BIOLOGICAL EVALUATION
FOR THE EMMA-OAK GROVE PROJECT
Freeport-McMoRan Tyrone Inc.

Prepared for:

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TABLE OF CONTENTS

TABLES

FIGURES

(follow text)

APPENDICES

1. INTRODUCTION

Freeport-McMoRan Tyrone Inc. (Tyrone) retained WestLand Resources, Inc. (WestLand) to prepare a Biological Evaluation (BE) for the Emma-Oak Grove Project Site in Grant County, NM (**Figure 1**). The Emma-Oak Grove Site is proposed for Tyrone Mine expansion (Project), totaling an area of about 421 acres of private property (Project Area; **Figure 2**). GeoSystems Analysis, Inc. (GSA) conducted a rare plant survey under sub-contract with WestLand in the Project Area to identify any rare plant species present.

This BE provides a screening analysis to determine the potential to occur of special-status species, designated or proposed critical habitat in the Project Area, and analyzes effects of the Project to such species and/or their habitats. For the purposes of this report, special-status species include:

1) Species listed, or proposed or candidate for listing, under the Endangered Species Act (ESA) by the U.S. Fish and Wildlife Service (USFWS) that have the potential to occur within the Project Area as identified by the USFWS Information, Planning and Consultation (IPaC) tool (**Appendix A**);
2) Species protected under the Bald and Golden Eagle Protection Act (BGEPA); and
3) Species designated as state threatened or endangered by the New Mexico Department of Game and Fish (NMDGF) as identified by the Biota Information System of New Mexico (BISON-M) for Grant County (**Appendix B**).

The following sections describe the Project Area location and environmental setting (**Section 2**), the methods (**Section 3**), potential to occur of special-status species screening results (**Section 4**), and list the references cited (**Section 5**). List of species occurrences for Grant County provided in the BISON-M query are included in **Appendix B** and the results of field surveys conducted for rare plants in the Project Area in October 2020 in **Appendix C**.

2. PROJECT AREA

The Project Area is a proposed area for expansion for the existing Tyrone Mine in Grant County, New Mexico (latitude: 32° 36'50.56" N/longitude: 108° 21'13.89" W), approximately 17 miles southeast of the Gila River and adjacent to the Burro Mountain Region of the Gila National Forest. The Project Area lies within portions of Section 25, 26, 35, and 36 of Township 19 South, Range 15 West of the New Mexico Meridian (**Figures 1** and **2**). The northernmost extent of the Project Area lies just 1,000 feet (ft) south of the Continental Divide. The Project Area is intersected by Oak Grove Wash, an ephemeral wash that likely flows only in direct response to precipitation.

2.1. PHYSIOGRAPHIC

The Project is located in the Burro Mountains, within the Basin and Range province (USGS 2009), within a couple of thousand feet of the Continental Divide. The site is located at an elevation ranging from about 5,600 ft to 6,300 ft.

2.2. CLIMACTIC

Temperature data are available from the National Oceanic and Atmospheric Administration (NOAA) Cooperative Station in Silver City, NM (WRCC 2020). Climatic conditions are characterized by warm summers (87.5° F average temperature in July, the hottest month), mild winters (50.8° F average temperature in January, the coldest month), and low precipitation. The average annual precipitation in Silver City is approximately 16 inches (WRCC 2020), falling primarily as rain during the monsoon season from July through October. Snow may fall between November and March.

2.3. SURFACE WATER

The Project Area is located within the Upper Gila-Mangas Subbasin (Hydrologic Unit Code (HUC8) 15040002) and is intersected by Oak Grove Wash (**Figure 2**). The National Wetland Inventory (NWI) has characterized Oak Grove Wash as an intermittent riverine feature (USFWS 2021d). However, based on aerial imagery, vegetation characteristics and depth to groundwater, this drainage is better characterized as ephemeral, only flowing in direct response to precipitation. The NWI surface water mapping suffers from a lack of ground-truthing of water features, such that ephemeral and intermittent features are seldom distinguished.

2.4. SOIL

GSA conducted a rare plant survey and characterized the soils within the Project Area (**Appendix A**). Soils within the project site are predominantly rock outcrop associations (84% of the total area), including: Santana-Rock outcrop complex, 15 to 35% slopes (34.2% of the site); Santa Fe-Rock outcrop complex, 20 to 45% slopes (33.9% of the site); Gaddes-Santa Fe outcrop complex, 15 to 45% slopes (12.2% of the site); and Santana-Rock outcrop complex, 1 to 25% slopes (3.2% of the site). These soil types comprise alluvial fans, hillslopes, terraces, mountain slopes and ridges and all are derived of mixed alluvium and/or colluvium derived from igneous, metamorphic, and sedimentary rock. Soils described for the site align with observed field conditions and the mapped terrain, which is a variable mix of steep hillslopes, terraces and ridges with most slopes ranging 15 to 45%, and few slopes less than 15%.

The remaining soils are loam types (16% of the site by area), including: Lonti gravelly loam, 15 to 35% slopes (9.7% of the site), Lonti gravelly clay loam, 0 to 8% slopes (2.6% of the site); Manzano loam, 1 to 3 % slopes (3.9% of the site). Manzano loam comprises drainageways, intermittent streams and valley floors, and is found in the bottom tiers of Oak Grove Wash. The loams in this type are derived from

mixed alluvium and/or residuum from weathered sandstone and shale. Lonti loam types comprise pediments and hillslopes, and like the outcrop types described above, are derived from alluvium and/or colluvium derived from igneous, metamorphic, and sedimentary rock. These soil types are present on the eastern edge of the Project Area, as slopes begin to level out and grade into the adjacent desert grassland.

2.5. VEGETATION

According to Environmental Protection Agency Eco-Regions delineations, the Project Area falls within a band of Madrean Lower Montane Woodlands that serves as a transition zone between the Chihuahuan Desert and Montane Coniferous Forest Eco-Regions (USEPA 2021). Similarly, Brown (1994), characterizes the site as Madrean Evergreen Woodland, dominated by alligator juniper (*Juniperus deppeana*), piñon pine (*Pinus edulis*) and oak (*Quercus* spp.), with elements of Interior Chapparal as indicated by a scattering of manzanita (*Arctostaphylos pungens*), sotol (*Dasylirion wheeleri*), and Wright's silktassel (*Garrya wrightii*). Plant species and characteristics observed during site visit in the Project Area support the ecoregion designation (**Appendix C**). The most common tree species documented include gray oak (*Quercus grisea*), Emory oak (*Q. emoryi*), piñon pine, and alligator juniper. Common understory species included broom snakeweed (*Gutierriezia sarothrae*), mountain mahogany (*Cercocarpus montanus*), Wright's silktassel, Wright's buckwheat (*Eriogonum wrightii*), shrub live oak (*Quercus turbinella*), three-leaf sumac (*Rhus trilobata*), catclaw mimosa (*Mimosa biuncifera*), Carruth's sagebrush (*Artemisia carruthii*), and black grama (*Bouteloua eriopoda*).

3. METHODS

This section describes what categories of special-status species were identified for analysis, how these species were screened for their potential to occur (including data sources), and the Potential to Occur categories.

3.1. SPECIAL-STATUS SPECIES IDENTIFICATION

A screening analysis was completed to evaluate the potential for special-status species or their critical habitat to occur within the Project Area. As stated in **Section 1**, special-status species in this BE are defined as:

1) Species designated by the USFWS as Endangered, Threatened, Proposed for listing, or Candidate for listing under the ESA as identified by the USFWS IPaC tool (**Appendix A**);
2) Species protected under the BGEPA; and
3) Species listed as state threatened or endangered by NMDGF as identified by BISON-M for Grant County (**Appendix B**).

3.2. SPECIAL-STATUS SPECIES SCREENING

Based on the special-status species list generated from the above sources, a screening analysis was performed to evaluate the potential for these species to occur within the Project Area and to determine the presence or absence of designated or proposed critical habitat within the Project Area. These determinations were based on review of:

- The natural history and known geographical and elevational ranges of the species.
- Results of the Biota Information System of New Mexico (BISON-M) species occurrences for Grant County, included as **Appendix B**.
- Other occurrence records in published or grey literature, including citizen science data (including eBird records).
- Data provided by the USFWS Critical Habitat Portal online mapping tool.
- Rare plant survey data collected by GSA for the Project Area in October 2020 (**Appendix C**).

The criteria used to determine the potential of occurrence of each species included in this screening analysis are defined as follows:

> **Present:** The species has been observed to occur within the Project Area, the Project Area is within the known range and distribution of the species, and habitat characteristics required by the species are present.
>
> **Possible:** There are no known records of the species within the Project Area, but the known, current distribution of the species includes the Project Area and the required habitat characteristics of the species appear to be present in the Project Area. Given the uncertainty associated with species identification and accuracy of the location of observations from eBird and other citizen science databases, observations associated with citizen science databases are evidence that a species is possible within the Project Area.
>
> **Unlikely:** The known, current distribution of the species does not include the Project Area, but the distribution of the species is close enough such that the Project Area may be within the dispersal or foraging distance of the species, and they may show up as transients. The habitat characteristics required by the species may be present in the Project Area.
>
> **None:** The Project Area is outside of the known distribution of the species or the habitat characteristics required by the species are not present.

4. POTENTIAL FOR SPECIAL-STATUS SPECIES TO OCCUR

Of the 57 special-status species evaluated, 35 species have no potential to occur, five are possible, 17 species are unlikely, and no special-status species are known to be present in the Project Area (see

below). The species evaluated include 16 ESA-listed species identified by the USFWS IPaC tool (**Appendix A**), two BGEPA species, and 39 NMDGF-listed species. There is no designated or proposed critical habitat present in the Project Area. No special-status or rare plants were observed during pedestrian surveys of the Project Area (**Appendix C**).

4.1. ESA-LISTED SPECIES

The potential for the sixteen special-status ESA species to occur within the Project Area are summarized below. The basis for determination of each of the ESA-listed species' potential to occur within the Project Area are provided in **Table 1**.

Amphibian:

- None – threatened; Chiricahua leopard frog [CLF] (*Rana chiricahuensis*)

Birds:

- Unlikely – threatened; western Distinct Population Segment (DPS) of yellow-billed cuckoo (*Coccyzus americanus*)
- None – experimental population; northern Aplomado falcon (*Falco femoralis septentrionalis*)
- None – endangered; southwestern willow flycatcher (*Empidonax traillii extimus*)
- Unlikely – threatened; Mexican spotted owl (*Strix occidentalis lucida*)

Fish:

- None – threatened; beautiful shiner (*Cyprinella formosa*)
- None – threatened; Chihuahua chub (*Gila nigrescens*)
- None – endangered; Gila chub (*Gila chub*)
- None – endangered; spikedace (*Meda fulgida*)
- None – endangered; loach minnow (*Tiaroga cobitis*)
- None – threatened; Gila topminnow (incl. Yaqui) (*Poeciliopsis occidentalis*)
- None – threatened; Gila trout (*Oncorhynchus gilae*)

Mammals:

- Unlikely – experimental population; Mexican wolf (*Canis lupus baileyi*)
- None – endangered; Mexican long-nosed bat (*Leptonycteris nivalis*)

Reptiles:

- None – threatened; northern Mexican gartersnake (*Thamnophis eques megalops*)
- None – threatened; narrow-headed gartersnake (*Thamnophis rufipunctatus*),

While gray wolf appeared on the IPaC screening, in addition to the Mexican gray wolf, the gray wolf has been recently delisted and as such does not have protections under the ESA (USFWS 2020a).

4.2. BGEPA-LISTED SPECIES

Results of the screening analysis of the two BGEPA-listed species are summarized below. The basis for determination of each of the BGEPA-listed species' potential to occur within the Project Area are provided in **Table 2**.

- Possible – Golden eagle (*Aquila chrysaetos*)
- Unlikely – Bald eagle (*Haliaeetus leucocephalus*)

4.3. NEW MEXICO STATE-LISTED SPECIES

The BISON-M online review tool was used to generate a list of New Mexico state species listed as either threatened or endangered by the NMDGF within Grant County (**Appendix B**). Of the 39 state-listed species, none were present, four are possible, 13 are considered unlikely, and 22 are not expected to occur in the Project Area. The basis for determination of each of the NMDGF-listed species' potential to occur within the Project Area are provided in **Table 3**.

Amphibian:

- None – Lowland leopard frog (*Lithobates yavapaiensis*)

Birds:

- Unlikely – Abert's towhee (*Melozone aberti*)
- Unlikely – Bald eagle (*Haliaeetus leucocephalus*)
- None – Baird's sparrow (*Centronyx bairdii*)
- None – Bell's vireo (*Vireo bellii*)
- Unlikely – Broad-billed hummingbird (*Cynanthus latirostris*)
- None – Buff-collared nightjar (*Antrostomus ridgwayi*)
- Unlikely – Common black hawk (*Buteogallus anthracinus*)
- Unlikely – Common ground dove (*Columbina passerine*)
- Unlikely – Costa's hummingbird (*Calypte costae*)
- Unlikely – Elegant trogon (*Trogon elegans*)
- Unlikely – Gila woodpecker (*Melanerpes uropygialis*)
- Possible – Gray vireo (*Vireo vicinor*)
- Unlikely – Lucifer hummingbird (*Calothorax lucifer*)
- None – Brown pelican (*Anaxyrus microscaphus*)
- None – Neotropic cormorant (*Phalacrocorax brasilianus*)
- None – Northern aplomado falcon (*Falco femoralis septentrionalis*)
- None – Northern beardless tyrannulet (*Camptostoma imberbe*)
- Possible – American peregrine falcon (*Falco peregrinus anatum*)
- None – Southwestern willow flycatcher (*Empidonax traillii extimus*)
- None – Thick-billed kingbird (*Tyrannus crassirostris*)
- Unlikely – White-eared hummingbird (*Hylocharis leucotis*)
- Unlikely – Varied bunting (*Passerina versicolor*)
- Possible – Yellow-eyed junco (*Junco phaeonotus*)

Fish:

- None – Chihuahua chub (*Gila nigrescens*)
- None – Gila chub (*Gila intermedia*)
- None – Gila topminnow (*Poeciliopsis occidentalis occidentalis*)
- None – Gila trout (*Oncorhynchus gilae*)
- None – Loach minnow (*Rhinichthys cobitis*)
- None – Roundtail chub (*Gila robusta*)
- None – Spikedace (*Meda fulgida*)

Mammals:

- Possible – Spotted bat (*Euderma maculatum*)
- Unlikely – Exp. population; Mexican gray wolf (*Canis lupus baileyi*)
- None – Lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*)

Reptiles:

- None – Narrow-headed gartersnake (*Thamnophis rufipunctatus*)
- None – Northern Mexican gartersnake (*Thamnophis eques megalops*)
- Unlikely – Gila monster (*Heloderma suspectum*)

Molluscs:

- None – Gila springsnail (*Pyrgulopsis gilae*)
- None – New Mexico springsnail (*Pyrgulopsis thermalis*)

Table 1. ESA-Listed Species evaluated for potential to occur in the Project Area

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
AMPHIBIANS					
Lithobates chiricahuensis Chiricahua leopard frog	Threatened (USFWS 2002a, USFWS 2012b); designated critical habitat (USFWS 2012b).	Breeds in perennial to semi-permanent montane aquatic environments including cattle tanks, creeks, cienegas, pools, rivers, springs, lakes and reservoirs (USFWS 2011). Larvae are obligate on aquatic habitats whereas adults are primarily aquatic but also utilize terrestrial habitats (USFWS 2012b). May disperse from occupied habitat one mile overland, three miles along intermittent drainages, and five miles along permanent water courses, or some combination thereof (USFWS 2012b). Elevation: 3,200–8,890 ft (USFWS 2012b).	Occurs in Arizona and New Mexico, U.S. and Sonora, Chihuahua and Durango, Mexico (USFWS 2012b).	In New Mexico, this species is found in west-central and southwestern New Mexico where suitable habitat can be found (Natural Heritage New Mexico 2021). This species is known to occur in suitable habitat in the Animas, Black Range, Guadalupe, Mogollon, and Peloncillo mountains, coinciding with the Rio Grande and Pecos Basins, Elephant Butte Reservoir, Caballo, Playas Lake, Mimbres, Rio Grande, Tularosa Valley, Lower Colorado River Basin, Upper Little Colorado, Upper Gila, Animas Valley, San Francisco, San Simon, San Bernandino Valley, and Cloverdale watersheds (BISON-M 2017d).	**None**. There is no suitable habitat in the Project Area. Previous surveys adjacent to the Little Rock site, on the east side of the mine and several miles from the Project Area, did not detect this species, nor were there any water features within five-mile radius that could support leopard frogs (BLM 2010). Given that the nearest suitable habitats (Mimbres or Gila River) are beyond the dispersal capabilities of this species (i.e., greater than three miles away), and surface flow in the Project Area is intermittent in Oak Grove Wash, the Project Area would not contribute to CLF dispersal, nor provide year-round suitable habitat for populations or metapopulations of CLF. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
BIRDS					
Coccyzus americanus (western Distinct Population Segment) Yellow-billed cuckoo	Threatened (USFWS 2014a); designated critical habitat (USFWS 2021b).	In Arizona, most commonly found in lowland riparian woodlands where Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk are dominant (USFWS 2013c). Also utilizes drier woodlands including mesquite bosques, drainages in desert scrub and desert grassland with a tree component, and Madrean evergreen woodlands in perennial, intermittent or ephemeral drainages (USFWS 2020c). This species typically occurs at elevations less than 6,600 ft (AGFD 2011c). Western yellow-billed cuckoos may migrate along riparian corridors and surrounding upland vegetation (Hughes 2020). Elevation: Typically below 6,600 ft (AGFD 2011c).	This species is a long-distance neotropical migrant (Hughes 2020). At the species level, breeds throughout temperate North America south to Mexico and the Greater Antilles (Hughes 2020). The western DPS breeds west of the Continental Divide and the watershed boundary between the Rio Grande and Pecos River and the Chihuahuan Desert. The USFWS considers the historical breeding range to include southern British Columbia, Canada and in Washington, Idaho, Nevada, Oregon, Utah, western Colorado, southwestern Wyoming, California, Arizona, western New Mexico, and Texas, U.S. Breeding range extends into the Cape Region of Baja California Sur, Sonora, Sinaloa, western Chihuahua and northwestern Durango, Mexico (USFWS 2014a). Winters in South America, east of the Andes and typically south of the Amazon Basin in southern Brazil, Paraguay, Uruguay, eastern Bolivia and northern Argentina (USFWS 2014a).	Occurs throughout the state where suitable habitat exists and is considered rare to fairly common. Breeding areas include the San Juan, Dry Cimarron, Rio Grande, Pecos, Mora, Canadian, San Francisco, and Gila valleys (BISON-M 2018k, accessed January 2021). This species is most common in the south and along major drainages (eBird 2021).	**Unlikely**. There is no preferred riparian habitat in the Project Area. However, this species uses ephemeral drainages in the southwest, thus the Project Area has some marginally suitable habitat. In addition, there have been citizen scientists detections of YBC in the vicinity of the Project Area (eBird 2021). Given that the habitat in the Project Area is marginal, and constitutes a minor portion of the available habitat for cuckoo in New Mexico, it is unlikely for this species to occur in the Project Area, although it is possible that cuckoo may traverse the site while foraging or migrating. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Falco femoralis septentrionalis Northern aplomado falcon	Endangered (USFWS 1986); no critical habitat; non-essential experimental population (USFWS 2006a).	Within the U.S., this species uses coastal prairies, desert grasslands, oak woodlands and riparian gallery forest (Keddy-Hector, Pyle, and Pattern 2017). This species has historically occurred in relatively flat and open habitats (USFWS 2014c). Builds nests in large trees, cliffs, utility poles, artificial platforms or on the ground when elevated nest sites are not available (Keddy-Hector, Pyle, and Pattern 2017). This species is expected to use similar habitat year-round (Keddy-Hector, Pyle, and Pattern 2017). Elevation: In southwestern US, most common from 3,300–4,900 ft (AGFD 2001c).	This species is mostly non-migratory, although local nomadic movement may occur (Keddy-Hector, Pyle, and Pattern 2017). The *septentrionalis* subspecies occurs in New Mexico and Texas, U.S. and the Mexican states of Chihuahua, northwestern Chiapas, western Campeche, Oaxaca, San Luis Potosi, Tabasco, and Vera Cruz (USFWS 2014c). Before reintroductions in Texas, the last known breeding of this species in the U.S. occurred in New Mexico in 1952. Current populations are primarily in Mexico, with isolated populations in southern Texas and from northern Chihuahua to southern New Mexico.	Occasional in the southern portion of the state; rare and local, mainly in grassland-shrubland areas at lower elevations (BISON-M 2017a).	**None**. The Project Area contains oak woodlands and thus may have marginal suitability for this species. However, this species is considered very rare in New Mexico, the nearest sighting of this species is 40 miles away (and this detection occurred over 20 years ago) (eBird 2021). Moreover, the Project Area constitutes a small percentage of the overall marginal habitat available for this species in New Mexico. Thus, the probability of their use of marginal habitats is very low.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Empidonax traillii extimus Southwestern willow flycatcher	Endangered (USFWS 1995); designated critical habitat (USFWS 2013a).	Breeds in successional stands of dense riparian vegetation composed of trees and shrubs along rivers or lakes (AGFD 2002c, USFWS 2013a). Migrates along riparian habitats, including those with shorter or more sparse vegetation or smaller patches than would be suitable for nesting (USFWS 2013a). This species is a long-distance neotropical migrant and winters in habitats outside of the U.S. (Sedgwick 2020). Elevation: In Arizona, 75–9,180 ft (AGFD 2002c).	This species is a long-distance neotropical migrant (Sedgwick 2020). Breeds in Arizona, California, Colorado, New Mexico, Nevada, Texas and Utah, U.S. Winters in southern Mexico and south to northern South America (Sedgwick 2020, USFWS 2013a).	In New Mexico, populations of this species occur along the Rio Grande and Gila river drainages, with much smaller populations at isolated locales in the San Juan, upper Canadian, Zuni, San Francisco, Mimbres, and Pecos river drainages (NMDGF 2018). Historical breeding records are also known from the Canadian, Chama, San Francisco, San Juan, and Zuni river drainages. Species occurs widely throughout the state during migration. (BISON-M 2018j).	**None**. There is no suitable riparian habitat with dense riparian vegetation in the Project Area, there are no detections of this species in New Mexico by citizen scientists (eBird 2021), and this species is limited to perennial waterways with tracts of riparian vegetation. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Strix occidentalis lucida Mexican spotted owl	Threatened (USFWS 1993a); designated critical habitat (USFWS 2004).	Prefers old-growth mixed conifer or pine-oak forests, or such forests with complex structure. Also uses narrow canyons with cliffs and conifer or riparian woodlands (Gutiérrez, Franklin, and Lahaye 2020). In Arizona, canyon habitats typically contain Madrean evergreen oak or Madrean pine-oak woodlands (Wise-Gervais 2005). In forested areas, nests in large trees. In canyon habitats, will nest in trees, caves or on rocky ledges (USFWS 2012c). Primarily forages for rodents in range of forest or woodland habitats, but diet also includes lagomorphs, bats, birds, reptiles and arthropods (AGFD 2005, Gutiérrez, Franklin, and Lahaye 2020, USFWS 2012c) . Species has large home ranges, with single owls in Arizona utilizing an average of 1,600 acres and pairs an average of 2,000 acres (AGFD 2005). Migration variable within areas and among years (AGFD 2005, Gutiérrez, Franklin, and Lahaye 2020). When winter movements do occur, this species may move locally, primarily to lower elevations and more open sites with pinyon pine-juniper woodlands, open mountain shrub habitat, conifer forests or deciduous riparian trees (AGFD 2005, Gutiérrez, Franklin, and Lahaye 2020). Elevation: 2,720–10,000 ft (AGFD 2005).	This species is primarily non-migratory, although there may be some short distance (12 to 30 miles) or altitudinal movement (Gutiérrez, Franklin, and Lahaye 2020). Occurs patchily in Colorado, Utah, Arizona, New Mexico and western Texas. Range extends from the international border southward along the Sierra Madre Occidental and Oriental to Michoacán (Gutiérrez, Franklin, and Lahaye 2020, USFWS 2012c).	In New Mexico, this species occurs in summer and winter throughout the state, except for in the eastern plains. They are more abundant in the south. Some of the larger populations are found in the Gila National Forest and Sacramento Mountains (Ganey et al. 2014, New Mexico Avian Conservation Partners 2017).	**Unlikely**. The Project Area is within the known distribution of this species and there is marginally suitable habitat in the Project Area. However, given the lack of mature forest habitat and the on-going levels of disturbance, it is unlikely that a spotted owl would remain in this area for an extended period. Despite this, it is possible that this species may forage or pass through the Project Area The closest area of designated critical habitat is 20 miles north near Silver City. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
FISH					
Cyprinella formosa Beautiful shiner	Threatened (USFWS 1984); designated critical habitat (USFWS 1984).	Riffles of small to medium streams with sand, gravel, and rock bottoms (BISON-M 2018b). Elevation: less than 4,500 ft (BISON-M 2018b).	Extirpated from the U.S. in 1968, but still found in much of its historical range in Mexico. Breeding stock were collected from Mexico in 1989 and placed at Dexter National Fish Hatchery in New Mexico. In 1990, several individuals were taken from the hatchery and were reintroduced on San Bernardino National Wildlife Refuge in southeastern Arizona (Cochise County) (USFWS 1994). Historically occurred throughout the Rio Yaqui Basin in USA and Mexico and the Mimbres River in New Mexico, primarily in Cochise County in Arizona, and Grant and Luna Counties in New Mexico (Cobble 1995b).	Historically found in Rio Yaqui drainage and the Mimbres River (USFWS 1994), although it is now considered to be extirpated in New Mexico (NatureServe 2021a, Sublette et al. 1990).	**None**. There is no suitable aquatic habitat in the Project Area and this species is presumed extirpated in New Mexico. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Gila nigrescens Chihuahua chub	Threatened (USFWS 1983); no critical habitat.	This species requires perennial water and prefers habitat with pools and undercut bank habitat (USFWS 1983). In streams, Chihuahua chub are found mainly in lateral-scour pools where flow is against or along undercut banks and pools around channel obstructions such as boulders and root wads (Propst and Stefferud, 1994). Elevation: There are few records from New Mexico, but elevations range between approximately 6900-7,100 ft. Across the range (including Mexico), elevations range between 4,500-7,100 ft (Propst and Stefferud 1994).	Chihuahua chub is native to the Mimbres River drainage in New Mexico and the Guzmán and Laguna Bustillos basins in Chihuahua (Propst 1999).	Historically, Chihuahua chub probably occupied all warmwater reaches in the Mimbres River drainage, but they now are found regularly only in Moreno Spring, in about a 15 km reach of the Mimbres River from the confluence of Allie Canyon downstream to the New Mexico Department of Game and Fish Mimbres Property south of Mimbres (Propst 1999).	**None**. There is no suitable aquatic habitat in the Project Area.
Gila intermedia Gila chub	Endangered (USFWS 2005); designated critical habitat (USFWS 2005). [Note: USFWS (2017) determined that *G. nigra* and *G. intermedia* should be subsumed into *G. robusta* and intends to review the status of Gila chub.]	The species typically occurs in pools of small streams or cienegas. However, this species can also be found in larger streams. It is often found near undercut banks, overhanging vegetation, and various types of cover within the aquatic habitat (USFWS 2015c). Elevation: 2,000–5,500 ft (USFWS 2015c).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. and Sonora, Mexico (USFWS 2015c).	In New Mexico, all historically documented populations have been extirpated except in Turkey Creek, in northwestern Grant County (USFWS 2005).	**None**. There is no suitable aquatic habitat in the Project Area and it is outside the known distribution of this species. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Meda fulgida Spikedace	Endangered (USFWS 2012a); designated critical habitat (USFWS 2012a).	Inhabits shallow riffles with sand, gravel, and rubble substrates of moderate to large perennial streams (USFWS 2012a). Elevation: 1,620–4,500 ft (AGFD 2013c).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. (USFWS 2012a).	In New Mexico, this species is found in the mainstem Gila River, as well as in the lower end of the West, Middle, and East forks of the Gila River, and Mangas Creek within Hidalgo, Grant, and Catron counties (BISON-M 2017k).	**None**. There is no suitable aquatic habitat in the Project Area. There is no designated critical habitat in the Project Area.
Rhinichthys* [=*Tiaroga*] *cobitis Loach minnow	Endangered (USFWS 2012a); designated critical habitat (USFWS 2012a).	Typically inhabits swift, small to large perennial streams where it uses interstitial spaces or lee areas of primarily cobble substrates for resting and spawning (USFWS 2012a). However, slow, silty streams are occasionally used (Minckley and Marsh 2009, , p. 174). Adults are often found in areas with coarse, filamentous algae (Minckley and Marsh 2009, p. 174, USFWS 2012a). Elevation: Below 8,000 ft (USFWS 2012a).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. (USFWS 2012a).	In New Mexico, the species is found in the Gila River and its tributaries including the West, Middle, and East forks of the Gila River (Paroz and Propst 2007); the San Francisco and Tularosa Rivers and their tributaries in Catron County (Propst et al. 2009); Blue River and its tributaries, including Dry Blue, Campbell Blue, Pace, and Frieborn Creeks (Catron County) and Dry Blue Creek. and Blue Rivers and some of their tributaries (Carter 2008, Clarkson et al. 2008, USFWS 2012a).	**None**. There is no suitable aquatic habitat in the Project Area. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Poeciliopsis occidentalis Gila topminnow (including Yaqui)	Endangered (USFWS 1967); no critical habitat.	Occurs in springs, cienegas, permanent and intermittent streams and the margins of large rivers. Prefers warm, shallow and slow-moving water but can occur in lentic habitats or lotic habitats with moderate current. Additionally, favors areas with algal mats or debris along stream margins (USFWS 1998b). Elevation: Historical records from 1,320–7,510 ft, with most records occurring below 5,000 ft (AGFD 2001a).	Occurs in the Gila, Concepción and Yaqui river basins of Arizona and New Mexico, U.S. and Sonora, Mexico (Cobble 1995a, USFWS 1998b).	In New Mexico, this species has historically been found in the Gila River at Frisco Hot Springs (Sheffer et al. 1997) and San Francisco River drainage, although this species may be extirpated in New Mexico (Paroz et al. 2006). In 1989, the Gila topminnow was stocked in a pond on the NMDGF Red Rock Wildlife Management Area (NMDGF 1996); however, the effort was unsuccessful.	**None**. There is no suitable aquatic habitat in the Project Area.
Oncorhynchus gilae Gila trout	Threatened (USFWS 1967, USFWS 2006b); no critical habitat.	Inhabits perennial montane streams in coniferous and mixed woodland, montane coniferous forest, and subalpine forests (USFWS 2003). These streams area characterized by high flow variability but with low turbidity and high dissolved oxygen. Spawns in areas with flow over substrates of coarse sand or gravel. Juveniles likely use areas with slow current such as stream margins, side channels or shallow bars. Subadults favor riffle habitats whereas adults prefer pool habitats (USFWS 2003). Elevation: 5,400–9,200 ft (USFWS 2003).	Arizona and New Mexico, U.S. (USFWS 2003).	In New Mexico, this species historically occurred in the headwater streams of the Gila and San Francisco rivers. As of 2001, there were documented populations in Grant, Catron, and Sierra counties, New Mexico (USFWS 2002b). Three streams within Grant County were known to contain populations of the Gila trout (McKnight Creek, Sheep Corral Canyon, and Black Canyon). Gila trout were introduced into McKnight Creek (USFWS 1993b).	**None**. There is no suitable aquatic habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
MAMMALS					
Canis lupus baileyi Mexican gray wolf	Endangered (USFWS 1975, USFWS 2015a); non-essential experimental population (USFWS 1998a, USFWS 2015a); non-essential experimental population remanded but remains in place until a new rule is finalized (Ctr. for Biological Diversity v. Jewell 2018).	Occurs in sparsely to densely forested mountainous terrain or adjacent grasslands where prey is abundant. Prey species include cervids, peccaries, lagomorphs and rodents (USFWS 2015a). Elevation: 3,000–12,000 ft (AGFD 2001b).	The *baileyi* subspecies occurs in Arizona and New Mexico, U.S. and Sonora, Mexico (USFWS 2015a).	This species has been translocated into the Gila National Forest in New Mexico. The non-essential experimental population boundaries are south of I-40 and is divided into management zones. Zone 1: Initial releases and translocations can occur into Apache-Sitgreaves National Forests, and the Tonto Basin Ranger District of Tonto National Forest. Zone 2: Areas outside of Zone 1, south of I-40 and east of Hwy 60/89 and 93, I-10 and I-19 allows for natural dispersal and occupancy. Initial releases allowed on private and tribal land with approved management agreements. Translocations and release of pups less than 5-months old allowed on Federal lands. Zone 3: Areas south of I-40 and west of Hwy 60/89 and 93, I-10 and I-19. Within Zone 3 no releases or translocations are allowed but can be occupied by naturally dispersing individuals (USFWS 2015a).	**Unlikely**. While the Project Area occurs within the secondary recovery zone of the Blue Range Recovery Area, and suitable habitat for the wolf exists in areas surrounding the site, no wolves have been documented on this site Currently, there are no packs within 45 miles of the Project Area according to the USFWS Mexican wolf tracking (USFWS 2021c). However, due to the high mobility of this species, it is possible that an occasional wolf could disperse through the area. Given that the size of the Project Area is negligible relative to the available habitat for this species, the sensitivity of gray wolves to disturbance (USFWS 1998a), it is highly unlikely that this species will occur in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Leptonycteris nivalis Mexican long-nosed bat	Endangered (USFWS 1988), no critical habitat.	A colonial cave dweller that usually inhabits deep caverns, but also can be found in mines, culverts, hollow trees, and unoccupied (USFSW 1988). This bat occupies a variety of habitats from high-elevation pine oak woodlands to sparsely vegetated deserts. Foraging habitat includes columnar cacti and succulents such as saguaro cactus and paniculate agaves (century plants) (USFWS 1988). Elevation: 3,700-7,800 ft (USFWS 1988)	The Mexican long-nosed bat has been found in extreme southwestern New Mexico, the Big Bend area of Texas, the Chinati Mountains of Presidio County, Texas and southward to central Mexico (USFWS 1988).	This species has been documented in the "bootheel" mountain ranges of southwestern New Mexico in Hidalgo County. There are known roosts for these species in the Animas Mountains, with another potential population in the Big Hatchet Mountains (Bogan, Cryan, and Weise 2006).	**None.** Although there is a known roost site in the Bootheel mountain ranges of southwestern New Mexico region (Bogan, Cryan, and Weise 2006), the Project Area is outside the reported geographic range for this species. Furthermore, the Project Area does not contain suitable foraging habitat for this species. An internal survey of a decline shaft in the Project vicinity in 2014 by Bat Conservation International (BCI) concluded that this species does not occur (BCI 2014). This species is not expected to occur in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
REPTILES					
Thamnophis eques megalops Northern Mexican gartersnake	Threatened (USFWS 2014b); designated critical habitat (USFWS 2021a).	This species is strongly associated with water due to its primarily aquatic prey base and is heavily dependent on fish species. Occurs near or in ponds, cienegas, lowland river riparian forests and woodlands, and upland stream gallery forests. Avoids steep mountain canyons. Most abundant in densely vegetated habitat. Associated with a variety of biotic communities including Sonoran Desertscrub, Semidesert Grasslands, Interior Chaparral, Madrean Evergreen Woodland and into the lower reaches of Petran Montane Conifer Forest (AGFD 2012, USFWS 2013b). Northern Mexican gartersnakes may be found up to one mile (or more) away from water, using terrestrial habitat for brumation, digestion, or for thermoregulatory needs such as developing young (Jeff Servoss, USFWS pers. comm. to D. Cerasale, April 18, 2016). Elevation: 130–8,497 ft (USFWS 2014b) but is most common below 5,000 ft (AGFD 2012).	Occurs in Arizona and New Mexico, U.S. (USFWS 2014b). Although it is poorly known, the range extends into Mexico and is thought to include Sonora, Chihuahua, Durango, Coahuila, Zacatecas, Guanajuato, Nayarit, Hidalgo, Jalisco, San Luis Potosí, Aguascalientes, Tlaxcala, Puebla, México, Michoacán, Oaxaca, Veracruz, and Querétaro (AGFD 2012).	The status of this species in New Mexico is uncertain, although it is possible that this species may occur in Mule Creek (USFWS 2014d), and there is proposed critical habitat for this species in Gila River and Duck Creek, although portions of these areas are being considered for exclusion (USFWS 2020b); however, it is likely extirpated.	**None**. There is no suitable aquatic habitat in the Project Area and the nearest suitable habitat is well outside of the dispersal capability of this species. There is no designated critical habitat in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Thamnophis rufipunctatus Narrow-headed gartersnake	Threatened (USFWS 2014b); proposed critical habitat (USFWS 2020b).	This species is strongly associated with pool and riffle habitats in clear, rocky streams habitats in Petran Montane Conifer Forest, Great Basin Conifer Woodland, Interior Chaparral and the Arizona Upland subdivision of Sonoran Desertscrub. Occasionally utilizes lake shoreline habitats (USFWS 2014b). The narrow-headed gartersnake primarily preys on fish species (USFWS 2014b). Bank-line vegetation is an important habitat component and this species favors areas with shrub- and sapling-sized plants for thermoregulation (USFWS 2014b). This species has been documented using site up to 656 ft away from the floodplain for hibernation (USFWS 2014b). This species is typically surface active between March and November with air temperatures of 52° to 89° F (USFWS 2014b). Elevation: 2,300–8,000 ft (USFWS 2014b).	Occurs in Arizona and New Mexico, U.S. (USFWS 2014b).	In New Mexico, this species is confined to the Catron, Grant, and Hidalgo counties where it reaches the easternmost edge of its distribution, where it uses suitable rocky rivers and streams of the San Francisco and Gila River drainages. This species is expected to exist within the San Francisco River drainage at low densities. Individuals have been recently detected in Saliz Creek, Whitewater Creek, Diamond Creek, and Dry Blue Creek near the Arizona border in Catron County (NMDGF 2020).	**None**. There is no suitable aquatic habitat in the Project Area and there is no suitable prey base (fish) for this species. The nearest suitable aquatic habitat is outside of the dispersal capabilities of this species; thus, this species is not expected to occur. There is no critical habitat in the Project Area.

Table 2. BGEPA Listed Species evaluated for potential to occur in the Project Area

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Aquila chrysaetos Golden eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c).	Range-wide, breeds in a wide variety of open habitats, with nests typically on cliffs, and avoids heavily forested areas (Katzner et al. 2020). In Arizona, prefers pinyon-juniper woodlands and Sonoran desertscrub (Driscoll 2005). Constructs large nests on cliff ledges, rock outcrops, tall trees or, rarely, transmission towers (Driscoll 2005). Golden eagles are known to forage within 4.4 miles of the nest (Tesky 1994), generally in open habitats where prey is available (Katzner et al. 2020). Primarily feeds on small mammals (greater than 80% of prey items) but also consumes birds, reptiles and fish (Katzner et al. 2020). In the western U.S. average territory size ranges from 22 to 55 square miles (AGFD 2002b). Elevation: In Arizona, typically breeds between 1,300–9,000 ft (Driscoll 2005).	This species is a short to medium-distance partial migrant with a Holarctic distribution (Katzner et al. 2020). In North America, primarily breeds in western portion of the continent from Alaska to central Mexico. Northern most populations are typically migratory. Year-round and non-breeding populations occur from central Saskatchewan to British Columbia, Canada and south throughout its range and sparsely in the eastern U.S. (Katzner et al. 2020).	In New Mexico, Golden Eagles breed locally in suitable habitat throughout the state (Katzner et al. 2020, Parmeter, Neville, and Emkalns 2002).	**Possible.** Golden eagles have been detected within 3 miles of the Project Area (eBird 2021, accessed 1/5/2021) and the site contains marginally suitable foraging habitat. There are no cliffs within the Project Area that could serve as suitable nesting habitat, although there are some ponderosa pines are present. Given the nearby sightings of golden eagles and marginally suitable habitat present, it is possible that golden eagles may occur within or in the vicinity of the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Haliaeetus leucocephalus Bald eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c).	Breeding is concentrated in coastal areas, along rivers, lakes or reservoirs. Typically breeds in forested areas with edge habitat within 1.3 miles of aquatic habitats suitable for foraging. Prefers areas of shallow water and shorelines for fishing and hunting wide variety of waterfowl, and small aquatic and terrestrial mammals. Fish are preferred prey, but carrion is used extensively whenever encountered. Nests away from human disturbance in large trees and rarely on cliff ledges or on the ground when trees are absent. Winters primarily in coastal areas or along major river systems with adequate prey availability and large trees for perching (Buehler 2020). Elevation: In Arizona, 460–7,930 ft (AGFD 2011a).	Migratory behavior varies among populations and age groups (Buehler 2020). Breeds south of the tundra throughout Canada and the U.S., excluding Hawaii. Additionally, small breeding populations occur in Baja California, Sonora and Chihuahua, Mexico (Buehler 2020). Winter range appears to be expanding as populations increase in size. Most populations are year-round residents with only the northern most populations in Alaska, U.S. and Canada withdrawing southward or to coastal areas (Fink et al. 2018).	In New Mexico, bald eagles are present casually to occasionally in summer, but they migrate and winter almost statewide, although there is limited breeding in New Mexico (Buehler 2020).	**Unlikely**. The Project Area within the range of this species and there are citizen scientists' sightings of bald eagles within ten miles of the site (eBird 2021, accessed 1/5/2021). However, the Project Area does not contain large bodies of water associated with this species. While it is possible that a bald eagle may fly over the Project Area when foraging, given the absence of preferred habitat, it is unlikely that this species will occur.

Table 3. NMDGF-Listed Species evaluated for potential to occur in the Project Area

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
AMPHIBIANS				
Lithobates yavapaiensis Lowland leopard frog	Occur in a variety of perennial to near perennial waters in desert grasslands to pinyon juniper biotic communities (AGFD 2006). Inhabits large rivers, streams, canals, cienegas, cattle tanks or other aquatic features (Rorabaugh 2008). Can survive in semi-permanent aquatic systems by retreating into deep mud cracks, mammal burrows, or rock fissures, but large pools are required for adult survival and reproductive efforts (Bureau of Reclamation 2016). Elevation: In Arizona, from 480–6,200 ft (AGFD 2006).	Historic range included Arizona, California, Nevada, New Mexico, U.S. and extreme northeastern Baja California, northern Sonora, and possibly northwestern Chihuahua, Mexico (AGFD 2006, Bureau of Reclamation 2016). Current range is restricted to southern Arizona and adjacent portions of Sonora (Bureau of Reclamation 2016).	Is thought to be extremely rare and likely extirpated in the state. A 1995 survey of 72 potential locations in the state, including six historical sites that had not been surveyed in the past 10 years, resulted in no observations. Populations are now believed to be extirpated or occurring in very low numbers (BISON-M 2019c).	**None.** There is no suitable aquatic habitat in the Project Area, and this species is likely extirpated from the state.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
BIRDS				
Melozone aberti Abert's towhee	Occupies riparian areas with cottonwood-willow woodlands, mesquite bosque, marshes and mixed exotic-native vegetation within the lower Sonoran life zone. Prefers a dense understory (Tweit and Finch 1994). Most abundant in low-elevation riparian vegetation with cottonwood, willows and mesquite or dry washes with dense thickets. Additionally, utilizes areas with dense stands of tamarisk, patches of dense shrubs along irrigation ditches or run-off retention ponds in agricultural areas and densely vegetated suburban areas (Corman 2005a). Occurs in the same habitat year-round (Tweit and Finch 1994). In its New Mexico range, this species uses thickets of seepwillow and other riparian habitats. Elevation: In Arizona and neighboring states, generally below 4,300 ft (Corman 2005a).	Non-migratory. The core of their range is in Arizona, but also extends into adjacent portions of southeastern California, southwestern New Mexico, southeastern Nevada, and extreme southwestern Utah, U.S. Additionally, there are populations just south of the international border in Baja California and Sonora, Mexico (Corman 2005a, Tweit and Finch 1994).	Found along portions of the Gila River from the Arizona border to Mogollon Creek in Grant County, and at the San Simon Cienega in Hidalgo County where suitable habitat exists (BISON-M 2018a, Tweit and Finch 2020).	**Unlikely.** There are citizen scientist sightings of this species in nearby Tyrone (eBird 2021). However, the species is rarely detected in the general vicinity and the Project Area does not contain suitable riparian habitat. This species may occur as a vagrant.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Haliaeetus leucocephalus Bald eagle	Breeding is concentrated in coastal areas, along rivers, lakes or reservoirs. Typically breeds in forested areas with edge habitat within 1.3 miles of aquatic habitats suitable for foraging. Prefers areas of shallow water and shorelines for fishing and hunting wide variety of waterfowl, and small aquatic and terrestrial mammals. Fish are preferred prey, but carrion is used extensively whenever encountered. Nests away from human disturbance in large trees and rarely on cliff ledges or on the ground when trees are absent. Winters primarily in coastal areas or along major river systems with adequate prey availability and large trees for perching (Buehler 2020). Elevation: In Arizona, 460–7,930 ft (AGFD 2011a).	Migratory behavior varies among populations and age groups (Buehler 2020). Breeds south of the tundra throughout Canada and the U.S., excluding Hawaii. Additionally, small breeding populations occur in Baja California, Sonora and Chihuahua, Mexico (Buehler 2020). Winter range appears to be expanding as populations increase in size. Most populations are year-round residents with only the northern most populations in Alaska, U.S. and Canada withdrawing southward or to coastal areas (Fink et al. 2018).	Are present casually to occasionally in summer, but they migrate and winter almost statewide, although there is limited breeding in the state (Buehler 2020).	**Unlikely.** The Project Area is within the range of this species and there are citizen scientists' sightings of bald eagles within ten miles of the site (eBird 2021). However, the site does not contain large bodies of water associated with this species. While it is possible that a bald eagle may fly over the site while foraging, given the absence of preferred habitat, it is unlikely that this species will occur.
Centronyx bairdii **[recently changed from *Ammodramus bairdii*]** Baird's sparrow	Utilizes prairie habitats. Winters in areas of dense and expansive grasslands, with only a minor shrub component (Green et al. 2020). In southern New Mexico, this species prefers areas with denser grass cover than surrounding areas (BISON-M 2019a). Elevation: 3,900-6,570 ft (BISON-M 2019a).	Nests in the Dakotas, Montana, and Minnesota, as well as the Canadian provinces of Alberta, Manitoba, and Saskatchewan. Winters primarily in northern Mexico, although some may be found in southern Texas, New Mexico, and Arizona (BISON-M 2019a, Green et al. 2020).	Species migrates in the eastern and extreme southern areas of the state, where it is considered rare to uncommon (BISON-M 2019a, Green et al. 2020).	**None.** The Project Area lack of suitable habitat, this species is considered rare to uncommon in the state, and has only been detected irregularly in southwestern New Mexico (eBird 2021).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Vireo bellii Bell's vireo	Breeds in a wide variety of dense shrubby habitats, often near water, particularly in arid environments, including riparian scrub along drainages, successional riparian vegetation, brushy fields, mesquite brushlands, chaparral and young forests and woodlands (Kus et al. 2020). In New Mexico, they characteristically occurs near riparian habitat and dense shrubland or woodland along lowland stream courses (Kus et al. 2020). In the southeast and southwest parts of the state, most nests occur in willow, seepwillow, or hackberry (Kus et al. 2020) Elevation: In Arizona, breeds 120–5,120 ft (Averill-Murray and Corman 2005).	A neotropical migrant (Kus et al. 2020). Breeds throughout the central and southwestern U.S. including Arizona, Arkansas, California, Colorado, Illinois, Indiana, Kentucky, Louisiana, Michigan, Missouri, Nebraska, Nevada, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Texas, Utah, Wisconsin, and Wyoming. Additionally, breeds in northern Mexico in Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Nuevo Leon, San Luis Potosi, Sinaloa, Sonora, Tamaulipas, and Zacatecas. The wintering range is less well known but includes Baja California Sur and south along the Pacific Slope from Sonora through Oaxaca, El Salvador, Honduras and Nicaragua (Kus et al. 2020). There are scattered winter records throughout the southern U.S. portion of the breeding range and in Florida (Kus et al. 2020).	Considered a common and widespread summer resident in southern parts of the state (Bailey 1928, Hubbard 1978). They are known populations in the lower Gila Box, San Simon Cienega, and Guadalupe Canyon.	**None.** Lack of suitable foraging or nesting habitat within the Project Area, and the Project Area is above the elevation preferred by this species. There are no citizen scientist records of this species from the vicinity of the Project Area (eBird 2021).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Cynanthus latirostris Broad-billed hummingbird	Utilizes a wide variety of habitats across its range including riparian forest, thorn forest, tropical deciduous forest, pine-oak forest and successional or disturbed habitats (Powers and Wethington 2020). In New Mexico, occurs along drainages with riparian habitat (Powers and Wethington 2020). Additionally, uses densely vegetated washes with mesquite, netleaf hackberry, juniper or oaks, parks and residential areas (Corman 2005b). There is no information on habitat use during migration. Winters in habitats outside of the U.S. (Powers and Wethington 1999). Elevation: Range-wide 490–9,840 ft (Powers and Wethington 2020). In Guadeloupe Canyon, New Mexico, breeds at approximately 4,480 ft (Powers and Wethington 2020).	A partial migrant, with the northern most populations withdrawing southward (Powers and Wethington 1999). Breeds in southeastern Arizona, extreme southwestern New Mexico and rarely in southwestern Texas, U.S. Range extends southward into Mexico in eastern Sonora, western Chihuahua, Sinaloa, extreme western Durango, Nayarit, west Zacatecas, Aguascalientes, Jalisco, Guanajuato, Querétaro, Hidalgo, Colima, Michoacán, México D. F., northern Guerrero, northern Puebla, extreme western Vera Cruz, Oaxaca, extreme southwestern Chiapas, San Luis Potosí, extreme western Tamaulipas, and extreme southern Nuevo León (Powers and Wethington 1999). During the winter, most individuals leave the U.S., northern Sonora and Nuevo León (Corman 2005b, Powers and Wethington 1999).	Dependent on riparian habitat in extreme southwest portion of the state in the Peloncillo and Guadeloupe Mountains in Hidalgo County (Powers and Wethington 1999). Have also been vagrant sightings of this species in Hidalgo, Doña Ana, and Sierra counties (BISON-M 2020a).	**Unlikely.** The Project Area does not contain the suitable forested habitat and is outside of the known breeding distribution. However, has been detected in the vicinity of the Project Area, although very rarely (eBird 2021).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Antrostomus [=*Caprimulgus*] *ridgwayi* Buff-collared nightjar	Prefers arid and densely vegetated areas and is often found in ravines, washes or rocky canyons (Bowers and Dunning 1997). Buff-collared nightjars do not build nests and instead lay eggs directly on the ground (Bowers and Dunning 1997). There is no information about habitat use during migration and this species winters in habitats outside of the U.S. (Bowers and Dunning 1997). Elevation: Across range, has been detected from sea-level to 7,870 ft (Bowers and Dunning 2020).	Migratory behavior of this species is poorly understood, but it is a suspected partial migrant with the northern most populations likely migratory (Bowers and Dunning 1997). Breeding range includes southeastern Arizona and extreme southwestern New Mexico, U.S. Breeding range extends southward into Mexico through eastern Sonora, western Chihuahua, Sinaloa, western Durango, south on the Pacific Slope to Oaxaca, northern Guerrero, Morelos, central Chiapas, and central Vera Cruz. Additional breeding populations occur in central Guatemala, west-central Honduras, and possibly central Nicaragua. Winter range is similar to the breeding range except the northern most populations withdraw from the US, north and central Sonora, Chihuahua and Durango (Bowers and Dunning 1997).	Detected in extreme southwestern portion of the state in of Hidalgo and Doña Ana counties (BISON-M 2017c).	**None.** The Project Area is outside of the known distribution of this species and there have been no citizen scientist records of this species in the vicinity (eBird 2021).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Buteogallus anthracinus Common black hawk	Is associated with swamps, marshes, flooded forests, coastal plains, mangroves, and riparian areas with perennial water. In the southwestern U.S. they are an obligate riparian species (Schnell 2020). In Arizona, this species occurs along perennial and intermittent streams with perennial pools in drainages with sycamores, Arizona alder, Fremont cottonwood, Arizona cypress, Arizona walnut, Goodding's willow, velvet ash, velvet mesquite or tamarisk. Hunts for arthropods and small vertebrates including fish, frogs, snakes, and lizards from streamside perches. High branches, rock ledges, sandbars or streamside rocks are used as foraging perches (Schnell 2020). U.S. populations are migratory and winter in Mexico or further south (Schnell 2020). Migratory habitat is insufficiently known, but this species is generally believed to follow riparian corridors (Sadoti 2010). Elevation: In Arizona, 1,800–7,000 ft (Corman and Wise-Gervais 2005).	A partial migrant. Migratory breeding populations in extreme southern Utah and Nevada, Arizona, New Mexico and western Texas in the U.S. and eastern Sonora, western Chihuahua, western Durango, and eastern Nayarit. Resident from Sinaloa and Tamaulipas and south, primarily along the coasts to Ecuador, Columbia, and Venezuela in northern South America. Occasional individuals have been reported overwintering in southern Arizona (Schnell 2020).	Found along the Gila, San Francisco, and Mimbres rivers in the southwest quadrant of the state, as well as along the Rio Hondo in the southeast. It occasionally nests along the Rio Grande as far north as Albuquerque, and in the Canadian River and Upper Pecos drainages. (AGFD 2013a, Corman and Wise-Gervais 2005).	**Unlikely.** While there is no suitable habitat in the Project Area, there have been citizen scientist detections of this species within 10 miles of the Project Area (eBird 2021). As there are ephemeral water features in the Project Area, it is possible that this species may fly over the site while foraging or migrating, although this is very unlikely.
Columbina passerine Common ground dove	Inhabit arid, open woodlands in the early stages of forest development, including pine woods, hammocks, lake shores, forest edges, coastal dunes, mesquite flats, river bottom woodlands, deserts, desert scrublands, oak scrublands, and savannas (Bowman 2020). Also found in human landscapes, especially irrigated farm fields and residential neighborhoods. Elevation: 1,000 to 6,000 ft in New Mexico (BISON-M 2017e).	Ranges from southern California to southern Florida, with populations occurring through Central and South America. Normally resident throughout breeding range, but vagrants north of range not uncommon. May move from interior to coastal areas; comparison of breeding and winter distributions suggest some movement southward from northern portions of range, but most movement into existing breeding areas (Bowman 2020).	Formerly was most regularly found in the southern part of the state at Las Cruces in the Rio Grande drainage and near Carlsbad (BISON-M 2017e).	**Unlikely.** There is potentially suitable habitat in the Project Area but there are no eBird records in the vicinity (eBird 2021).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Calypte costae Costa's hummingbird	Breeds in Sonoran and Mojave desertscrub, coastal scrub, chaparral and tropical deciduous forest (Baltosser and Scott 1996). In Arizona, this hummingbird occurs in upland desertscrub, desert washes and in riparian vegetation associated with springs or intermittent streams (Corman 2005c). During migration, this species uses xeric habitats but also is known to travel along drainages, which may be more mesic than habitats used during breeding (Baltosser and Scott 1996). Arizona populations may travel westward to summer in chaparral and costal scrub of California and Baja California (Baltosser and Scott 1996). Elevation: In Arizona, typically 100–4,700 ft, but occasionally up to 7,800 ft (Corman 2005c).	A partial migrant (Baltosser and Scott 1996). Migratory breeding populations occur in east-central California, southern Nevada, Arizona and extreme southwestern New Mexico and Sonora, Mexico. Resident breeding populations occur in southern California, southwestern Arizona and in Baja California, Baja California Sur and northwestern Sonora, Mexico. Wintering populations occur in southern Sonora, Sinaloa and Nayarit (Baltosser and Scott 1996).	Uncommon and sporadic breeder in the southwest and south-central mountains, and is most commonly found in Guadalupe Canyon and in side canyons along the lower Gila River from Cliff south (BISON-M 2017f).	**Unlikely.** There is marginally suitable habitat of ephemeral washed in the Project Area, and there have been citizen scientist detections of this species within 10 miles of the site (eBird 2021). It is possible that this species may fly over the site while foraging or migrating.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Trogon elegans Elegant trogon	Most common tropical deciduous forest (Williams 2011) but uses a wide variety of habitats including semi-arid pine-oak woodland, xeroriparian areas in thornscrub, thorn forest, pine and pine-oak forests, riparian woodlands, montane rainforest and plantations (Kunzmann, Hall, and Johnson 1998). Habitat use in New Mexico is poorly known, but in Arizona, this species breeds in canyons with large sycamores and Madrean pine-oak woodlands and, less frequently, in lower elevation canyons with sycamores and adjacent slopes with scattered oaks, pinyon pine or juniper (Corman 2005d). There is no information on migration habitat (Kunzmann, Hall, and Johnson 1998, Williams 2011). Elevation: Range not well known in New Mexico. In Arizona, typically 3,400–6,800 ft (AGFD 2014) but have been observed above 7,000 ft (Corman 2005d).	A partial migrant, with only the northern most populations withdrawing southward (Kunzmann, Hall, and Johnson 1998, Williams 2011). Breeds from southeastern Arizona and southwestern New Mexico, U.S. south through Mexico from Sonora and Chihuahua along the Pacific Slope and from Tamaulipas and Nuevo León to southern Oaxaca. Additionally, occurs in southeastern Guatemala, El Salvador, western Honduras, Nicaragua and northwestern Costa Rica (Kunzmann, Hall, and Johnson 1998). During the winter, U.S. and northern Sonora populations withdraw southwards (Williams 2011).	Scattered records in Guadalupe Canyon and is also described as rare in the Peloncillo and Animas mountains (BISON-M 2017g, Kunzmann et al. 2020).	**Unlikely.** The Project Area is outside of the known current distribution of this species, although there is one historical record of this species from 1986 in the Big Burro Mountains (eBird 2021). Given the rarity of this species in the state, it is unlikely this species will occur in the site.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Melanerpes uropygialis Gila woodpecker	Occurs in desert areas with large cacti or trees, dry subtropical forests, riparian woodlands and residential areas (Edwards and Schnell 2000). In Arizona, this species is most common in upland areas of Sonoran Desert with abundant saguaros, paloverde, mesquite, and ironwood. Is present, but less common in low desert areas and washes where there are few to no saguaros. Commonly nests in riparian woodlands with Fremont cottonwood, Goodding's willow, mesquite, or sycamores. Generally tolerant of some types of human activities and utilizes residential and rural areas (Bradley 2005). They utilize similar habitat throughout the year (Edwards and Schnell 2000). Elevation: In Arizona, 150–4,800 ft (Bradley 2005). In New Mexico, 3,000-5,000 ft (BISON-M 2018e).	Non-migratory, although short-distance local movements may occur (Edwards and Schnell 2000). Found in Arizona, California, Nevada and New Mexico, U.S. and the Mexican states of Aguascalientes, Baja California, Baja California Sur, Chihuahua, Durango, Jalisco, Nayarit, Sinaloa, Sonora and Zacatecas (Edwards and Schnell 2000).	Present only in extreme southwest part of the state, in Grant and west Hidalgo counties (Edwards and Schnell 2000). Primarily found in the lower Gila Valley in both Grant and Hidalgo counties, Guadalupe Canyon, San Simon Cienega, drainages of the Animas and Peloncillo Mountains, and Bitter Creek in western Grant County (BISON-M 2018e, Edwards and Schnell 2000).	**Unlikely.** The Project Area is within the known geographic range, and there are eBird records in the vicinity near Silver City (eBird 2021). However, there is no suitable desert habitat in the site.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Vireo vicinior Gray vireo	Preferred breeding habitat includes pinyon pine-juniper woodlands, oak scrub and chaparral in arid mountain ranges and high plains (Barlow, Leckie, and Baril 2020). In Arizona and New Mexico, occurs in chaparral-juniper and dwarf conifer forests, as well as sites with Graves oak (*Quercus gravesii*), mixed piñon, and madrone (*Arbutus* spp.; (Barlow, Leckie, and Baril 2020). Occasionally occurs in chaparral dominated slopes and Madrean evergreen oak woodlands with only scattered pinyon pine or junipers (Corman 2005e). Habitat used during migration is likely similar to the breeding and wintering habitats. In Arizona, wintering habitat includes lowland Sonoran desertscrub and rocky canyons in desert mountains. Elsewhere in the wintering range this species uses Chihuahuan desertscrub and lowland riparian areas with willow and cottonwood near springs or intermittent streams (Barlow, Leckie, and Baril 2020). Elevation: Typically breeds 3,500–6,800 ft (Corman 2005e), winters much lower (Barlow, Leckie, and Baril 2020).	A short-distance migrant (Barlow, Leckie, and Baril 2020). Breeds from central and southern Utah and western Colorado, south to southern Nevada, Arizona, and New Mexico, U.S. Isolated populations also breed in southern California, Baja California, western Texas, U.S. and in Mexico in northwestern Coahuila and possibly north-central Durango. Wintering range is poorly known, but this species has been reported from south-central Arizona, western Sonora, Baja California Sur and western Texas (Barlow, Leckie, and Baril 2020).	Rare summer residents of the Gila National Forest and only in the state during the warmer months. Has been recorded in central and western counties east to Pecos, western San Miguel County, and Gran Quivara National Monument, eastern Socorro County, the Silver City area, the foothills of the Magdalena, Manzanita, and Sandia mountains and in the southeast in the Guadalupe Mountains and in eastern Otero County (BISON-M 2017i).	**Unlikely.** The Project Area is within the known distribution of this species, has potentially suitable woodland habitat, and there are eBird records within the immediate vicinity (eBird 2021). However, this species is rarely detected in New Mexico, and thus it is unlikely to occur in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Calothorax lucifer Lucifer hummingbird	Range-wide, this species primarily occurs in arid habitats including desertscrub, densely vegetated dry washes, lava fields, volcanic hills, rocky slopes but occasionally uses deciduous riparian woodland (Scott 1994). Little is known about habitat use in New Mexico. There is no information on migratory habitat and this species winters outside of the U.S. (Scott 1994). However, individuals have been reported from feeding stations in drainages dominated by sycamores, Madrean evergreen oak woodlands or pine-oak forest during the presumably post-breeding period (Corman 2005f). Elevation: Range-wide 2,625–7,220 ft (Scott 1994).	Migratory behavior is poorly understood, but this species is likely primarily migratory (Scott 1994). There are sparse breeding populations in southeastern Arizona, extreme southwestern New Mexico and the Big Bend region of Texas, U.S. The breeding range extends along the Sierra Madre Occidental and Oriental in northeastern Sonora, Chihuahua, Durango, Coahuila and Nuevo Leon to the Central Plateau and possibly as far south as Puebla (Scott 1994). Winters in central and southwestern Mexico in Jalisco, Guanajuato, Querétaro, Guerrero, Oaxaca, Colima, Michoacán and Morelos (Scott 1994).	A rare breeder and sparse visitor to the mountain ranges in the southwestern portion of the state including Post Office Canyon in the Peloncillo Mountains. Has also been recorded in the Peloncillos at Clanton Canyon and Skeleton Canyon (BISON-M 2018f).	**Unlikely.** While the Project Area may contain some marginally suitable woodland habitat, it is a rare vagrant to New Mexico, and has only been detected in the vicinity of the Project Area twice in the past 35 years, both times in Silver City (eBird 2021). Given the rarity of this species in New Mexico, it is unlikely to occur in the site.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Anaxyrus microscaphus Brown pelican	Primarily warm coastal marine and estuarine environments year-round. Generally rare inland, but regular post-breeding visitor to inland waters in the southwestern U.S. (Shields 2020) Very little is known about the habitat use of this species in New Mexico. Elevation: Unknown for New Mexico.	Pacific coast from southern California south to central Mexico (including Gulf of California), Honduras, Costa Rica, Panama, Galápagos Islands, Colombia, and southern Ecuador. On the Atlantic, this species is found in the Gulf of Mexico, and Caribbean coasts from Maryland south around Florida and west to southern Texas; from southern Veracruz, Mexico, east to northern Honduras. Also found in the Bahamas, Greater and Lesser Antilles, Trinidad and Tobago, Venezuela, and Colombia. Also inland at Lake Okeechobee, Florida and Salton Sea, California (Shields 2020)	Rare post-breeding vagrant to water bodies across the state (BISON-M 2017b).	**None.** There is no suitable inland water habitat in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Phalacrocorax brasilianus Neotropic cormorant	Inhabits a wide variety of wetlands in fresh, brackish, or saltwater. In coastal areas, this species remains close to the shore in sheltered bays, inlets, estuaries, lagoons, rock outcrops, and islands. Inland, occupies broad slow-flowing rivers, mountain streams, lakes, marshes, swamps, and reservoirs. Habitat requirements include water deep enough for diving and elevated perches in trees and shrubs (Telfair II and Morrison 2020) Elevation: across range, found from sea-level to 16,400 ft in the Andes (Telfair II and Morrison 2020).	Breeding resident throughout lowland South America and Aruba. Largely resident in Central America to northwestern Mexico, and north to Gulf Coast of United States from Texas to Louisiana, with inland breeding colonies established in Louisiana, Mississippi Delta, southern Florida, southwestern Arkansas, southeastern and north-central Oklahoma, central Kansas, eastern South Dakota, southern New Mexico, south-central Arizona, and southern, eastern, north-central, and western Texas (Telfair II and Morrison 2020). Nonbreeding range is similar to breeding range (Telfair II and Morrison 2020)	Found throughout the state in areas with suitably large bodies of water (BISON-M 2018g).	**None.** The Project Area does not contain suitable foraging or breeding habitat of large water bodies.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Falco femoralis septentrionalis Northern aplomado falcon	Within the U.S., this species uses coastal prairies, desert grasslands, oak woodlands and riparian gallery forest (Keddy-Hector, Pyle, and Pattern 2017). Historically occurred in relatively flat and open habitats (USFWS 2014c). Builds nests in large trees, cliffs, utility poles, artificial platforms or on the ground when elevated nest sites are not available (Keddy-Hector, Pyle, and Pattern 2017). Is expected to use similar habitat year-round (Keddy-Hector, Pyle, and Pattern 2017). Elevation: In southwestern U.S., most common from 3,300–4,900 ft (AGFD 2001c).	Mostly non-migratory, although local nomadic movement may occur (Keddy-Hector, Pyle, and Pattern 2017). The *septentrionalis* subspecies occurs in New Mexico and Texas, U.S. and the Mexican states of Chihuahua, northwestern Chiapas, western Campeche, Oaxaca, San Luis Potosi, Tabasco, and Vera Cruz (USFWS 2014c). Before reintroductions in Texas, the last known breeding of this species in the U.S. occurred in New Mexico in 1952. Current populations are primarily in Mexico, with isolated populations in southern Texas and from northern Chihuahua to southern New Mexico.	Occasional in the southern portion of the state; rare and local, mainly in grassland-shrubland areas at lower elevations (BISON-M 2017a).	**None**. The Project Area contains oak woodlands and thus may have marginal suitability for this species. However, this species is considered very rare in New Mexico, the nearest sighting of this species is 40 miles away (and this detection occurred over 20 years ago) (eBird 2021). Moreover, the Project Area constitutes a small percentage of the overall marginal habitat available for this species in New Mexico. Thus, the probability of their use of marginal habitats is very low.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Camptostoma imberbe Northern beardless tyrannulet	Occurs in arid to semi-humid brushy areas, thickets and forest edges, commonly along streams and dry washes (Tenney 2000). In New Mexico, irregular and uncommon in lowland riparian woodland and adjacent scrub (Tenney 2000). Also uses mesquite bosque and intermittent foothill drainages or dry washes with mesquite and netleaf hackberry (Corman 2005g). Migration habitat use is poorly known but has been reported in areas with desertscrub. Wintering habitat is similar to breeding habitat and includes lowland riparian woodland and adjacent habitats, chaparral and mesquite (Tenney 2000). Elevation: Poorly known for New Mexico. In Arizona, breeds 1,920–4,600 ft (Corman 2005g).	A partial migrant, with northern-most populations being short-distance migrants (Tenney 2000). Breeds locally in southcentral and southeastern Arizona, extreme southwestern New Mexico and in south Texas along the Rio Grande Valley. Range extends southward from U.S. populations through Mexico to Guatemala, although is absent from western Sonora, northwestern Sinaloa, the north Central Plateau, and the highlands of southeastern Chiapas. Also occurs in El Salvador, Honduras, Nicaragua and Costa Rica (Tenney 2000). Winter range is the same as the breeding range with only a portion of the populations in the northern-most extent of the range withdrawing (Tenney 2000).	Breeds irregularly in Guadalupe Canyon in extreme southwest Hidalgo County. Occasionally may occur in the Animas Mountains and north into southern Grant County (BISON-M 2017j)	**None**. The Project Area is outside of the known geographic range and is an irregular and rare visitor to the state.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Falco peregrinus anatum American peregrine falcon	Breeds in a wide range of open habitats (White et al. 2002). Prefer steep cliffs that overlook woodlands and riparian areas. Habitat selection is mainly driven by the abundance of prey (birds and occasionally bats). They dive from cliffs to ambush prey. Usually forages within 9 miles of the nest site, but foraging distances of 15 miles are common (Luensmann 2010). Can be found in less optimal habitats, such as small, broken cliffs or cliffs in xeric areas, when preferred habitat is not available. Will roost on tall buildings when prey is abundant (AGFD 2002a). In Arizona, this species is most often found in forested regions from pinyon pine-juniper and evergreen oaks to ponderosa pine and mixed conifer, to cold-temperate desertscrub and Sonoran desertscrub (AGFD 2002a, Burger 2005). Migratory and overwintering habitats are diverse and include similar habitats to those used during breeding and areas devoid of cliffs (White et al. 2002). Elevation: In Arizona, 400–9,000 ft (AGFD 2002a).	*F. peregrinus* occurs on every continent expect Antarctica (White et al. 2002). The *anatum* subspecies is a partial migrant and breeds throughout North America south of the tundra, excluding coastal Pacific Northwest, to northern Mexico (White et al. 2002). Winter range includes portions of the breeding range where prey is abundant year-round and extends south through Central America and South America through Chile (AGFD 2002a, White et al. 2002).	They pPass through the state during migration from March-May and there are isolated breeding records throughout the state (White et al. 2002).	**Possible**. While there is no the cliff habitat for nesting on the site, there are recent detections of peregrine falcons from in the vicinity of the Project Area (eBird 2021). It is possible that this species could pass through the site while foraging.
Empidonax traillii extimus Southwestern willow flycatcher	Breeds in successional stands of dense riparian vegetation composed of trees and shrubs along rivers or lakes (AGFD 2002c, USFWS 2013a). Migrates along riparian habitats, including those with shorter or more sparse vegetation or smaller patches than would be suitable for nesting (USFWS 2013a). They are a long-distance neotropical migrant and winters in habitats outside of the U.S. (Sedgwick 2020). Elevation: In Arizona, 75–9,180 ft (AGFD 2002c).	They are a long-distance neotropical migrant (Sedgwick 2020). Breeds in Arizona, California, Colorado, New Mexico, Nevada, Texas and Utah, U.S. Winters in southern Mexico and south to northern South America (Sedgwick 2020, USFWS 2013a).	Populations occur along the Rio Grande and Gila River drainages, with much smaller populations at isolated locales in the San Juan, upper Canadian, Zuni, San Francisco, Mimbres, and Pecos river drainages (NMDGF 2018). Historical breeding records are also known from the Canadian, Chama, San Francisco, San Juan, and Zuni River drainages. Species occurs widely throughout the state during migration (BISON-M 2018j).	**None.** There is no suitable riparian habitat with dense riparian vegetation in the Project Area and there are no eBird detection records are limited to perennial waterways with tracts of riparian vegetation in New Mexico (eBird 2021). There is no designated critical habitat in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Tyrannus crassirostris Thick-billed kingbird	Prefers low elevation gallery forest and edge habitats in tropical deciduous forest. The gallery forest may be surrounded by subtropical thorn scrub, desertscrub or oak woodland (Lowther, Pyle, and Patten 2020). Habitat use in New Mexico is poorly understood, but in Arizona, breeds in broad drainages at the edges of riparian woodland with large sycamores or cottonwoods. Also uses areas with tall cottonwoods around manmade ponds. Frequently forages in adjacent brushy areas (Corman 2005h) including oak-pine woodland or mesquite grassland (AGFD 2010).Winters in habitats outside of the U.S. Migratory habitat is unknown but is expected to be similar to that used for breeding (Lowther, Pyle, and Patten 2020). Elevation: Range-wide, occurs below 6,070 ft (Lowther, Pyle, and Patten 2020).	A partial migrant with only the northernmost populations withdrawing southward (Lowther, Pyle, and Patten 2020). Breeds from southeastern Arizona and extreme southwestern New Mexico, U.S. and south along the Pacific Slope of Mexico from eastern Sonora and western Chihuahua to Guerrero, México D.F., Morelos, southern Puebla, and central Oaxaca. Winters from southeastern Sonora, through the remainder of the breeding range to southwestern Chiapas. Rarely found as far south as Guatemala (Lowther, Pyle, and Patten 2020).	Occurs in Hidalgo County in extreme southwestern New Mexico, including Antelope Wells and the foothills of the Animas Mountains (BISON-M 2017m, Lowther, Pyle, and Patten 2020).	**None.** There is no suitable tropical forest habitat in the Project Area and this species an uncommon visitor to the state.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Hylocharis leucotis White-eared hummingbird	Breeds in pine, pine-oak and mixed conifer forests particularly in edge habitats or clearings (Arizmendi et al. 2015). In Arizona, this species occurs in forested mountain canyons and in shrubby, previously burned or otherwise disturbed areas. These habitats may include broadleaf or coniferous trees such as Arizona sycamore, bigtooth maple, Gambel's or Madrean evergreen oak, pines, Douglas Fir or locust (Corman 2005j). Arizona populations winter in habitats outside of the U.S. (Arizmendi et al. 2015). Elevation: In Arizona, 4,900–8,400 ft (Corman 2005j). In New Mexico, 5,000-7,000 ft (BISON-M 2020b).	Is a partial migrant, with the northern most populations withdrawing southward (Arizmendi et al. 2015). Breeds from southeastern Arizona, U.S. and southward through highlands of Mexico, Guatemala, El Salvador, Honduras and Nicaragua (Arizmendi et al. 2015, Corman 2005j). May also breed in portions of New Mexico and Texas (Arizmendi et al. 2015). During the winter, this species withdraws from the U.S. and Sonora, Chihuahua and Nuevo León, Mexico (Arizmendi et al. 2015).	Verified only as migrants in the state and was found summering in the Animas Mountains in the mid-1970s. Subsequently, it was reported from two sites in the Peloncillo Mountains. In 1993, at least four individuals were at two sites in the Piños Altos Mountains, and individuals were reported from two sites in the Sangre de Cristo Mountains (BISON-M 2020b, eBird 2021).	**Unlikely**. There is some potentially suitable forested habitat in the Project Area, it was detected in the Piños Altos Mountains. However, these detections occurred in the early 1990's (eBird 2021). Given the rarity in the state, it is highly unlikely to occur in the site.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Passerina versicolor Varied bunting	Range-wide, they breed in densely vegetated areas with desertscrub, thornscrub, scrubby woodlands, forest edges, and overgrown clearings (Groschupf and Thompson 2020). Habitat use in New Mexico is poorly described. However, in Arizona, most breeding records are from arid slopes adjacent to drainages with mesquite and netleaf hackberry and from areas with dense Sonoran desertscrub (Corman 2005i). During migration habitat use is similar to that used for breeding (Groschupf and Thompson 2020). They winter in habitats outside of the U.S. (Groschupf and Thompson 2020). Elevation: In Arizona, breeds between 1,350–5,100 ft (Corman 2005i). In New Mexico, 3,000-5,000 ft (BISON-M 2017n).	Is a partial migrant (Groschupf and Thompson 2020). Breeding range includes south-central and southeastern Arizona, southern New Mexico and southern Texas, U.S. The range extends southward to northern Michoacán, Mexico and locally in Guatemala. During the winter, northern populations withdraw southward and this species can be found in Mexico from southern Sonora on the Pacific Slope, Guanajuato in the interior and northern Tamaulipas and eastern Nuevo León on the Atlantic Slope and southward through the breeding range (Groschupf and Thompson 2020). There is some evidence that they may be expanding northward into Arizona and New Mexico (Groschupf and Thompson 2020).	Occurs in southern part of the state near the Carlsbad Caverns in Hidalgo County and the Guadalupe Mountains. Vagrants have also been detected in west-central portions of the state (BISON-M 2017n, Groschupf and Thompson 2020).	**Unlikely.** The Project Area is outside of the known geographic range, the site may contain marginally suitable woodland habitat. However, there are some eBird records in the vicinity (eBird 2021) and there is evidence that the species is expanding its range northward.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Junco phaeonotus Yellow-eyed junco	Utilizes open conifer forest, ponderosa pine forest, pine-oak forests, scrubby or brushy areas, pastures or other fields During the winter, may move to lower elevations sites with oak-pine woodland, oak-woodland or chaparral (Corman 2005k). Elevation: Range-wide, occurs between 3,940–11,480 ft (Sullivan 2018).	Typically non-migratory (Sullivan 2018). The range extends from southeastern Arizona and extreme southwestern New Mexico, U.S. and southward into Mexico. In Mexico, this species in a two-pronged distribution from northeastern Sonora and western Chihuahua, and western Nuevo León and southwestern Tamaulipas, south to central Oaxaca. Also found in Chiapas, and adjacent southwestern Guatemala (Sullivan 2018).	Fairly common in southwestern part of the state in the Animas Mountains of Hidalgo County (Sullivan 2018). There have also been some detections of this species in the Big Hatchet Mountains of Hidalgo County and the Piños Altos Mountains in Grant County (BISON-M 2018l, Sullivan 2018).	**Possible.** The Project Area has suitable forest habitat and there are eBird records in the vicinity (eBird 2021).
FISH				
Gila nigrescens Chihuahua chub	Requires perennial water and prefers habitat with pools and undercut bank habitat (USFWS 1983). In streams, they are found mainly in lateral-scour pools where flow is against or along undercut banks and pools around channel obstructions such as boulders and root wads (Propst and Stefferud, 1994). Elevation: There are few records from New Mexico, but elevations range from approximately 6,900-7,100 ft. Across the range (including Mexico), range from 4,500-7,100 ft (Propst and Stefferud 1994).	Native to the Mimbres River drainage in New Mexico and the Guzmán and Laguna Bustillos basins in Chihuahua, Mexico (Propst 1999).	Historically, occupied all warmwater reaches in the Mimbres River drainage, but they now are found regularly only in Moreno Spring, in about 9 mile reach of the Mimbres River from the confluence of Allie Canyon downstream to the New Mexico Department of Game and Fish Mimbres Property south of Mimbres (Propst 1999).	**None**. There is no suitable aquatic habitat in the Project Area.
Gila intermedia Gila chub	Occurs in pools of small streams or cienegas. However, can also be found in larger streams. It is often found near undercut banks, overhanging vegetation, and various types of cover within the aquatic habitat (USFWS 2015c). Elevation: 2,000–5,500 ft (USFWS 2015c).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. and Sonora, Mexico (USFWS 2015c).	Historically documented populations have been extirpated except in Turkey Creek, in northwestern Grant County (USFWS 2005).	**None**. There is no suitable aquatic habitat in the Project Area. There is no designated critical habitat in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Poeciliopsis occidentalis occidentalis [Note: There are no currently recognized subspecies of P. occidentalis (Integrated Taxonomic Information System 2019, Accessed April 8, 2019)]. Gila topminnow	Occurs in springs, cienegas, permanent and intermittent streams and the margins of large rivers. Prefers warm, shallow, and slow-moving water but can occur in lentic habitats or lotic habitats with moderate current. Additionally, favors areas with algal mats or debris along stream margins (USFWS 1998b). Elevation: Historical records from 1,320–7,510 ft, with most records occurring below 5,000 ft (AGFD 2001a).	In the U.S., occurs in the Gila River Basin of Arizona and New Mexico. In Mexico, occurs in the Rio Sonora, Santa Cruz River and Rio de la Concepción basins in Sonora (USFWS 1998b).	Historically found in the Gila River at Frisco Hot Springs (Sheffer et al. 1997) and San Francisco River drainage, although this species may be extirpated in the state (Paroz et al. 2006). In 1989, the Gila topminnow was stocked in a pond on the NMDGF Red Rock Wildlife Management Area (BISON-M 2018c, NMDGF 2018) however, the effort was unsuccessful.	**None**. There is no suitable aquatic habitat in the Proposed Action Area.
Oncorhynchus gilae Gila trout	Inhabits perennial montane streams in coniferous and mixed woodland, montane coniferous forest, and subalpine forests (USFWS 2003). These streams area characterized by high flow variability but with low turbidity and high dissolved oxygen. Spawns in areas with flow over substrates of coarse sand or gravel. Juveniles likely use areas with slow current such as stream margins, side channels or shallow bars. Subadults favor riffle habitats whereas adults prefer pool habitats (USFWS 2003). Elevation: 5,400–9,200 ft (USFWS 2003).	Found in Arizona and New Mexico, U.S. (USFWS 2003).	Historically occurred in the headwater streams of the Gila and San Francisco rivers. As of 2001, there were documented populations in Grant, Catron, and Sierra counties (BISON-M 2018d, USFWS 2002b). Three streams within Grant County were known to contain populations of the Gila trout (McKnight Creek, Sheep Corral Canyon, and Black Canyon). Gila trout were introduced into McKnight Creek (BISON-M 2018d, USFWS 1993b).	**None**. There is no suitable aquatic habitat in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Rhinichthys* [=*Tiaroga*] *cobitis Loach minnow	Typically inhabits swift, small to large perennial streams where it uses interstitial spaces or lee areas of primarily cobble substrates for resting and spawning (USFWS 2012a). However, slow, silty streams are occasionally used (Minckley and Marsh 2009, p. 174). Adults are often found in areas with coarse, filamentous algae (Minckley and Marsh 2009, p. 174, USFWS 2012a). Elevation: Below 8,000 ft (USFWS 2012a).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. (USFWS 2012a). In Arizona, only found in Aravaipa, Campbell Blue Creeks, and White, San Francisco, and Blue Rivers in Arizona (USFWS 1991).	Found in the Gila River and its tributaries including the West, Middle, and East forks of the Gila River (BISON-M 2019b, Paroz and Propst 2007); the San Francisco and Tularosa Rivers and their tributaries in Catron County (Propst et al. 2009); Blue River and its tributaries, including Dry Blue, Campbell Blue, Pace, and Frieborn Creeks (Catron County) and Dry Blue Creek. and Blue Rivers and some of their tributaries (BISON-M 2019b, Carter 2008, Clarkson et al. 2008, USFWS 2012a).	**None**. There is no suitable aquatic habitat in the Project Area. There is no designated critical habitat in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Gila robusta[1] Roundtail chub	Inhabits cool to warm water streams and rivers (USFWS 2015b). Typically found in largest and deepest pools of middle to large streams and is considered to be less associated with dense cover than other chub species (AGFD 2015, Minckley and Marsh 2009). Young-of-the-year favor slow, shallow water associated with vegetated shorelines (USFWS 2015b). Elevation: 1,210–7,220 ft, most common between 2,000–5,000 ft (AGFD 2015, Minckley and Marsh 2009).	Note: The distribution described below reflects USFWS description of the proposed DPS and not the current understanding of the species complex. Historically from The Bill Williams, Gila, Little Colorado, Salt and Verde river drainages in Arizona and New Mexico. At the full species level: In the U.S.: the Colorado River basin in Arizona, Colorado, New Mexico, Utah and Wyoming (USFWS 2015b). In Mexico: Rio Yaqui and Piaxtla in Sonora (AGFD 2015).	Found in Rio Arriba, San Juan, and New Mexico counties (BISON-M 2019e).	**None**. There is no suitable aquatic habitat for this species in the Project Area.
Meda fulgida Spikedace	Inhabits shallow riffles with sand, gravel, and rubble substrates of moderate to large perennial streams (USFWS 2012a). Elevation: 1,620–4,500 ft (AGFD 2013c).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. (USFWS 2012a).	Found in the mainstem Gila River, as well as in the lower end of the West, Middle, and East forks of the Gila River, and Mangas Creek within Hidalgo, Grant, and Catron counties (BISON-M 2017k).	**None**. There is no suitable aquatic habitat in the Project Area. There is no designated critical habitat in the Project Area.

[1] Proposed threatened status withdrawn because the it did not meet the definition of a species under the Act (USFWS 2017). USFWS determined that *G. nigra* and *G. intermedia* should be subsumed into *G. robusta*.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
MAMMALS				
Leptonycteris curasoae yerbabuenae [Note: This taxa has been elevated to full species status as L. yerbabuenae (ITIS 2019, accessed December 2, 2019)].[2] Lesser long-nosed bat	Occurs in thornscrub or Sonoran desertscrub and through semi-desert grasslands and into oak woodlands or deciduous forest where columnar cacti and agaves are present (AGFD 2011b, Medellín 2016). Roosts in caves, abandoned mines, vegetation and occasionally old buildings (AGFD 2011b, USFWS 2018b). Forages at night on nectar and pollen of columnar cacti and agaves (AGFD 2011b, USFWS 2018b). In some portions of its range, fruits of cacti are commonly consumed. Additionally, this species readily finds and utilizes hummingbird feeders. Sometimes bypass foraging areas close to roost sites in favor of distant areas and have been documented travelling greater than 40 miles from known roosts. Elevation: Range-wide, reported as high as 8,530 ft but is typically found below 5,905 ft (Medellín 2016).	In the U.S.: southern Arizona and extreme southwestern New Mexico. Outside the U.S.: south from the U.S. border through Mexico (including Baja), Guatemala, El Salvador, and Honduras (NatureServe 2021b, accessed October 21, 2021). Note that USFWS (2018b) indicates that the range outside of the U.S. only extends as far south as southern Mexico.	Southwestern portions of the state in the Animas and Peloncillo mountains of Hidalgo County (Cole and Wilson 2006, Richardson 2007, USFWS 2016).	**None**. The Project Area is outside of the known range, distribution, and lacks suitable roosting and foraging habitat. They were not observed during bat surveys of abandoned mine features in the site. None were observed during surveys of abandoned mine features in the site but they have some potential to forage in the area.

[2] Delisted due to recovery (USFWS 2018a).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Canis lupus baileyi Mexican gray wolf	Occurs in sparsely to densely forested mountainous terrain or adjacent grasslands where prey is abundant. Prey species include cervids, peccaries, lagomorphs and rodents (USFWS 2015a). Are sensitive to disturbance Elevation: 3,000–12,000 ft (AGFD 2001b). In New Mexico, 4,000-9,000 ft (BISON-M 2021).	The *baileyi* subspecies occurs in Arizona and New Mexico, U.S. and Sonora, Mexico (USFWS 2015a).	They has been translocated into the Gila National Forest (Mexican Wolf Interagency Field Team 2020). The non-essential experimental population boundaries are south of I-40 and is divided into management zones. Zone 1: Initial releases and translocations can occur into Apache-Sitgreaves National Forests, and the Tonto Basin Ranger District of Tonto National Forest. Zone 2: Areas outside of Zone 1, south of I-40 and east of Hwy 60/89 and 93, I-10 and I-19 allows for natural dispersal and occupancy. Initial releases allowed on private and tribal land with approved management agreements. Translocations and release of pups less than 5-months old allowed on Federal lands. Zone 3: Areas south of I-40 and west of Hwy 60/89 and 93, I-10 and I-19. Within Zone 3 no releases or translocations are allowed but can be occupied by naturally dispersing individuals (BISON-M 2021, USFWS 2015a).	**Unlikely**. While the Project Area occurs within the secondary recovery zone of the Blue Range Recovery Area, and suitable habitat for the wolf exists in areas surrounding the site, no wolves have been documented in the Project Area. Currently, there are no packs within 45 miles of the Project Area (USFWS 2021c). However, due to the high mobility of this species, it is possible that an occasional wolf could disperse through the area, although unlikely due to human disturbance in the vicinity.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Euderma maculatum Spotted bat	Occurs in a wide-range of vegetation types including desertscrub, pinyon-juniper woodlands, ponderosa pine forests, mixed conifer forest, canyon bottoms, riparian areas, fields, pastures, and sub-alpine meadows. Roost in cracks and crevices of rock cliffs and in caves. They are generally solitary but may roost or hibernate in small groups. Foraging ranges may be large and up to 25 miles from their roost sites. Primarily consume moths. Are rarely caught in nets, potentially due to rarity, high flight patterns or sensitivity to light and sound. In Arizona, this species is most commonly captured near water or along canyon rims. It is unknown if this species is migratory. In Arizona, they appear active year-round (Luce, Chambers, and Herder 2005). Elevation: In Arizona, 110–8,670 ft (AGFD 2003).	Occurs in British Columbia, Canada and the U.S. states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Washington, and Wyoming. Range extends south from U.S. populations to Durango and Queretaro, Mexico (AGFD 2003, Hammerson 2015).	Documented from Bernalillo, Catron, Cibola, Doña Ana, Eddy, Grant, Lincoln, Los Alamos, Otero, Rio Arriba, Sandoval, San Juan, Santa Fe, Valencia, and Socorro counties. In 2006, this species was observed in Grant County at the following locations: near the Gila River at Lichty Farm, near Buckhorn, Big Burro Mountains, and near Santa Fe at Black Canyon Campground (BISON-M 2017l).	**Possible**. The Project Area contains potentially suitable woodland habitat and is within the known range of this species because they have been observed in the Big Burro Mountains in vicinity of the site. None were observed during surveys of abandoned mine features in the site but they have some potential to forage in the area.
REPTILES				
Thamnophis rufipunctatus Narrow-headed gartersnake	Are strongly associated with pool and riffle habitats in clear, rocky streams habitats in Petran Montane Conifer Forest, Great Basin Conifer Woodland, Interior Chaparral and the Arizona Upland subdivision of Sonoran Desertscrub. Occasionally utilizes lake shoreline habitats (USFWS 2014b). They primarily preys on fish species (USFWS 2014b). Bank-line vegetation is an important habitat component and this species favors areas with shrub- and sapling-sized plants for thermoregulation (USFWS 2014b). Been documented using site up to 656 ft away from the floodplain for hibernation (USFWS 2014b). Typically surface active between March and November with air temperatures of 52° to 89° F (USFWS 2014b). Elevation: 2,300-8,000 ft (USFWS 2014b).	Occurs in Arizona and New Mexico (USFWS 2014b).	Confined to the Catron, Grant, and Hidalgo counties where it reaches the easternmost edge of its distribution, where it uses suitable rocky rivers and streams of the San Francisco and Gila River drainages. Expected to exist within the San Francisco River drainage at low densities. Individuals have been recently detected in Saliz Creek, Whitewater Creek, Diamond Creek, and Dry Blue Creek near the Arizona border in Catron County (NMDGF 2020).	None. There is no suitable aquatic habitat in the Project Area, and as there are no fish species present thus there is no suitable prey base. The nearest suitable aquatic habitat is outside of the dispersal capabilities of this species. There is no proposed critical habitat in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Thamnophis eques megalops Northern Mexican gartersnake	Strongly associated with water due to its primarily aquatic prey base and is heavily dependent on fish species. Occurs near or in ponds, cienegas, lowland river riparian forests and woodlands, and upland stream gallery forests. Avoids steep mountain canyons. Most abundant in densely vegetated habitat. Associated with a variety of biotic communities including Sonoran Desertscrub, Semidesert Grasslands, Interior Chaparral, Madrean Evergreen Woodland and into the lower reaches of Petran Montane Conifer Forest (AGFD 2012, USFWS 2013b). May be found up to one mile (or more) away from water, using terrestrial habitat for brumation, digestion, or for thermoregulatory needs such as developing young (Jeff Servoss, USFWS pers. comm. to D. Cerasale, April 18, 2016). Elevation: 130-8,497 ft (USFWS 2014b) but is most common below 5,000 ft (AGFD 2012).	Occurs in Arizona and New Mexico, U.S. (USFWS 2014b). Although it is poorly known, the range extends into Mexico and is thought to include Sonora, Chihuahua, Durango, Coahuila, Zacatecas, Guanajuato, Nayarit, Hidalgo, Jalisco, San Luis Potosí, Aguascalientes, Tlaxcala, Puebla, México, Michoacán, Oaxaca, Veracruz, and Querétaro (AGFD 2012).	The status in the state is uncertain, although it is possible that this species may occur in Mule Creek (USFWS 2014d), and there is proposed critical habitat for this species in Gila River and Duck Creek, although portions of these areas are being considered for exclusion (USFWS 2020b); however, it is likely extirpated.	**None.** There is no suitable aquatic habitat in the Project Area and the distance from the nearest suitable habitat is well outside of the dispersal capability of this species. There is no designated critical habitat in the Project Area.
Heloderma suspectum Gila monster	Inhabit desert and mesquite-grassland, but also pine-oak forest, tropical deciduous forest, and thorn forest. It is usually found in rocky foothill regions and avoids open flats. It typically inhabits the lower slopes of mountains and nearby outwash plains, especially in canyons and arroyos where water is at least periodically present (Beck 2009). In some areas, they also frequent irrigated farmlands that adjoin those habitat types. Cover in such areas often includes boulders, rock crevices, downed vegetation, and litter (AGFD 2013b). Elevation: 3,800-6,400 ft (Beck 2009).	Occupies the southern areas of Utah, Nevada, California, and New Mexico. The most southern population lives in the Sonoran desert of Mexico near the towns of Alamos Guayamas and Ortiz (AGFD 2013b, Beck 2009).	Peripheral in the state, reaching the eastern edge of its range in the southwest, where it is known from Hidalgo, Grant, Luna and perhaps Doña Ana counties (BISON-M 2018h). Most common at the Redrock Wildlife Area on the Gila River west of the Big Burro Mountains (BISON-M 2018h).	**Unlikely**. The Project Area contains suitable habitat but is near the eastern limit of its known geographic range.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
MOLLUSCS				
Pyrgulopsis gilae Gila springsnail	Inhabits cool springs and brooks, but a few have also been found in a nearby thermal spring. Occurs in mud, debris, and vegetation. Typical habitat is a rivulet about 3 ft wide and grown up with watercress (*Nasturtium officinale*) (BISON-M 2017h). Elevation: Unknown.	Endemic to New Mexico (BISON-M 2017h).	Limited to a series of thermal springs along the Gila River in Grant County in the East and West Forks. Has also been observed along Beaver Creek, Mimbres District and in the Black Range District (BISON-M 2017h).	**None**. Project Area is outside of the highly restricted geographic range.
Pyrgulopsis thermalis New Mexico springsnail	Inhabits waters as warm as 38°C but is more common where temperatures are 33-35°C. Occupies substrates in areas of steep or even vertical rock, covered with thin sheets of water. Also found in minor spring flows on algal film and crusts of lime-depositing algae. Likely also occurs in dense grasses and sedges bordering the springs (BISON-M 2019d). Elevation: Unknown.	Endemic to New Mexico (BISON-M 2019d).	Restricted to a series of thermal springs along the Gila River in Grant County (BISON-M 2019d).	**None**. Project Area is outside of the highly restricted geographic range.

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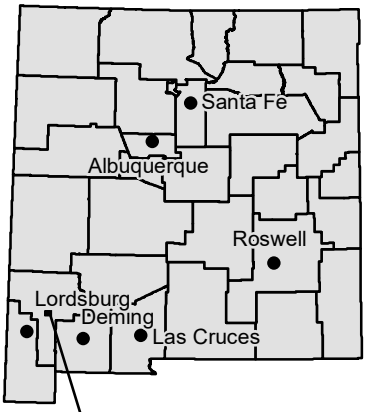
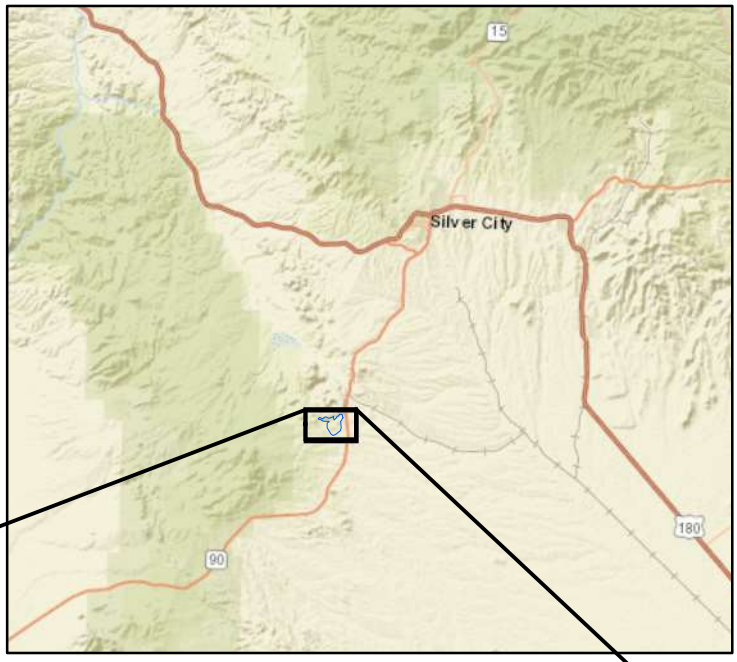
FIGURES

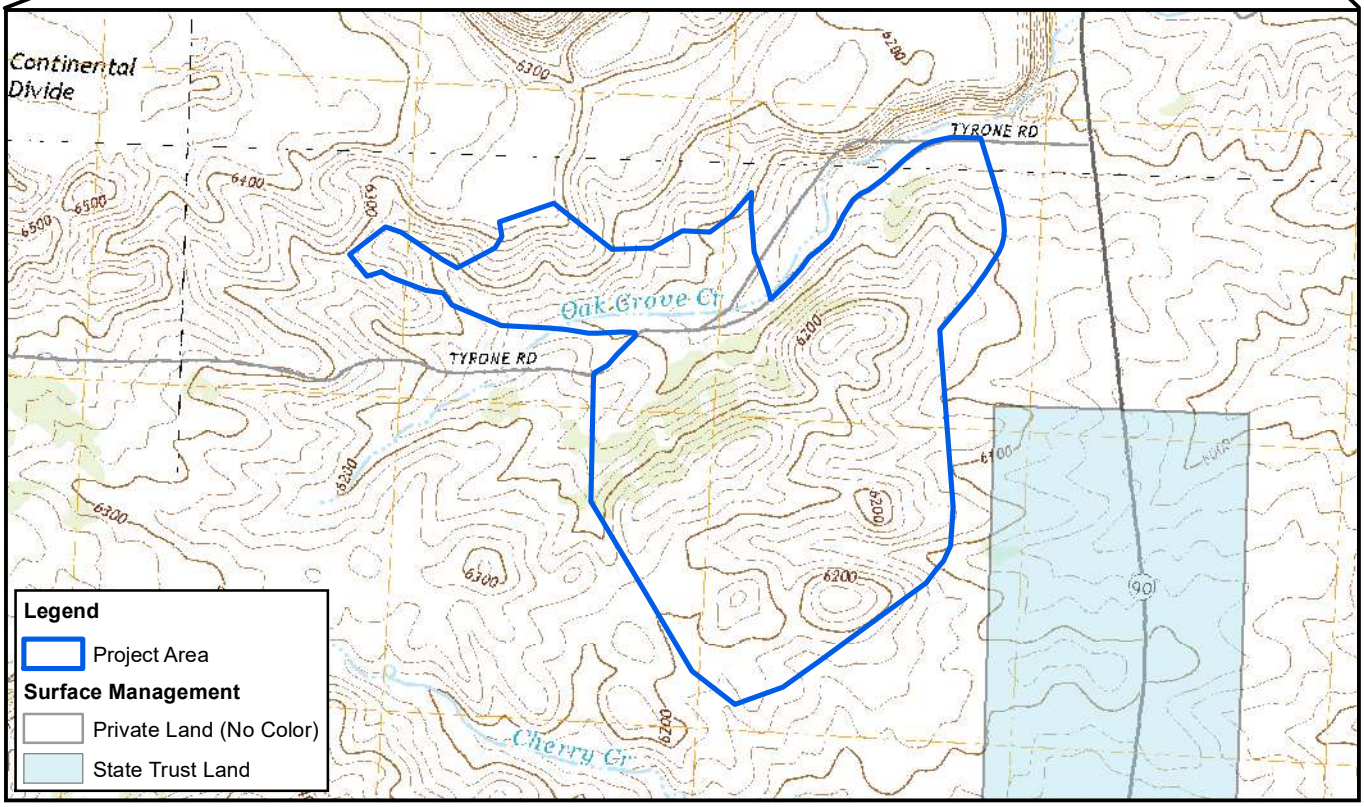
NEW MEXICO



PROJECT VICINITY



Approximate Scale 1 Inch = 10 Miles



T19S, R15W, Portions of Sections 25, 26, 35 and 36,
Grant County, New Mexico
Tyrone and White Signal USGS 7.5' Quadrangles (2020)
Surface Management: BLM 2014,
Image Source: ArcGIS Online, World Street Map

FREEPORT-MCMORAN
TYRONE MINING LLC
Emma Oak Grove
Biological Evaluation

VICINITY MAP
Figure 1

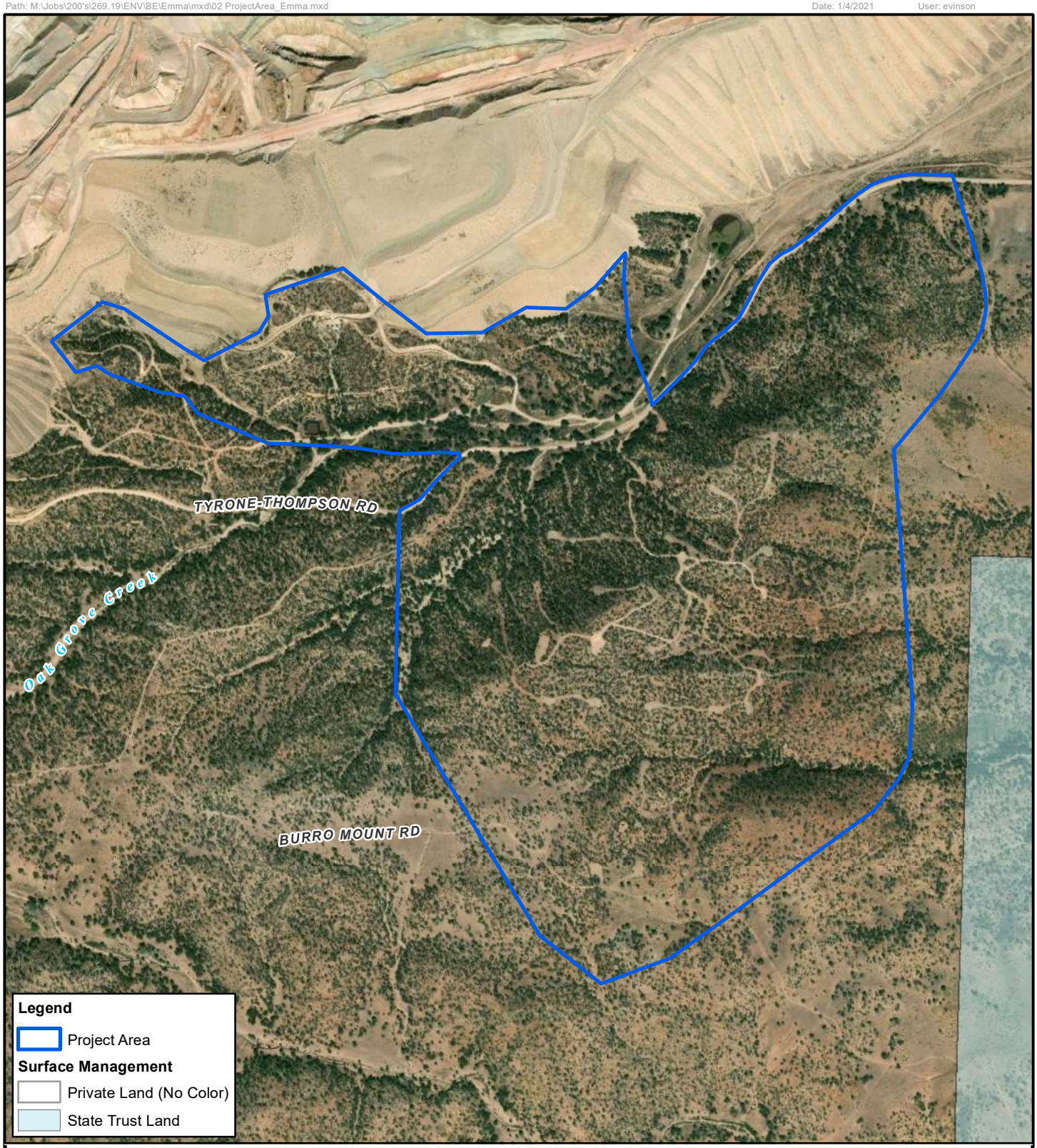
WestLand Resources

N

0 1,000 2,000 Feet

0 300 600 Meters

Path: M:\Jobs\200's\269.19\ENV\BE\Emma\mxd\02 ProjectArea_Emma.mxd Date: 1/4/2021 User: evinson



T19S, R15W, Portions of Sections 25, 26, 35 and 36,
Grant County, New Mexico
Surface Management: BLM 2014,
Image Source: ArcGIS Online, World Imagery 10/25/2019

FREEPORT-MCMORAN
TYRONE MINING LLC
Emma Oak Grove
Biological Evaluation

PROJECT AREA
Figure 2

WestLand Resources

N

0 500 1,000 Feet

0 150 300 Meters