

BIOLOGICAL EVALUATION

**PROPOSED ARIZONA TRAIL REROUTE
NORTHEASTERN FOOTHILLS OF
THE SANTA RITA MOUNTAINS
PIMA COUNTY, ARIZONA**

Prepared for:

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1. INTRODUCTION

WestLand Resources, Inc. (WestLand), was retained by Rosemont Copper Company to prepare a Biological Evaluation (BE) for a proposed reroute of the Arizona Trail (the Project). The Project will include the abandonment of an existing portion of the Arizona Trail and its replacement with a new portion located to the east. The new route is primarily on lands owned by the Coronado National Forest (CNF), but would also cross two small parcels of privately owned lands (*Figure 1*). The Project would depart from the existing route just northeast of where the existing trail crosses Box Canyon Road, continue east and north, and rejoin the existing route at Mulberry Canyon (*Figure 2*). The Project is proposed within Township 19 South, Range 16 East, Sections 4, 5, 7, and 8, and Township 18 South, Range 16 East, Sections 34, 27, 22, and 15, and crosses State Route (SR) 83 at Oak Tree Canyon and again at Barrel Canyon (the Project Area, *Figure 2*).

The purpose of this BE is to evaluate the potential effects of the proposed Arizona Trail reroute on special-status species. For the purposes of this BE, special-status species are those species designated as threatened, endangered, proposed for listing, or candidate for listing by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) (USFWS 2012a; *Appendix A*) or designated as sensitive by the Forest Service for the CNF. This BE includes the identification of all special-status species known or with the potential to be present in the Project Area or its immediate vicinity, a description of their habitat requirements, and an assessment of the potential effects of the Project on the species and their habitat.

2. SITE DESCRIPTION

The Project Area is located along the northeastern foothills of the Santa Rita Mountains, southeast of Tucson, Arizona (**Figure 1**). Topography in and surrounding the Project Area consists of a series of ridges and drainages. Elevations within the Project Area range from approximately 4,300 to 5,300 feet above mean sea level, with a gradual topographical gradient trending downslope toward the northeast. Surface drainage from the southern end of the Project Area is to the east along Oak Tree and North Canyons to Cienega Creek. Drainage from the northern end of the project is to the northeast through Barrel Canyon and Davidson Canyon to Cienega Creek. In addition to these ephemeral channels, there are several ephemeral stock tanks in the Project Area vicinity, including Oak Tree Tank, Highway Tank, Adobe Tank, and East Dam (**Figure 2**).

Land use within the CNF in the vicinity of the Project Area has primarily been associated with mining, cattle grazing, and dispersed public recreation.

The Project Area and surrounding lands are mapped as Semidesert Grassland, with a few patches of Madrean Evergreen Woodland on north-facing slopes (Brown and Lowe 1980). These communities are described by Brown (1982a) and Brown (1982b), respectively. Dominant vegetation within Semidesert Grassland includes a variety of grass species with some shrubs such as velvet mesquite (*Prosopis velutina*) and catclaw mimosa (*Mimosa aculeaticarpa*). Vegetation in the Madrean Evergreen Woodland includes more tree species such as Emory oak (*Quercus emoryi*) and alligator-bark juniper (*Juniperus deppeana*). Palmer's agaves (*Agave palmeri*) are present throughout the Project Area in low densities. An aerial photograph depicting the Project Area is presented in **Figure 2**.

3. METHODS

The potential for the presence of special-status species in the Project Area was evaluated based upon: 1) a review of information regarding the natural history of the special-status species; 2) an evaluation of the known range and distribution of the special-status species; 3) comparison of this information with habitats present in the Project Area and general region; and 4) review of information from the Arizona Game and Fish Department (AGFD) Heritage Data Management System (HDMS). Records from the HDMS and USFWS were also used to determine whether critical habitat has been designated or proposed within or near the Project Area.

The physical features and biological characteristics of the Project Area and geographic region were documented and evaluated for comparison with habitats known to support special-status species. Species are considered to have no potential to occur if the Project Area is located outside their known range or if required habitat components are not present. Species range and habitat data were obtained primarily from information provided by AGFD HDMS animal and plant abstracts.

Occurrence records were obtained through a search of the AGFD's Online Environmental Review Tool, which queries for recorded occurrences of species tracked by the HDMS. The HDMS species search includes USFWS-listed species of concern, species considered sensitive by the Bureau of Land Management's Arizona State Office, species considered sensitive by the CNF, species listed by the Arizona Department of Agriculture as Salvage Restricted, and species listed by the AGFD as Wildlife of Special Concern in Arizona. These species are not necessarily afforded protection under the ESA.

4. RESULTS

4.1. FEDERALLY LISTED SPECIES SCREENING ANALYSIS

Twenty-five special-status species are listed by the USFWS for Pima County (USFWS 2012a; *Appendix A*). This list consists of 6 plants, 2 invertebrates, 3 fish, 1 amphibian, 4 reptiles, 5 birds, and 4 mammal species. Twenty-two of the 25 listed species were eliminated from further review through the screening analysis (*Table 1*) because their known ranges are outside the Project Area or the required habitat is not present within the Project Area. Three listed species—lesser long-nosed bat (LLNB; *Leptonycteris yerbabuenae*), jaguar (*Panthera onca*), and Chiricahua leopard frog (CLF; *Lithobates chiricahuensis*)—are considered to have some potential to occur within the Project Area and/or have proposed or designated critical habitat in proximity to the Project Area. The remaining listed species are considered to have no potential to occur or are regarded as unlikely to occur (*Table 1*).

4.1.1. Lesser Long-nosed Bat

The endangered LLNB is a nectar-feeding bat that forages on saguaro (*Carnegiea gigantea*) and organ pipe cactus (*Stenocereus thurberi*) flowers and fruit during its maternity season in spring and early summer. The LLNB is a migratory species that is only present in the Project Area during the late summer and early fall (late July through late September) during its post-maternity dispersal from its maternity colonies found only in the Arizona Upland subdivision of Sonoran Desertscrub. During the post-maternity season, the LLNB forage for nectar primarily at Palmer’s agaves. These bats normally roost in relatively large colonies in natural caves and abandoned mines, and are known to use an abandoned mine as a post-maternity dispersal roost within approximately 1 mile of where the proposed trail realignment would rejoin the current trail alignment (*Figure 2*). The realignment of the trail will move the trail away from this roost site and will reduce the potential for human disturbance to this colony. LLNB will forage on agaves that are present along the proposed route. Potential impacts on foraging resources could be minimized by minor adjustments to the trail route to avoid agave rosettes. There are no natural caves or known abandoned mines on the proposed route. There is no designated or proposed critical habitat for LLNB.

4.1.2. Jaguar

Portions of the existing Arizona Trail alignment and the northernmost portions of the proposed trail realignment are found on lands that have been proposed as critical habitat for the jaguar (*Panthera onca*) (*Figure 3*). In their proposal to designate critical habitat for the jaguar, the USFWS (2012c) defines the physical and biological features that are essential to the conservation of the jaguar as “expansive open spaces in the southwestern United States with adequate connectivity to Mexico that contain a sufficient native prey base and available surface water, have suitable vegetative cover and rugged topography to provide sites for resting, and have minimal human impact.” Two proposed critical habitat units are identified by the USFWS in the Project Area: Unit 3 Patagonia and Unit 4 Whetstone, specifically Subunit 4b (Whetstone-Santa Rita Subunit) (*Figure 3*). The USFWS states that the Whetstone-Santa Rita

Subunit provides connectivity from the Whetstone Mountains to Mexico and contributes to the jaguar's persistence by providing connectivity to occupied areas that support individuals during dispersal movements during cyclical expansion and contraction of the nearest core area and breeding populations in Sonora, Mexico (USFWS 2012c).

The trail realignment is proposed along SR 83 within lands that are already impacted by human activity. The Project would not cause an increase in traffic and it would not cause any permanent increases in noise levels. A temporary increase in noise is expected during the construction of the trail segment being realigned. The Project would not influence the movement of jaguars between the Santa Rita and Whetstone Mountains, and it would not impact connectivity from any of the proposed critical habitat units to Mexico. The Project will not substantially impact the prey base for the jaguar, although some impacts to individual prey species may occur. No impacts to surface water will result from the Project. Some vegetation removal will occur within the Project Area as a result of the trail realignment; however, the Project is linear and requires a narrow corridor for construction; impacts to vegetation will be minimized. The trail realignment would be constructed along the existing grade and would not substantially impact the existing topography within the Project Area.

The Project is not anticipated to impact any individual jaguar traveling through the Project Area because the trail realignment would not interrupt any potential movement corridors for jaguar, and few, if any, prey species for the jaguar would be impacted by the Project.

4.1.3. Chiricahua Leopard Frog

The CLF is known to be present in Empire Gulch, Cienega Creek, and numerous stock tanks in the vicinity of the Project Area. These frogs normally require perennial or nearly perennial water in streams, springs, cienegas, and stock tanks in order to complete their life cycle, but are capable of overland movement between water sources. Critical habitat for CLF has been designated in Empire Gulch, Cienega Creek, and the Greaterville area (USFWS 2012b). The closest point of this critical habitat is less than 3 miles from the proposed trail route in the Project Area. The proposed trail construction will have no direct impact on this designated critical habitat. Surface water features would not be impacted by the Project, and no perennial streams are crossed by the proposed route; therefore, no adverse impacts to CLF are anticipated as a result of the Project.

Table 1. USFWS threatened, endangered, proposed, candidate, and conservation agreement species known or suspected to occur in Pima County, Arizona, potential for occurrence, and effect determination

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
PLANTS		
<p>Goodding's onion (<i>Allium gooddingii</i>)</p> <p>Status: <u>Federal:</u> Signed Conservation Agreement (USFWS 1997a) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: In Arizona, known from White Mountains, Apache County, and Santa Catalina Mountains, Pima County</p> <p>Habitat: Shaded sites on north-trending drainages, on slopes, or in narrow canyons within mixed conifer and spruce-fir forests</p> <p>Elevation: 7,500–11,250 feet</p> <p>Reference(s): AGFD 1999a, USFWS 2012a</p>	<p>Potential Occurrence: None. The Project Area is below the known elevation for this species and does not contain suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Kearney's blue star (<i>Amsonia kearneyana</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1989) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (USFWS 1993a)</p>	<p>Range: Known only from the western slopes of the Baboquivari Mountains</p> <p>Habitat: Dry open slopes in Madrean Evergreen Woodland/Interior Chaparral transition zone and under deciduous riparian trees and shrubs in Sonoran desertscrub-grassland ecotone</p> <p>Elevation: 3,600–6,000 feet</p> <p>Reference(s): ARPC 2001</p>	<p>Potential Occurrence: None. The Project Area does not contain habitat suitable for this species, it is below the known elevation for this species, and it is outside the known geographic range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Pima pineapple cactus (<i>Coryphantha scheeri</i> var. <i>robustispina</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1993b) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Bounded by Santa Cruz County, Santa Rita Mountains (east); Pima County, Baboquivari Mountains (west); Tucson (north); Arizona-Mexican border (south)</p> <p>Habitat: Sonoran desertscrub and semidesert grassland on ridges and bajadas in sandy, rocky loam; slopes < 10%</p> <p>Elevation: 2,300–5,000 feet</p> <p>Reference(s): AGFD 2001a; ARPC 2001</p>	<p>Potential Occurrence: None. The Pima pineapple cactus is not known to occur east of the Santa Rita Mountains.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Nichol Turk's head cactus (<i>Echinocactus horizonthalonius</i> var. <i>nicholii</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1979) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (USFWS 1986a)</p>	<p>Range: In Arizona, known from three areas in southwestern Pinal County and north-central Pima County</p> <p>Habitat: Relatively open Sonoran desertscrub. Found in bedrock habitat at higher elevations and gravelly bajadas with limestone-derived soils at lower elevations (dissected alluvial fans at the foot of limestone mountains).</p> <p>Elevation: 2,000–3,600 feet</p> <p>Reference(s): AGFD 2008; ARPC 2001</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat for this species and is over 50 miles from the closest known population.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Acuña cactus (<i>Echinomastus erectocentrus</i> var. <i>acunensis</i>)</p> <p>Status: <u>Federal:</u> Proposed Endangered (USFWS 2012d) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Maricopa, Pinal, and far western Pima Counties</p> <p>Habitat: Tops or upper halves of side-slopes of broad, dissected hills</p> <p>Elevation: 1,200–4,000 feet</p> <p>Reference(s): AGFD 2011a; ARPC 2001</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat for this species and is over 60 miles from the closest known population.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 1. USFWS threatened, endangered, proposed, candidate, and conservation agreement species known or suspected to occur in Pima County, Arizona, potential for occurrence, and effect determination

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Huachuca water umbel (<i>Lilaeopsis schaffneriana</i> ssp. <i>recurva</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1997b) <u>Critical Habitat:</u> Yes (USFWS 1999a) <u>Recovery Plan:</u> No</p>	<p>Range: Known primarily from Santa Cruz and southern Cochise Counties. Also found along perennial reaches of the San Pedro River in Pinal County and Cienega Creek in Pima County.</p> <p>Habitat: Shallow water, saturated soils near perennial cienegas, springs, seeps, and streams</p> <p>Elevation: 2,000–7,100 feet</p> <p>Reference(s): AGFD 2003a; ARPC 2001</p>	<p>Potential Occurrence: None. The Project Area has no suitable aquatic habitat for this species. No designated critical habitat for this species is present in the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
INVERTEBRATES		
<p>San Xavier talussnail (<i>Sonorella eremita</i>)</p> <p>Status: <u>Federal:</u> Signed Conservation Agreement (USFWS 1998a, 2008) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Restricted to a 50-by-100-foot area of land privately owned in Pima County, Arizona</p> <p>Habitat: Deep, northwest-facing limestone rockslide on San Xavier Hill</p> <p>Elevation: 3,850–3,920 feet</p> <p>Reference(s): AGFD 2003b</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat for this species and is outside the limited geographic range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Rosemont talussnail (<i>Sonorella rosemontensis</i>)</p> <p>Status: <u>Federal:</u> Candidate (USFWS 2011a) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Endemic to the Santa Rita Mountains</p> <p>Habitat: Inhabits talus slopes composed of volcanic rock and limestone</p> <p>Elevation: 4,400–5,600 feet</p> <p>Reference(s): AGFD 2011b</p>	<p>Potential Occurrence: None. The Project Area has no suitable talus habitat for these snails. AGFD (2012) reports records of this species within 3 miles of the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
FISH		
<p>Desert pupfish (<i>Cyprinodon macularius</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1986b) <u>Critical Habitat:</u> Yes (USFWS 1986b) <u>Recovery Plan:</u> Yes (USFWS 1993c)</p>	<p>Range: Historically occurred throughout the lower Gila River basin in the U.S. and Mexico. No natural populations persist in Arizona; currently managed at discrete natural and artificial refuge sites.</p> <p>Habitat: Shallow waters of springs, small streams, and marshes</p> <p>Elevation: < 4,920 feet</p> <p>Reference(s): AGFD 2001b</p>	<p>Potential Occurrence: None. This species is restricted to very few introduced populations, none of which are near the Project Area. No designated critical habitat for this species is present in the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Gila chub (<i>Gila intermedia</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 2005a) <u>Critical Habitat:</u> Yes (USFWS 2005a) <u>Recovery Plan:</u> No</p>	<p>Range: Endemic to Gila River Basin, including the San Pedro River</p> <p>Habitat: Smaller headwater streams, pools, springs, and cienegas in a diversity of aquatic habitats (e.g., vegetated backwaters and deep pools, riffles, undercut banks)</p> <p>Elevation: 2,700–5,500 feet</p> <p>Reference(s): AGFD 2002a</p>	<p>Potential Occurrence: None. The Project Area has no suitable perennial stream habitat for this species. No designated critical habitat for this species is present in the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 1. USFWS threatened, endangered, proposed, candidate, and conservation agreement species known or suspected to occur in Pima County, Arizona, potential for occurrence, and effect determination

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Gila topminnow (<i>Poeciliopsis occidentalis occidentalis</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1967) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (Draft: USFWS 1999b)</p>	<p>Range: Historically distributed throughout the Gila River Basin</p> <p>Habitat: Headwater springs, vegetated margins, and backwater areas of intermittent to perennial streams and rivers</p> <p>Elevation: 1,300–7,500 feet; most populations < 5,000 feet</p> <p>Reference(s): AGFD 2001c</p>	<p>Potential Occurrence: None. The Project Area has no suitable perennial stream habitat for this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
AMPHIBIANS		
<p>Chiricahua leopard frog (<i>Lithobates [Rana] chiricahuensis</i>)</p> <p>Status: <u>Federal:</u> Threatened (USFWS 2002a) <u>Critical Habitat:</u> Final: (USFWS 2012b) <u>Recovery Plan:</u> Yes (USFWS 2007)</p>	<p>Range: Two disjunct populations distributed in New Mexico and Arizona along the Mogollon Rim and in southeastern Arizona, southwestern New Mexico, and northeastern Mexico. Currently extirpated from much of their historical range, including lowland river systems such as the upper San Pedro River. Known from the upper Santa Cruz River in the San Rafael Valley and tributaries draining the Atascosa and Tumacacori Mountains.</p> <p>Habitat: Requires perennial or near-perennial water in a wide variety of habitats, including cienegas, springs, creeks, streams, reservoirs, and above-ground and earthen livestock tanks.</p> <p>Elevation: 3,300–8,900 feet</p> <p>Reference(s): USFWS 2007</p>	<p>Potential Occurrence: Possible. The proposed trail route in the Project Area passes close to stock tanks that have supported Chiricahua leopard frogs in the past. Chiricahua leopard frogs are known to be present in the region. Designated critical habitat for the Chiricahua leopard frog is present within 3 miles of the Project Area, but not within the Project Area.</p> <p>Effect Determination: The Project will not impact any surface water features or individual frogs.</p> <p>This species and its critical habitat designation are discussed further in §4.1.3.</p>
REPTILES		
<p>Tucson shovel-nosed snake (<i>Chionactis occipitalis klauberi</i>)</p> <p>Status: <u>Federal:</u> Candidate (USFWS 2011a) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Occurs from Pima County in the Avra and Santa Cruz Valleys and from western Pinal County and a portion of Maricopa County. The area between the Tucson and Phoenix metropolitan areas is believed to encompass the majority of its current range, particularly west of Tucson northward along Avra Valley in Pima County to western Pinal County, and then north into eastern Maricopa County.</p> <p>Habitat: Creosote-mesquite floodplain habitats with soils described as soft, sandy loams with sparse gravel</p> <p>Elevation: 785–1,662 feet</p> <p>Reference(s): AGFD 2010a</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat, is located outside the current range of this species, and is above the known elevation range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Desert Tortoise – Sonoran population (<i>Gopherus agassizii</i>)</p> <p>Status: <u>Federal:</u> Candidate (USFWS 2010b) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Occurs throughout Arizona’s Sonoran Desert with appropriate habitat. Eastern edge of range extends to the middle San Pedro River.</p> <p>Habitat: Found primarily on rocky slopes and bajadas of Mojave and Sonoran Desertscrub; also found associated with caliche caves (shelter sites) along lower Sonoran Desert washes</p> <p>Elevation: 510–5,300 feet</p> <p>Reference(s): AGFD 2010b</p>	<p>Potential Occurrence: Unlikely. The Project Area is at the edge of the geographic range of this species and may have suitable habitat on the slopes of ephemeral drainages. There are no HDMS records of this species within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>

Table 1. USFWS threatened, endangered, proposed, candidate, and conservation agreement species known or suspected to occur in Pima County, Arizona, potential for occurrence, and effect determination

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Sonoyta mud turtle (<i>Kinosternon sonoriense longifemorale</i>)</p> <p>Status: <u>Federal:</u> Candidate (USFWS 2011a) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Known from ponds and stream habitats at the Quitobaquito Springs in Organ Pipe Cactus National Monument, Arizona</p> <p>Habitat: Ponds and stream habitats</p> <p>Elevation: 1,100 feet</p> <p>Reference(s): AGFD 2005a</p>	<p>Potential Occurrence: None. The Project Area has no perennial aquatic habitat suitable for this species and is located outside the known geographic range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)</p> <p>Status: <u>Federal:</u> Candidate (USFWS 2011a) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> No</p>	<p>Range: Historical range included much of the greater Gila River Basin. Currently found in < 10% of former range and restricted to isolated, scattered populations. Likely extant in fragmented populations within the middle/upper Verde River drainage, middle/lower Tonto Creek, and the Cienega Creek drainage, as well as a small number of isolated wetland habitats in southeastern Arizona.</p> <p>Habitat: Perennial cienegas, cienega-streams, riparian forests, and woodlands; usually associated with dense vegetation</p> <p>Elevation: 3,000–5,000 feet</p> <p>Reference(s): Brennan and Holycross 2006; AGFD 2011c</p>	<p>Potential Occurrence: None. The Project Area has no perennial to near-perennial aquatic habitats suitable for this species, although this snake is known to be present in Cienega Creek, about 6 miles east of the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
BIRDS		
<p>Masked bobwhite (<i>Colinus virginianus ridgwayi</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1967) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (USFWS 1995a)</p>	<p>Range: Historically occurred from extreme south-central Arizona (bottomlands of Altar and Santa Cruz Valleys) south into central Sonora, Mexico. Currently reintroduced to Buenos Aires National Wildlife Refuge, the only known population in the U.S.</p> <p>Habitat: Desert grasslands with a diversity of dense native grasses, forbs, and brush</p> <p>Elevation: 3,090–3,720 feet, in Arizona</p> <p>Reference(s): AGFD 2001d</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat for this species, and the only known population of this species in the United States is located within the Buenos Aires National Wildlife Refuge.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>California least tern (<i>Sterna antillarum browni</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1970) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (USFWS 1985)</p>	<p>Range: Primarily California, but there are transient migrants with occasional breeding in Arizona. Recorded from Mohave, Maricopa, and Pima Counties.</p> <p>Habitat: Nests in shallow depressions on open sandy beaches, sand bars, gravel pits, or exposed flats along shorelines of inland rivers and lakes.</p> <p>Elevation: < 2,000 feet</p> <p>Reference(s): USFWS 2012a</p>	<p>Potential Occurrence: None. The Project Area lacks the shoreline habitat and shallow water foraging habitat required by this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 1. USFWS threatened, endangered, proposed, candidate, and conservation agreement species known or suspected to occur in Pima County, Arizona, potential for occurrence, and effect determination

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Mexican spotted owl (<i>Strix occidentalis lucida</i>)</p> <p>Status: <u>Federal:</u> Threatened (USFWS 1993d)</p> <p><u>Critical Habitat:</u> Yes Final: (USFWS 2004)</p> <p><u>Recovery Plan:</u> Yes Draft: (USFWS 2011b)</p>	<p>Range: Patchily distributed in forested areas throughout Arizona</p> <p>Habitat: Breeds primarily on dense old growth mixed conifer forests</p> <p>Elevation: 3,700–9,600 feet (AZ)</p> <p>Reference(s): AGFD 2005b</p>	<p>Potential Occurrence: None. The Project Area has no mature montane forests or steep forested canyons. No designated critical habitat for this species is present in the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1995b)</p> <p><u>Critical Habitat:</u> Yes Proposed: (USFWS 2011c) Final Rule: (USFWS 2005b) Final Rule: (USFWS 1997c)</p> <p><u>Recovery Plan:</u> Yes (USFWS 2002b)</p>	<p>Range: A neotropical migrant that winters in Mexico and Central America and breeds throughout the greater southwestern U.S. Breeds very locally along dynamic riparian systems, including the middle Gila, Salt, and Verde Rivers; middle to lower San Pedro River; and upper San Francisco River near Alpine.</p> <p>Habitat: Cottonwood/willow and/or tamarisk riparian communities along rivers and streams; prefers riparian areas with dense under- and mid-story vegetation that is ≥ 10 feet in height, with or without canopy cover, and in close proximity to surface water.</p> <p>Elevation: 75–9,200 feet</p> <p>Reference(s): AGFD 2002b</p>	<p>Potential Occurrence: None. The Project Area has no suitable riparian habitat. No designated critical habitat for this species is present in the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Yellow-billed cuckoo (<i>Coccyzus americanus</i>)</p> <p>Status: <u>Federal:</u> Candidate (USFWS 2001)</p> <p>Status Review: (USFWS 2011a)</p> <p><u>Critical Habitat:</u> No</p> <p><u>Recovery Plan:</u> No</p>	<p>Range: A late spring migrant from South America, cuckoos breed throughout the western U.S. They occur in west, central, and southeastern Arizona.</p> <p>Habitat: Typically associated with rivers and streams supporting dense, humid riparian woodlands (e.g., cottonwood, willow, and tamarisk galleries and mesquite bosques). In southeastern Arizona, they are known to nest along intermittent streams supporting dense stands of mesquite and netleaf hackberry. They are rarely observed as transients in xeric desert or urban settings.</p> <p>Elevation: < 6,700 feet (typically < 5,000 feet)</p> <p>Reference(s): AGFD 2011d; Corman and Wise-Gervais 2005</p>	<p>Potential Occurrence: None. The Project Area has no suitable riparian woodland or dense stands of mesquite or netleaf hackberry, although cuckoos are known to be present in Cienega Creek, about 6 miles east of the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 1. USFWS threatened, endangered, proposed, candidate, and conservation agreement species known or suspected to occur in Pima County, Arizona, potential for occurrence, and effect determination

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
MAMMALS		
<p>Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1988) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (USFWS 1995c)</p>	<p>Range: A summer migrant that winters in Central America, lesser long-nosed bats are found locally in the U.S. only in southern Arizona and extreme southwestern New Mexico from April to late September. Peripheral observations exist from the Phoenix area and the Pinalaño Mountains.</p> <p>Habitat: Sonoran desertscrub through semidesert grasslands and into oak woodlands where columnar cacti and agaves grow. Roosts in caves, abandoned mines, and occasionally old buildings. Forages at night on nectar, pollen, and possibly fruit of columnar cacti and agaves.</p> <p>Elevation: 1,200–7,300 feet (most often < 5,500 feet)</p> <p>Reference(s): AGFD 2011e</p>	<p>Potential Occurrence: Likely. Suitable agave-foraging habitat is present within the Project Area and a post-maternity dispersal roost site is within 1 mile of the Project Area.</p> <p>Effect Determination: This species would be benefited by the Project. The current trail alignment is immediately adjacent to a post-maternity dispersal roost for this species, and the reroute of the trail would reduce the likelihood of human disturbance to the roost. The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to forage for this species would be avoided to the extent practicable and are not expected to affect foraging availability for this species.</p> <p>This species is discussed further in §4.1.1.</p>
<p>Ocelot (<i>Leopardus pardalis</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1982) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (Draft) (USFWS 2010a)</p>	<p>Range: Globally, ranges from the southern U.S. to northern South America. In U.S., currently known from Arizona and southern Texas.</p> <p>Habitat: Areas with dense cover. Species avoids open areas. Desertscrub communities in Arizona, thickets in Texas, and humid tropical and coastal habitats in the southern U.S.</p> <p>Elevation: Generally < 4,000 feet</p> <p>Reference(s): AGFD 2010c</p>	<p>Potential Occurrence: None. The Project Area does not contain dense forested areas or areas with otherwise dense cover.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Jaguar (<i>Panthera onca</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1997d) <u>Critical Habitat:</u> Proposed (USFWS 2012c) <u>Recovery Plan:</u> No</p>	<p>Range: Globally, ranges from southern U.S. to South America. Recent observations in Arizona have been restricted to the mountain ranges of southeastern Arizona.</p> <p>Habitat: Occurs in a variety of habitats. In recent Arizona observations, this has been restricted to oak-pine woodlands.</p> <p>Elevation: 5,200–5,700 feet (recent observations in AZ)</p> <p>Reference(s): AGFD 2004a</p>	<p>Potential Occurrence: Possible. Jaguars have been documented in the northern Santa Rita Mountains. However, considering the lack of tree cover throughout most of the Project Area and the relatively low number of these cats known or suspected to occur in southern Arizona, it is very unlikely that this species would utilize the Project Area, although one could pass through the area on rare occasions.</p> <p>Portions of the existing Arizona Trail alignment and the proposed reroute occur within lands that have been proposed as critical habitat for the jaguar (Figure 3).</p> <p>Effect Determination: The Project is not anticipated to impact any individual jaguars traveling through the Project Area because the trail realignment would not interrupt any potential movement corridors for jaguar, and few, if any, prey species for the jaguar would be impacted by the Project.</p> <p>This species and its proposed critical habitat designation are discussed further in §4.1.2.</p>

Table 1. USFWS threatened, endangered, proposed, candidate, and conservation agreement species known or suspected to occur in Pima County, Arizona, potential for occurrence, and effect determination

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>)</p> <p>Status: <u>Federal:</u> Endangered (USFWS 1967) <u>Critical Habitat:</u> No <u>Recovery Plan:</u> Yes (USFWS 1998b)</p>	<p>Range: Known from the Cabeza Prieta National Wildlife Refuge, Organ Pipe Cactus National Monument, Barry M. Goldwater Gunnery Range, and the Tohono O’odham Indian Reservation</p> <p>Habitat: Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations</p> <p>Elevation: 2,000–4,000 feet</p> <p>Reference(s): AGFD 2002c</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

* The potentials for taxa to occur within the Project Area are categorized according to the following criteria:

- Possible:** The taxon has not been recorded by WestLand in the Project Area, but the known current distribution of the taxon includes the site and the required habitat characteristics of the taxon are present within or in the vicinity of the Project Area.
- Unlikely:** The required habitat characteristics of the taxon are present, but the Project Area is outside the known current distribution of the taxon, which is not highly restricted.
- None:** The Project Area is outside the known distribution of the taxon and the habitat characteristics required by the taxon are not present, and/or taxon-specific surveys have been conducted and no detections of the taxon have been made. Taxa with highly restricted ranges (e.g., springsnails) are considered to have no potential to occur if the Project Area is outside the known range, even if the required habitat characteristics are present in the Project Area.

4.2. FOREST SENSITIVE SPECIES SCREENING ANALYSIS

The U.S. Department of Agriculture Forest Service website identifies 165 plants and animals as Forest Sensitive species within Pima County (USDA-FS 2007a and 2007b). Based on the screening analysis in **Table 2**, 40 of these species have reasonable potential to occur in the Project Area. This total consists of 15 plant species, 1 amphibian, 4 reptile species, 6 bird species, and 14 mammal species.

Of the 15 sensitive plant species that could be found in the Project Area, two are orchid species: Arizona coralroot (*Hexalectris arizonica*) and Coleman’s coralroot (*H. colemanii*). Both these species are saprophytes (root parasites) on oaks, and both are known to be present within a few miles of the Project Area. Surveys for these species can only be conducted during the flowering season (April through June) when flowering spikes are visible above the ground. Both these species have been petitioned for listing under the ESA. Other plant species that have been the subject of special interest in the area are Bartram stonecrop (*Graptopetalum bartramii*) and beardless chinchweed (*Pectis imberbis*). Impacts to plants can be minimized by orienting the trail to avoid any of the sensitive plants that may be encountered during surveys or trail construction.

One sensitive amphibian—the lowland leopard frog (*Rana yavapaiensis*)—has the potential to occur in the Project Area, but the Project will not affect this species because no surface water features will be impacted.

The four sensitive reptile species that may be present in the Project Area are the mountain skink (*Eumeces callicephalus*), giant spotted whiptail (*Cnemidophorus burti*), reticulate Gila monster (*Heloderma suspectum suspectum*), and green rat snake (*Senticolis triaspis*). Impacts to reptiles can be minimized through care during construction to avoid direct and indirect impacts to individuals and potential den sites.

The six sensitive bird species that may be present in the Project Area are the common black hawk (*Buteogallus anthracinus*), broad-billed hummingbird (*Cyanthus latirostris*), northern beardless tyrannulet (*Campostoma imberbe*), Abert's towhee (*Pipilo aberti*), Baird's sparrow (*Ammodramus bairdii*), and varied bunting (*Passerina versicolor*). The common black hawk has been observed in Mulberry Canyon in the northern portion of the Project Area. The towhee is a permanent resident of this vicinity. The hummingbird, tyrannulet, and bunting are neotropical migrants that are only present during the breeding season in spring, summer, and early fall. The Baird's sparrow is a northern migrant that is only present during the winter. Because of their mobility, birds are unlikely to be directly impacted by the trail construction. Indirect impacts to bird species can be minimized by taking appropriate precautions during construction to avoid known or potential nest sites.

Of the 14 sensitive mammal species that could be present in the Project Area, there are five insectivorous bats (southern yellow bat [*Lasiurus xanthinus*], western red bat [*L. blossevillii*], Pale Townsend's big-eared bat [*Corynorhinus townsendii pallascens*], pocketed free-tailed bat [*Nyctinomops femorosaccus*], and greater western mastiff bat [*Eumops perotis californicus*]), one nectarivorous bat (Mexican long-tongued bat [*Choeronycteris mexicana*]), one shrew (Cockrum's desert shrew [*Notiosorex cockrumi*]), five rodents (Huachuca Mountains pocket gopher [*Thomomys umbrinus intermedius*], fulvous harvest mouse [*Reithrodontomys fulvescens*], plains harvest mouse [*R. montanus*], northern pygmy mouse [*Baiomys taylori ater*], and yellow-nosed cotton rat [*Sigmodon ochrognathus*]), and two small carnivores (white-nosed coati [*Nasua narica*] and hooded skunk [*Mephitis macroura milleri*]). The bats are likely to use the Project Area primarily for foraging, although two of the species roost in trees during daylight hours. These mammals would not likely be directly impacted by the trail construction because they are mobile. Indirect impacts to mammal species can be minimized by taking appropriate precautions during construction to avoid the larger trees that could be used by roosting bats and known or potential burrows and den sites.

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
PLANTS		
<p>Pima Indian mallow (<i>Abutilon parishii</i>)</p> <p>Status: CNF-S USFS-S AZ-SR</p>	<p>Range: Known from 84 populations in 17 mountain ranges from central Arizona to Sonora</p> <p>Habitat: Higher elevation Sonoran Desertscrub and Semidesert Grassland. Rocky hillsides, cliff bases, canyon bottoms, lower side slopes, and ledges of canyons among rocks and boulders</p> <p>Elevation: 1,720–4,900 feet</p> <p>Reference(s): AGFD 2000a</p>	<p>Potential Occurrence: Unlikely. Not reported in the vicinity of the Santa Rita Mountains in Pima County, but suitable habitat may be present.</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>
<p>Santa Cruz striped agave (<i>Agave parviflora</i> ssp. <i>parviflora</i>)</p> <p>Status: CNF-S USFS-S AZ-HS</p>	<p>Range: Several mountain ranges in Pima and Santa Cruz Counties and also in Sonora</p> <p>Habitat: Desert grassland and oak woodland, open rocky or gravelly slopes and ridges</p> <p>Elevation: 3,600–4,600 feet</p> <p>Reference(s): ARPC 2001; AGFD 2003c</p>	<p>Potential Occurrence: Possible. The Project Area is within this species' reported range in the Santa Rita Mountains and suitable habitat is present.</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Trelease agave (<i>Agave schottii</i> var. <i>treleasei</i>)</p> <p>Status: CNF-S USFS-S AZ-HS</p>	<p>Range: Known only from Santa Catalina Mountains</p> <p>Habitat: Desertscrub, grassland, oak, and juniper woodlands, gravelly to rocky places</p> <p>Elevation: 3,600–6,600 feet</p> <p>Reference(s): AGFD 2005c</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Saiya (<i>Amoreuxia gonzalezii</i>)</p> <p>Status: CNF-S USFS-S AZ-HS</p>	<p>Range: Known only from two or three populations in the Santa Rita Mountains</p> <p>Habitat: Rocky limestone hillsides</p> <p>Elevation: 4,200–4,600 feet</p> <p>Reference(s): AGFD 2011f</p>	<p>Potential Occurrence: Unlikely. No limestone is present in the Project Area. Portions of the Project Area vicinity have been surveyed for this plant and none have been detected (WestLand 2012). A congener of this plant, Mexican yellowshow (<i>A. palmatifida</i>), was detected in survey areas (WestLand 2012).</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Large-flowered blue star (<i>Amsonia grandiflora</i>)</p> <p>Status: CNF-S USFS-S</p>	<p>Range: Limited to Patagonia and Atascosa Mountains</p> <p>Habitat: Canyon bottoms and slopes in oak woodlands</p> <p>Elevation: 3,700–4,500 feet</p> <p>Reference(s): AGFD 2003d</p>	<p>Potential Occurrence: None. The Project Area is outside this species' reported geographic range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Chiricahua rock cress (<i>Arabis tricornuta</i>) Status: CNF-S USFS-S	Range: Known to be present in Santa Rita Mountains Habitat: Steep and rocky slopes in the understory with pine trees and on road banks Elevation: 6,000–8,840 feet Reference(s): AGFD 2006a	Potential Occurrence: None. The Project Area has no pine forest habitat and is below the known elevation range. Effect Determination: The Project will have no effect on this species or its habitat.
Lemmon milkweed (<i>Asclepias lemmonii</i>) Status: CNF-S USFS-S	Range: Known from Huachuca, Chiricahua, Baboquivari, and Santa Rita Mountains Habitat: Canyons, roadsides, and open woodlands in mountainous areas, often on limestone substrates Elevation: 5,050–7,200 feet Reference(s): AGFD 2006b	Potential Occurrence: Unlikely. The Project area is mostly below the known elevation range, has no limestone, and has marginal habitat conditions. Effect Determination: The Project is unlikely to have an effect on this species or its habitat.
Greene milkweed (<i>Asclepias uncialis</i> ssp. <i>uncialis</i>) Status: CNF-S	Range: About 25 to 30 locations in the western U.S., including Coconino, Pima, and Santa Cruz Counties in Arizona Habitat: Plains grassland and shortgrass communities on open hills and lower side slopes at the bases of mesas, canyons, and bluffs. Also found in open grassland areas within Madrean Evergreen Woodland communities. Elevation: 4,000–6,400 feet Reference(s): AGFD 2006c	Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Maguire's (Coppermine) milkvetch (<i>Astragalus cobrensis</i> var. <i>maguirei</i>) Status: CNF-S AZ-SR	Range: Confirmed only in Chiricahua and Peloncillo Mountains of Arizona Habitat: Shady canyons (near stream bottoms) and lower ledges both in full sun (often on rocky soils) and in shade (found on more organic soils composed of leaf litter) Elevation: 5,080–7,450 feet Reference(s): AGFD 1999b	Potential Occurrence: None. The Project Area is outside the known geographic range of this species. Effect Determination: The Project will have no effect on this species or its habitat.
Huachuca milkvetch (<i>Astragalus hypoxylus</i>) Status: CNF-S AZ-SR	Range: Restricted to Huachuca and Patagonia Mountains Habitat: Open, limestone rocky clearings in oak-juniper-pinyon woodland. Found on hillsides with slopes of 25 to 30%. Generally unshaded. Elevation: 5,300–6,100 feet Reference(s): AGFD 1999c	Potential Occurrence: None. The Project Area is outside the known geographic range and below the known elevation range. Effect Determination: The Project will have no effect on this species or its habitat.
Ayenia (<i>Ayenia truncata</i>) Status: CNF-S	Range: Arizona and Sonora. In the Las Guijas Mountains in Pima County and Santa Rita Mountains in Santa Cruz County Habitat: Rocky slopes, hillsides, and canyon bottoms, and in grassy plains Elevation: 3,920–3,960 feet in the Santa Rita Mountains Reference(s): AGFD 2010d	Potential Occurrence: Unlikely. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Bush-violet (<i>Browallia eludens</i>) Status: CNF-S	Range: Restricted to the Canelo Hills Habitat: Temperate, moist summer habitats in and around the boundaries of Madrean Evergreen Woodland Elevation: 5,065–5,250 feet Reference(s): AGFD 2003e	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Chiltepin (<i>Capsicum annuum</i> var. <i>glabriusculum</i>) Status: USFS-S CNF-S	Range: In Arizona, known from a few populations in the Chiricahua, Tumacacori, Baboquivari, and Ajo Mountains Habitat: Canyons and slopes of desert riparian habitats in mesquite and oak woodlands Elevation: 3,600–4,400 feet Reference(s): AGFD 2003f	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Chihuahuan sedge (<i>Carex chihuahuensis</i>) Status: USFS-S CNF-S	Range: Southeastern Arizona, southwestern New Mexico, Sonora, and Chihuahua. Known to be present in the Santa Rita Mountains. Habitat: Wet soils in streambeds, shallower draws in pine-oak forest and riparian areas; wet meadows, cienegas, marshy areas, and canyon bottoms Elevation: 3,600–7,200 feet Reference(s): AGFD 2004b	Potential Occurrence: None. The Project Area has no suitable habitat along the trail route. Effect Determination: The Project will have no effect on this species or its habitat.
Arizona giant sedge (<i>Carex ultra</i>) Status: USFS-S CNF-S	Range: Several isolated populations in the mountain ranges of southeastern Arizona, southwestern New Mexico, and Mexico Habitat: Moist soils near perennially wet springs and streams, undulating gravelly terrain. Aquatic riparian woodland or oak/pinyon woodland. Elevation: 2,040–6,000 feet Reference(s): AGFD 2000b; ARPC 2001	Potential Occurrence: None. The Project Area has no suitable habitat along the trail route, although this species is present at Scholefield Spring about 2 miles west of the proposed route. The HDMS reports this species' occurrence within 3 miles of the Project Area (AGFD 2012). Effect Determination: The Project will have no effect on this species or its habitat.
Trans-Pecos Indian paintbrush (<i>Castilleja nervata</i>) Status: CNF-S	Range: Primarily Mexico, with isolated specimens from the Chiricahua and Santa Rita Mountains Habitat: Rocky slopes or openings, pine to pine-oak or pine woods, rarely in pine-fir Elevation: 2,460–7,550 feet Reference(s): NatureServe 2012; SEINet 2012	Potential Occurrence: None. The Project Area has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Santa Cruz star-leaf (<i>Choisya mollis</i>) Status: CNF-S	Range: Limited to Pajarito, Atascosa, and Tumacacori Mountains northwest of Nogales Habitat: Bottoms and slopes of canyons on gravelly, sandy, and cobbly loams in the shade of oaks or other trees, or rocks in Madrean Evergreen Woodland Elevation: 4,000–4,900 feet Reference(s): ARPC 2001	Potential Occurrence: None. The Project Area is outside this species' known geographic range. Effect Determination: The Project will have no effect on this species or its habitat.

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Mexican hemlock parsley (<i>Conioselinum mexicanum</i>)</p> <p>Status: CNF-S</p>	<p>Range: Present in the Huachuca and Santa Rita Mountains</p> <p>Habitat: Cool, shaded mountain slopes</p> <p>Elevation: 6,000–9,000 feet</p> <p>Reference(s): AGFD 2001e</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat and is below the known elevation range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Santa Cruz beehive cactus (<i>Coryphantha recurvata</i>)</p> <p>Status: CNF-S AZ-HS</p>	<p>Range: Generally north and west of Nogales in Tumacacori, Atascosa, and Pajarito Mountains</p> <p>Habitat: Alluvial soils of valleys and foothills in desert grassland and oak woodland. Plants are either on rocky hillsides with good grass cover or in rock crevices where runoff accumulates and provides more moisture than the surrounding soils.</p> <p>Elevation: 3,680–6,000 feet</p> <p>Reference(s): AGFD 2001f</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Cochise pincushion cactus (<i>Coryphantha robbinsorum</i>)</p> <p>Status: AZ-HS</p>	<p>Range: Southeastern and southwestern Cochise County, Arizona, and northern Sonora, Mexico</p> <p>Habitat: Rolling gray limestone slopes of hills in transition zone between Chihuahuan Desertscrub and Semidesert Grassland. Plants are rooted in bedrock cracks or thin soil.</p> <p>Elevation: 4,200–4,650 feet</p> <p>Reference(s): AGFD 2001x</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat and is outside the known geographic range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Smooth babybonnets (<i>Coursetia glabella</i>)</p> <p>Status: CNF-S</p>	<p>Range: Reported from the Huachuca, Chiricahua, and Patagonia Mountains and Canelo Hills</p> <p>Habitat: Dry, partially shaded slopes in Madrean oak woodland, oak-juniper, and pine-oak forest</p> <p>Elevation: 5,000–7,200 feet</p> <p>Reference(s): AGFD 2001g</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and below the known elevation for this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Wiggins milkweed vine (<i>Cynanchum wigginsii</i>) (formerly <i>Metastelma mexicanum</i>)</p> <p>Status: USFS-S</p>	<p>Range: Several mountain ranges in southeastern Arizona, but not known from the Santa Rita Mountains</p> <p>Habitat: Open slopes in oak woodland on granitic substrate</p> <p>Elevation: 3,500–5,500 feet</p> <p>Reference(s): AGFD 2000c</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range and has no granitic substrate.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Gentry indigo bush (<i>Dalea tentaculoides</i>)</p> <p>Status: CNF-S USFS-S AZ-HS</p>	<p>Range: In Arizona, known only from the Baboquivari, Atascosa, and Pajarito Mountains</p> <p>Habitat: Canyon bottoms on cobble terraces subject to occasional flooding; possible growth on rocky hillsides</p> <p>Elevation: 3,600–4,580 feet</p> <p>Reference(s): AGFD 2001h</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Metcalf's tick-trefoil (<i>Desmodium metcalfei</i>)</p> <p>Status: CNF-S</p>	<p>Range: Specimens from Cochise, Santa Cruz, Gila, Greenlee, Yavapai, and Coconino Counties</p> <p>Habitat: Rocky slopes, canyons, and ditches</p> <p>Elevation: No data</p> <p>Reference(s): NatureServe 2012; SEINet 2012</p>	<p>Potential Occurrence: Unlikely. This species is rare and poorly known. Suitable habitat is not likely present in the Project Area.</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>
<p>Needle-spined pineapple cactus (<i>Echinomastus erectocentrus</i> var. <i>erectocentrus</i>)</p> <p>Status: AZ-SR</p>	<p>Range: Mainly south and east of Tucson</p> <p>Habitat: Semidesert Grassland, light-colored gravel on gentle slopes, hills, and alluvial fans</p> <p>Elevation: 2,950–4,920 feet</p> <p>Reference(s): AGFD 2009a</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and appears to have suitable habitat.</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Arid throne fleabane (<i>Erigeron arisolius</i>)</p> <p>Status: USFS-S</p>	<p>Range: Arizona, southwestern New Mexico, and Sonora, Mexico. Known to be present in the Santa Rita Mountains.</p> <p>Habitat: Semidesert Grassland and Madrean Evergreen Woodland; grasslands or oak woodlands; in grassy open areas or along roads, often in moist areas</p> <p>Elevation: 4,265–5,650 feet</p> <p>Reference(s): AGFD 2001y</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is available. This species has been reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Heliograph Peak fleabane (<i>Erigeron heliographis</i>)</p> <p>Status: CNF-S</p>	<p>Range: Restricted to the Pinaleno Mountains</p> <p>Habitat: Granite rock cliffs and outcrops, usually somewhat mesic, in mixed conifer forests</p> <p>Elevation: 8,500–10,400 feet</p> <p>Reference(s): AGFD 2003g</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Chiricahua fleabane (<i>Erigeron kuschei</i>)</p> <p>Status: CNF-S</p>	<p>Range: Endemic to the Chiricahua Mountains, with only four known populations</p> <p>Habitat: Shaded, north-facing granitic cliffs and rock ledges with high moss cover</p> <p>Elevation: 7,000–9,500 feet</p> <p>Reference(s): ARPC 2001; NatureServe 2012</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Lemmon's fleabane (<i>Erigeron lemmonii</i>) Status: AZ-HS	Range: Confirmed in only one location in Huachuca Mountains Habitat: Dense clumps up to about 4 feet in diameter, in crevices and on ledges of west-, south-, and north-facing cliffs in shady habitat, and on the vertical faces of large boulders along canyon bottoms Elevation: 6,300–7,300 feet Reference(s): AGFD 2011g	Potential Occurrence: None. The Project Area is outside the geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Heathleaf wild-buckwheat (<i>Eriogonum ericifolium</i> var. <i>ericifolium</i>) Status: USFS-S	Range: Primarily in central Arizona; in Pima County, restricted to Cienega Creek Habitat: Dry, gravelly to rocky slopes in lakebed deposits, in grasslands, and chaparral and oak-woodlands Elevation: 2,950–6,300 feet Reference(s): AGFD 2005d; NatureServe 2012	Potential Occurrence: Unlikely. The Project Area is outside the reported geographic range, although it is close to Cienega Creek. Effect Determination: The Project is unlikely to have an effect on this species or its habitat.
Huachuca Mountain spurge (<i>Euphorbia macropus</i>) (formerly <i>Euphorbia plummerae</i>) Status: AZ-SR	Range: Restricted to the Huachuca Mountains and the southern end of the Patagonia Mountains Habitat: Shady canyon bottoms in leaf litter and open hillsides in pine-oak woodland Elevation: 5,200–7,250 feet Reference(s): AGFD 2005e	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Wislizeni gentian (<i>Gentianella wislizeni</i>) Status: USFS-S AZ-SR	Range: Apparently restricted to Cochise and Greenlee Counties Habitat: Rocky sites in pine-oak and pine woodlands Elevation: 6,560–8,370 feet Reference(s): NatureServe 2012	Potential Occurrence: None. The Project Area is outside the reported geographic and elevation ranges and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Bartram stonecrop (<i>Graptopetalum bartramii</i>) Status: CNF-S USFS-S AZ-SR	Range: Southeastern Arizona from the Baboquivari Mountains to the Chiricahua Mountains Habitat: Madrean Evergreen Woodland, cracks in rocky outcrops in shrub live oak-grassland communities along meandering arroyos on sides of rugged canyons Elevation: 3,650–6,700 feet Reference(s): AGFD 2001i	Potential Occurrence: Possible. The Project Area is within the geographic range of this species and suitable habitat may be present. This species is known to be present in the Santa Rita Mountains and it has been reported within 3 miles of the Project Area (AGFD 2012). Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Huachuca golden aster (<i>Heterotheca rutteri</i>)</p> <p>Status: USFS-S</p>	<p>Range: Only known from 11 sites in the U.S. Not known to occur in the northern end of the Santa Rita Mountains.</p> <p>Habitat: Grassland and oak savanna, level open grasslands, roadcuts, disturbed areas</p> <p>Elevation: 4,500–6,500 feet</p> <p>Reference(s): AGFD 2001j</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Arizona alumroot (<i>Heuchera glomerulata</i>)</p> <p>Status: CNF-S</p>	<p>Range: Several mountain ranges in southeastern Arizona, but not reported from the Santa Rita Mountains</p> <p>Habitat: Shaded rocky slopes, in humus soil, near seeps, streams, and riparian areas</p> <p>Elevation: 4,000–9,000 feet</p> <p>Reference(s): AGFD 2004c</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Chisos Mt. crested coralroot (<i>Hexalectris revoluta</i>)</p> <p>Status: USFS-S AZ-SR</p>	<p>Range: Arizona to western Texas and northern Mexico. Populations in the Santa Rita Mountains and elsewhere in Arizona are now known as <i>Hexalectris colemanii</i>.</p> <p>Habitat: Oak and oak-pine-juniper forests within Madrean Evergreen Woodland near the transition zone with Semidesert Grassland. Under trees and shrubs on the edges of canyon bottoms.</p> <p>Elevation: 4,500–5,200 feet</p> <p>Reference(s): AGFD 2004d</p>	<p>Potential Occurrence: Possible. The Project Area is close to known populations, and oak trees are present.</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Arizona coralroot (<i>Hexalectris spicata</i> var. <i>arizonica</i>)</p> <p>Status: CNF-S</p>	<p>Range: Southern U.S. from Arizona to Florida and Maryland and northern Mexico. Populations in the Santa Rita Mountains and elsewhere in Arizona are now known as <i>Hexalectris arizonica</i>.</p> <p>Habitat: Oak woodlands, on the wooded sides of canyons, and on canyon bottoms, on limestone to calcareous sandy or organic soils</p> <p>Elevation: 3,480–6,950 feet</p> <p>Reference(s): AGFD 2005f</p>	<p>Potential Occurrence: Possible. The Project Area is close to known populations, and oak trees are present.</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Texas purple-spike (<i>Hexalectris warnockii</i>)</p> <p>Status: CNF-S</p>	<p>Range: Western Texas, southern New Mexico, southern Arizona, and Baja California, Mexico. In Arizona, known only from the Chiricahua, Mule, and Huachuca Mountains.</p> <p>Habitat: In humus beneath rocks and fallen oaks along streambeds in shady canyon bottoms</p> <p>Elevation: 5,000–7,000 feet</p> <p>Reference(s): AGFD 2001k</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Rusby hawkweed (<i>Hieracium abscissum</i> [= <i>H. rusbyi</i>]) Status: CNF-S	Range: Southeastern Arizona, southwestern New Mexico, and Chihuahua, Mexico. In Arizona, known only from the Santa Catalina, Pinaleño, Chiricahua, and Huachuca Mountains. Habitat: Mixed conifer forests at high elevations Elevation: 8,800–9,300 feet Reference(s): AGFD 2004e; ARPC 2001	Potential Occurrence: None. The Project Area has no suitable habitat and is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
New Mexico bitterweed (<i>Hymenoxys ambigens</i> var. <i>neomexicana</i>) Status: CNF-S	Range: This variety found only in Hidalgo County, New Mexico Habitat: No information Elevation: No information Reference(s): NatureServe 2012; SEINet 2012	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Spiderleaf (<i>Ipomoea tenuiloba</i> var. <i>lemmonii</i>) (formerly <i>Ipomoea lemmonii</i>) Status: CNF-S	Range: Present in mountain ranges in southeastern Arizona Habitat: Shallow sandy or gravelly soil on bedrock terraces, rocky canyons, or shaded mountains. Oak woodlands and pinyon-juniper woodlands. Elevation: 4,020–7,025 feet Reference(s): AGFD 2000d; NatureServe 2012	Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Lemon lily (<i>Lilium parryi</i>) Status: USFS-S AZ-SR	Range: Southern Arizona, southern California, and northern Sonora. Known to be present in the Santa Rita, Huachuca, and Chiricahua Mountains. Habitat: Montane conifer forest, mesic, shady canyon bottoms along perennial streams or adjacent hillside springs. Sandy soil that is high in organic material and remains saturated year-round. Elevation: 5,500–7,800 feet Reference(s): AGFD 2001I	Potential Occurrence: None. The Project Area has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Chiricahua mudwort (<i>Limosella pubiflora</i>) Status: CNF-S	Range: Southeastern Arizona and southwestern New Mexico. In Arizona, known only from the Chiricahua Mountains, but no known extant populations remain in Arizona. Habitat: Cienegas, springs, streams, pond margins Elevation: Unknown Reference(s): NatureServe 2012	Potential Occurrence: None. The Project Area has no suitable habitat and no known extant populations remain in Arizona. Effect Determination: The Project will have no effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Alamos deervetch (<i>Lotus alamosanus</i>)</p> <p>Status: CNF-S</p>	<p>Range: Southern Arizona and northwestern Mexico. In Arizona, known only from Bear Valley or Sycamore Canyon, and the Pajarito Mountains in Santa Cruz County.</p> <p>Habitat: Wet soil or sand in springs, seeps, and streams of canyons or meadows</p> <p>Elevation: About 4,000 feet</p> <p>Reference(s): Kearney and Peebles 1960; SEINet 2012; NatureServe 2012</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Huachuca Mountain lupine (<i>Lupinus huachucanus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southern Arizona and northwestern Mexico. In Arizona, known to be present in the Santa Rita, Huachuca, and Chiricahua Mountains.</p> <p>Habitat: Pine forests on moderate to steep slopes</p> <p>Elevation: 5,000–6,700 feet</p> <p>Reference(s): AGFD 2000e</p>	<p>Potential Occurrence: None. The Project Area has no pine forest habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Lemmon's lupine (<i>Lupinus lemmonii</i>)</p> <p>Status: CNF-S</p>	<p>Range: Reported from several mountain ranges of Arizona; also from Sonora and Chihuahua</p> <p>Habitat: Desert grassland, oak-juniper woodlands, pine forests, sandy ridges, sandy washes</p> <p>Elevation: 4,000–6,000 feet</p> <p>Reference(s): Kearney and Peebles 1960; ARPC 2001; SEINet 2012</p>	<p>Potential Occurrence: Possible. The Project Area is within the reported geographic range and suitable habitat is present.</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Supine bean (<i>Macroptilium supinum</i>) (=<i>Phaseolus supinus</i>)</p> <p>Status: CNF-S</p>	<p>Range: Reported from the Atascosa, Pajarito, San Luis, and Patagonia Mountains, and the southern Santa Cruz River drainage</p> <p>Habitat: Ridgetops and gentle slopes, semidesert grassland or grassy openings in oak-juniper woodland</p> <p>Elevation: 3,600–4,900 feet</p> <p>Reference(s): ARPC 2001</p>	<p>Potential Occurrence: Unlikely. The Project Area is outside the reported geographic range, but suitable habitat is present.</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>
<p>Counter clockwise fishhook cactus (<i>Mammillaria mainiae</i>)</p> <p>Status: USFS-S AZ-SR</p>	<p>Range: Restricted to the western slope of the Baboquivari Mountains</p> <p>Habitat: Sonoran Desertscrub, Semidesert Grassland, Madrean Evergreen Woodland, bajadas, washes, valleys, alluvial fans</p> <p>Elevation: 2,000–4,000 feet</p> <p>Reference(s): AGFD 2004f</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Arizona manihot (<i>Manihot davisiae</i>)</p> <p>Status: USFS-S</p>	<p>Range: Known to be present in the Baboquivari, Santa Catalina, and Santa Rita Mountains</p> <p>Habitat: Semidesert Grassland, limestone slopes</p> <p>Elevation: 3,500–4,000 feet</p> <p>Reference(s): ARPC 2001</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat may be present. WestLand detected this plant during surveys in the Project Area vicinity (WestLand 2012).</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. This plant is widely distributed in its range. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Wiggins milkweed vine (<i>Metastelma mexicanum</i>)</p> <p>Status: CNF-S</p>	<p>Range: Reported from the Atascosa, Pajarito, Patagonia, Mule, Baboquivari, Coyote, and Santa Catalina Mountains</p> <p>Habitat: Open slopes within open oak woodland on granitic soils</p> <p>Elevation: 3,500–5,550 feet</p> <p>Reference(s): ARPC 2001; AGFD 2000f</p>	<p>Potential Occurrence: Unlikely. The Project Area is outside the reported geographic range, but suitable habitat may be present.</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>
<p>Southwestern muhly (<i>Muhlenbergia palmeri</i>) (=<i>M. dubioides</i>)</p> <p>Status: USFS-S</p>	<p>Range: Several mountain ranges of southern Arizona. Known to be present in the Santa Rita Mountains.</p> <p>Habitat: Sonoran Desertscrub, Semidesert Grassland, Madrean Evergreen Woodland. Rocky slopes in canyons, along stream courses, often on cliffs.</p> <p>Elevation: 2,750–6,000 feet</p> <p>Reference(s): AGFD 2000g; ARPC 2001</p>	<p>Potential Occurrence: Possible. The Project Area has suitable habitat. This species is known to be present in Box Canyon, less than 3 miles from the Project Area (AGFD 2012), although no southwestern muhly were detected by WestLand during surveys of the Project Area vicinity in 2010 or 2011 (WestLand 2012).</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. This plant is widely distributed in its range. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Sycamore Canyon muhly (<i>Muhlenbergia elongata</i>) (= <i>M. xerophila</i>) Status: USFS-S	Range: Santa Catalina, Rincon, Santa Rita, Tumacacori, and Baboquivari Mountains and Sycamore Canyon, Arizona Habitat: Riparian areas within Sonoran Desertscrub, Semidesert Grassland, Madrean Evergreen Woodland. In seeps or associated with water. Most often growing in crevices of cliffs, bedrock, and other rocks along canyon bottoms; also known from rocky canyon slopes in oak, pine-oak, and riparian woodlands. Elevation: 3,520–6,000 feet Reference(s): ARPC 2001	Potential Occurrence: Possible. The Project Area has suitable habitat. This species is known to be present in Box Canyon less than 3 miles from the Project Area (AGFD 2012). Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Toumey groundsel (<i>Packera neomexicana</i> var. <i>toumeyi</i>) (= <i>Senecio n. var. t.</i>) Status: USFS-S	Range: This variety is limited to the Chiricahua and Huachuca Mountains in Cochise County, possibly in the Pinal Mountains of Gila County. Not reported from the Santa Rita Mountains. Habitat: Oak chaparral, coniferous woodland Elevation: 5,500–9,200 feet Reference(s): AGFD 2004g	Potential Occurrence: None. Project Area is outside the reported geographic range of this species. Effect Determination: The Project will have no effect on this species or its habitat.
Virlet paspalum (<i>Paspalum virletii</i>) Status: CNF-S	Range: Southern Arizona and Mexico. Arizona specimens from Pajarito Mountains and Brawley Wash. Habitat: Sandy soil in canyon bottoms Elevation: 2,600–3,850 feet Reference(s): SEINet 2012; Kearney and Peebles 1960	Potential Occurrence: None. Project Area is outside reported geographic distribution. Effect Determination: The Project will have no effect on this species or its habitat.
Arizona passionflower (<i>Passiflora foetida</i> var. <i>arizonica</i>) Status: USFS-S	Range: Southern Arizona and Sonora, Mexico. Not known from the Santa Rita Mountains. Habitat: Sonoran Desertscrub, Semidesert Grassland, rocky desert hillsides, limestone outcrops, canyons, cliffs, and arroyos Elevation: 3,500–5,600 feet Reference(s): AGFD 2006d	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Beardless chinchweed (<i>Pectis imberbis</i>) Status: USFS-S	Range: Southern Arizona, eastern Sonora, and western Chihuahua, Mexico. Known to be present in the Santa Rita Mountains. Habitat: Open grassland and oak woodland, disturbed areas, road cuts Elevation: 3,600–6,475 feet Reference(s): AGFD 2003h	Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. This species is known to be present within 3 miles of the Project Area (AGFD 2012). WestLand detected this species within McCleary Canyon in the vicinity of the Project Area (WestLand 2012). Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. This plant is widely distributed in its range. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Three-nerved scurf-pea (<i>Pediomelum pentaphyllum</i>) Status: CNF-S	Range: Southern Arizona, southwestern New Mexico, western Texas, and Chihuahua, Mexico. Reported from the Chiricahua Mountains and Graham County, Arizona. Habitat: Desert grasslands, associated with mesquite Elevation: 3,600–4,500 feet Reference(s): AGFD 2001m; SEINet 2012	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Catalina beardtongue (<i>Penstemon discolor</i>) Status: USFS-S AZ-HS	Range: Not reported from the Santa Rita Mountains Habitat: Bedrock openings in chaparral or pine-oak woodland Elevation: 4,400–7,200 feet Reference(s): ARPC 2001	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Chiricahua rockdaisy (<i>Perityle cochisensis</i>) Status: CNF-S	Range: Known only from the Chiricahua and Dos Cabezas Mountains Habitat: Moist north-facing cliff faces Elevation: 5,500–7,000 feet Reference(s): ARPC 2001	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Broad-leaf ground-cherry (<i>Physalis latiphysa</i>) Status: USFS-S	Range: Southern Arizona endemic with few known locations. Not reported from the Santa Rita Mountains. Habitat: Desertscrub or grassland, washes, in the shade of shrubs or boulders, on granitic, gravelly soils Elevation: 3,000–4,700 feet Reference(s): AGFD 2004h	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Hinkley polemonium (<i>Polemonium pauciflorum</i> ssp. <i>hinckleyi</i>) Status: CNF-S	Range: Only 11 populations in the U.S., including Arizona and Texas. Arizona populations limited to Cochise County. Habitat: Moist, humusy soils derived from igneous substrates along streams in shaded canyons, in pine-oak-juniper, oak, or fir forests; also occasionally on loose talus in oak forests. Elevation: No information Reference(s): NatureServe 2012	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
White-flowered cinquefoil (<i>Potentilla albiflora</i>) Status: CNF-S	Range: Known only from the Pinaleno Mountains Habitat: Open, coniferous forests and rocky slopes Elevation: 7,500–9,500 feet Reference(s): Kearney and Peebles 1960; NatureServe 2012	Potential Occurrence: None. The Project Area is outside the reported geographic range and below the known elevation range. Effect Determination: The Project will have no effect on this species or its habitat.
Chiricahua cinquefoil (<i>Potentilla rhyolitica</i> var. <i>rhyolitica</i>) Status: CNF-S	Range: Endemic to summit areas of the Santa Rita and Huachuca Mountains Habitat: Crevices of rhyolitic and quartzitic outcrops in open pine forests Elevation: 8,500–9,500 feet Reference(s): Ertter 2007	Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Huachuca cinquefoil (<i>Potentilla rhyolitica</i> var. <i>chiricahuensis</i>) Status: USFS-S	Range: Endemic to upper elevations of the Chiricahua Mountains Habitat: Rocky openings in mixed conifer forests Elevation: 8,900–9,500 feet Reference(s): Ertter 2007	Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Mexican tansy aster (<i>Psilactis gentryi</i>) (= <i>Machaeranthera mexicana</i>) Status: CNF-S	Range: Southern Arizona and Chihuahua to central Mexico. In Arizona, restricted to the Huachuca Mountains. Habitat: Moist habitats, highland meadows, fields, roadsides, and stream and lake margins Elevation: 5,900–9,180 feet Reference(s): AGFD 2004i	Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Whisk fern (<i>Psilotum nudum</i>) Status: CNF-S AZ-HS	Range: Found from North Carolina to Texas, Arizona, and California. Most Arizona specimens are from Sycamore Canyon, the Pajarito Mountains, and one from the Rincon Mountains. Habitat: Rock crevices, on trees, and on ground Elevation: Up to 4,000 feet Reference(s): NatureServe 2012; SEINet 2012	Potential Occurrence: None. The Project Area is outside the reported geographic range and above the known elevation range. Effect Determination: The Project will have no effect on this species or its habitat.
Blumer's (Chiricahua Mountain) dock (<i>Rumex orthoneurus</i>) Status: CNF-S	Range: East-central to southeastern Arizona and New Mexico. Not reported from the Santa Rita Mountains. Habitat: Mid- to high-elevation wetlands with moist organic soil adjacent to perennial springs or streams in canyons or meadows Elevation: 4,480–9,660 feet Reference(s): AGFD 2002d; ARPC 2001	Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Galiuro (Aravaipa) sage (<i>Salvia amissa</i>) Status: CNF-S	Range: South-central Arizona in the Galiuro and Superstition Mountains. Historical records from Santa Catalina Mountains. Habitat: Upper floodplain terraces in shady canyon bottoms near streams in understories of mature sycamore, ash, walnut, and mesquite. Elevation: 1,500–5,000 feet Reference(s): AGFD 2002e; ARPC 2001	Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Chiricahua Mountain brookweed (<i>Samolus vagans</i>) Status: USFS-S	Range: Most records of occurrences are from the Huachuca and Chiricahua Mountains. Known to be present in the Santa Rita Mountains. The closest reported location is at Robinson Spring in Florida Canyon, about 8 miles from the Project Area. Habitat: Wet, sandy soil Elevation range 3,500–6,000 feet Reference(s): SEINet 2012	Potential Occurrence: Unlikely. The Project Area does not contain the required habitat to support this species. Effect Determination: The Project is unlikely to have an effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Huachuca Mountain ragwort (<i>Senecio multidentatus</i> var. <i>huachucanus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Found in the Santa Rita, Huachuca, and Chiricahua Mountains</p> <p>Habitat: Steep, rocky, high-elevation mountain slopes and in canyon bottoms within pine-oak or mixed-conifer-dominated forests; moist loam soils associated with granite rock outcroppings and/or stabilized talus</p> <p>Elevation: 7,000–9,500 feet</p> <p>Reference(s): AGFD 2004j</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Nodding blue-eyed grass (<i>Sisyrinchium cernuum</i>)</p> <p>Status: USFS-S</p>	<p>Range: Records from several mountain ranges in southeastern Arizona, with most records from Rincon Mountains. One specimen from Big Casa Blanca Canyon in the Santa Rita Mountains.</p> <p>Habitat: Pine-oak woodlands, wet edges of flowing streams or springs</p> <p>Elevation: 3,300–9,000 feet</p> <p>Reference(s): SEINet 2012</p>	<p>Potential Occurrence: None. The Project Area does not contain suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Porsild's starwort (<i>Stellaria porsildii</i>)</p> <p>Status: CNF-S</p>	<p>Range: Southeastern Arizona and a single peak in southwestern New Mexico. In Arizona, restricted to the Chiricahua Mountains.</p> <p>Habitat: Partially shaded understory of pine, Douglas fir, and oak; also in open meadows</p> <p>Elevation: 7,000–9,200 feet</p> <p>Reference(s): AGFD 2004k</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Lemmon's stevia (<i>Stevia lemmonii</i>)</p> <p>Status: USFS-S</p>	<p>Range: Reported from the Santa Rita Mountains</p> <p>Habitat: Oak and pine-oak forests and woodlands, rocky canyon slopes, ravines streambeds</p> <p>Elevation: 3,000–5,500 feet</p> <p>Reference(s): AGFD 2004l</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range of this species and suitable habitat is present.</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Pinos Altos flameflower (<i>Talinum humile</i>)</p> <p>Status: CNF-S</p>	<p>Range: Primarily southwestern New Mexico and Durango and Chihuahua, Mexico. Only two known populations in Arizona, both southeast of Sonoita in the Canelo Hills.</p> <p>Habitat: Dry, shallow, gravelly, well-drained, rhyolitic soil terraces, often overlying bedrock. Known populations occur in Semidesert Grassland/Madrean Evergreen Woodland transition communities in Arizona.</p> <p>Elevation: 4,000–8,000 feet</p> <p>Reference(s): AGFD 2004s</p>	<p>Potential Occurrence: Unlikely. The Project Area is outside the reported geographic range, but suitable habitat is present.</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Tepec flameflower (<i>Talinum marginatum</i>)</p> <p>Status: CNF-S</p>	<p>Range: Southeastern Arizona and the Sierra Madre Occidental of Mexico. In the U.S., limited to a few isolated populations in the Huachuca Mountains.</p> <p>Habitat: Mountainous areas with pine-oak woodland and areas of low rolling hills dissected by narrow, steep-walled canyons at the transition zone between Madrean Evergreen Woodland communities and Semidesert Grassland communities.</p> <p>Elevation: 5,000–7,025 feet</p> <p>Reference(s): AGFD 2004m</p>	<p>Potential Occurrence: None. The Project Area is outside the reported geographic range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Aravaipa woodfern (<i>Thelypteris puberula</i> var. <i>sonorensis</i>)</p> <p>Status: CNF-S</p>	<p>Range: Arizona, California, and western Mexico. Found in several widely scattered locations in Arizona. Not reported from the Santa Rita Mountains.</p> <p>Habitat: Moist soil in the shade of boulders in mesic canyons. On riverbanks and in seepage areas and meadow habitats.</p> <p>Elevation: 2,220–4,500 feet</p> <p>Reference(s): AGFD 2004n</p>	<p>Potential Occurrence: None. Project Area is outside reported range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Sonoran noseburn (<i>Tragia laciniata</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern Arizona, Sonora, and Chihuahua. Known to be present in the Santa Rita Mountains.</p> <p>Habitat: Open oak and mixed-coniferous woodlands, streams and canyon bottoms, shaded hillsides</p> <p>Elevation: 3,500–5,680 feet</p> <p>Reference(s): AGFD 2004o</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. This species has been reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: The Project is linear, requires a narrow corridor for construction, and allows for some flexibility in trail placement. Impacts to sensitive plants would be avoided to the extent practicable. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Mogollon clover (<i>Trifolium longipes</i> ssp. <i>neurophyllum</i>)</p> <p>Status: CNF-S</p>	<p>Range: Restricted to the White Mountains in eastern Arizona and the Mogollon Mountains in western New Mexico</p> <p>Habitat: Permanently wet meadows, springs, and along streams</p> <p>Elevation: 6,500–9,000 feet</p> <p>Reference(s): AGFD 2002f</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Tumamoc globeberry (<i>Tumamoca macdougalii</i>)</p> <p>Status: USFS-S AZ-SR</p>	<p>Range: Southern Arizona and northwestern Mexico</p> <p>Habitat: Sonoran Desertscrub, sandy washes of hills and valleys, xeric conditions</p> <p>Elevation: Below 3,000 feet</p> <p>Reference(s): AGFD 2004p</p>	<p>Potential Occurrence: None. The Project Area is above the reported elevation limit for this species and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Limestone Arizona rosewood (<i>Vauquelinia californica</i> ssp. <i>pauciflora</i>) Status: CNF-S	Range: Southeastern Arizona, southwestern New Mexico, and several states in Mexico. In Arizona, known from only three locations in Guadalupe Canyon, Cochise County. Habitat: Low mountains and foothills, often on limestone Elevation: 4,000–4,500 feet Reference(s): SEINet 2012; NatureServe 2012; AGFD 1998	Potential Occurrence: None. The Project Area is approximately 100 miles from the only known populations in Guadalupe Canyon. Effect Determination: The Project will have no effect on this species or its habitat.
Shade violet (<i>Viola umbraticola</i>) Status: USFS-S	Range: Southern Arizona and northern Mexico. Known to be present in the Santa Rita Mountains. Habitat: Shady areas in canyon bottoms, usually in riparian ponderosa pine stands Elevation: 5,200–7,500 feet Reference(s): AGFD 2004q	Potential Occurrence: None. The Project Area has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
INSECTS		
Huachuca giant skipper (<i>Agathymus evansi</i>) Status: CNF-S	Range: Restricted to the Huachuca Mountains Habitat: Mixed pine-oak-juniper woodland with stands of its host, <i>Agave parryi</i> var. <i>huachucensis</i> . May also use <i>Agave palmeri</i> . Elevation: 5,600–5,800 feet Reference(s): AGFD 2001n	Potential Occurrence: None. The Project Area is the outside reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Sabino Canyon damselfly (<i>Argia sabino</i>) Status: USFS-S	Range: Known only from the Santa Catalina Mountains Habitat: Upper Sonoran riparian, sycamore and ash Elevation: 3,000–5,000 feet Reference(s): AGFD 2001o	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Cestus skipper (<i>Atrytonopsis cestus</i>) Status: CNF-S	Range: Primarily the Baboquivari Mountains and adjacent foothills; also reported from the Atacosa, Tumacacori, Santa Catalina, and Galiuro Mountains Habitat: Upper limits of the saguaro belt, as it blends into mesquite grassland Elevation: Unknown Reference(s): AGFD 2002g	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Chiricahua water scavenger beetle (<i>Cymbiodyta arizonica</i>) Status: CNF-S	Range: Restricted to Chiricahua Mountains Habitat: Larvae and adults are aquatic, most often found along water's edge. Pupation occurs in moist soil along water's edge. Elevation: Unknown Reference(s): AGFD 2003i	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Pinaleño monkey grasshopper (<i>Eumorsea pinaleño</i>) Status: CNF-S	Range: Restricted to Pinaleño Mountains. Known from only four specimens. Lack of wings limits dispersal ability. Habitat: Spruce-fir forest Elevation: Above 9,000 feet Reference(s): AGFD 2001p	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Stephan's heterelmis riffle beetle (<i>Heterelmis stephani</i>) Status: CNF-S	Range: Total range limited to Bog, Kent, and Sylvester Springs, all in Madera Canyon in the Santa Rita Mountains Habitat: Waterlogged, decomposing wood, leaf litter, and detritus in small seeps and springs Elevation: 5,000–7,000 feet Reference(s): AGFD 2002h	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Arizona snaketail (<i>Ophiogomphus arizonicus</i>) Status: CNF-S	Range: Mountains of eastern Arizona and western New Mexico, typically from the Huachuca Mountains Habitat: Swift rocky mountain streams in pine woodland with silt for larval habitat Elevation: Unknown Reference(s): AGFD 2002i	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Four-spotted skipperling (<i>Piruna polingii</i>) Status: CNF-S	Range: Central Arizona and New Mexico south into Mexico Habitat: Moist woodland openings with lush vegetation, meadows, and ravines and stream sides in the mountains Elevation: Unknown Reference(s): AGFD 2002j	Potential Occurrence: None. The Project Area has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
SNAILS		
Huachuca springsnail (<i>Pyrgulopsis thompsoni</i>) Status: CNF-S	Range: Found in springs and cienegas in and around the Huachuca Mountains and the Canelo Hills Habitat: Marshy areas characterized by various aquatic and emergent plant species that occur within plains grasslands, oak and pine-oak woodlands, and coniferous forest vegetation communities Elevation: 4,500–7,000 feet Reference(s): AGFD 2003j	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Clark Peak talussnail (<i>Sonorella christenseni</i>) Status: CNF-S	Range: Restricted to Clark Peak in the Pinaleno Mountains Habitat: Rockslides Elevation: 6,520–9,100 feet Reference(s): AGFD 2003k	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Mimic talussnail (<i>Sonorella imitator</i>) Status: CNF-S	Range: Restricted to Clark Peak in the Pinaleno Mountains Habitat: Rockslides Elevation: 6,680–10,280 feet Reference(s): AGFD 2003l	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Pinaleno talussnail (<i>Sonorella grahamensis</i>) Status: CNF-S	Range: Restricted to the northeastern slope of Mt. Graham south to the vicinity of the Arcadia Campground in the Pinaleno Mountains Habitat: Rockslides Elevation: 6,000–10,000 feet Reference(s): AGFD 2003m	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Wet Canyon talussnail (<i>Sonorella macrophallus</i>) Status: CNF-S	Range: Restricted to Wet Canyon on the northeastern slope of the Pinaleno Mountains Habitat: Talus slopes near the canyon bottom along a perennial reach Elevation: 6,050–7,400 feet Reference(s): AGFD 2004r	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Talussnail (no common name) (<i>Sonorella hachitana</i> <i>Peloncillensis</i>) Status: CNF-S	Range: Restricted to Skull Canyon on the western slope of the Peloncillo Mountains, New Mexico Habitat: Steep slopes in the canyon Elevation: No information Reference(s): BISON-M 2012	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Bearded mountainsnail (<i>Oreohelix barbata</i>) Status: CNF-S	Range: Restricted to the Mogollon Mountains of New Mexico and the Chiricahua Mountains of Arizona Habitat: Found in rock rubble with an abundance of leaf litter from deciduous trees along creeks in canyon bottoms Elevation: No information Reference(s): BISON-M 2012	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Pinaleno mountainsnail (<i>Oreohelix grahamensis</i>) Status: CNF-S	Range: Found between Clark Peak and Heliograph Peak in the Pinaleno Mountains Habitat: Found in leaf litter in and around talus Elevation: 6,590–10,080 feet Reference(s): AGFD 2003n	Potential Occurrence: None. The Project Area is outside the reported geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
FISH		
Longfin dace (<i>Agosia chrysogaster</i>) Status: CNF-S	Range: Widespread in the Bill Williams and Gila River drainages. Rio Yaqui form restricted to San Bernardino National Wildlife Refuge and streams in the Chiricahua Mountains and Sulphur Springs Valley. Habitat: Wide habitat range, from intermittent hot low-desert streams to clear and cool brooks at higher elevations. Can tolerate high temperatures and low dissolved oxygen. Elevation: Usually below 4,900 feet Reference(s): AGFD 2006e	Potential Occurrence: None. The Project Area has no suitable aquatic habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Mexican stoneroller (<i>Campostoma ornatum</i>) Status: USFS-S AZ-WSC	Range: Widespread in Mexico. In Arizona, now known only from Rucker Canyon and San Bernardino Creek. Habitat: Shallow riffles and runs over gravel/cobble substrates Elevation: 2,625 to 6,560 feet Reference(s): AGFD 2003o	Potential Occurrence: None. The Project Area has no suitable aquatic habitat. Effect Determination: The Project will have no effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Desert sucker (<i>Catostomus clarki</i>) Status: CNF-S	Range: The Colorado River and tributaries in Utah, Nevada, and Arizona Habitat: Rapids and flowing pools of streams and rivers primarily over bottoms of gravel-rubble with sandy silt in the interstices. Adults live in pools, moving at night to swift riffles and runs to feed. Elevation: 480–8,840 feet Reference(s): AGFD 2002k	Potential Occurrence: None. The Project Area has no suitable aquatic habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Sonora sucker (<i>Catostomus insignis</i>) Status: CNF-S	Range: The Gila and Bill Williams river drainages in Arizona, New Mexico, and northern Sonora Habitat: Occupies a variety of habitats from warm water rivers to trout streams, with an affinity for gravelly or rocky pools, or at least for relatively deep, quiet waters Elevation: 1,210 to 8,730 feet Reference(s): AGFD 2002l	Potential Occurrence: None. The Project Area has no suitable aquatic habitat. Effect Determination: The Project will have no effect on this species or its habitat.
AMPHIBIANS		
Great Plains narrowmouth toad (<i>Gastrophryne olivacea</i>) Status: CNF-S	Range: Southern Great Plains to central Mexico. In Arizona, from western Santa Cruz County north and west to Maricopa County, and Ajo in Pima County. Not known from the Santa Rita Mountains. Habitat: Mesquite semidesert grassland to oak woodland, in the vicinity of streams, springs, and rain pools. More terrestrial than aquatic in habits. Can be found in deep, moist crevices or burrows, often with various rodents, and under large flat rocks, dead wood, and other debris near water. Elevation: 1,400–4,700 feet Reference(s): AGFD 2003p	Potential Occurrence: None. The Project Area is outside the reported geographic range and has little suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Western barking frog (<i>Craugastor</i> [<i>Eleutherodactylus</i> <i>augusti cactorum</i>]) Status: USFS-S AZ-WSC	Range: Southern Arizona and northeastern Sonora. Reported from the Santa Rita Mountains. Habitat: Madrean Evergreen Woodland, crevices in cliffs and large rock outcroppings, particularly limestone, rhyolite, and granite. Spends daylight hours in crevices, caves, mines, wells, and rock piles. Elevation: 4,200–6,200 feet Reference(s): AGFD 2009b	Potential Occurrence: None. The Project Area has no suitable bedrock habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Ramsey Canyon leopard frog (<i>Rana subaquavocalis</i>) Status: USFS-S	Range: Range limited to eastern side of the Huachuca Mountains. This taxon is now considered a race of the Chiricahua leopard frog (<i>Lithobates chiricahuensis</i>). Habitat: Aquatic systems, including springs, cienegas, earthen tanks, small creeks, and slack waters of main-stem rivers Elevation: 4,750–6,400 feet Reference(s): AGFD 2011h; ITIS 2012	Potential Occurrence: None. The Project Area is outside this race's range. <i>L. chiricahuensis</i> is known from stock tanks in the vicinity of the Project Area. However, the Ramsey Canyon race does not occur in the Project Area. Effect Determination: The Project will have no effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Lowland leopard frog (<i>Lithobates [Rana] yavapaiensis</i>) Status: USFS-S AZ-WSC	Range: Central and southeastern Arizona, southwestern New Mexico, and northwestern Mexico Habitat: Sonoran Desertscrub to Madrean Evergreen Woodland. Permanent or semi-permanent water along streams with dense vegetation such as cottonwoods and willows. Also in ponds, cienegas, springs, cattle tanks, wetlands, and ditches. Elevation: 480–6,200 feet Reference(s): Brennan and Holycross 2006; AGFD 2006f	Potential Occurrence: Possible. <i>L. yavapaiensis</i> may overlap with <i>L. chiricahuensis</i> in the lower elevations of the Project Area where suitable habitat is present. <i>L. yavapaiensis</i> is present in the region. This species has been reported within 3 miles of the Project Area (AGFD 2012). Effect Determination: The Project would not impact surface water features or individual frogs. The Project will have no effect on this species or its habitat.
Tarahumara frog (<i>Rana tarahumarae</i>) Status: USFS-S AZ-WSC	Range: Extirpated from Arizona in the 1980s. An experimental population was established in one drainage in the Santa Rita Mountains in 2004. Habitat: Canyons and deep drought-resistant plunge pools formed among boulders or in bedrock. Habitats are located within oak, pine-oak woodlands. Elevation: 1,500–6,100 feet Reference(s): AGFD 2006g; Brennan and Holycross 2006	Potential Occurrence: None. No natural populations remain in Arizona. Effect Determination: The Project will have no effect on this species or its habitat.
REPTILES		
Yuman desert fringe-toed lizard (<i>Uma rufopunctata</i>) Status: AZ-WSC	Range: Southwestern Arizona and adjacent Mexico Habitat: Lower Colorado River Desertscrub, dunes, and sandy flats with sparse vegetation. Restricted to the southwestern corner of the state. Elevation: 0–600 feet Reference(s): AGFD 2003q	Potential Occurrence: None. Project Area is outside the known geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Slevin's bunchgrass lizard (<i>Sceloporus slevini</i>) Status: CNF-S	Range: Southeastern Arizona, southwestern New Mexico, and the Sierra Madre Occidental of Mexico Habitat: Primarily coniferous forest to 10,000 feet; rarely desert-grassland Elevation: 4,300–9,480 feet, mainly above 6,000 feet Reference(s): AGFD 2003r	Potential Occurrence: None. Project Area has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Mountain skink (<i>Eumeces callicephalus</i>) Status: CNF-S	Range: Mountain ranges of southern Arizona Habitat: Madrean Evergreen Woodland to upper parts of semidesert grassland, usually in moist areas in cover of rocks, fallen logs, leaf litter, and dense grass Elevation: No information Reference(s): Brennan and Holycross 2006	Potential Occurrence: Possible. The Project Area is on the edge of the known geographic range of this species and suitable habitat is present. Effect Determination: Some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Giant spotted whiptail (<i>Cnemidophorus burti</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern Arizona, extreme southwestern New Mexico, and northern Sonora</p> <p>Habitat: Semidesert grassland and Madrean Evergreen Woodland. Canyon bottoms in mountainous terrain, washes, riparian corridors, low valley bottoms, usually near streams or temporary water.</p> <p>Elevation: Sea level to 4,500 feet</p> <p>Reference(s): Brennan and Holycross 2006; AGFD 2012; AGFD 2001q</p>	<p>Potential Occurrence: Possible. This species has been reported within 3 miles of the Project Area (AGFD 2012) and suitable habitat is present.</p> <p>Effect Determination: Some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Reticulate Gila monster (<i>Heloderma suspectum suspectum</i>)</p> <p>Status: USFS-S</p>	<p>Range: Central and southeastern Arizona</p> <p>Habitat: Sonoran Desertscrub, Semidesert Grassland, Interior Chaparral, occasionally found in woodland, on rocky bajadas, hillsides, and in mountainous terrain</p> <p>Elevation: No information</p> <p>Reference(s): Brennan and Holycross 2006; AGFD 2012</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. This species has been reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: Some suitable habitat for this species may be impacted by the Project. Individuals of this species should be avoided during construction. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Green rat snake (<i>Senticolis triaspis</i>)</p> <p>Status: CNF-S</p>	<p>Range: Southern Arizona and western Mexico</p> <p>Habitat: Rocky slopes at an ecotone between Madrean Evergreen Woodland and more open areas or riparian corridors</p> <p>Elevation: Sea level to about 7,000 feet</p> <p>Reference(s): Brennan and Holycross 2006; AGFD 2012; NatureServe 2012; Stebbins 2003</p>	<p>Potential Occurrence: Possible. The Project Area is at the northern end of the known geographic range for this species and suitable habitat is available. This species has been reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: Some suitable habitat for this species may be impacted by the Project. Individuals of this species should be avoided during construction. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)</p> <p>Status: USFS-S AZ-WSC</p>	<p>Range: Central and southeastern Arizona, widespread in Mexico</p> <p>Habitat: Sonoran Desertscrub, Semidesert Grassland, Interior Chaparral, Madrean Evergreen Woodland, streams, rivers, cienegas, and ponds with dense bank vegetation</p> <p>Elevation: 3,000–5,000 feet</p> <p>Reference(s): Brennan and Holycross 2006; Stebbins 2003; AGFD 2011i</p>	<p>Potential Occurrence: None. There is no suitable aquatic habitat within the Project Area.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Thornscrub hook-nosed snake (<i>Gyalopion quadrangulare</i>) Status: CNF-S	Range: In Arizona, found in Patagonia and the Pajarito Mountains Habitat: Canyon bottoms, outwash plains, creosotebush desert, mesquite grassland foothills, thorn woodland, and dry tropical and subtropical forest Elevation: 0–4,400 feet Reference(s): NatureServe 2012; Stebbins 2003	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Yaqui black-headed snake (<i>Tantilla yaquia</i>) Status: CNF-S	Range: Southeastern Arizona and western Mexico. Map indicates presence in Santa Rita Mountains. Habitat: Moist conditions under rocks or logs in Madrean Evergreen Woodland. Evergreen and streamside woodlands. Elevation: Sea level to 5,500 feet Reference(s): Brennan and Holycross 2006; NatureServe 2012; Stebbins 2003	Potential Occurrence: Unlikely. The Project Area is at edge of the reported geographic range and habitat is marginally suitable. Effect Determination: The Project is unlikely to have an effect on this species or its habitat.
Brown vine snake (<i>Oxybelis aeneus</i>) Status: USFS-S AZ-WSC	Range: Primarily found at Arivaca Lake and the Tumacacori, Pajarito, and Patagonia Mountains in Santa Cruz County. Only isolated records of occurrence from the Santa Rita Mountains. Habitat: Brush-covered hillsides, canyons, and stream bottoms with sycamore, oak, walnut, and wild grape Elevation: 3,000–5,800 feet Reference(s): AGFD 2003w; Brennan and Holycross 2006	Potential Occurrence: None. The Project Area is outside the reported geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Twin-spotted rattlesnake (<i>Crotalus pricei</i>) Status: CNF-S	Range: Southeastern Arizona and mountains of western Mexico Habitat: Primarily in or near large rock slides in Montane Coniferous Forest or Subalpine Coniferous Forest, but also in adjacent forest and canyon bottoms. Occasionally found in Madrean Evergreen Woodland. Elevation: 4,000–10,500 feet Reference(s): Brennan and Holycross 2006; Stebbins 2003	Potential Occurrence: Unlikely. The Project Area has some marginal habitat at the lower limit of the known elevation range of this species. Effect Determination: The Project is unlikely to have an effect on this species or its habitat.
Arizona ridge-nosed rattlesnake (<i>Crotalus willardi willardi</i>) Status: USFS-S AZ-WSC	Range: Central Arizona and southwestern New Mexico to central Mexico Habitat: Oak woodland to pine-fir forests, near rock crevices on forest and woodland floors, also especially mesic canyon bottoms with canopies of alder, box elder, maple, oak, and other broadleaf deciduous trees; it is infrequently found in high grasslands bordering woodlands Elevation: 4,800–9,000 feet Reference(s): AGFD 2001r	Potential Occurrence: Unlikely. The Project Area has some marginal habitat, but is below the lower limit of the known elevation range. Effect Determination: The Project is unlikely to have an effect on this species or its habitat.
Desert massasauga (<i>Sistrurus catenatus edwardsii</i>) Status: AZ-WSC	Range: In Arizona, currently only known from two localized populations in San Bernardino and Sulphur Springs Valleys Habitat: Primarily in tobosa grassland along sloping bajadas with surface rocks Elevation: 4,400–4,700 feet Reference(s): AGFD 2001s	Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat. Effect Determination: The Project will have no effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
BIRDS		
Neotropical cormorant (<i>Phalacrocorax basilianus</i>) Status: USFS-S	Range: Infrequent visitor to small lakes in southeastern Arizona Habitat: Rivers, lakes, marshes, and seacoasts. Prefers shallow clear water at low elevations. Elevation: No information Reference(s): Dunn and Alderer 2006; NatureServe 2012; Taylor 1995	Potential Occurrence: None. The Project Area has no suitable aquatic habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Northern goshawk (<i>Accipiter gentilis</i>) Status: USFS-S AZ-WSC	Range: Widespread in northern hemisphere. Mountainous areas of Arizona. Habitat: Cool forests of pine, fir, and/or spruce, with tall trees and open canopy Elevation: 4,750–9,120 feet Reference(s): Corman and Wise-Gervais 2005; AGFD 2003s	Potential Occurrence: None. The Project Area has no suitable forested habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Northern gray hawk (<i>Buteo nitidus maximus</i>) Status: USFS-S AZ-WSC	Range: Southern Arizona, southern New Mexico, southern Texas. Widespread across Central and South America. Known to be present in Cienega Creek. Habitat: Perennial and intermittent drainages with tall groves of Fremont cottonwood and Goodding willow, typically with adjacent stands of velvet mesquite Elevation: No information Reference(s): Corman and Wise-Gervais 2005; AGFD 1999d	Potential Occurrence: Unlikely. The Project Area has no suitable breeding habitat, although individuals from Cienega Creek may occasionally fly over the Project Area. Effect Determination: The Project will have no effect on this species or its habitat.
Common black hawk (<i>Buteogallus anthracinus</i>) Status: USFS-S AZ-WSC	Range: Southwestern U.S. to northern South America. Remote rivers and streams across central Arizona. Habitat: Perennial drainages with mature gallery forests of riparian deciduous trees Elevation: 1,750–7,080 feet Reference(s): Corman and Wise-Gervais 2005; AGFD 2005g	Potential Occurrence: Possible. This bird has been observed along Mulberry Canyon in proximity to the Project Area (pers. comm. Angela Barclay, SWCA Environmental Consultants). Effect Determination: This species is highly mobile. Its habitat within the Project Area may be affected on a very small scale, but because the Project is linear and narrow, adjacent habitats will continue to be available to this species. Nesting birds will be avoided to the extent possible during construction of the trail. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
American peregrine falcon (<i>Falco peregrinus anatum</i>) Status: USFS-S AZ-WSC	Range: All continents except Antarctica. Throughout Arizona where cliffs are available. Habitat: Wide variety of habitats, from Sonoran Desertscrub to mixed conifer forests, most often in ponderosa pine areas. Primary requirements are topographic relief and available prey, often near rivers or other water sources. Elevation: 400–9,000 feet Reference(s): Corman and Wise-Gervais 2005; AGFD 2002m	Potential Occurrence: Unlikely. The Project Area has no suitable breeding habitat, but individuals could use this area for foraging. Effect Determination: The Project will have no effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Gould's turkey (<i>Meleagris gallopavo mexicana</i>) Status: USFS-S	Range: Merriam's race is widespread in Arizona, but Gould's race has had successful reintroductions in the Huachuca and Galiuro Mountains. No recent records from Santa Rita Mountains. Habitat: Evergreen oak woodlands, Madrean pine-oak forests, and sycamore-dominated drainages Elevation: 3,800–9,300 feet Reference(s): Corman and Wise-Gervais 2005	Potential Occurrence: None. The Project Area is outside the current range and has only marginal habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Cactus ferruginous pygmy-owl (<i>Glaucidium brasilianum cactorum</i>) Status: USFS-S	Range: Arizona is at the extreme northern end of distribution. Not reported from the eastern side of the Santa Rita Mountains. Habitat: Streamside cottonwoods and willows and adjacent mesquite bosques, usually with saguaros on nearby slopes. Less often along dry washes where large mesquite, palo verde, ironwood, and saguaro thrive. Elevation: 1,300–4,000 feet Reference(s): AGFD 2001t	Potential Occurrence: None. The Project Area is outside the known geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Whiskered screech-owl (<i>Megascops trichopsis</i>) Status: USFS-S	Range: Breeding confirmed in the Santa Rita Mountains Habitat: Dense oak and oak-pine woodlands Elevation: 3,800–7,600 feet Reference(s): NatureServe 2012; Corman & Wise-Gervais 2005	Potential Occurrence: None. The Project Area has no suitable dense woodland habitat. Effect Determination: The Project will have no effect on this species or its habitat.
Buff-collared nightjar (<i>Caprimulgus ridgwayi</i>) Status: USFS-S	Range: Southeastern Arizona is at the northern limit of this species' range, extending to southern Mexico and Guatemala. Rare reports from the Santa Rita Mountains. Habitat: Open, arid canyons with steep to moderate slopes in Sonoran Desertscrub and Semidesert Grassland. Canyon bottoms dominated by thorny, short-statured trees and shrubs. Elevation: 3,000–4,600 feet Reference(s): Corman & Wise-Gervais 2005; NatureServe 2012	Potential Occurrence: Unlikely. The Project Area is at the extreme limit of the known geographic range. Effect Determination: The Project will have no effect on this species or its habitat.
Lucifer hummingbird (<i>Calothorax lucifer</i>) Status: USFS-S	Range: Southeastern Arizona is at the northern limit of the range extending to southern Mexico. Breeding has been reported in the Santa Rita Mountains. Habitat: Dry brushy to sparsely vegetated rocky canyon slopes, foothill washes, and dry woodland edges; open arid landscapes with scattered agaves, yucca, and ocotillo. Elevation: 3,800–5,800 feet Reference(s): Corman & Wise-Gervais 2005; NatureServe 2012	Potential Occurrence: Unlikely. The Project Area has suitable habitat, but is near extreme limit of geographic distribution. Effect Determination: The Project is unlikely to have an effect on this species.
Violet-crowned hummingbird (<i>Amazilia violiceps</i>) Status: USFS-S	Range: Southeastern Arizona and southwestern New Mexico south to central Mexico. Present in several mountain ranges in southeastern Arizona. Habitat: Sycamore and some cottonwood-willow riparian habitats along several canyons and creeks; scrub, open woodland, forest edge, riparian groves and plantations, generally in arid or semi-arid situations Elevation: 2,800–5,800 feet Reference(s): AGFD 2002n; Corman & Wise-Gervais 2005	Potential Occurrence: Unlikely. The Project Area may have some suitable habitat, but is at the northern extreme of the known geographic range of this species. Effect Determination: The Project is unlikely to have an effect on this species or its habitat.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>White-eared hummingbird (<i>Hylocharis leucotis</i>)</p> <p>Status: USFS-S</p>	<p>Range: Primarily Mexico and Central America. Rare and irregular in Arizona. Breeding confirmed only in the Huachuca and Chiricahua Mountains.</p> <p>Habitat: Shrubby undergrowth of pine-oak and Madrean evergreen oak forests in highlands</p> <p>Elevation: 5,500–8,400 feet</p> <p>Reference(s): Corman and Wise-Gervais 2005; NatureServe 2012</p>	<p>Potential Occurrence: Unlikely. The Project Area has no suitable habitat and is near the extreme limit of the known geographic distribution.</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>
<p>Broad-billed hummingbird (<i>Cynanthus latirostris</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern Arizona, southwestern New Mexico, and south to central Mexico. Breeding confirmed in several mountain ranges in southeastern Arizona.</p> <p>Habitat: In Arizona, usually in broadleaf riparian forest with sycamores or cottonwoods. In lowland areas, found in cottonwood, willow, or mesquite woodlands along drainages, lakes, ponds, and springs.</p> <p>Elevation: 1,700–5,800 feet</p> <p>Reference(s): Corman and Wise-Gervais 2005; NatureServe 2012</p>	<p>Potential Occurrence: Possible. The Project Area has potential habitat, but not optimal.</p> <p>Effect Determination: This species is highly mobile. Its habitat within the Project Area may be affected on a very small scale, but because the Project is linear and narrow, adjacent habitats will continue to be available to this species. Nesting birds will be avoided to the extent possible during construction of the trail. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Eared quetzal (<i>Euptilotis neoxenus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Rarely observed in Arizona and no successful breeding confirmed for Arizona</p> <p>Habitat: Pine and pine-oak forests, Madrean Evergreen Woodland</p> <p>Elevation: 5,000–10,800 feet</p> <p>Reference(s): AGFD 2002o; Corman and Wise-Gervais 2005; NatureServe 2012</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat and is below the lower limit of the known elevation range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Rose-throated becard (<i>Pachyramphus algaiae</i>)</p> <p>Status: USFS-S AZ-WSC</p>	<p>Range: Southeastern Arizona to Costa Rica</p> <p>Habitat: Shady riparian woodlands along small perennial or intermittent foothill drainages and canyons, with sycamores, cottonwoods, and velvet ash</p> <p>Elevation: 3,400–4,500 feet</p> <p>Reference(s): Corman and Wise-Gervais 2005; AGFD 2001u</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Thick-billed kingbird (<i>Tyrannus crassirostris</i>)</p> <p>Status: USFS-S AZ-WSC</p>	<p>Range: Southeastern Arizona, southwestern New Mexico, south to southern Mexico and Guatemala. Breeding confirmed in several canyons and rivers in southeastern Arizona.</p> <p>Habitat: Riparian gallery woodlands in broad floodplains of perennial or intermittent creeks and rivers</p> <p>Elevation: 3,500–4,200 feet</p> <p>Reference(s): Corman and Wise Gervais 2005; AGFD 2010e</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat and is above the known elevation range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Buff-breasted flycatcher (<i>Empidonax fulvifrons</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern Arizona to southwestern Chihuahua. Populations declining, possibly fewer than 75 individuals in Arizona.</p> <p>Habitat: Madrean pine-oak woodlands, in areas with relatively wide, open drainages with open canopy forest of Chihuahua, Apache, or ponderosa pine</p> <p>Elevation: 5,380–8,450 feet</p> <p>Reference(s): Corman and Wise-Gervais 2005; AGFD 2003t</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Northern beardless tyrannulet (<i>Campostoma imberbe</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern Arizona, southwestern New Mexico, and south through Mexico to Costa Rica. Breeding confirmed in several river drainages in southeastern Arizona.</p> <p>Habitat: Open riparian woodlands and heavily wooded dry washes. Surface water often present, but not required. Intermittent foothill drainages with netleaf hackberry and mesquite.</p> <p>Elevation: 1,920–4,600 feet</p> <p>Reference(s): Corman and Wise-Gervais 2005</p>	<p>Potential: Possible. The Project Area has suitable habitat and this species has been observed within 3 miles of the Project Area.</p> <p>Effect Determination: This species is highly mobile. Its habitat within the Project Area may be affected on a very small scale, but because the Project is linear and narrow, adjacent habitats will continue to be available to this species. Nesting birds will be avoided to the extent possible during construction of the trail. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Abert's towhee (<i>Pipilo aberti</i>)</p> <p>Status: USFS-S</p>	<p>Range: Primarily within Arizona. Breeding probable in the Rosemont vicinity.</p> <p>Habitat: Most common in lowland riparian thickets with Fremont cottonwood, Goodding willow, seepwillow, and mesquite, and in dry desert washes that are tributary to riparian areas</p> <p>Reference(s): Corman and Wise-Gervais 2005; NatureServe 2012</p>	<p>Potential Occurrence: Possible. The Project Area has suitable habitat and this species has been observed in the vicinity.</p> <p>Effect Determination: This species is highly mobile. Its habitat within the Project Area may be affected on a very small scale, but because the Project is linear and narrow, adjacent habitats will continue to be available to this species. Nesting birds will be avoided to the extent possible during construction of the trail. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Arizona grasshopper sparrow (<i>Ammodramus savannarum ammoregus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern Arizona, southwestern New Mexico, and adjacent Sonora and Chihuahua</p> <p>Habitat: Open grassland in areas with moderate to high coverage of medium-height grass and with relatively low shrub coverage. Areas with trees appear to be avoided, as are areas with extremely short or tall grass, low grass cover, or high shrub densities.</p> <p>Elevation: 3,800–5,300 feet</p> <p>Reference(s): AGFD 2010f; Strong 1987</p>	<p>Potential Occurrence: None. The Project Area has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Baird's sparrow (<i>Ammodramus bairdii</i>) Status: USFS-S	Range: Breeds in the northern Great Plains. Winters from southeastern Arizona to Texas and south into Mexico. Habitat: Dense stands of grass, usually in extensive expanses of grasslands; also taller, denser grass and on south-facing slopes of mixed-oak grassland where the oaks are on the north-facing slope Elevation: 4,140–4,900 feet Reference(s): AGFD 2001v	Potential Occurrence: Possible as a winter visitor. The Project Area has suitable grassland habitat. Effect Determination: This species is highly mobile. Its habitat within the Project Area may be affected on a very small scale, but because the Project is linear and narrow, adjacent habitats will continue to be available to this species. Nesting birds will be avoided to the extent possible during construction of the trail. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Varied bunting (<i>Passerina versicolor</i>) Status: USFS-S	Range: Southeastern Arizona and southern Texas to southern Mexico. Known to breed on northwestern side of the Santa Rita Mountains. Habitat: Brushy arid slopes, canyons, and dry washes, particularly along drainages with mesquite and netleaf hackberry with dense thickets on adjacent slopes Elevation: 1,350–5,100 feet Reference(s): Corman and Wise-Gervais 2005; NatureServe 2012	Potential Occurrence: Possible. The Project Area has suitable habitat and is close to known breeding areas. Effect Determination: This species is highly mobile. Its habitat within the Project Area may be affected on a very small scale, but because the Project is linear and narrow, adjacent habitats will continue to be available to this species. Nesting birds will be avoided to the extent possible during construction of the trail. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
MAMMALS		
Arizona shrew (<i>Sorex arizonae</i>) Status: USFS-S	Range: Known only from the Chiricahua, Huachuca, and Santa Rita Mountains Habitat: Primarily in riparian edges in pine-oak forests Elevation: 6,900–7,500 feet Reference(s): BISON-M 2012	Potential Occurrence: None. The Project Area has no suitable habitat and is below the known elevation range for this species. Effect Determination: The Project will have no effect on this species or its habitat.
Cockrum's desert shrew (<i>Notiosorex cockrumi</i>) Status: USFS-S	Range: Southern Arizona and Sonora, but limits are poorly known Habitat: Riparian overstory of Arizona walnut and ash in mesquite grassland dominated by giant sacaton Elevation: No information Reference(s): Reid 2006 Note: Visibly indistinguishable from <i>N. crawfordi</i> , and ranges overlap. <i>N. crawfordi</i> is found in desert areas and up to oak and pinyon-juniper zones.	Potential Occurrence: Possible. Can only be distinguished from <i>N. crawfordi</i> by mitochondrial DNA analysis. Effect Determination: Some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.

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Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Mexican long-tongued bat (<i>Choeronycteris mexicana</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southern California to southernmost Texas and most of northern and central Mexico. Mountain ranges of southeastern Arizona.</p> <p>Habitat: Mesic areas in canyons of mixed oak-conifer forests in mountains rising from the desert. Caves and abandoned mines are favored daytime retreats where they prefer to roost in the dimly lit areas near the entrance.</p> <p>Elevation: Mostly 4,000–6,000 feet</p> <p>Reference(s): AGFD 2006h</p>	<p>Potential Occurrence: Possible. Known to be present in the vicinity of the Project Area, using numerous abandoned mine adits in the Santa Rita Mountains. This species forages for nectar on agaves and has been reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: There is no roosting substrate within the Project Area and individuals would not likely be impacted by the Project. The Project will not substantially affect the availability of forage for this species. Agaves would be avoided to the greatest extent practicable. The Project will have no effect on this species or its habitat.</p>
<p>California leaf-nosed bat (<i>Macrotus californicus</i>)</p> <p>Status: USFS-S</p>	<p>Range: From southern California and southern Nevada across Arizona to Sinaloa and southwestern Chihuahua. Present in southern and western Arizona.</p> <p>Habitat: Mostly found in Sonoran desertscrub; primary summer and winter ranges essentially the same; primarily roosts in mines, caves, and rock shelters.</p> <p>Elevation: Below 4,000 feet</p> <p>Reference(s): AGFD 2001w</p>	<p>Potential Occurrence: None. The Project Area lacks suitable habitat and is above the reported elevation range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Southern yellow bat (<i>Lasiurus ega</i> [includes <i>L. xanthinus</i>])</p> <p>Status: USFS-S</p>	<p>Range: Southern California, Arizona, and New Mexico to western and central Mexico. Found in several mountain ranges in central and southeastern Arizona.</p> <p>Habitat: Not clearly understood; may be associated with Washington fan palm trees, other palms, or other leafy vegetation such as sycamores, hackberries, and cottonwoods, which provide roost sites. Found in thorny desertscrub habitats to oak woodlands.</p> <p>Elevation: 550–6,000 feet</p> <p>Reference(s): AGFD 2011j; Snow, no date</p>	<p>Potential Occurrence: Possible. The Project is within the geographic range and suitable foraging habitat is available, but available roost sites may be limited.</p> <p>Effect Determination: Roosting substrate could be avoided by the Project. The Project will not substantially affect the availability of forage for this species. The Project will have no effect on this species or its habitat.</p>
<p>Western red bat (<i>Lasiurus blossevillii</i>)</p> <p>Status: USFS-S</p>	<p>Range: Northern Argentina to western North America. In Arizona, primarily in central and southeastern areas.</p> <p>Habitat: Riparian and other wooded areas. Roosts by day in trees along waterways among oaks, sycamores, and walnuts.</p> <p>Elevation: 1,900–7,200 feet</p> <p>Reference(s): Hoffmeister 1986; AGFD 2011k</p>	<p>Potential Occurrence: Possible. The Project is within the known geographic range of this species and suitable foraging habitat is available, but available roost sites may be limited.</p> <p>Effect Determination: Roosting substrate would be avoided by the Project. The Project will not substantially affect the availability of forage for this species. The Project will have no effect on this species or its habitat.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Allen's lappet-browed bat (<i>Idionycteris phyllotis</i>)</p> <p>Status: USFS-S</p>	<p>Range: Northern Arizona to the highlands of central Mexico. Present from the northwestern corner to southeastern corner of Arizona, but absent from southwestern desert areas. Not reported from the Santa Rita Mountains.</p> <p>Habitat: Most often in ponderosa pine, pinyon-juniper, Mexican woodland, and riparian areas of sycamores, cottonwoods, and willows. Boulder piles, cliffs, rocky outcrops or lava flows at or near most collection locations. Roosts in caves and abandoned mine shafts.</p> <p>Elevation: 1,320–9,800 feet, but most specimens are at altitudes between 3,500–7,500 feet</p> <p>Reference(s): Hoffmeister 1986; AGFD 2001z</p>	<p>Potential Occurrence: None. The Project Area lacks suitable habitat and is outside the reported geographic range of this species.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Pale Townsend's big-eared bat (<i>Corynorhinus townsendii pallascens</i>)</p> <p>Status: USFS-S</p>	<p>Range: From Black Hills of South Dakota to highlands of northern Mexico. Widespread in Arizona from the Grand Canyon to the southeastern part of the state.</p> <p>Habitat: Summer day roosts are found in caves and mines from desertscrub up to woodlands and coniferous forests. Night roosts may often be in abandoned buildings. In winter, this species hibernates in cold caves, lava tubes, and mines mostly in uplands and mountains.</p> <p>Elevation: 550 to 7,520 feet</p> <p>Reference(s): AGFD 2003u; Hoffmeister 1986</p>	<p>Potential Occurrence: Possible. This species is known to be present in abandoned mine adits in the Santa Rita Mtns, within 5 mi of the Project Area.</p> <p>Effect Determination: There is no roosting substrate within the Project Area and individuals would not likely be impacted by the Project. The Project will not substantially affect the availability of forage for this species. The Project will have no effect on this species or its habitat.</p>
<p>Pocketed free-tailed bat (<i>Nyctinomops femorosaccus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southern California, western Texas and south to central Mexico. Widely distributed across southern and western Arizona.</p> <p>Habitat: Arid low elevations usually around high cliffs and rugged rock outcrops. Roosts in rock crevices during the day.</p> <p>Elevation: 190 to 7,520 feet</p> <p>Reference(s): AGFD 2011l</p>	<p>Potential Occurrence: Possible. The Project is within the known geographic range and suitable habitat is available, but available roosting sites may be limited.</p> <p>Effect Determination: There is no roosting substrate within the Project Area and individuals would not likely be impacted by the Project. The Project will not substantially affect the availability of forage for this species. The Project will have no effect on this species or its habitat.</p>
<p>Greater western mastiff bat (<i>Eumops perotis californicus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southern California, western Texas, and south to central Mexico. Found primarily in the southern part of Arizona.</p> <p>Habitat: Lower and upper Sonoran Desertscrub near cliffs, preferring rugged rocky canyons with abundant crevices</p> <p>Elevation: 240–8,475 feet</p> <p>Reference(s): AGFD 2002p</p>	<p>Potential Occurrence: Possible. The Project is within the known geographic range and suitable habitat is available, but available roosting sites may be limited.</p> <p>Effect Determination: There is no roosting substrate within the Project Area and individuals would not likely be impacted by the Project. The Project will not substantially affect the availability of forage for this species. The Project will have no effect on this species or its habitat.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>White-sided jackrabbit (<i>Lepus callotis</i>)</p> <p>Status: USFS-S</p>	<p>Range: Primarily in the Animas and Playas Valleys of southwestern New Mexico and into central Mexico; may occasionally enter extreme southeastern Arizona</p> <p>Habitat: Flat grassland with little or no shrub cover</p> <p>Elevation: 4,900–5,250 feet</p> <p>Reference(s): Reid 2006</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range of this species and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Chiricahua fox squirrel (<i>Sciurus nayaritensis chiricahuae</i>)</p> <p>Status: USFS-S</p>	<p>Range: Restricted to the Chiricahua Mountains</p> <p>Habitat: Partially open Apache pine-oak forest with mixed broadleaf deciduous trees, mainly in the thick growth of canyon bottoms</p> <p>Elevation: 5,280–8,400 feet</p> <p>Reference(s): AGFD 2011m</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range of this species and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Graham Mountains pocket gopher (<i>Thomomys bottae grahamensis</i>)</p> <p>Status: USFS-S</p>	<p>Range: Restricted to higher parts of the Pinaleno Mountains</p> <p>Habitat: Mountain meadows with deep, friable soil and a heavy stand of grass and weeds</p> <p>Elevation: 9,200 feet</p> <p>Reference(s): Hoffmeister 1986</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>Huachuca Mountains pocket gopher (<i>Thomomys umbrinus intermedius</i>)</p> <p>Status: USFS-S</p>	<p>Range: Limited to the Santa Rita, Huachuca, Patagonia, Atascosa, and Pajarita Mountains of southeastern Arizona</p> <p>Habitat: Confined to the oak zone of mountain ranges. Specimens have been collected near Greaterville and on Empire Ranch.</p> <p>Elevation: 4,500–9,000 feet</p> <p>Reference(s): Hoffmeister 1986</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present.</p> <p>Effect Determination: Some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Southern (Pajarito) pocket gopher (<i>Thomomys umbrinus quercinus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Apparently confined to Sycamore Canyon and Peña Blanca Spring in the Atascosa and Pajarito Mountains of Santa Cruz County</p> <p>Habitat: In rocky soil in oak woodland</p> <p>Elevation: 3,500–4,500 feet</p> <p>Reference(s): Hoffmeister 1986</p> <p>Note: The taxonomy of this species is a subject of debate. Hoffmeister (1986) found no evidence to distinguish these animals from <i>T. u. intermedius</i>.</p>	<p>Potential Occurrence: None. Outside the reported geographic range.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Fulvous harvest mouse (<i>Reithrodontomys fulvescens</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern corner of Arizona east to Louisiana and south through Mexico to Honduras. Has been collected near Greaterville in the Santa Rita Mountains.</p> <p>Habitat: Grassy slopes and alluvial fans, usually with scattered oaks or other trees</p> <p>Elevation: No information</p> <p>Reference(s): Hoffmeister 1986; Reid 2006</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. Reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: Some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Plains harvest mouse (<i>Reithrodontomys montanus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Great Plains from southeastern Montana to southeastern Arizona and northern Mexico. Has been collected northeast of Greaterville in the Santa Rita Mountains.</p> <p>Habitat: Xeric conditions, usually in desertscrub or chaparral, often with mesquite, creosote, and grasses</p> <p>Elevation: No information</p> <p>Reference(s): Hoffmeister 1986; Reid 2006</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. Reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: Some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>Mesquite mouse (<i>Peromyscus merriami</i>)</p> <p>Status: USFS-S</p>	<p>Range: This species occurs in south-central Arizona through western Sonora to central Sinaloa, Mexico (Wilson and Reeder 2005).</p> <p>Habitat: Riparian or low desert habitats. Found in dense brush, mesquite bosque.</p> <p>Elevation: 1,600–3,850 feet</p> <p>Reference(s): AGFD 2011n</p>	<p>Potential Occurrence: Unlikely. The Project Area does not provide suitable habitat and occurs above the elevation range of this species.</p> <p>Effect Determination: The Project is unlikely to have an effect on this species or its habitat.</p>
<p>Northern pygmy mouse (<i>Baiomys taylori ater</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern corner of Arizona into Mexico. Also southern Oklahoma and Texas. Specimens have been collected at Thurber Ranch on Box Canyon Road.</p> <p>Habitat: Plains and semidesert grassland, including areas with grama, sacaton, mesquite, and yucca</p> <p>Elevation: No information</p> <p>Reference(s): Hoffmeister 1986</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable grassland habitat is available. Has been reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: There is some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
<p>Yellow-nosed cotton rat (<i>Sigmodon ochrognathus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Southeastern Arizona, southwestern New Mexico, western Texas south to Durango, Mexico. Specimens have been collected at or near Rosemont.</p> <p>Habitat: Grassy, dry, rocky slopes in or near the oak woodland belt, as well as montane meadows within ponderosa pine and Douglas fir forests. Grasses are often sparse and scattered in clumps with beargrass, agave, or yuccas. Slopes are often up to 40 degrees.</p> <p>Elevation: 3,000–8,500 feet</p> <p>Reference(s): AGFD 2003v; Hoffmeister 1986</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. Species has been reported within 3 miles of the Project Area (AGFD 2012).</p> <p>Effect Determination: There is some suitable habitat for this species and individuals may be impacted by the Project. The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.</p>
<p>White-bellied long-tailed vole (<i>Microtus longicaudus leucophaeus</i>)</p> <p>Status: USFS-S</p>	<p>Range: Restricted to the Pinaleño Mountains, Graham County</p> <p>Habitat: Grassy meadows and flats, along boggy stream bottoms, cienegas, openings in coniferous forests, and along roadsides</p> <p>Elevation: 6,000–10,700 feet</p> <p>Reference(s): Hoffmeister 1986; AGFD 2003x</p>	<p>Potential Occurrence: None. The Project Area is outside the known geographic range and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>
<p>White-nosed coati (<i>Nasua narica</i>)</p> <p>Status: USFS-S</p>	<p>Range: Central Arizona through Mexico and Central America to northern Colombia</p> <p>Habitat: Primarily woodland areas with oaks, sycamores, and walnuts; also in pine-oak woodlands, shrubby woodlands, and shrubby grasslands</p> <p>Elevation: No information</p> <p>Reference(s): Hoffmeister 1986; Reid 2006</p>	<p>Potential Occurrence: Possible. The Project is within the known geographic range and has suitable habitat. Species has been observed within 5 miles of the Project Area.</p> <p>Effect Determination: Individuals and dens would be avoided during construction. The Project will have no effect on this species or its habitat.</p>
<p>Hooded skunk (<i>Mephitis macroura milleri</i>)</p> <p>Status: USFS-S</p>	<p>Range: Specimen has been collected at Thurber Ranch on Box Canyon Road.</p> <p>Habitat: Rocky slopes, bases of cliffs, and rocky arroyos at intermediate elevations</p> <p>Elevation: Intermediate elevations, above desert, not in high mountains</p> <p>Reference(s): Hoffmeister 1986</p>	<p>Potential Occurrence: Possible. The Project Area is within the known geographic range and suitable habitat is present. This species has been observed in a small abandoned mine adit within 4 miles of the Project Area.</p> <p>Effect Determination: Individuals and dens would be avoided during construction. The Project will have no effect on this species or its habitat.</p>

Table 2. U.S. Forest Service sensitive species present in Pima County, Arizona, potential occurrence, and effect determination. Species lists from USDA-FS (2007a and 2007b). Species included in Table 1 are not repeated here. Species highlighted in gray are known or have the potential to occur within the Project Area.

Species and Status	Known Geographic Range and Habitat Preference(s)	Potential Occurrence* in Project Area and Effect Determination
Desert bighorn sheep (<i>Ovis canadensis mexicanus</i>)	<p>Range: From Kanab Creek and the Grand Canyon to Grand Wash in westernmost Arizona, eastward to the Catalina Mountains. Also reported from Dix Mesa in the White Mountains.</p> <p>Habitat: Precipitous, rocky desert ranges, primarily in the western part of Arizona and in the Grand Canyon. The best habitat appears to be the jojoba communities with galleta as the dominant grass.</p> <p>Elevation: 3,000–4,000 feet</p> <p>Reference(s): Hoffmeister 1986</p>	<p>Potential Occurrence: None. The Project is outside the known geographic range of this species and has no suitable habitat.</p> <p>Effect Determination: The Project will have no effect on this species or its habitat.</p>

* The potentials for taxa to occur within the Project Area are categorized according to the following criteria:

- Possible:** The taxon has not been recorded by WestLand in the Project Area, but the known current distribution of the taxon includes the site and the required habitat characteristics of the taxon are present within or in the vicinity of the Project Area.
- Unlikely:** The required habitat characteristics of the taxon are present, but the Project Area is outside the known current distribution of the taxon, which is not highly restricted.
- None:** The Project Area is outside the known distribution of the taxon and the habitat characteristics required by the taxon are not present, and/or taxon-specific surveys have been conducted and no detections of the taxon have been made. Taxa with highly restricted ranges (e.g., springsnails) are considered to have no potential to occur if the Project Area is outside the known range, even if the required habitat characteristics are present in the Project Area.

5. SUMMARY OF FINDINGS

Three listed species—LLNB, jaguar, and CLF—are considered to have some potential to occur within the Project Area and/or have proposed or designated critical habitat in proximity to the Project Area. The remaining listed species are considered to have no potential to occur or are regarded as unlikely to occur (*Table 1*).

LLNBs are known to use an abandoned mine as a post-maternity dispersal roost within approximately 1 mile of where the proposed trail realignment would rejoin the current trail alignment (*Figure 2*). A realignment of the trail will move the trail away from this roost site and will reduce the potential for human disturbance of this colony. LLNB will forage on agaves that are present along the proposed route. Potential impacts on foraging resources could be minimized by minor adjustments to the trail route to avoid agave rosettes. There are no natural caves and no known abandoned mines on the proposed route. There is no designated or proposed critical habitat for the LLNB.

Portions of the existing Arizona Trail alignment and the northernmost portions of the proposed trail realignment occur within lands that have been proposed as critical habitat for the jaguar (*Figure 3*). The Project is not anticipated to impact any individual jaguars traveling through the Project Area because the trail realignment would not interrupt any potential movement corridors for jaguar and few, if any, prey species for the jaguar would be impacted by the Project. The trail realignment is proposed along SR 83 within lands that are already impacted by human activity. The Project would not cause an increase in traffic and it would not cause any permanent increases in noise levels. A temporary increase in noise is expected during the construction of the trail segment being realigned. The Project would not influence the movement of jaguars between the Santa Rita and Whetstone Mountains, and it would not impact connectivity from any of the proposed critical habitat units to Mexico. The Project will not substantially impact the prey base of the jaguar, although some impacts to individual prey species may occur. No impacts to surface water will result from the Project. Some vegetation removal will occur within the Project Area as a result of the trail realignment; however, the Project is linear and requires a narrow corridor for construction; impacts to vegetation will be minimized. The trail realignment would be constructed along the existing grade and would not substantially impact the existing topography within the Project Area.

The CLF is known to be present in Empire Gulch, Cienega Creek, and numerous stock tanks in the vicinity of the Project Area. These frogs normally require perennial or nearly perennial water in streams, springs, cienegas, and stock tanks in order to complete their life cycle, but are capable of overland movement between water sources. Critical habitat for the CLF has been designated in Empire Gulch, Cienega Creek, and the Greaterville area (USFWS 2012b). The closest point of this critical habitat is less than 3 miles from the proposed trail route in the Project Area. The proposed trail construction will have no direct impact on this designated critical habitat. Surface water features would not be impacted by the Project and no perennial streams are crossed by the proposed route; therefore, no adverse impacts to CLF are anticipated as a result of the Project.

Based on the screening analysis in *Table 2*, 40 Forest Sensitive species have a reasonable potential to occur in the Project Area. This total consists of 15 plant species, 1 amphibian, 4 reptile species, 6 bird species, and 14 mammal species.

Of the 15 sensitive plant species that could be found in the Project Area, two are orchid species: Arizona coralroot and Coleman's coralroot. Both these species are saprophytes (root parasites) on oaks and both are known to be present within a few miles of the Project Area. Surveys for these species can only be conducted during the flowering season (April through June) when flowering spikes are visible above the ground. Both these species have been petitioned for listing under the ESA. Other plant species that have been the subject of special interest in this area are Bartram stonecrop and beardless chinchweed. Impacts to plants can be minimized by orienting the trail to avoid any of the sensitive plants that may be encountered during surveys or trail construction.

One sensitive amphibian, the lowland leopard frog, has the potential to occur in the Project Area, but the Project will not affect this species because it will not impact any surface water features.

The four sensitive reptile species that may be present in the Project Area are the mountain skink, giant spotted whiptail, reticulate Gila monster, and green rat snake. Impacts to reptiles can be minimized with care during construction to avoid direct and indirect impacts to individuals and potential den sites.

The six sensitive bird species that may be present in the Project Area are the common black hawk, broad-billed hummingbird, northern beardless tyrannulet, Abert's towhee, Baird's sparrow, and varied bunting. The common black hawk has been observed in Mulberry Canyon in the northern portion of the Project Area. The towhee is a permanent resident of this vicinity. The hummingbird, tyrannulet, and bunting are neotropical migrants that are only present during the breeding season in spring, summer, and early fall. The Baird's sparrow is a northern migrant that is only present during the winter. Because of their mobility, birds are unlikely to be directly impacted by the trail construction. Indirect impacts to bird species can be minimized by taking appropriate precautions during construction to avoid known or potential nest sites.

Of the 14 sensitive mammal species that could be present in the Project Area, there are five insectivorous bats (southern yellow bat, western red bat, Pale Townsend's big-eared bat, pocketed free-tailed bat, and greater western mastiff bat), one nectarivorous bat (Mexican long-tongued bat), one shrew (Cockrum's desert shrew), five rodents (Huachuca Mountains pocket gopher, fulvous harvest mouse, plains harvest mouse, northern pygmy mouse, and yellow-nosed cotton rat), and two small carnivores (white-nosed coati and hooded skunk). The bats are likely to use the Project Area primarily for foraging, although two of these species roost in trees during daylight hours. These mammals would not likely be directly impacted by the trail construction because they are mobile. Indirect impacts to mammal species can be minimized by taking appropriate precautions during construction to avoid the larger trees that could be used by roosting bats and known or potential burrows and den sites.

Table 3. Summary of special-status species with potential to occur and determination of effects

Species	Effects Determination
Chiricahua leopard frog	The Project will not affect the Chiricahua leopard frog or its habitat.
Lesser long-nosed bat	The Project may beneficially affect the lesser long-nosed bat and its habitat.
Jaguar	The Project will not affect the jaguar or its habitat.
Santa Cruz striped agave	The Project may impact individual Santa Cruz striped agave, but is not likely to result in a trend toward federal listing or loss of viability.
Greene milkweed	The Project may impact individual Greene milkweed plants, but is not likely to result in a trend toward federal listing or loss of viability.
Needle-spined pineapple cactus	The Project may impact individual needle-spined pineapple cactus, but is not likely to result in a trend toward federal listing or loss of viability.
Arid throne fleabane	The Project may impact individual arid throne fleabane, but is not likely to result in a trend toward federal listing or loss of viability.
Bartram stonecrop	The Project may impact individual Bartram stonecrop, but is not likely to result in a trend toward federal listing or loss of viability.
Chisos Mt. crested coralroot	The Project may impact individual Chisos Mt. crested coralroot, but is not likely to result in a trend toward federal listing or loss of viability.
Arizona coralroot	The Project may impact individual Arizona coralroot, but is not likely to result in a trend toward federal listing or loss of viability.
Spiderleaf	The Project may impact individual spiderleaf plants, but is not likely to result in a trend toward federal listing or loss of viability.
Lemmon's lupine	The Project may impact individual Lemmon's lupine, but is not likely to result in a trend toward federal listing or loss of viability.
Arizona manihot	The Project may impact individual Arizona manihot, but is not likely to result in a trend toward federal listing or loss of viability.
Southwestern muhly	The Project may impact individual southwestern muhly plants, but is not likely to result in a trend toward federal listing or loss of viability.
Sycamore Canyon muhly	The Project may impact individual Sycamore Canyon muhly plants, but is not likely to result in a trend toward federal listing or loss of viability.
Beardless chinchweed	The Project may impact individual beardless chinchweed, but is not likely to result in a trend toward federal listing or loss of viability.
Lemmon's stevia	The Project may impact individual Lemmon's stevia, but is not likely to result in a trend toward federal listing or loss of viability.
Sonoran noseburn	The Project may impact individual Sonoran noseburn, but is not likely to result in a trend toward federal listing or loss of viability.
Lowland leopard frog	The Project will have no effect on the lowland leopard frog.
Mountain skink	The Project may impact individual mountain skinks, but is not likely to result in a trend toward federal listing or loss of viability.
Giant spotted whiptail	The Project may impact individual giant spotted whiptails, but is not likely to result in a trend toward federal listing or loss of viability.
Reticulate Gila monster	The Project may impact individual reticulate Gila monsters, but is not likely to result in a trend toward federal listing or loss of viability.
Green rat snake	The Project may impact individual green rat snakes, but is not likely to result in a trend toward federal listing or loss of viability.
Common black hawk	The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Broad-billed hummingbird	The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.

Table 3. Summary of special-status species with potential to occur and determination of effects

Species	Effects Determination
Northern beardless tyrannulet	The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Abert's towhee	The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Baird's sparrow	The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Varied bunting	The Project may impact individuals of this species, but is not likely to result in a trend toward federal listing or loss of viability.
Cockrum's desert shrew	The Project may impact individual Cockrum's desert shrews, but is not likely to result in a trend toward federal listing or loss of viability.
Mexican long-tongued bat	The Project will have no effect on the Mexican long-tongued bat.
Southern yellow bat	The Project will have no effect on the southern yellow bat.
Western red bat	The Project will have no effect on the western red bat.
Pale Townsend's big-eared bat	The Project will have no effect on the pale Townsend's big-eared bat.
Pocketed free-tailed bat	The Project will have no effect on the pocketed free-tailed bat.
Greater western mastiff bat	The Project will have no effect on the greater western mastiff bat.
Huachuca Mountains pocket gopher	The Project may impact individual Huachuca Mountains pocket gophers, but is not likely to result in a trend toward federal listing or loss of viability.
Fulvous harvest mouse	The Project may impact individual fulvous harvest mice, but is not likely to result in a trend toward federal listing or loss of viability.
Plains harvest mouse	The Project may impact individual plains harvest mice, but is not likely to result in a trend toward federal listing or loss of viability.
Northern pygmy mouse	The Project may impact individual northern pygmy mice, but is not likely to result in a trend toward federal listing or loss of viability.
Yellow-nosed cotton rat	The Project may impact individual yellow-nosed cotton rats, but is not likely to result in a trend toward federal listing or loss of viability.
White-nosed coati	The Project will have no effect on the white-nosed coati.
Hooded skunk	The Project will have no effect on the hooded skunk.

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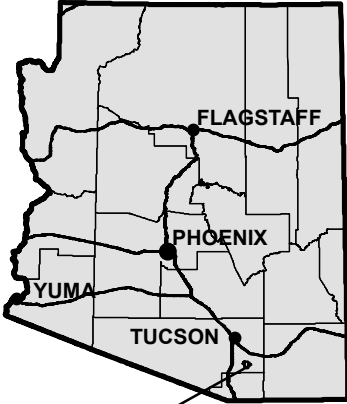
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FIGURES

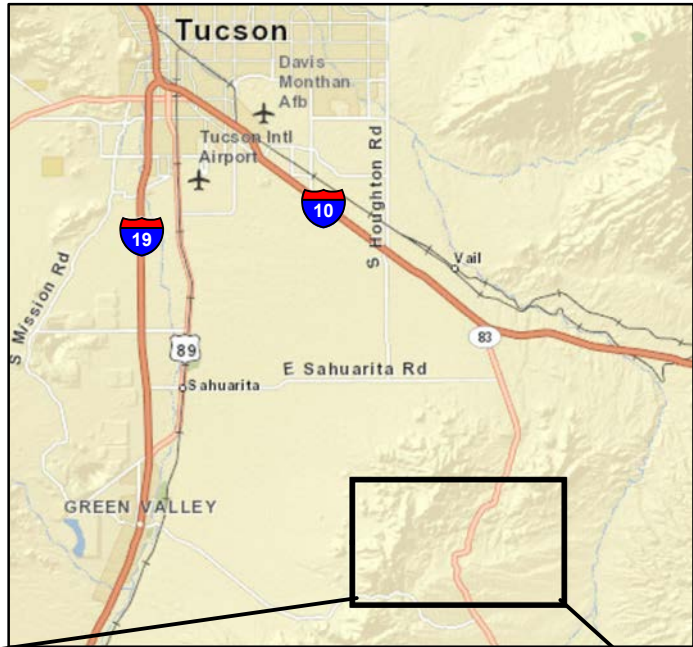
ARIZONA



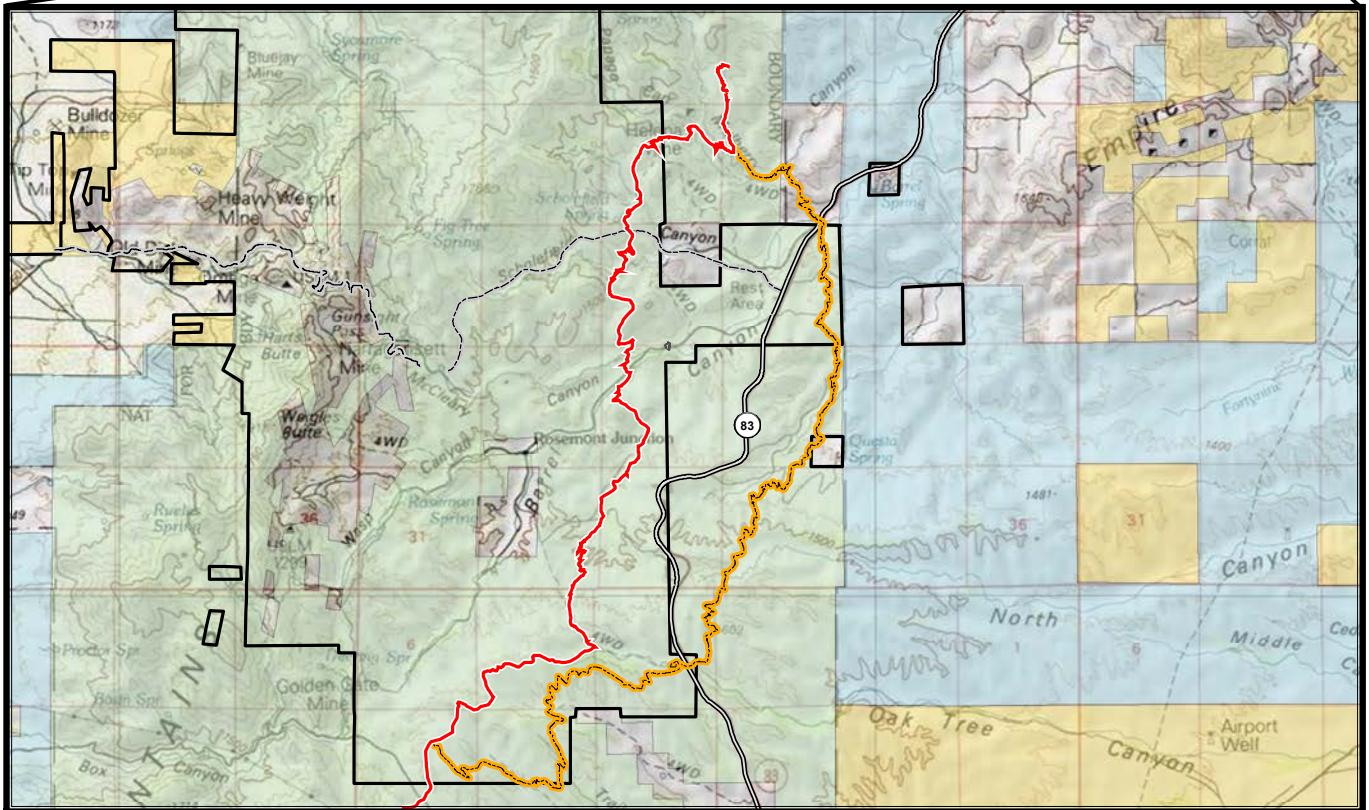
PROJECT LOCATION

Pima County, Arizona,
Helvetia and Corona de Tucson
USGS 7.5' Quadrangle
Data: ALRIS and Tetra Tech

HELVETIA AREA - PIMA COUNTY



Approximate Scale 1 Inch = 10 Miles



Legend

- Existing Arizona Trail Alignment
- Proposed Arizona Trail Reroute
- SR83
- Access Road
- Holdings

Surface Management (BLM 2011)

- Private Land (No Color)
- State Trust Land
- US Forest Service (USFS)
- Bureau of Land Management

ROSEMONT COPPER COMPANY
Proposed Arizona Trail Reroute
Biological Evaluation

VICINITY MAP

Figure 1



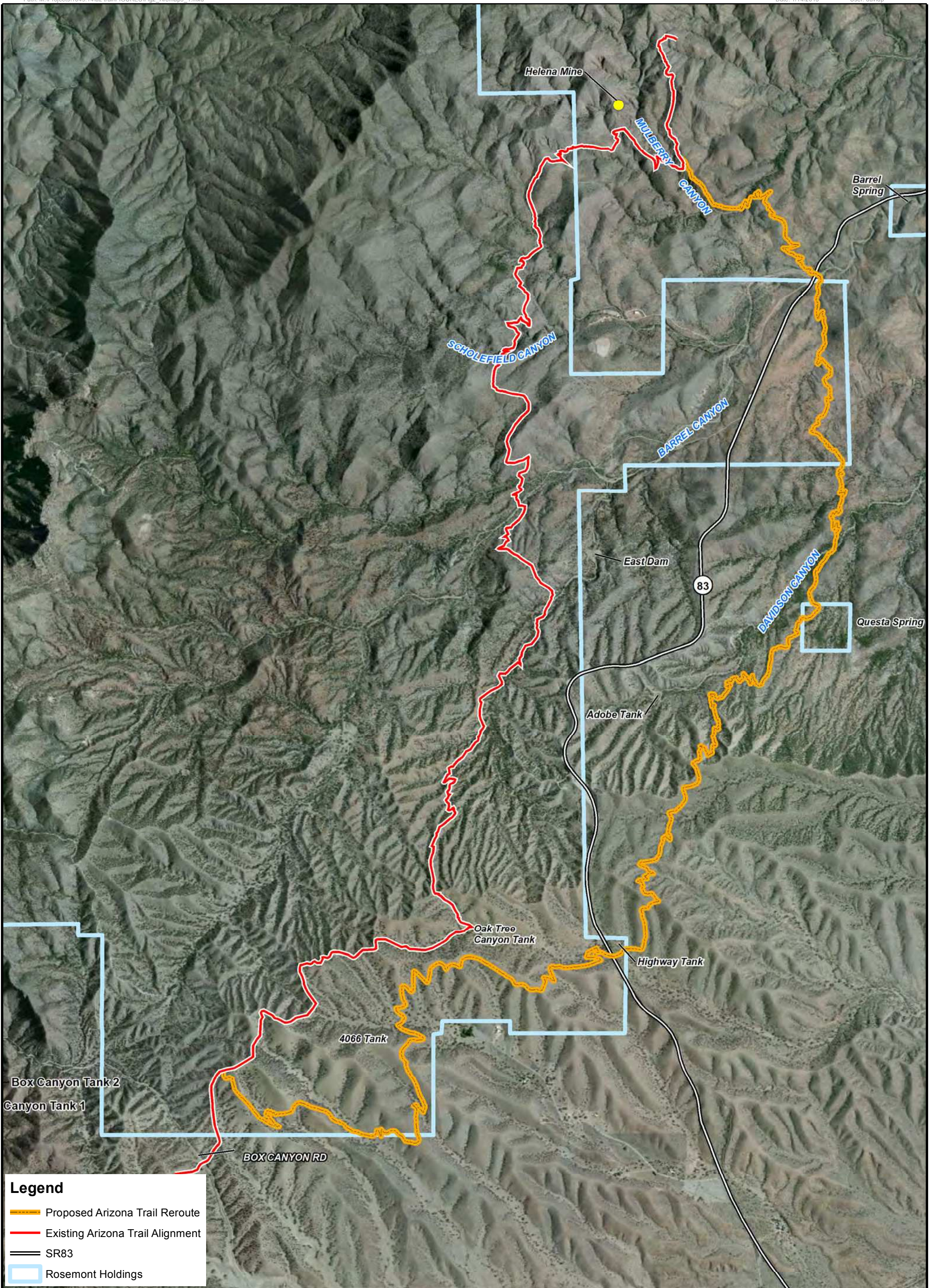
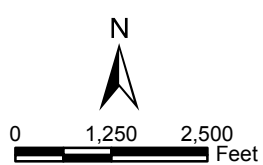
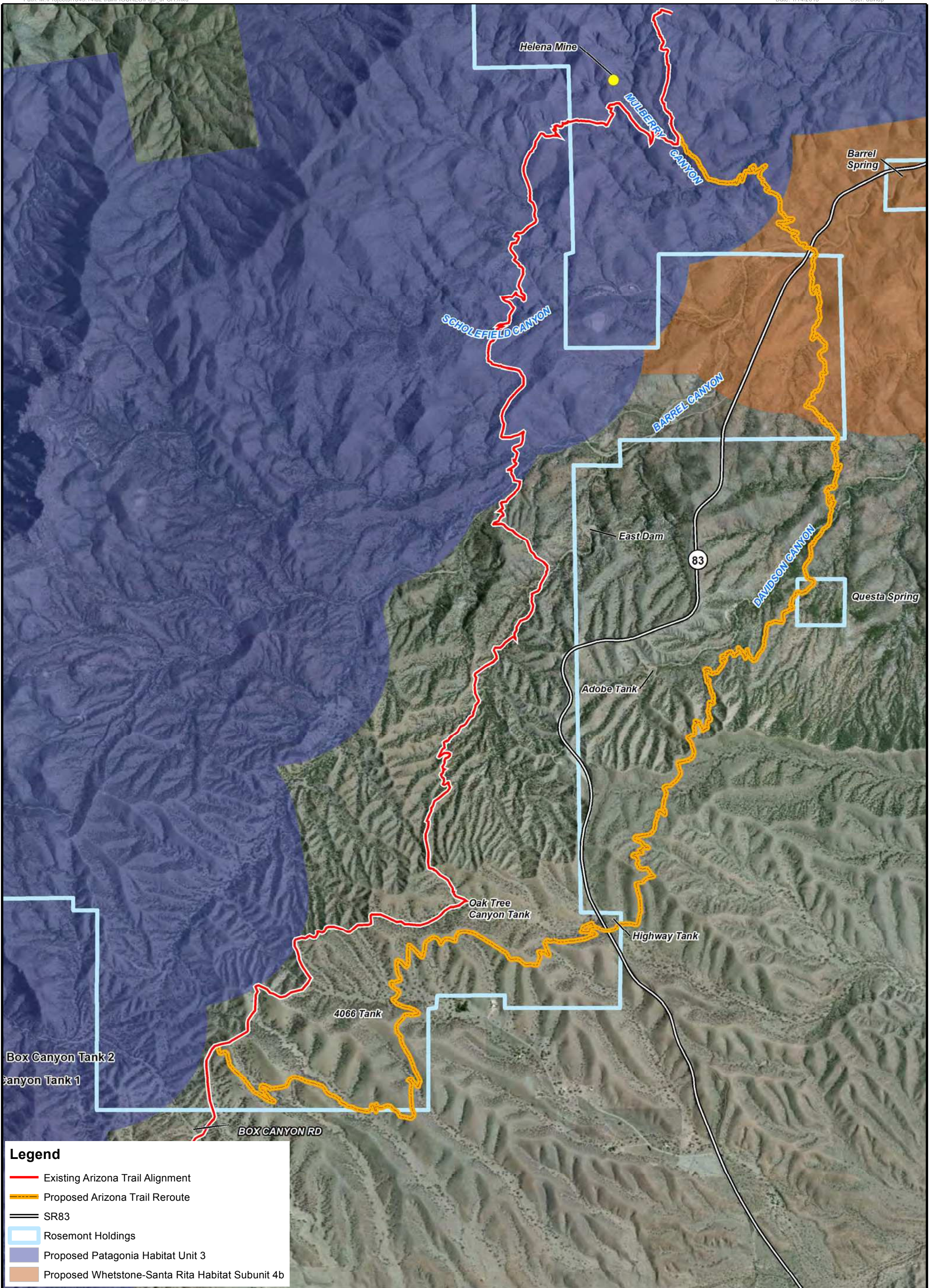


Photo Source: Bing Image





Legend

- Existing Arizona Trail Alignment
- Proposed Arizona Trail Reroute
- SR83
- Rosemont Holdings
- Proposed Patagonia Habitat Unit 3
- Proposed Whetstone-Santa Rita Habitat Subunit 4b

Photo Source: Bing Image
 Data Source: U.S. Fish and Wildlife Service- Jaguar Proposed Critical Habitat

WestLand Resources, Inc.
 Engineering and Environmental Consultants

ROSEMONT COPPER COMPANY
 Proposed Arizona Trail Reroute
 Biological Evaluation
 JAGUAR PROPOSED CRITICAL HABITAT
 Figure 3

APPENDIX A

**USFWS LIST OF
ENDANGERED,
THREATENED,
PROPOSED,
CANDIDATE,
AND CONSERVATION
AGREEMENT SPECIES
FOR PIMA COUNTY**

Pima County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Acuna cactus	<i>Echinomastus erectocentrus</i> var. <i>acunensis</i>	Proposed Endangered	Less than 12 inches tall; spine clusters borne on tubercles, each with a groove on the upper surface. 2-3 central spines and 12 radial spines. Radial spines are dirty white with maroon tips. Flowers pink to purple.	Maricopa, Pima, Pinal	1,198 to 3,773 ft	Well drained knolls and gravel ridges in Sonoran desertscrub.	Immature plants distinctly different from mature plants. Immatures are disc-shaped or spherical and have no central spines until they are about 1.5 inches. Critical habitat is being proposed for a total of 53,720 ac in Maricopa, Pima, and Pinal counties (77 FR 60510).
California Least Tern	<i>Sterna antillarum browni</i>	Endangered	Smallest of the North American terns. Body length is 21-24 cm (8-9 inches) with a wingspan of 45-51 cm (18-20 inches). Has black crown and loreal stripe on head, snowy white forehead and underside, and gray upperparts. Outer two primaries black, yellow or orange bill with black tip, and orange legs. Males have a wider dark loreal stripe but sexes mostly distinguished by behavior.	Maricopa, Mohave, Pima	< 2,000 ft	Open, bare or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems.	Breeding occasionally documented in Arizona; migrants may occur more frequently. Feeds primarily on fish in shallow waters and secondarily on invertebrates. Nests in a simple scrape on sandy or gravelly soil.
Chiricahua leopard frog	<i>Lithobates chiricahuensis</i>	Threatened	Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai	3,281-8,890 ft	Restricted to springs, livestock tanks, and streams in upper portion of watersheds that are free from nonnative predators or where marginal habitat for nonnative predators exists.	Critical habitat is designated for 10,346 acres in Apache, Cochise, Gila, Graham, Greenlee, Pima, Santa Cruz, and Yavapai counties in Arizona; and Catron, Hidalgo, Grant, Sierra, and Socorro counties in New Mexico (77 FR 16324).

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Desert pupfish	<i>Cyprinodon macularius</i>	Endangered	Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.	Cochise, Graham, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Two subspecies are recognized: Desert Pupfish (<i>C.m. macularis</i>) and Quitobaquito Pupfish (<i>C.m. eremus</i>). Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California.
Gila chub	<i>Gila intermedia</i>	Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, Yavapai	2,000-5,500 ft	Pools, springs, cienegas, and streams.	Occurs on Federal, State, and private lands, including the Nature Conservancy and the Audubon Society. Also occurs in Sonora, Mexico. Critical habitat includes Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai counties (70 FR 66664).
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Cochise, Gila, Graham, La Paz, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Huachuca water umbel	<i>Lilaeopsis schaffneriana ssp. recurva</i>	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise, Pima, Santa Cruz	3,500-6,500 ft	Cienegas, perennial low gradient streams, wetlands.	Species also occurs in adjacent Sonora, Mexico, west of the continental divide. Critical habitat includes Cochise and Santa Cruz counties (64 FR 37441).
Jaguar	<i>Panthera onca</i>	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 90-300 lbs.	Cochise, Pima, Santa Cruz	1,600-9,000 ft	Found in Sonoran desertscrub up through subalpine conifer forest.	Critical habitat is being proposed for a total of 838,232 ac. in Cochise, Pima, and Santa Cruz counties, Arizona; and Hidalgo County, New Mexico (77 FR 50214). A recovery team for the jaguar was formed in 2010, who completed a recovery outline for the species in April, 2012. The recovery team is currently developing a full recovery plan for the species based on the recovery outline.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Kearney's blue star	<i>Amsonia kearneyana</i>	Endangered	A herbaceous perennial about 2 feet tall in the dogbane family (Apocynaceae). Thickened woody root and many pubescent (hairy) stems that rarely branch. Flowers: white terminal inflorescence in April and May.	Pima	3,600-3,800 ft	West-facing drainages in the Baboquivari Mountains.	Plants grow in stable, partially shaded, coarse alluvium along a dry wash in the Baboquivari Mountains. Range is extremely limited. Protected by Arizona Native Plant Law.
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yuma	1,600-11,500 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Masked bobwhite	<i>Colinus virginianus ridgewayi</i>	Endangered	Males have a brick-red breast and black head and throat. Females are generally nondescript but resemble other races such as the Texas bobwhite.	Pima	1,000-4,000 ft	Desert grasslands with diversity of dense native grasses, forbs, and brush.	Species is closely associated with Prairie acacia (<i>Acacia angustissima</i>). Formerly occurred in Altar and Santa Cruz valleys, as well as Sonora, Mexico. Presently only known from reintroduced populations on Buenos Aires NWR.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4,100-9,000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.
Nichol Turk's head cactus	<i>Echinocactus horizonthalonius var. nicholii</i>	Endangered	Blue-green to yellowish-green, columnar, 18 inches tall, 8 inches in diameter. Spine clusters have 5 radial and 3 central spines; one curves downward and is short; 2 spines curve upward and are red or pale gray. Flowers: pink; fruit: woolly white.	Pima, Pinal	2,400-4,100 ft	Sonoran desertscrub.	Found in unshaded microsites in Sonoran desertscrub on dissected alluvial fans at the foot of limestone mountains and on inclined terraces and saddles on limestone mountain sides.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Ocelot	<i>Leopardus pardalis</i>	Endangered	Medium-sized spotted cat that is yellowish with black streaks and stripes running from front to back. Tail is spotted and about 1/2 the length of head and body. Face is less heavily streaked than the back and sides.	Cochise, Gila, Graham, Pima, Pinal, Santa Cruz	< 8,000 ft	Desert scrub in Arizona. Humid tropical and sub-tropical forests, and savannahs in areas south of the U.S.	Little is known about ocelot habitat use in Arizona; however, ocelots are typically associated with areas of dense cover. Four confirmed reports of ocelots have been received from Gila (one) and Cochise (three) counties since 2009. Based on photographic evidence, two of the reports from Cochise County were most likely of the same ocelot.
Pima pineapple cactus	<i>Coryphantha scheeri</i> var. <i>robustispina</i>	Endangered	Hemispherical stems 4-7 inches tall 3-4 inches diameter. Central spine 1 inch long straw colored hooked surrounded by 6-15 radial spines. Flower: yellow, salmon, or rarely white narrow floral tube.	Pima, Santa Cruz	2,300-5,000 ft	Sonoran desert scrub or semi-desert grassland communities.	Occurs in alluvial valleys or on hillsides in rocky to sandy or silty soils. This species can be confused with juvenile barrel cactus (<i>Ferocactus</i>). However, the spines of the later are flattened, in contrast with the round cross-section of the <i>Coryphantha</i> spines. About 80-90% of individuals occur on state or private land.
Sonoran pronghorn	<i>Antilocapra americana sonoriensis</i>	Endangered	Upperparts tan; underparts, rump, and two bands across the neck are white. Male has two black cheek pouches. Hoofed with slightly curved black horns having a single prong. Smallest and palest of the pronghorn subspecies.	Maricopa, Pima, Yuma	2,000-4,000 ft	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations.	Typically, bajadas are used as fawning areas and sandy dune areas provide food seasonally. Cacti (jumping cholla) appears to make up substantial part of diet. This subspecies also occurs in Mexico.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 8,500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Riparian-obligate bird that occupies migratory/breeding habitat from late April-Sept. Critical habitat was finalized on October 19, 2005 in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties (70 FR 60886). Revised critical habitat was proposed August 15, 2011 (76 FR 50542) and includes river segments in counties currently designated plus those in La Paz, Santa Cruz, and Yuma counties. The 2005 critical habitat designation remains in effect until the current proposal is finalized. Training seminar/permits required for those conducting call playback surveys.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Desert tortoise, Sonoran population	<i>Gopherus agassizii</i>	Candidate	Large herbivorous reptile with domed shell and round stumpy hind legs. The carapace is a dull brown or grey color and the plastron is unhinged, often pale yellow in coloration. Sonoran desert tortoises generally have a flatter carapace than tortoises in the Mohave population. Active in spring and during the monsoon; dormant in winter and mid-summer months.	Cochise, Gila, Graham, La Paz, Maricopa, Mohave, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 7,800 ft	Primarily rocky (often steep) hillsides and bajadas of Mohave and Sonoran desertscrub but may encroach into desert grassland, juniper woodland, interior chaparral habitats, and even pine communities. Washes and valley bottoms may be used in dispersal.	Desert tortoises that occur east and south of the Colorado River in Arizona are referred to as the Sonoran population. Individuals are found throughout their historic range; but populations are becoming increasingly fragmented due to threats to their habitat in valley bottoms, which are used for dispersal and exchange of genetic material.
Northern Mexican Gartersnake	<i>Thamnophis eques megalops</i>	Candidate	Background color ranges from olive, olive-brown, to olive-gray. Body has three yellow or light colored stripes running down the length of the body, darker towards tail. Species distinguished from other native gartersnakes by the lateral stripes reaching the 3rd and 4th scale rows. Paired black spots extend along dorsolateral fields.	Apache, Cochise, Coconino, Gila, Graham, Navajo, Pima, Pinal, Santa Cruz, Yavapai	130-8,500 ft	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests.	Core population areas in the U.S. include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area. Status on tribal lands unknown. Distributed south into Mexico along the Sierra Madre Occidental and Mexican Plateau. Strongly associated with the presence of a native prey base including leopard frogs and native fish.
Rosemont talussnail	<i>Sonorella rosemontensis</i>	Candidate	Terrestrial snail with shell height of 0.5 inches, diameter of 0.85 inches, and has about 4.5 whorls. The shell is polished, moderately solid, pale brown, fading around the umbilicus (belly button), with a light-bordered chestnut brown band. Positive identification of the species depends on examination of soft body parts.	Pima	~5,500 ft	Inhabits talus slopes comprised of volcanic rock and limestone.	The species is vulnerable to any disturbance that would remove talus, increase interstitial sedimentation, or change moisture conditions. The entire range of the species is located on lands designated for the purpose of hard rock mining.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Sonoyta mud turtle	<i>Kinosternon sonoriense longifemorale</i>	Candidate	Aquatic; dark, medium-sized; shell up to 7 inches long; head, neck, and limbs mottled; carapace is olive brown to dark brown; plastron hinged; long barbels on chin, webbed feet.	Pima	1,100 ft	Ponds and streams.	Found only in Quitobaquito Springs in Organ Pipe Cactus National Monument, Arizona. Species also occurs in Rio Sonoyta, Sonora, Mexico.
Tucson shovel-nosed snake	<i>Chionactis occipitalis klauberi</i>	Candidate	Small snake (10-17 inches total length) in the family Colubridae, with a shovel-shaped snout and an inset lower jaw. Overall coloring mimics coral snakes, with pale yellow to cream-colored body, 21 or more black or brown saddle-like bands across the back, and orange-red saddle-like bands in between. The subspecies is distinguished from the other subspecies in that these secondary orange-red crossbands are suffused with dark pigment, making them appear brown or partly black, and the black and red crossbands do not encircle the entire body.	Maricopa, Pima, Pinal	785-1,662 ft	Sonoran Desertscrub; associated with soft, sandy soils having sparse gravel.	Found in creosote-mesquite floodplain environments, finds refuge under desert shrubs, active during crepuscular (dawn and dusk) and daylight hours.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees.
Gooddings onion	<i>Allium gooddingii</i>	Conservation Agreement	Herbaceous perennial plant; broad, flat, rather blunt leaves; flowering stalk 14-18 inches tall, flattened, and narrowly winged toward apex; fruit is broader than long; seeds are short and thick.	Apache, Greenlee, Pima	7,500-11,250 ft	Shaded sites on north-trending drainages, on slopes, or in narrow canyons, within mixed conifer and spruce fir forests.	Known from the White, Santa Catalina, and Chuska Mountains. Also found in New Mexico on the Lincoln and Gila National Forests. A Conservation Agreement between the Service and the Forest Service signed in February 1998.
San Xavier talussnail	<i>Sonorella eremita</i>	Conservation Agreement	Land snail, less than one inch in diameter (about .75 inches); round shell with 4.5 whorls; white to pinkish tint and chestnut-brown shoulder band.	Pima	3,850-3,920 ft	Inhabits a deep, northwest-facing limestone rockslide.	Restricted to 50 by 100 foot area of land privately owned in southeastern Arizona. A Conservation Agreement was finalized in 1995 and renewed in May 2008.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
American peregrine falcon	<i>Falco peregrinus anatum</i>	Delisted	A crow-sized falcon with slate blue-gray on the back and wings, and white on the underside; a black head with vertical "bandit's mask" pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	3,500-9,000 ft	Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments.	Species recovered with over 1,650 breeding birds in the US and Canada.
Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	Delisted; petitioned for relisting	Small reddish-brown owl with a cream-colored belly streaked with reddish-brown. Males average 2.2 oz and females average 2.6 oz. Length is approximately 6.5 in., including a relatively long tail. Lacks ear tufts, and has paired black spots on the back of the head.	Pima, Pinal	< 4,000 ft	Areas of desert woodlands with tall canopy cover. Primarily found in Sonoran desert scrub and occasionally in riparian drainages and woodlands within semi-desert grassland communities. Prefers to nest in cavities in saguaro cacti but has been found in low-density suburban developments that include natural open spaces.	Not recognized as a protected taxonomic entity under the Act, but protected from direct take of individuals and nests/eggs under the Migratory Bird Treaty Act. A 2006 petition for relisting under the Act is currently being evaluated. Due to low population numbers, captive breeding research was initiated in 2006 with some success.

APPENDIX B

**AGFD HDMS ON-LINE
ENVIRONMENTAL REVIEW
TOOL REPORT**

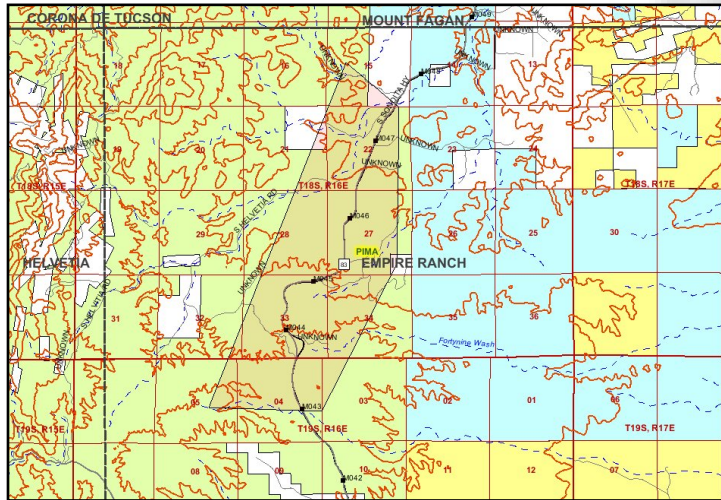
Arizona's On-line Environmental Review Tool

Search ID: 20130114019398

Project Name: Arizona Trail

Date: 1/14/2013 12:24:00 PM

Project Location



Project Name: Arizona Trail

Submitted By: Carolyn Chilcote

On behalf of: CONSULTING

Project Search ID: 20130114019398

Date: 1/14/2013 12:23:54 PM

Project Category: Recreation Areas, Trails and trail heads (parking, day-use, picnic areas, etc.), Construction of new facilities

Project Coordinates (UTM Zone 12-NAD 83): 527827.304, 3522178.471 meter

Project Area: 3172.145 acres

Project Perimeter: 16706.762 meter

County: PIMA

USGS 7.5 Minute Quadrangle ID: 1866

Quadrangle Name: EMPIRE RANCH

Project locality is currently being scoped

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	FWS	USFS	BLM	State
<i>Aspidoscelis burti stictogrammus</i>	Giant Spotted Whiptail	SC	S		
<i>Baiomys taylori</i>	Northern Pygmy Mouse		S		
CH for <i>Lithobates chiricahuensis</i>	Designated Critical Habitat for Chiricahua leopard frog				
<i>Carex ultra</i>	Arizona Giant Sedge		S	S	
<i>Choeronycteris mexicana</i>	Mexican Long-tongued Bat	SC	S	S	WSC
<i>Erigeron arisolius</i>	Arid Throne Fleabane		S		
<i>Graptopetalum bartramii</i>	Bartram Stonecrop	SC	S	S	SR
<i>Heloderma suspectum suspectum</i>	Reticulate Gila Monster		S		
<i>Hexalectris revoluta</i>	Chisos Coral-root		S		
<i>Leptonycteris curasoae yerbabuenae</i>	Lesser Long-nosed Bat	LE			WSC
<i>Lithobates chiricahuensis</i>	Chiricahua Leopard Frog	LT			WSC
<i>Muhlenbergia dubioides</i>	Box Canyon Muhly		S		
<i>Muhlenbergia xerophila</i>	Weeping Muhly		S		
<i>Pectis imberbis</i>	Beardless Chinch Weed	SC	S		
<i>Rana yavapaiensis</i>	Lowland Leopard Frog	SC	S	S	WSC
<i>Reithrodontomys fulvescens</i>	Fulvous Harvest Mouse		S		
<i>Reithrodontomys montanus</i>	Plains Harvest Mouse		S		
Rincon - Santa Rita - Whetstone Linkage Design	Wildlife Corridor				
Santa Rita - Sierrita Linkage Design	Wildlife Corridor				
<i>Senticolis triaspis intermedia</i>	Northern Green Ratsnake		S		
<i>Sigmodon ochrognathus</i>	Yellow-nosed Cotton Rat	SC	S		
<i>Sonorella rosemontensis</i>	Rosemont Talussnail	C			
<i>Tragia laciniata</i>	Sonoran Noseburn		S		

Location Accuracy Disclaimer

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

Arizona's On-line Environmental Review Tool

Search ID: 20130114019398

Project Name: Arizona Trail

Date: 1/14/2013 12:24:00 PM

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: <http://arizonaes.fws.gov/>.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
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Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Recreation Areas, Trails and trail heads (parking, day-use, picnic areas, etc.), Construction of new facilities

Project Type Recommendations:

All degraded and disturbed lands should be restored to their natural state. Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

Based on the project type entered; coordination with State Historic Preservation Office may be required
<http://azstateparks.com/SHPO/index.html>

Development plans should provide for open natural space for wildlife movement, while also minimizing the potential for wildlife-human interactions through design features. Please contact Project Evaluation Program for more information on living with urban wildlife.

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants,

animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants <http://www.azda.gov/PSD/quarantine5.htm>. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: <http://www.usda.gov/wps/portal/usdahome>. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Hydrological considerations: design culverts to minimize impacts to

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channel geometry, or design channel geometry (low flow, overbank, floodplains) and substrates to carry expected discharge using local drainages of appropriate size as templates. Aquatic wildlife considerations: reduce/minimize barriers to migration of amphibians or fish (e.g. eliminate falls). Terrestrial wildlife: washes and stream corridors often provide important corridors for movement. Overall culvert width, height, and length should be optimized for movement of the greatest number and diversity of species expected to utilize the passage. Culvert designs should consider moisture, light, and noise, while providing clear views at both ends to maximize utilization. For many species, fencing is an important design feature that can be utilized with culverts to funnel wildlife into these areas and minimize the potential for roadway collisions. Guidelines for culvert designs to facilitate wildlife passage can be found at <http://www.azgfd.gov/hgis/guidelines.aspx>.

Minimize impacts to wildlife and wildlife habitat by staying on designated roads and trails, and by minimizing use during spring and summer breeding periods. Additional information concerning OHV use is located at: http://www.azgfd.gov/outdoor_recreation/habitat_ohv_areas.shtml

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

Project Location and/or Species recommendations:

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:
Ecological Services Office
US Fish and Wildlife Service

2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

Heritage Data Management System records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:
Arizona Department of Agriculture
1688 W Adams
Phoenix, AZ 85007
Phone: 602-542-4373

HDMS records indicate your project is in or near an identified wildlife habitat linkage corridor. Project planning and implementation efforts should focus on maintaining adequate opportunities for wildlife permeability. For information on the linkage assessment and wildlife species that may be affected refer to: <http://www.corridor design.org/arizona>. Contact your Arizona Game and Fish Department Regional Office for specific project recommendations: http://www.azgfd.gov/inside_azgfd/agency_directory.shtml

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the

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Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.

5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.

6. Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).

7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

**Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366**

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1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you

will not use this website for any other purpose.

2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .

3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.

4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.

5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6)

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months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

City, State, Zip: _____

Phone: _____

E-mail: _____

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Person Conducting Search (if not applicant)

Signature: _____

Agency/organization: _____

Date: _____

Contact Name: _____

Proposed Date of Implementation: _____

Address: _____

Please provide point of contact information regarding this Environmental Review.

City, State, Zip: _____

Application or organization responsible for project implementation

Phone: _____

Agency/organization: _____

E-mail: _____

Contact Name: _____

Address: _____