mexico State Road 605
NMDA	New Mexico Department of Agriculture
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMEMERD	New Mexico Energy Minerals and Natural Resources Division
NMRPTC	New Mexico Rare Plant Technical Council
NMWD	New Mexico Wildlife Department
NPS	National Park Service
NWI	National Wetlands Inventory
NWPR	Navigable Waters Protection Rule
OHWM	ordinary high-water mark
SLO	State Land Office
TES	Threatened, Endangered, and Sensitive
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife
USGS	U.S. Geological Survey
WOTUS	Waters of the United States

1 Summary

1.1 Introduction

The purpose of this Biological Assessment/Biological Evaluation (BA/BE) is to determine to what extent the Project activities associated with the reclamation of the former uranium mining site (Red Bluff) will affect federally listed threatened, endangered, candidate, or proposed species or their critical habitat, and state-listed species. The work is being funded under the New Mexico Environment Department (NMED) Abandoned Uranium Mine Cleanup program in the Grants Mining District. Surveys for these species were conducted across the Project Area in September and October 2025. This report synthesizes the findings from the surveys with current, region-specific scientific information to determine the potential impacts on these species resulting from the Project.

The Proposed Action is located at the Red Bluff site, 19.3 kilometers (km) (12 miles [mi]) north of Milan, New Mexico (U.S. Geological Survey [USGS] Dos Lomas 7.5-minute quadrangle, Sections 30, 31, and 36 Township 13 N, Range 10 W). The proposed area of potential effect (APE) or Project Area consists of approximately 77.9 ha (192.5 ac), of mostly private land with small areas managed by the New Mexico State Land Office (SLO) and Bureau of Land Management (BLM). The former uranium mine site is part of the Ambrosia Lake mining district and was last operated in 1964. The Proposed Action as recommended by NMED consists of removing waste with elevated radioactivity and reclaiming unstable pit walls.

Section 7(a)(1) of the Endangered Species Act (ESA) directs all federal agencies to carry out programs for the conservation of threatened and endangered species. The project does not have a federal nexus. The program is state funded and no federal permits were required to conduct the Proposed Action. However, the lead agency, NMED, intends to ensure that any actions to meet program objectives do not impact federal or state species that are protected under the State of New Mexico's Wildlife Conservation Act (17-2-37 New Mexico Statutes Annotated 1978 [NMSA 1978]).

This BA/BE was prepared in accordance with legal requirements set forth under Section 7 of the ESA of 1973, as amended (16 United States Code [U.S.C.] 1536, et seq.).

2 Regulatory Framework

2.1 Endangered Species Act of 1973 (as amended)

Section 7(a)(2) of the ESA requires federal agencies to ensure that any actions authorized, funded, or carried out by the agency are not likely to jeopardize the continued existence of any threatened, endangered, or proposed species or to adversely modify critical habitat. The NMED is completing its due diligence to ensure no adverse impacts occur from the proposed action that potentially affect federally threatened, endangered, and proposed species. Background research for this analysis was made by consulting the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website.

2.2 Wetlands and Floodplains under the Clean Water Act

Section 404 of the Clean Water Act (CWA) (33 Code of Federal Regulations [CFR] Parts 320-332) authorizes the U.S. Army Corps of Engineers (USACE) to issue permits for the discharge of dredged or fill material into jurisdictional waters, including wetlands.

Under Executive Orders 11988 and 11990, federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance or mitigation to ensure that there would be no net loss of function and value for these systems. NMED is completing its due diligence to ensure no adverse impacts occur from the proposed action that potentially affect any wetlands federally designated as Waters of the United States (WOTUS).

Federal jurisdiction under the CWA is limited to WOTUS. The WOTUS definition indicates where the federal government can require permits to protect aquatic resources such as rivers, streams, lakes, and wetlands. Legal challenges to the Clean Water Rule and the Navigable Waters Protection Rule (NWPR) and the resulting May 25, 2023, court decision in the case of *Sackett v. EPA* found that CWA jurisdiction extends to “only those relatively permanent, standing or continuously flowing bodies of water ‘forming geographic[al] features’” such as streams, oceans, rivers, and lakes. The Court also held that the CWA only applies to wetlands that are WOTUS “in their own right,” meaning those “that are as a practical matter indistinguishable from waters of the United States, such that it is difficult to determine where the water ends, and the wetland begins.” This decision significantly narrowed the scope of waters subject to federal jurisdiction under the CWA by limiting protections for wetlands to only those that have a continuous surface connection to traditional navigable waters.

2.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703) prohibits the killing, capture, “take,” or otherwise harming of birds listed as migratory. “Take” means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect. “Migratory bird” means any bird, whatever its origin and whether or not raised in captivity, which belongs to a species listed in 50 CFR 10.13, or which is a mutation or hybrid of any such species, including any part, nest, or egg, or any product composed in whole or in part of any such bird, nest, or egg thereof.

2.4 State of New Mexico

Under the Wildlife Conservation Act, it is unlawful to “take” species determined to be endangered within the state as set forth by regulations of the State Game Commission. From Section 3(18) of the ESA, the term “take” means to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” As used in the Wildlife Conservation Act (17-2-37 to 17-2-46 NMSA 1978), “take” or “taking” means to harass, hunt, capture, or kill any wildlife or attempt to do so.

The New Mexico Wildlife Conservation Act has designated certain wildlife species as threatened or endangered. The New Mexico Department of Game and Fish (NMDGF) has developed a list of these species and a plan of recovery for each. The online resource for this list (BISON-M: Biota Information System of New Mexico) was utilized while compiling a list of target species that could occur in the Project Area. Other sources of information used for this analysis included New Mexico Energy, Minerals and Natural Resources Department state endangered plant species list, the New Mexico Rare Plant website, Threatened and Endangered Species of New Mexico 2024 Biennial Review, and the 2025 State Wildlife Action Plan for New Mexico.

3 Description of the Proposed Project

3.1 The Project Area

The Red Bluff site is located approximately 3 miles southwest of the junction of New Mexico State Highways 509 and 605 (334). The Site is 0.5 mile west of NM 605 (334) on Private and New Mexico State Trust Land (Figure 1).

The Project Area is located approximately 19.3 km (12 mi) northwest of the city of Milan in McKinley County, New Mexico. The northern and a portion of the eastern boundary run along an existing fence line that parallels County Road 23. The western boundary is an existing fence line that extends north and south. The southern portion has a natural boundary of cliffs. An existing fence separates the state land from private land (Appendix A Figure 2).

The Project Area contains approximately 50 rock piles due north of the excavation with an estimated volume of 1,500 cubic yards (Souder, Miller & Associates, 2008). These piles and the mining activity are

all on private land. As noted below, there are several excavations that may or may not be associated with the uranium mine that now collect runoff and have resulted in shallow sand canyons with steep walls.

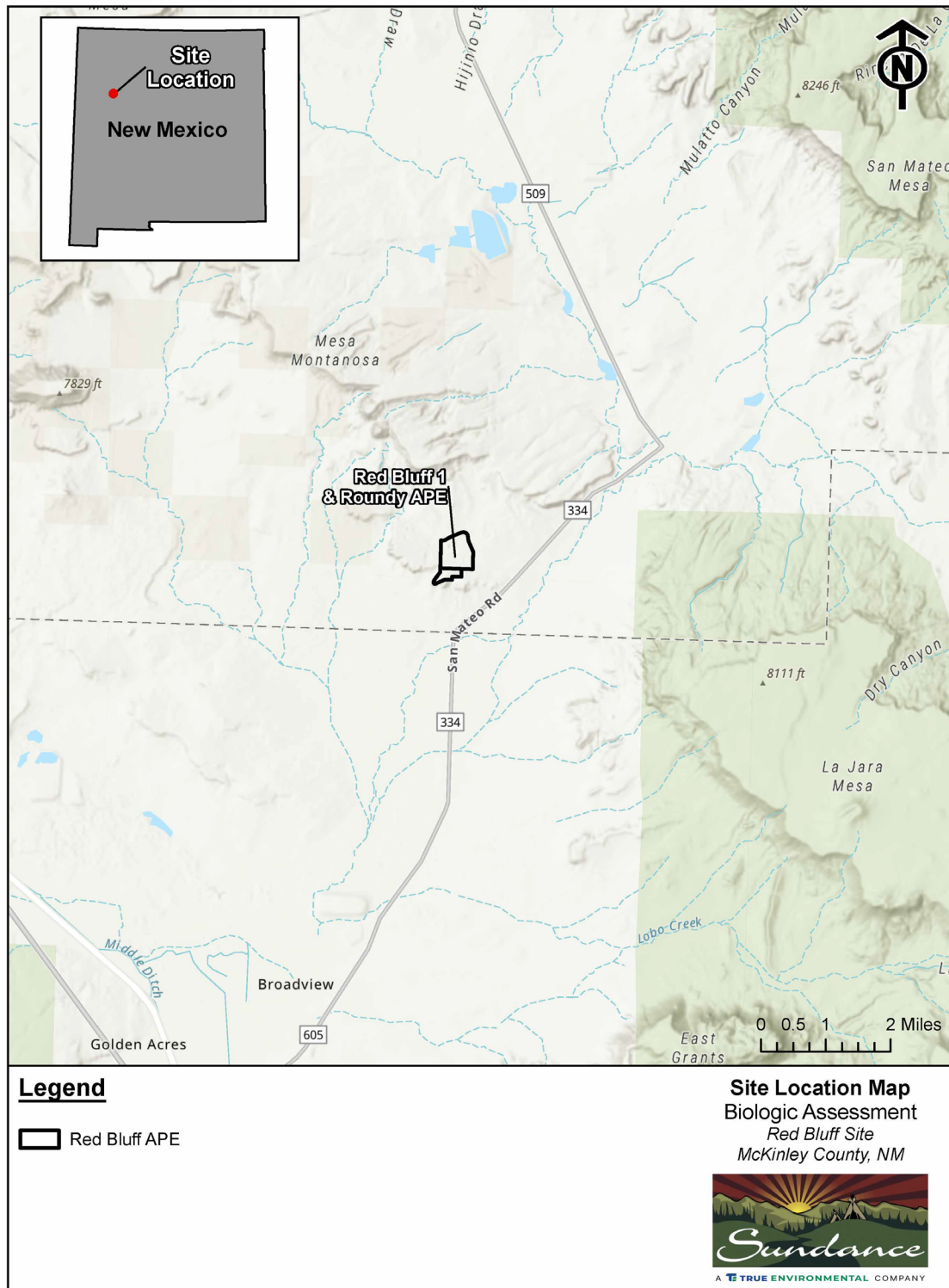


Figure 1. Project Location

4 Environmental Baseline Conditions

Biological surveys for Threatened, Endangered, and Sensitive (TES) species, habitat and other environmental conditions were conducted on September 29, 2025, and October 22, 2025. Surveys employed meandering transects that covered nearly the entire extent of the Project Area with focused surveys conducted of diverse features such as wetlands, drainages, and areas of higher habitat diversity such as tree or shrub cover. Photo documentation was recorded of representative plants and habitats. All incidental wildlife encounters were recorded, including signs of wildlife presence such as tracks, scat, burrows, and nests. Species lists, including all vascular plants and wildlife observations, were compiled and can be found in Appendix B, Tables 4 and 5. Findings from the biological surveys have been incorporated into the effects analysis and effects determination for all federally listed species.

Fieldwork consisted of the following specific tasks:

- A general botanical survey with an inventory of plant species
- Documentation and mapping of invasive/noxious weed infestations
- Documentation of all evidence (e.g., nests) of fauna or observed fauna (including raptors and statutory migratory birds) encountered during fieldwork
- Evaluation of habitat types and wildlife corridors to determine the potential for special status species to occur locally.

Visual inspection using binoculars was completed for the presence of bird or nests. Juniper and other suitable nesting substrate were also checked within the Project Area for the presence of old nests. Photographs taken during the field survey are provided in Appendix A.

4.1 Target Species

A pre-field review of target species was conducted, utilizing the species list assimilated from the Biota Information System from NMDGF, the USFWS Environmental Conservation Online System (ECOS), and the USFWS IPaC site. Target species for the surveys included all federal and state flora and fauna that had the potential to occur in the Project Area, based on their ecology, range, and distribution. These reviews concluded that the area had no viable habitat, including designated critical habitat for most of the target species.

4.2 Geology and Soils

Geologically, the Project Area is comprised of upper and middle Jurassic rocks (Appendix A, Figure 3). that are widely distributed and include sedimentary, igneous, and metamorphic rocks. Middle Jurassic rock has a range of shallow marine, fluvial, and deltaic settings with significant carbonate and clastic sedimentation. In the western United States, upper Jurassic rock, particularly the Morrison Formation, is a clastic deposit of lacustrine and fluvial mudstone, siltstone, sandstone, and conglomerate (Tang, 2025). The site is relatively flat with a few small hills. There were several drainage areas that showed significant erosion. The southernmost portion of the site had a granite rock out crops and a sandstone cliff face (Appendix C, Photo 1).

Four soil classifications are present at the Project Area: Penistaja-Tintero complex, Todest fine sandy loam, Uranium mined lands, and rock outcrop-vessilla complex (Appendix A, Figure 4). The Todest series of soils consist of moderately deep to limestone, well drained, moderately permeable soils on dip slopes of cuestras (USDA, 2025b) with slopes of 2 to 8 % (Table 1). Penistaja series consists of very deep, well drained, moderately permeable soil that is formed in mixed alluvium, fan alluvium, slope alluvium and eolian material derived from sandstone and shale. Penistaja soils are found on mesas, plateaus, hills, cuestras, and bajadas (USDA, 2025a) and found on 1 to 10 % slopes. Vessilla series consists of shallow and very shallow, well drained, moderately rapid permeable soils that formed in eolian and alluvial material weathered from sandstone. Vessilla soils are on narrow ridges, hills, breaks and mesas of bedrock-

controlled landscapes (USDA, 2025c) where slopes range from 35 to 70 %. Uranium mine lands make up 53.33 acres of the Project Area (Table 1).

The site displays notable erosional features consisting of drainages that may have been excavated during mining operations, which now receive runoff from surrounding terrain. Debris piles adjacent to these drainages were an indication of past disturbance. Periodic heavy runoff has eroded the sand channel walls and created shallow canyons (Appendix C, Photo 2). Runoff occasionally accumulates at low areas located at the bottom of the channels.

Table 1. Soil Units in the Project Area.

Soils Map Unit Name	Acres
Penistaja-Tintero complex, 1 to 10 % slopes	53.3
Uranium mined lands	53.4
Rock outcrop-Vessilla complex, 35 to 70 % slopes	7.6
Todest fine sandy loam, 2 to 8 % slopes	78.2

4.3 Wetlands and Water Resources

The National Wetlands Inventory (NWI) identified several ephemeral drainages in the Project Area (Table 2 and Appendix A, Figure 5). As noted, these drainages were heavily eroded from periodic runoff with low areas where water from overland flow accumulates. As noted below, none of these drainages had characteristics qualifying them as wetlands.

A wetland delineation was conducted on October 22, 2025. The week prior to sampling, a storm event deposited approximately 3 inches (in.) of precipitation, making up approximately 28% of the area's annual average cumulative precipitation. The Antecedent Precipitation Tool (USACE) identified the 90-day period prior to sampling as wetter than normal. The area consists of a 3.0 meter (m) – 6.1 m (10 – 20 feet [ft]) deep ephemeral drainage that flows into a wider depression that collects precipitation. Four other depressions independent of the riverine system are present. Though the NWI layer shows five small wetland depressions connected by an intermittent riverine system, there is no evidence of any drainage that connects the NWI wetlands as mapped (Appendix A, Figure 4). Two of the five depressions held surface water during the time of the survey, which was likely remnant from the strong storm event that occurred October 12 – 15. These two depressions were tested for wetland attributes, and they did not qualify as wetlands due to the lack of both hydric soils and hydrophytic vegetation. Flooding of these areas is not frequent enough for the former to form, and the latter consists mainly of dense stands of non-native upland and facultative upland species such as Russian thistle (*Salsola turgus*), kochia (*Bassia scoparia*) and cocklebur (*Xanthium strumarium*). Water sources in this area are likely from precipitation and are not fed by groundwater. None of the water resources surveyed and listed in Table 2 are jurisdictional under Section 404 of the CWA.

Table 2. National Wetlands Inventory

Wetland Type	NWI Category	NWI Definition	Location	Survey Results
Riverine	R4SBJ	Riverine, intermittent, streambed, intermittently flooded	Northwest to southeast corners of project area	Drainage ran from the northwest corner south for ~½ mile, did not connect with other NWI features
Palustrine	PUS1J	Palustrine, unconsolidated shore, cobble/gravel bottom, intermittently flooded	Northwest corner of Project Area	Water present, Wetland Sample Point collected, no wetland indicators detected

Wetland Type	NWI Category	NWI Definition	Location	Survey Results
Palustrine	PUS2Jx	Palustrine, Unconsolidated shore, sand bottom, intermittently flooded, excavated	Central portion of Project Area	No hydrologic indicators or hydrophytic vegetation detected
Palustrine	PUS2A	Palustrine, Unconsolidated shore, sand bottom, temporarily flooded	Central portion of Project Area	Water present, Wetland Sample Point collected, no wetland indicators detected
Palustrine	PUS1J	Palustrine, Unconsolidated shore, cobble/gravel bottom, intermittently flooded	Central portion of Project Area	No hydrologic indicators or hydrophytic vegetation detected
Palustrine	PUS2A	Palustrine, Unconsolidated shore, sand bottom, temporarily flooded	Southeast corner of Project Area	No hydrologic indicators or hydrophytic vegetation detected

4.4 Vegetation

A total of 47 plant genera and species were identified during the surveys. Due to the survey occurring late in the growing season, some plants could not be identified due to the absence of flowers or seeds. Some plants were classified by genus since the lack of flowering parts precluded the identification to species.

The vegetation showed signs of past grazing resulting in limited wildflowers and grass coverage that was sparse in some places, replaced by patches of bare soil (Appendix C, Photo 3). Vegetation consisted of mostly patches of grasses interspersed with patches of shrubs, bare soil, and trees. Dominant grass species included blue gramma (*Bouteloua gracilis*) and sand dropseed (*Sporobolus cryptandrus*). Shrub species, such as broom snakeweed (*Gutierrezia sarothrae*) and four-winged saltbush (*Atriplex caescens*) were observed throughout the Project Area. Clusters of one-seeded junipers (*Juniperus monosperma*) and a few pinyon pines (*Pinus edulis*) were observed in the slightly higher elevation of the southern portion of the Project Area (Appendix C, Photo 4).

4.4.1 Noxious Weeds

Six non- native species were observed in the Project Area: Russian thistle, dock (*Rumex triangulivalvis*), Siberian elm (*Ulmus pumila*), salt cedar (*Tamarix chinensis*), kochia (*Bassia scoparia*) and cocklebur. Russian thistle, dock, kochia, and cocklebur were concentrated in drainages and low areas (Appendix C, Photo 2). A few individual Siberian elm and salt cedar were observed scattered throughout the Project Area. Salt cedar is considered a Class C noxious weed in New Mexico (New Mexico Department of Agriculture [NMDA], 2020). Spiny cocklebur is a Class B noxious weed. Locations of all invasive species were recorded and mapped (Appendix A, Figure 6).

4.5 Wildlife

Twelve bird species were observed during the surveys (Appendix B, Table 5), including a number of songbird species that were likely fall migrants using the denser vegetation in the drainage areas. One species of mammal: least chipmunk (*Tamias minimus*) was observed, and signs of ground squirrels and kangaroo rats were also recorded around numerous burrow complexes present on the Project Area. Signs of desert cottontail (*Sylvilagus audubonii*), grey fox (*Urocyon cinereoargenteus*), and mule deer (*Odocoileus hemionus*) were observed. Three reptiles: little striped whiptail (*Aspidoscelis inornatus*), short horned lizard (*Phrynosoma douglasii*), and a rattlesnake were seen in the Project Area.

5 Threatened and Endangered Species Life History and Habitat Accounts

The following species are listed as threatened or endangered by the USFWS and according to IPAC have the potential to occur within the Project Area.

5.1 Mexican Wolf (*Canis lupus baileyi*)

5.1.1 Regulatory Status

The Mexican wolf was listed as a federally endangered species on April 28, 1976, under the ESA of 1973, as amended (80 Federal Register [FR] 2488). It is listed endangered under the state of New Mexico and is a Species of Greatest Conservation Need.

5.1.2 Critical Habitat

No critical habitat has been designated for the Mexican wolf.

5.1.3 Taxonomy and Life History

The Mexican Wolf is the smallest, most southern occurring, and genetically distinct subspecies of gray wolf in North America. Mexican wolves are typically a patchy black, brown, to cinnamon, and cream color. They live in extended family groups, or packs, which consist of an adult mated pair and their offspring. Mexican wolf packs consist up of four to eight individuals and can occupy a territory up to several hundred square miles. They typically breed in February and give birth in April or early May (USFWS, 2025a).

5.1.4 Distribution and Habitat Requirements

Historically, the wolf's core range occurred throughout the mountainous regions of Mexico, southeastern Arizona, southern New Mexico, and southwestern Texas. The wolves were largely eradicated from their historical range and by the 1990s, the only surviving Mexican wolves existed in captivity. A decision was made by the USFWS to re-introduce the Mexican wolf to the Apache and Gila National Forests in Arizona and New Mexico as a "nonessential experimental population." The first wolves were released into the Blue Range Wolf Recovery Area in 1998 (National Park Service [NPS], 2023). Today, this area contains the largest distribution of Mexican wolves. Mexican wolves are considered habitat generalists and can be found in a variety of southwestern habitats except for low deserts. Wolves in the Southwest were known to occupy areas with foothills characterized by evergreen oaks, pinyon, and juniper to higher elevation mixed conifer forests. Currently, in New Mexico, Mexican wolves inhabit evergreen pine-oak woodlands, pinyon-juniper woodlands, and mixed-conifer montane forests that are inhabited by elk, mule deer, and white-tailed deer (80 FR 2488). BISON-M does not list McKinley County for the present or historical occurrence for the Mexican wolf. It is possible individual animals could pass through the county as wolves have large home ranges and have been reported to travel throughout the state including near Mount Taylor (Western Watersheds Project, 2025) in the Cibola National Forest just to the east of the Project Area.

5.1.5 Threats

Today, the biggest threats to Mexican wolves are human-caused mortality and lack of genetic diversity (Parsons, 2018). Loss of suitable habitat due to human development and roads can serve as a source of increased wolf mortality due to vehicular collisions and illegal killings (80 FR 2488).

5.2 Western Yellow-billed Cuckoo (*Coccyzus americanus*)

5.2.1 Regulatory Status

On October 3, 2014, the USFWS listed the western yellow-billed cuckoo as threatened (79 FR 59991).

5.2.2 Critical Habitat

On April 21, 2021, the USFWS designated critical habitat for the western distinct population segment of the western yellow-billed cuckoo under the ESA (79 FR 48547). In total, approximately 120,939 ha (298,845 ac) were designated critical habitat in Arizona, California, Colorado, Idaho, New Mexico, Texas, and Utah (USFWS, 2021). There is no proposed critical habitat near the Project Area.

5.2.3 Taxonomy and Life History

The male and female western yellow-billed cuckoo build flat, oblong platform nests constructed of loose sticks collected from the ground or snapped from nearby trees and shrubs. The pair may line the nest sparingly with strips of bark or dried leaves. Sometimes the male continues to bring in nest construction materials after incubation has begun. Pairs may visit prospective nest sites multiple times before building a nest together (USFWS, 2025b).

5.2.4 Distribution and Habitat Requirements

In the United States, the western yellow-billed cuckoo is known to occur in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming. Western yellow-billed cuckoos are a riparian-obligate species that breed in cottonwood forests with thick understory, usually below 2,011 m (6,600 ft) in elevation. Western yellow-billed cuckoos use wooded habitat with dense cover and nearby water. This includes woodlands with low, scrubby vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes (USFWS, 2025b).

5.2.5 Threats

The USFWS determined that riparian habitat destruction is the greatest threat to the western distinct population segment of the western yellow-billed cuckoo population. In the west, much of the western yellow-billed cuckoo's riparian habitat has been converted to farmland and housing, leading to population declines and the possible extirpation of cuckoos (USFWS, 2025d).

5.3 Monarch Butterfly (*Danaus plexippus*)

5.3.1 Regulatory Status

The monarch butterfly was proposed for listing as a threatened species by the USFWS on December 12, 2024 (USFWS, 2024a).

5.3.2 Critical Habitat

Critical habitat is being proposed in seven counties in California (USFWS 2024a).

5.3.3 Taxonomy and Life History

Overwintering sites consist of habitat conducive for winter survival. Monarchs in habitats with suitable winter climates (e.g., some areas in California and Florida) may breed year-round without migrating. Adult monarchs lay their eggs on milkweed with larvae emerging after 2 to 5 days (USFWS, 2024a). Larvae develop over a period of 9 to 18 days, feeding on milkweed and building up toxic cardenolides as a defense against predators (USFWS, 2024a) before pupating into a chrysalis. Adults emerge 6 to 14 days later. Monarchs produce multiple generations during the breeding season. Breeding adult butterflies live approximately 2 to 5 weeks; however, migrating and overwintering adults can live 6 to 9 months (USFWS, 2024a).

5.3.4 Distribution and Habitat Requirements

New Mexico is generally outside the normal migration corridors for the butterfly, which occur in the western U.S. mainly along the Pacific coast. Nonmigratory populations are distributed in warmer climates, exclusively in California for the western population.

Monarch butterflies depend on milkweed for reproduction, as it is the only plant on which they lay their eggs. They also rely on nectar-rich flowers in meadows, fields, and along migration routes for sustenance

5.3.5 Threats

Monarchs are highly sensitive to habitat loss, pesticide exposure, and fragmentation of migration corridors. The effects of grazing can reduce the coverage of wildflowers on which pollinators depend. This can occur through direct trampling or indirectly through compaction of the soil, which makes plant germination and production more difficult. Compaction can also increase runoff and reduce absorption of rare moisture that many desert plants depend on to produce flowers that pollinators feed upon.

5.4 Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*)

5.4.1 Regulatory Status

The Suckley's cuckoo bumble bee was proposed for listing as a federally endangered species by the USFWS on December 17, 2024 (USFWS, 2024b).

5.4.2 Critical Habitat

No critical habitat has been designated for this species.

5.4.3 Taxonomy and Life History

Suckley's cuckoo bumble bees are a member of the genus *Bombus* and are a medium-sized about 1.8 to 2.3 centimeters (cm) (0.7 to 0.9 in.) in length. Suckley's cuckoo bumble bees are an obligate social parasite of social bumble bees. Female cuckoo bumble bees emerge from hibernation in late spring and will usurp the nest of a suitable host colony, where host workers provision their young. They have been described as semi-specialist parasite of the subgenus *Bombus* throughout the extent of its range. Two known and confirmed host species are Western bumble bees (*Bombus occidentalis*) and Nevada bumble bees (*Bombus nevadensis*) (USFWS, 2025c).

5.4.4 Distribution and Habitat Requirements

There is significant uncertainty about the range of the Suckley's cuckoo bumble bee. The species has a broad distribution across North America. They range from the Yukon, down to Arizona, and as far east to Newfoundland. They have been collected in a wide range of habitat types and at elevations ranging from 1.8 to 3,200 m (6 to 10,500 ft) (USFWS, 2025c). In the United States, no observations of the bumble bees have been made since 2018. There are a number of occurrence records of the bee in Colorado before the year 2000. The most southerly records are of two male specimens from Arizona in 2009 and 2011 (USFWS, 2024b). The cuckoos bumble bee cannot successfully reproduce in areas lacking suitable host colonies and require a diversity of floral resources for feeding. Little is known about their overwintering sites.

5.4.5 Threats

Threats to Suckley's cuckoo bumble bee include habitat loss, decline in populations of suitable host species, pathogens, and competition from managed and introduced bees. Many species that act as or have the potential to be parasitized by Suckley's cuckoo bumble bee have documented declines in the last century (USFWS, 2025c). Loss of abundance of suitable host species has significant impacts on Suckley's cuckoo bumble bee viability. Habitat conversion and fragmentation contribute to long-term bee decline through the reduction of abundant and diverse floral resources for foraging.

6 Effects Determination

The following are determinations based on effects analyses from the Proposed Action for each federally listed species that has the potential to occur in the Project Area. Direct effects, indirect effects, interrelated actions, and interdependent actions related to the Proposed Action have been considered for each

determination. Additional cumulative effects from other activities in or around the Proposed Action are addressed in the Cumulative Effects section of this document. Determinations for TES species are also illustrated in Appendix B, Table 6.

6.1 Mexican Wolf

The Mexican wolf is not likely to be present in the Project Area as there is no suitable habitat present. Although they are considered habitat generalists, the site lacks the preferred conditions of montane, mixed conifer or pinyon-juniper woodlands. While some signs of prey, such as desert cottontail and mule deer were observed in the Project Area, signs were minimal. Prey densities are potentially too low to support a population of wolves.

Due to the lack of suitable habitat and the unlikely occurrence of this species in the Project Area, it has been determined that the Proposed Action will have **NO IMPACT** on the Mexican wolf.

6.2 Western Yellow-billed Cuckoo

The Project Area contains no potential habitat for the western yellow-billed cuckoo. The lack of riparian vegetation along the San Mateo Creek especially the cottonwood-dominated vegetation with which the cuckoo is associated. There are a few salt cedars along the creek, but these are unlikely to support either nesting or feeding cuckoos. The area is surrounded by arid heavily grazed grasslands and there is no visible connection to viable cuckoo habitat either to the north or south along the San Mateo Creek drainage.

Due to the lack of suitable habitat and the unlikely occurrence of this species in the Project Area, it has been determined that the Proposed Action will have **NO IMPACT** on the western yellow-billed cuckoo.

6.3 Monarch Butterfly

The Project Area has been previously disturbed by mining and grazing. The latter has been periodically heavy and has affected plant diversity and density. The surveys were conducted late in the growing season (September) and only a few common wildflowers were observed. The density and diversity would be unlikely to be adequate to support pollinators, and no milkweed species were observed. The low quality of the habitat including the lack of wildflower diversity (at least reflected in the fall season) and the Project Area being outside the migration corridor for this species would likely preclude its use; therefore, it has been determined that the Proposed Action will have **NO IMPACT** on the monarch butterfly

6.4 Suckley's Cuckoo Bumble Bee

The Project Area has been previously disturbed by mining and grazing. The latter has been periodically heavy and has affected plant diversity and density. The surveys were conducted late in the growing season (September) and only a few common wildflowers were observed. The density and diversity would be unlikely to be adequate to support pollinators. The low quality of the habitat, including the lack of wildflower diversity (at least reflected in the fall season) would likely preclude its use, therefore it has been determined that the Proposed Action will have **NO IMPACT** on the Suckley's cuckoo bumble bee.

7 State Listed Species

Species listed as threatened or endangered in the New Mexico 2024 Biennial Review are listed below in Table 3. A review of habitat requirements using BISON-M (2025) was used to assess the potential to occur in the Project Area.

Table 3. State Listed Threatened and Endangered Species with the Potential to Occur in McKinley County

Species Category	Common Name (<i>Species Name</i>)	Listing Status	Habitat Review and Likelihood of Occurrence
Listed Fish	Zuni bluehead sucker (<i>Catostomus discobolus yarrowi</i>)	State E	No habitat that would support this species is located in the project area.
Listed Plants	Gooding's onion (<i>Allium gooddingii</i>)	State E	Requires saturated soils of desert wetlands. The project does not overlap critical habitat. Habitat that would support this species is not located in the project area.
	Zuni fleabane (<i>Erigeron rhizomatus</i>)	State E	The species is most often found on north or east-facing moderate to steep slopes in open pinyon-juniper woodlands and ponderosa pine forests at 2,200-2,400 m (7,300-8,300 ft). The project area would not have suitable habitat and is outside the elevational range for this species.
	Parish's alkali grass (<i>Puccinella parishii</i>)	State E	Requires alkaline springs, seeps, and seasonally flooded areas. The species requires continuously damp soils during its late winter to spring growing period. Habitat that would support this species is not located in the project area.
Listed Birds	Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	State E	The project does not overlap critical habitat. No habitat that would support this species is located in the project area.
	Least tern (<i>Sternula antillarum</i>)	State E	This species breeds in the vicinity of Roswell, including the Bitter Lake National Wildlife Refuge. Least terns prefer nesting on flat, sandy substrate essentially devoid of vegetation. The project does not overlap critical habitat. No habitat that would support this species is located in the project area.
	Costa's hummingbird (<i>Calypte costae</i>)	State T	Occasionally a resident in desert canyons, washes, and desert scrub in the southwest. They are irregular breeders in New Mexico. The project does not overlap critical habitat. No habitat that would support this species is located in the project area.
	Peregrine falcon (<i>Falco peregrinus</i>)	State T	Species can use a variety of habitats, but breeding territories of peregrine falcons center on cliffs that are in wooded/forested habitats. No habitat that would support this species is located in the project area.
	Gray vireo (<i>Vireo vicinor</i>)	State T	Use pinyon-juniper habitats of foothills, canyons, mesas, and rolling hills. Suitable habitat may be nearby, but the Project Area does not provide viable habitat.
	Bald eagle (<i>Haliaeetus leucocephalus</i>)	State T	Mainly associated with bodies of water or river systems. No habitat that would support this species is located in the project area.

8 Cumulative Effects

Cumulative effects are the combination of additional past, present, and reasonably foreseeable future activities of state, local, or private actions in the Project Area. This section considers how these activities may affect habitat. As defined under Section 7 of the ESA, the BA should consider “those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the Project Area of the federal action subject to consultation” (50 CFR §402.02).

8.1 Traditional Human Land Use

Presently, active and inactive mining projects are located near the Project Area. Human activity is minimal with scattered residences mostly to the south with a few located west of the Project Area. Based on the lack of population growth, the area does not appear to be targeted for extensive residential development that would be accompanied by the establishment of roads that might influence the patterns of movement of wildlife in the area. The area is fenced along the main access roads, and a locked gate prevents public access by vehicle. However, there were several locations where trash and other debris had been deposited perhaps from illegal dumping (Appendix C, Photo 5). A portion of the Project Area is private land, but landowners are not on the property on any regular basis.

Continued human activity on- and off-road in the Project Area would result in ongoing disturbances that will affect the presence of wildlife species. Illegal dumping would continue to degrade the habitat quality. New construction of residential homes is not expected. Future road construction in the area is possible, particularly for existing or new mining activities

8.2 Grazing

Cattle are common in the area, but the grazing history of the private land is uncertain. Grazing by cattle has a direct impact on the growth and distribution of vegetation types, with some plant species being browsed much more heavily than others. These animals can disperse the seeds of plant species across the landscape, including exotic and invasive plant species that are present. Trampling of sensitive species by cattle is a potential impact as well as compaction of soil or erosion of soft, sandy soil, especially up and down the banks in and around washes. Additionally, the input of organic matter into the system occurs from cattle. During the field surveys, excrement from cattle was observed throughout the Project Area.

Continued grazing from livestock is a foreseeable future activity in this region. The above stipulations of impacts will continue to be true for the land and in the Project Area as long as these animals are present. This should not impact potential habitat for sensitive birds, but burrowing animals, whose burrows may be crushed by heavy animals, could be impacted. Sensitive plants will continue to be at risk of trampling or browsing, apart from the sensitive cactus species, which are unlikely to be browsed.

8.3 Climate Change

Climate change may result in potential modifications in the patterns of precipitation and could encourage development of a more arid environment. This could influence future plant and animal distribution over time. An increase in aridity may require plant species to either adapt to lower moisture and higher heat conditions or face local extinction. Grazing animals may be impacted if suitable plant food species do not reproduce under future climate conditions.

8.4 Mining

The area contains numerous active and inactive mining, with some mines in close proximity to the Project Area. In addition, through the NMED Abandoned Uranium Mine Cleanup program in the Grants Mining District, there are other previously mined uranium sites being proposed for reclamation.

9 Mitigation Measures

The surveys found no evidence of the presence of either federal or state threatened and endangered species. Therefore, no specific mitigation measures are recommended. No old nests were located that would indicate the presence of breeding birds, but the Project Area could provide some habitat, especially in the low drainage areas where there is suitable nesting cover or where junipers are present that offer substrate for nesting. It is recommended that construction activities take place outside of the migratory bird nesting season (March-August), but this is not always practical. Therefore, a pre-construction nesting survey of the Project Area is recommended within two weeks prior to commencement of reclamation activities if they are initiated in the breeding season for migratory birds.

No specific mitigation measures are proposed due to the unlikely impact to sensitive habitat. However, there are concentrations of invasive species in the bottoms of drainage areas and mapped in Appendix A, Figure 6. NMED could notify landowners and provide guidance or treatment recommendations, if requested but landowners would be responsible for invasive plant species treatment and control.

10 Determination

The activities planned under the Proposed Action will cause some disturbance in the Project Area but they are not likely to impact federal or state listed species and other sensitive species. After conducting analyses of the habitat needs and species-specific concerns, adverse effects to these species are highly unlikely.

The surveys emphasize the lack of sensitive species or habitat in the Project Area. Based on these considerations, the reclamation activities should be able to proceed with no restrictions other than the surveys described above to reduce the potential of impacts to migratory birds.

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Appendix A Figures

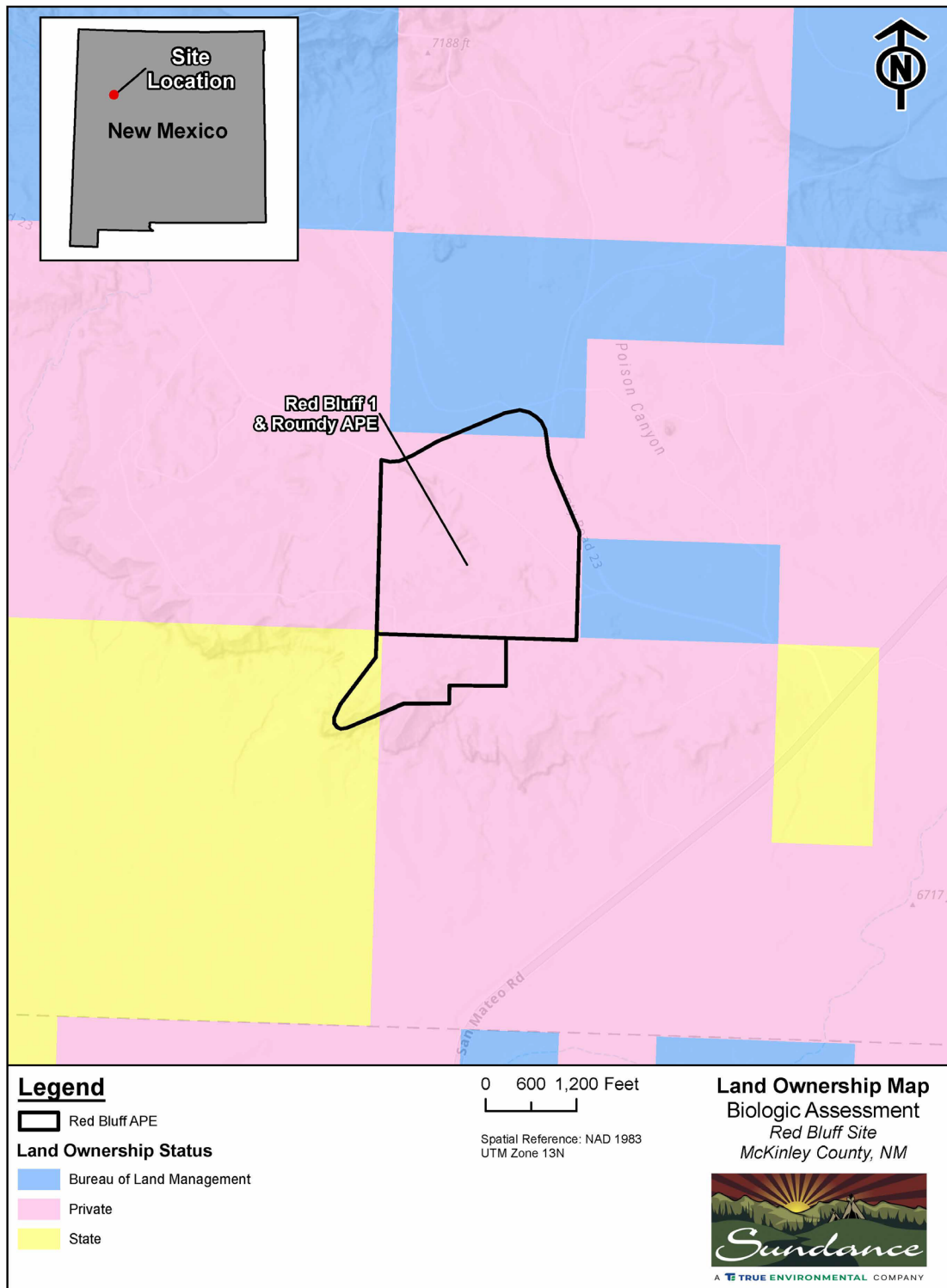


Figure 2. Land ownership map (Source: BLM NM Lands Surface Management Agency)

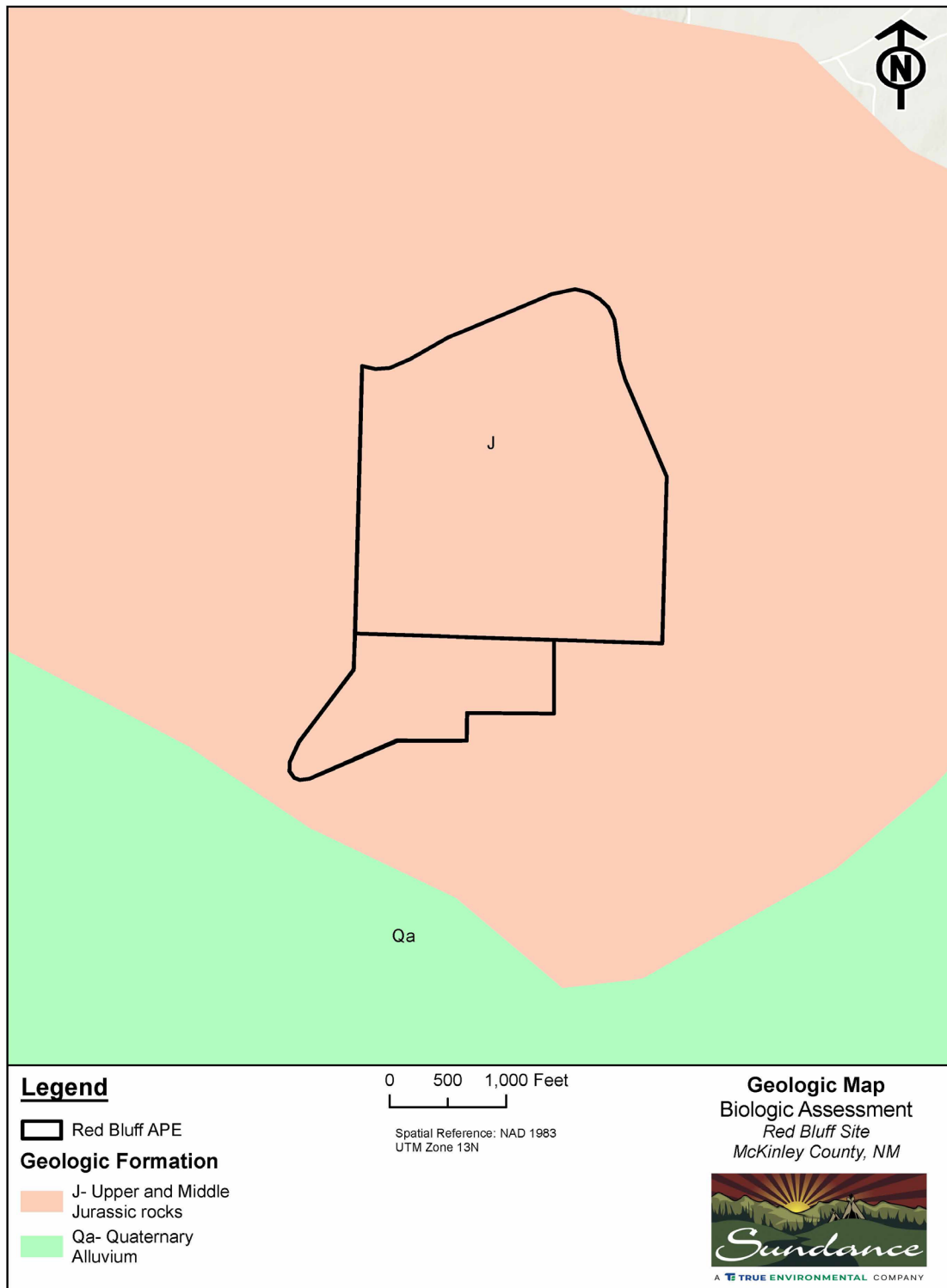


Figure 3. Geology map (Source: U.S. Geological Survey New Mexico Geologic Formations)

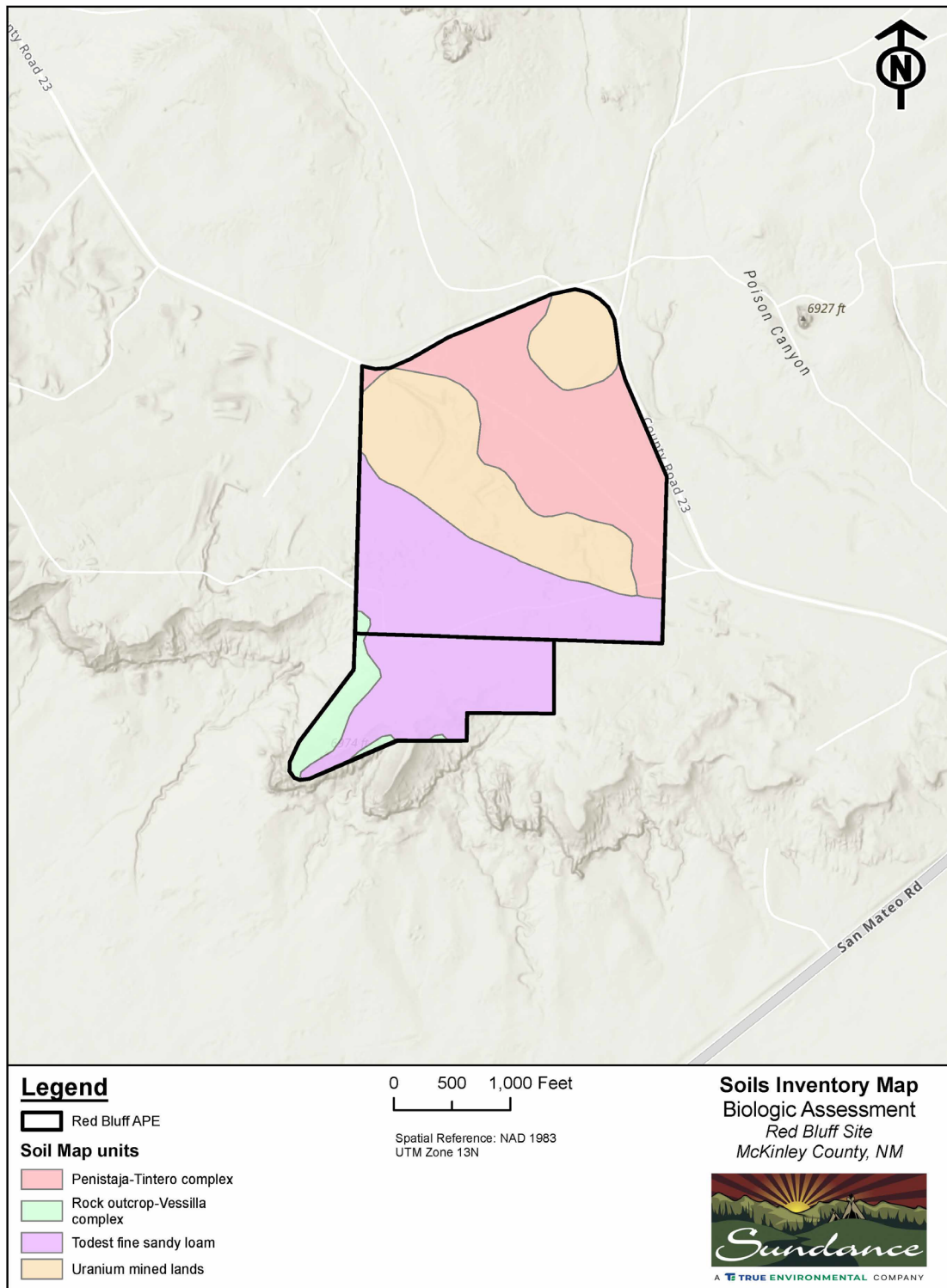


Figure 4. Soils map (Source: Soil Survey Geographic Database (SSURGO) from Natural Resource Conservation Service)

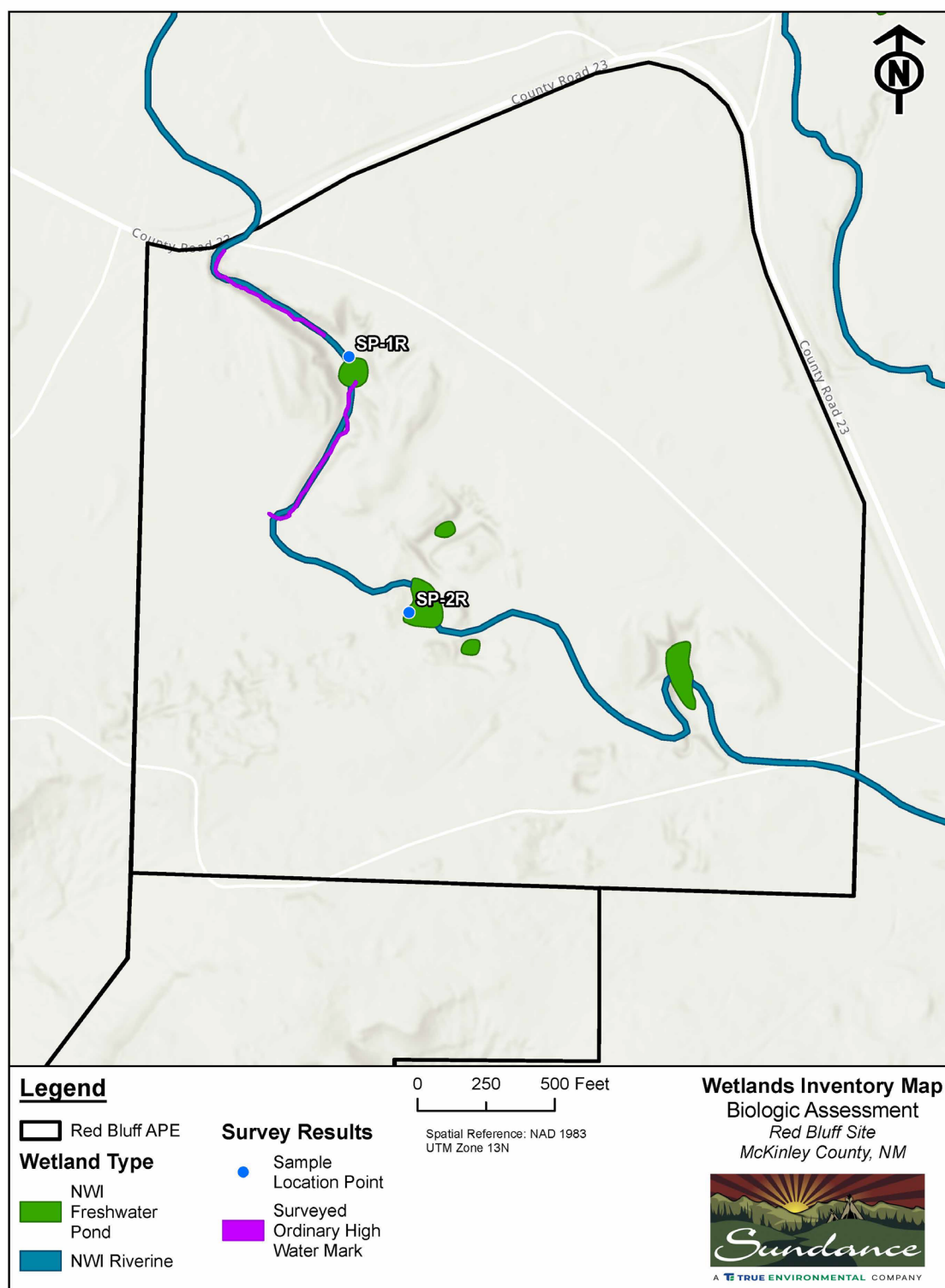


Figure 5. Surface water features. Wetlands classified by the U.S. Fish and Wildlife Service National Wetland Inventory (NWI) could not be validated during the surveys.

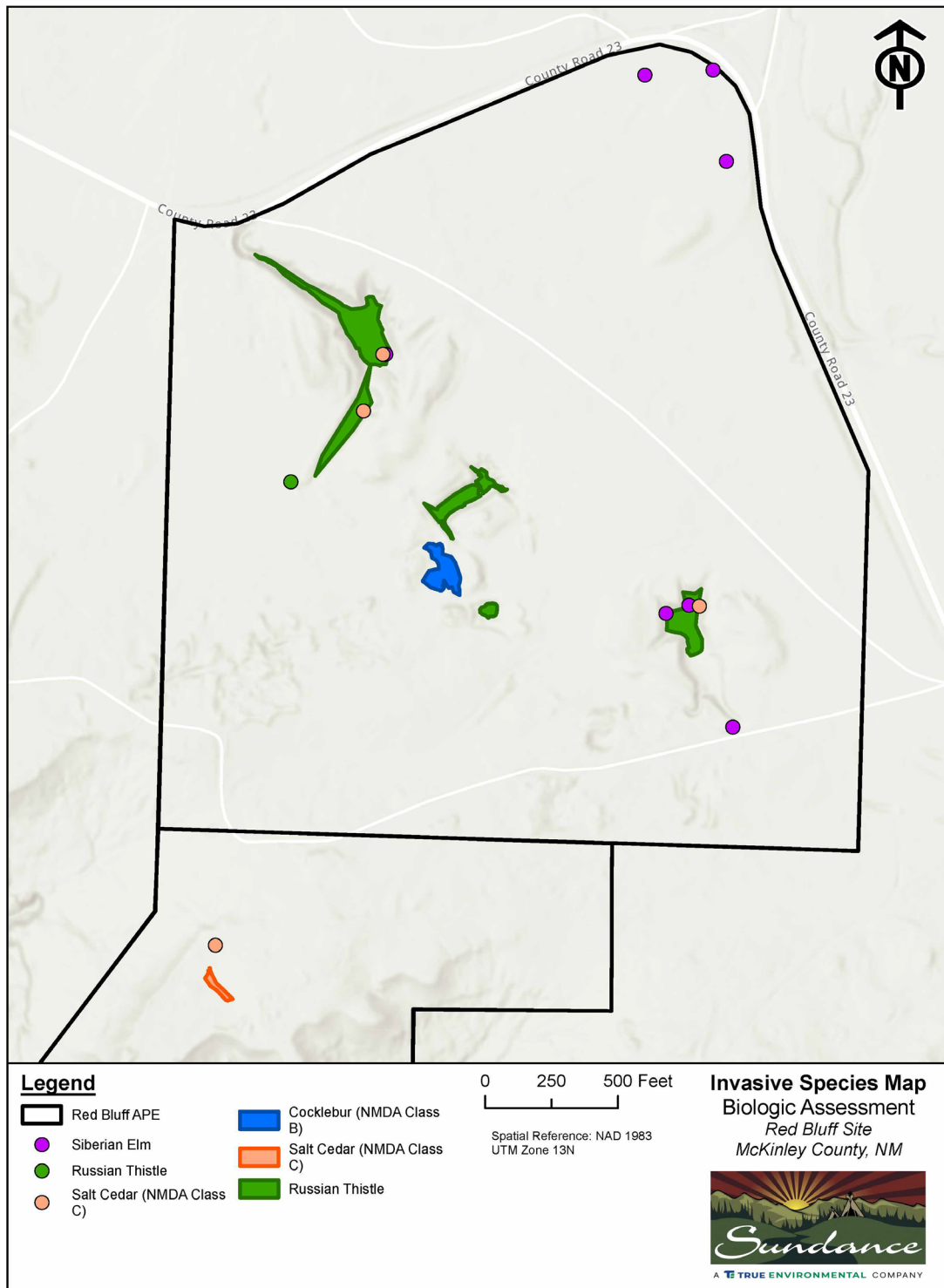


Figure 6. Locations of Invasive Species

Appendix B Tables

Table 4. Plant species identified during the biological surveys of the Project Area

Plant Species	Scientific Name	USFWS/State Status
Aster	<i>Aster</i> sp.	None
Bitterweed	<i>Hymenoxys brandegie</i>	None
Blackfoot daisy	<i>Melampodium leucanthum</i>	None
Blue gramma grass	<i>Bouteloua gracilis</i>	None
Broom snakeweed	<i>Gutierrezia sarothrae</i>	None
Cane cholla	<i>Cylindropuntia imbricata</i>	None
Cocklebur*	<i>Xanthium strumarium</i>	None
Colorado Four o'clock	<i>Mirabilis multiflora</i>	None
Common Beehive Cactus	<i>Escobaria vivipara</i>	None
Curlycup gumweed	<i>Grindelia squarrosa</i>	None
Dock*	<i>Rumex triangulivalvis.</i>	None
Four-winged saltbush	<i>Atriplex canescens</i>	None
Galleta grass	<i>Hilaria jamesii</i>	None
Golden weed	<i>Verbesina enceliodes</i>	None
Indian rice grass	<i>Achnatherum hymenoides</i>	None
Kochia*	<i>Bassia scoparia</i>	None
Muhly grass	<i>Muhlenbergia capillaris</i>	None
Narrow leaf Mallow	<i>Malva neglecta</i>	None
One-seeded Juniper	<i>Juniperus monosperma</i>	None
Penstemon species	<i>Penstemon</i> sp.	None
Pepper weed	<i>Lepidium virginicum</i>	None
Pigweed	<i>Amarathus</i> sp.	None
Piñon Pine	<i>Pinus edulis</i>	None
Plains yucca	<i>Yucca glauca</i>	None
Prairie sage	<i>Artemisia frigida</i>	None
Prickly Pear	<i>Opunita</i> sp.	None
Purple Threawn	<i>Aristida purpurea</i>	None
Rabbit brush	<i>Chrysanthamnus</i> sp.	None
Rocky Mountain bee plant	<i>Peritoma serrulata</i>	None
Rocky Mountain sage	<i>Salvia reflexa</i>	None
Russian thistle*	<i>Salsola targus</i>	None
Salt cedar*	<i>Tamarix chinensis</i>	None
Sand dropseed	<i>Sporobolus cryptandrus</i>	None

Plant Species	Scientific Name	USFWS/State Status
Sand sage	<i>Artemisia filifolia</i>	None
Siberian elm*	<i>Ulmus pumila</i>	None
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>	None
Slimleaf plains mustard	<i>Hesperidanthus linearifolius</i>	None
Spectacle pod	<i>Dimorphocarpa wislizeni</i>	None
Squirrel tail grass	<i>Sitanion hystrix</i>	None
Sulphur-flower buckwheat	<i>Erigeron umbellatus</i>	None
Sunflower	<i>Helianthus</i> sp.	None
Western wallflower	<i>Erysimum capitatum</i>	None
Winterfat	<i>Krashennikovia lanata</i>	None
Wolfberry	<i>Lycium</i> sp.	None
Woolly paper flower	<i>Psilostrophe tagetina</i>	None
Yellow spine thistle	<i>Cirsium ochrocentrum</i>	None

*Non-native species

Table 5. Animal species identified during the biological surveys of the Project Area

Animal Species	Type of Observation	USFWS Status
Reptiles		
Little striped whiptail (<i>Aspidoscelis inornatus</i>)	visual	None
Rattlesnake (<i>Crotalis</i> sp.)*	visual	None
Short horned lizard (<i>Phrynosoma douglasii</i>)*	visual	None
Birds		
American Crow (<i>Corvus brachyrhynchos</i>)	visual	None
American Robin (<i>Turdus migratorius</i>)	visual	None
Black-tailed gnatcatcher (<i>Poliophtila melanura</i>)	visual	None
Black throated sparrow (<i>Amphispiza bilineata</i>)	visual	None
Canyon towhee (<i>Melozone fusca</i>)	visual	None
Green- tailed towhee (<i>Piplo chlorurus</i>)	visual	None
Ladder backed woodpecker (<i>Dryobates scalaris</i>)	visual	None
Mourning dove (<i>Zenaida macroura</i>)	visual	None
Rock wren (<i>Salpinctes obsoletus</i>)	visual	None
Western Meadowlark (<i>Sturnella neglecta</i>)	visual	None
White-crowned sparrow (<i>Zonotrichia leucophrys</i>)	visual	None
Williamson's Sapsucker (<i>Sphyrapicus thyroideus</i>)	visual	None
Mammals		
Desert Cottontail (<i>Sylvilagus audubonii</i>)	track and scats	None
Grey fox (<i>Urocyon cinereoargenteus</i>)	track	None
Kangaroo Rat species (<i>Dipodomys</i> sp.)	track and scats	None
Least Chipmunk (<i>Tamias minimus</i>)	visual	None
Mule deer (<i>Odocoileus hemionus</i>)	track	None
Spotted ground squirrel (<i>Xerospermophilus spilosoma</i>)	scats	None

*Reported by ENACT staff. Not verified during surveys.

Table 6. Federally listed threatened and endangered species and their determination

Species Name	Federal Status	Critical Habitat in Project Area?	Potential to Occur	Survey History and Results	Determination	Criteria	Habitat Description and Range in New Mexico
Terrestrial Mammals							
Mexican Wolf <i>Canis lupus baileyi</i>	Endangered	No	No	Not detected during September 2025 surveys.	NI	3	Found in a variety of southwestern habitats, prefer montane mountain woodlands; foothills characterized by evergreen oaks, pinyon, juniper, and higher elevation pine; mixed conifer forests; areas with prey availability. Except for dispersing individual animals, the Mexican wolf population is primarily confined to eastern and southeastern Arizona and western and southern New Mexico, with some populations in northern Mexico.
Bird Species							
Western yellow-billed cuckoo <i>Coccyzus americanus</i>	Threatened	No	No	Not detected during September 2025 surveys.	NI	2	Riparian areas; associated with cottonwood forests with habitat with dense cover and thick understory and associated with water.
Plant Species							
Monarch Butterfly <i>Danaus plexippus</i>	Proposed Threatened	No	No	Not detected during September 2025 surveys.	NI	1; 2	Areas with milkweed for reproduction; areas with nectar-rich flower meadows, fields, and along migration routes
Suckley’s Cuckoo Bumble Bee <i>Bombus suckelyi</i>	Proposed Threatened	No	No	Not detected during September 2025 surveys.	NI	2	Areas with diversity of flowering plants; areas where host species are present for reproduction

Metadata for Table 6

Determinations:

MI: may impact individuals but is not likely to cause a trend to federal listing or loss of viability
NI: no impact

Criteria ‘May Impact’ and ‘No Impact:’

Assessments made in this table were performed in consideration of available information on species distributions and habitat using one or more of the following: topographic maps, geographic information system coverages, BISON-M data from the NMDFG, USFWS ECOS, field reconnaissance, as well as published scientific information. If the Project was determined to have no effect or no impact, this determination was based on one or more of these following criteria:

- 1. The species is not known to occur, or it is unlikely to occur, in or near the Project Area.
- 2. Habitat for the species is not present in the Project Area.
- 3. Habitat for the species is present, but the species is rare in the area, at low-densities, and/or only incidentally occurs. The Project would not have any direct, indirect, or cumulative effects on this species.
- 4. Habitat for the species is present, the species occurs or may occur in the Project Area, but the Project would not have any direct, indirect, or cumulative effects on this species.

Appendix C Photos



Photo 1. Geology/topography in the southern portion of Project Area



Photo 2. Russian thistle infestation in low area with eroded sand canyon walls.



Photo 3. Eastern portion of the Project Area



Photo 4. One-seeded juniper south central portion of the Project Area



Photo 5. Garbage dump in northwestern drainage area adjacent to CR 23

Appendix D Field Forms

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Red Bluffs</u>	City/County: <u>Mckinley</u>	Sampling Date: <u>10-22-25</u>
Applicant/Owner: <u>Entact, LLC.</u>	State: <u>NM</u>	Sampling Point: <u>SP_1R</u>
Investigator(s): <u>C. Qubain</u> Section, Township, Range: _____		
Landform (hillside, terrace, etc.): <u>depression</u>	Local relief (concave, convex, none): <u>Concave</u>	Slope (%): <u>1</u>
Subregion (LRR): <u>LRR D</u>	Lat: <u>35.32416</u>	Long: <u>-107.835740</u> Datum: _____
Soil Map Unit Name: <u>Uranium mined lands, not hydric</u>		NWI classification: <u>PUS1J</u>
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No <u>x</u> (If no, explain in Remarks.)		
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No <u>x</u>		
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)		

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Conditions are wetter than normal, according to the Antecedent Precipitation Tool. Approximately 3 in. of rain fell the week prior to sampling.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			=Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			=Total Cover	
Herb Stratum (Plot size: <u>1 m^2</u>)				
1. <u>Bassia scoparia</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Salsola tragus</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
			<u>90</u> =Total Cover	
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			=Total Cover	
% Bare Ground in Herb Stratum <u>5</u>		% Cover of Biotic Crust _____		
Remarks: Saturation, standing water 5 ft. away				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>60</u>	x 3 = <u>180</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>90</u> (A)	<u>300</u> (B)
Prevalence Index = B/A = <u>3.33</u>	

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0¹

___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

SOIL

Sampling Point: SP_1R**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	5YR 4/3	100					Sandy	
4-18	5YR 5/4	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Gleyed Matrix (S4)
☐ Histic Epipedon (A2)	☐ Sandy Redox (S5)
☐ Black Histic (A3)	☐ Stripped Matrix (S6)
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1)
☐ Stratified Layers (A5) (LRR C)	☐ Loamy Gleyed Matrix (F2)
☐ 1 cm Muck (A9) (LRR D)	☐ Depleted Matrix (F3)
☐ Depleted Below Dark Surface (A11)	☐ Redox Dark Surface (F6)
☐ Thick Dark Surface (A12)	☐ Depleted Dark Surface (F7)
☐ Iron Monosulfide (A18)	☐ Redox Depressions (F8)
☐ Sandy Mucky Mineral (S1)	

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Iron-Manganese Masses (F12) (LRR D)
☐ Reduced Vertic (F18)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: _____
 Depth (inches): _____
Hydric Soil Present?Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

☐ Surface Water (A1)	☐ Salt Crust (B11)
☐ High Water Table (A2)	☐ Biotic Crust (B12)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)
☒ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No <u>x</u>	Depth (inches): _____
Water Table Present?	Yes _____	No <u>x</u>	Depth (inches): _____
Saturation Present?	Yes _____	No <u>x</u>	Depth (inches): _____
(includes capillary fringe)			

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

NWI lists as Wetland, darker area appears on satellite imagery, but inundation is not present in imagery.

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Arid West Region See ERDC/EL TR-08-28; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 9/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Red Bluffs City/County: Mckinley Sampling Date: 10-22-25
Applicant/Owner: Entact, LLC. State: NM Sampling Point: SP_2R
Investigator(s): C. Qubain Section, Township, Range: _____
Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR): LRR D Lat: 35.32204 Long: -107.83645 Datum: _____
Soil Map Unit Name: Uranium mined lands, not hydric NWI classification: PUS2A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No x (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No x
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
---	--

Remarks:
Conditions are wetter than normal, according to the Antecedent Precipitation Tool. Approximately 3 in. of rain fell the week prior to sampling.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>60</u> x 4 = <u>240</u> UPL species <u>30</u> x 5 = <u>150</u> Column Totals: <u>95</u> (A) <u>405</u> (B) Prevalence Index = B/A = <u>4.26</u>
Herb Stratum (Plot size: <u>1 m^2</u>) 1. <u>Grindelia squarrosa</u> <u>60</u> Yes <u>FACU</u> 2. <u>Aristida purpurea</u> <u>30</u> Yes <u>UPL</u> 3. <u>Rumex crispus</u> <u>5</u> No <u>FAC</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ _____ <u>95</u> =Total Cover	Hydrophytic Vegetation Indicators: ____ Dominance Test is >50% ____ Prevalence Index is ≤3.0 ¹ ____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____	
Remarks:	

SOIL

Sampling Point: SP_2R

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)	
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)	
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)	
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)	
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)	
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☐ No ☒ Depth (inches): Saturation Present? Yes ☒ No ☐ Depth (inches): 0 (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
NWI lists as Wetland, darker area appears on satellite imagery, but inundation is not present in imagery.			
Remarks:			

Appendix E IPaC Report

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

McKinley County, New Mexico



Local office

New Mexico Ecological Services Field Office

☎ (505) 346-2525

📠 (505) 346-2542

2105 Osuna Road Ne
Albuquerque, NM 87113-1001

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [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.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Mexican Wolf <i>Canis lupus baileyi</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3916	Endangered

Birds

NAME	STATUS
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Suckley's Cuckoo Bumble Bee <i>Bombus suckleyi</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10885	Proposed Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

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

The [data](#) in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the [Supplemental Information on Migratory Birds and Eagles document](#) to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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 an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are 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 resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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.

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Pinyon Jay <i>Gymnorhinus cyanocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9420	Breeds Feb 15 to Jul 15

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 "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "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.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

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.

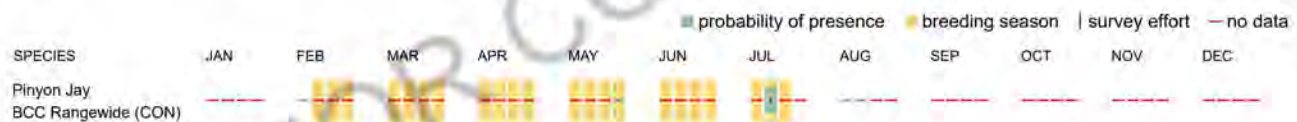
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Migratory Bird FAQs

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

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed 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 [Birds of Conservation Concern \(BCC\)](#), and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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 to 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 resident), you may query your location using the [RAIL Tool](#) and view 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 IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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 [Bald and Golden Eagle Protection 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 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

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.

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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

Facilities

National Wildlife Refuge lands

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 at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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.

This location overlaps the following wetlands:

FRESHWATER POND

[PUS2A](#)

[PUS1J](#)

[PUS2Jx](#)

RIVERINE

[R4SBJ](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and

nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION