

**Resolution Copper Project and Land Exchange
Environmental Impact Statement**

USDA Forest Service
Tonto National Forest
Arizona

August 6, 2018

Process Memorandum to File

Wildlife Resource Analysis: Assumptions, Methodology Used, and Relevant Regulations, Laws, and Guidance, and Key Documents

This document is deliberative and is prepared by the third-party contractor in compliance with the National Environmental Policy Act and other laws, regulations, and policies to document ongoing process and analysis steps. This document does not take the place of any Line Officer's decision space related to this project.

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Revision History

Date	Personnel	Revisions Made
08/06/18	Emily Newell	Process memo created
10/29/18	Emily Newell	Revisions to memorandum title, revision history table added, edits to purpose of process memorandum section, references and key documents section added
10/31/18	Emily Newell	Applicability of relevant laws updated
11/15/18	Emily Newell	Edits to references cited
12/13/18	Jeffery Johnson	Added in text from wildlife section
12/18/18	Emily Newell	Updated references, analysis area info
01/14/19	Emily Newell	Ready for PM review
7/12/19	Donna Morey	Updated process memo to Draft EIS section
8/6/2019	Emily Newell	Final consistency review

Purpose of Process Memorandum

In order to provide a concise and accessible summary of resource impacts, certain detailed information has not been included directly in the environmental impact statement (EIS). The purpose of this process memorandum is to describe additional supporting resource information in detail. The Wildlife section of Chapter 3 of the EIS includes brief summaries of the information contained in this process memorandum. This process memorandum covers the following topics:

- Resource Analysis Area
- Analysis Methodology
- Regulations, Laws, and Guidance
- Key Documents and References Cited

Detailed Information Supporting EIS Analysis

Resource Analysis Area

The analysis area covers the project footprint plus a 1-mile buffer, as well as areas along Queen Creek and Devil's Canyon where groundwater drawdown or reductions in surface water could change habitat (see Figure 3.8.2-1 in Section 3.8.2 of the Draft EIS). Much of the impact on species and habitat is caused by direct disturbance of the land and vegetation. The 1-mile buffer and areas of Queen Creek and Devil's Canyon were determined by using the areas where the noise analyses, water analyses (i.e., groundwater and surface water quantity/quality analyses), fugitive dust distance affecting air quality, and noxious weed introduction and spread (Foxcroft et al. 2007) indicate the potential for impacts.

According to the air quality analysis, ambient air quality standards would be achieved at the project footprint boundaries; therefore, any potential air quality impacts are encompassed within the 1-mile buffer. The noise modeling shows that for all action alternatives, noise levels at 1 mile would be at or below the level of normal human conversation; as such, the 1-mile buffer is sufficient to address potential impacts from noise-producing activities. We also expect light associated with project construction and facilities to increase night-sky brightness from 1 to 9 percent (Dark Sky Partners LLC 2018). Light impacts would occur across the landscape, but available research suggests any substantial impacts would occur within the 1-mile buffer. Species' movement corridors include areas outside the 1-mile buffer; we address potential impacts on those corridors at a landscape level.

The Arizona Game and Fish Department (AGFD) is a cooperating agency and made species records and other information available to the U.S. Forest Service (Forest Service) for use in the analysis. AGFD searched for records within the project footprint plus a 5-mile buffer; this information was used to determine the likelihood of occurrence for each species. This search area is greater than the analysis area and thus errs on the side of including more species' records, rather than fewer. Although the analysis area is a 1-mile buffer, data provided by the AGFD were within a 5-mile buffer and could not be clipped to the 1-mile buffer. This larger 5-mile buffer is clearly noted when it has been used.

The temporal parameters for this analysis involved the time frames for (1) construction: mine years 1 through 9, (2) operation: mine years 6 through 46, and (3) post-closure/reclamation: mine years 46 through 51 to 56, plus any additional years that are identified in other resource analysis (e.g., the groundwater analysis used to inform this section predicts out to 200 years). Construction activities would overlap operations activities for approximately 6 years.

Analysis Methodology

The 1-mile buffer and areas of Queen Creek and Devil's Canyon were determined by using the areas where the noise analyses, water analyses (i.e., groundwater and surface water quantity/quality analyses), fugitive dust distance affecting air quality, and noxious weed introduction and spread (Foxcroft et al. 2007) indicate the potential for impacts. The 1-mile buffer is bolstered by available literature studying the response of various species to noise at various distances. Some examples include the following:

- Delaney et al. (1999) researched percent flushing of Mexican spotted owl with distance and found little response beyond 250 meters.
- Grubb and King (1991) researched the response of over 4,000 human events on nesting bald eagles in Arizona. Their recommendation based on this research was a restricted primary buffer zone of 600 meters, and a secondary buffer zone of 1,200 meters. These researchers also report other buffer zones considered by various regulatory programs, ranging from 450 meters to 1,600 meters.
- Eigenbrod et al. (2009) examined pond habitats and found road-effect zones extending roughly 250 to 1,000 meters from highways.

- Siemers and Schaub (2011) researched simulated highway noise effects on bat foraging and found that effects largely fell off after 25 meters.

Additional light associated with project construction and facilities is anticipated to increase night-sky brightness by 1 to 9 percent (Dark Sky Partners LLC 2018). With the additional light increase of 1 to 9 percent over existing conditions, the 1-mile buffer would be sufficient to capture potential project-related impacts to wildlife from additional light. While substantial research has been conducted on the ecological effects of night lighting, identifying distance impacts with night lighting is more scarce, but some studies suggest a 1-mile buffer is sufficient. Bruce-White and Shardlow (2011) generally cite 500 meters as the distance insects are attracted to an unshielded light source, or for buffer distance for water bodies.

In addition, we consider species' movement corridors that include areas outside the 1-mile buffer, and we address potential impacts to those corridors at a landscape level. AGFD is a cooperating agency and made species' records and other information available to the Forest Service for use in the analysis. AGFD searched for records within the project footprint plus a 5-mile buffer; this information was used to determine the likelihood of occurrence for each species. This search area is greater than the analysis area and thus errs on the side of including more species' records rather than less. This larger 5-mile buffer is clearly noted when it has been used.

The goal of this analysis is to identify the reasonably potentially foreseeable impacts to wildlife and special status wildlife species and their habitat from all activities associated with each project alternative (see Section 2.2, Alternatives Considered in Detail, of the DEIS). Several elements constitute the core of this analysis: (1) the factors for analysis identified during the NEPA scoping process, (2) survey and records data provided as part of this project, and (3) a scientific examination using current literature on species and how environmental changes (human or natural) affect species and their habitat.

Important wildlife movement corridors throughout the state have been identified in recent years through the aid of resource management planning by agencies, organizations, stakeholders, academia, private citizens, and non-profit organizations. Detail on the identified wildlife movement corridors can be found in the Wildlife Connectivity section in the background documentation below.

Additionally, further information and details, including analysis methods, species accounts, occurrence records, etc., on wildlife resources discussed in Section 3.8 of the Draft EIS can be found in Appendix A of this process memorandum.

Regulations, Laws, and Guidance

Mine operations are subject to a wide range of Federal, State, and local requirements. Table 1 provides a summary of wildlife laws, regulations, policies, and plans at the Federal, State, and local level.

Table 1. Wildlife Laws, Regulations, Policies, and Plans

Laws, Ordinances, Regulations, and Standards	Description	Applicability
Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)	Requires Federal agencies (e.g., Forest Service and U.S. Army Corps of Engineers) to use their authority to conserve endangered and threatened species.	ESA-listed wildlife species having the potential to occur within the analysis area include the yellow-billed cuckoo, southwestern willow flycatcher, and Gila chub.
Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703–711)	Provides Federal protection to all migratory birds, including nests and eggs. Under this act, it is unlawful to take, kill, or possess migratory birds.	Species protected under the Migratory Bird Treaty Act are known to occur within the analysis area and were analyzed for each of the action alternatives.
Executive Order 13186	States that a memorandum of understanding (MOU) must occur between the Forest Service and U.S. Fish and Wildlife Service (USFWS). This order requires each Federal agency taking actions that have, or are likely to have, measurable negative effects on migratory bird populations and also to promote the conservation of migratory bird populations.	Migratory birds may experience impacts as a result of artificial night lighting, noise and vibrations, changes in surface water or groundwater quality or availability, exposure to process ponds or canals, exposure to a potential pit lake, erosion, loss of vegetation or open water habitat, and the spread of pathogens or noxious or invasive weeds.
Executive Order 13443	Facilitation of Hunting Heritage and Wildlife Conservation. The emphasis is on hunting and conservation, and the Federal Government is required to address its activities on these natural resource components.	The footprint of the analysis area is located within AGFD's GMU 24A and 24B where game species are present. Those species include Gambel's quail, javelina, cottontail, mule deer, white-tailed deer, black bear, mountain lion, elk, bighorn sheep, and tree squirrel. Additionally, there are 10 SERI species with predicted occurrences within 5 miles of the GPO footprint. These species include: mule deer, white-tailed deer, javelina, elk, black bear, mountain lion, Gambel's quail, mourning dove, white-winged dove, and band-tailed pigeon.
Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. 668–668c)	This act provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commercial sale of such birds.	Bald and golden eagle habitat occurs within the Resolution Copper Project analysis area for wildlife.
Fish and Wildlife Coordination Act of 1934	Requires coordination with Federal and State wildlife agencies for the purpose of mitigating losses of wildlife resources caused by a project that impounds, diverts, or otherwise modifies a stream or other natural body of water.	Resolution Copper must mitigate potential losses of wildlife resource caused by project-related activities that impound, divert, or otherwise modify a stream or other natural body of water.
National Forest Management Act implementing regulations (36 CFR 219.19(a)(1))	Under this 1976 act, the Secretary of Agriculture "provides for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives."	In addition to federally listed species (see section on ESA, above), this law has regulatory implementation requirements for "management indicator species" and "sensitive species" that appear as directives in the Forest Service Manual.

Laws, Ordinances, Regulations, and Standards	Description	Applicability
Management Indicator Species	The role of management indicator species in national forest planning is described in the 1982 implementing regulations for the National Forest Management Act (36 CFR 219.19(a)(1)). FSM 2620.5 requires that certain vertebrate and/or invertebrate species present in the area be identified as management indicator species within the planning area (Tonto and Coconino National Forests).	The forest plan identifies 29 wildlife species and one macroinvertebrate species group as Management Indicator Species for the Tonto National Forest.
Forest Service Sensitive Species	As described in FSM 2670.12 (U.S. Forest Service 2005), the Forest Service will do the following: (1) manage "habitats for all existing native and desired nonnative plants, fish, and wildlife species in order to maintain at least viable populations of such species;" and (2) avoid actions that "may cause a species to become threatened or endangered."	Eleven Forest Service Sensitive Species were identified as known to occur and/or possible to occur within at least one of the alternative tailings storage facility footprints analyzed.
BLM Sensitive Species	BLM Manual 6840 (Bureau of Land Management 2008) defines BLM sensitive species as those "species that require special management consideration to avoid potential future listing under the ESA and that have been identified in accordance with procedures set forth in this manual."	Thirteen BLM sensitive species are known to occur and/or possibly occur in at least one of the alternative tailings storage facility footprints analyzed.
ARS Title 17 (AGFD determinations of Species of Greatest Conservation Need (SGCN) occurring within the wildlife analysis area)	Specifies State regulations regarding fish and game species, including management on State lands, hunting, and take of individuals. ARS 17-102 states that wildlife, both resident and migratory, native or introduced, found in this state (with certain exceptions) are property of the State and may be taken at such times, in such places, in such manner, and with such devices as provided by law or rule of the commission. In addition, Species of Greatest Conservation (SGCN) is an AGFD status listing defined as wildlife of conservation priority—described nationally as Wildlife of Greatest Conservation Need.	SGCN are species of vertebrates, crustaceans, and mollusks that rank high in the vulnerability category and have been identified for immediate action (AGFD 2012). Seventy-five species listed as Species of Greatest Concern by AGFD were evaluated for likelihood of occurrence in Alternatives 2 and 3. Alternative 4 addressed the likelihood of occurrence for 72 SGCN listed species. 73 species on the SGCN list were evaluated for likelihood of occurrence in Alternative 5. Finally, 75 species listed on the SGCN list were evaluated for likelihood of occurrence in Alternative 6.
BLM – Phoenix Resource Management Plan, Las Cienegas National Conservation Area Resource Management Plan, and San Pedro Riparian National Conservation Area Resource Management Plan	BLM resource management plans serve to allocate resources and determine appropriate multiple uses for the public lands; provide strategies to manage and protect resources and establish systems to monitor and evaluate the health of resources and effectiveness of management practices over time.	The analysis area includes lands managed by the BLM and thus are applicable under the Phoenix Resource Management Plan, Las Cienegas National Conservation Area Resource Management Plan, and San Pedro Riparian National Conservation Area Resource Management Plan.

Key Documents and References Cited for Wildlife

The following list is meant to highlight key process or analysis documents available in the project record. It should not be considered a full list of all available documentation considered within this process memorandum or the EIS analysis.

- Arizona Game and Fish Department (AGFD). 2012. *Arizona's State Wildlife Action Plan: 2012-2022*. Phoenix: Arizona Game and Fish Department. May 16.
- . 2013. *The Pinal County Wildlife Connectivity Assessment: Report on Stakeholder Input*. Phoenix: Arizona Game and Fish Department. April.
- Bruce-White, C., and M. Shardlow. 2011. *A Review of the Impact of Artificial Light on Invertebrates*. Peterborough, United Kingdom: Buglife - The Invertebrate Conservation Trust. March.
- Bureau of Land Management. 2008. *Manual 6840 – Special Status Species Management*. Rel. 6-121. Washington D.C.: Department of the Interior, Bureau of Land Management. December 12.
- Dark Sky Partners LLC. 2018. Impact Assessment of the Proposed Resolution Copper Mine on Night Sky Brightness, Final Report.
- Delaney, D.K., T.G. Grubb, P. Beier, L.L. Pater, and M.H. Reiser. 1999. Effects of Helicopter Noise on Mexican Spotted Owls. *Journal of Wildlife Management* 63(1):60–76.
- Eigenbrod, F., S.J. Hecnar, and L. Fahrig. 2009. Quantifying the road-effect zone: Threshold effects of a motorway on anuran populations in Ontario, Canada. *Ecology and Society* 14(1):1–18.
- Garrett, C. 2019. *Review of Hydrologic Trends in Devil's Canyon and on Oak Flat*. SWCA Project No. 030951.04. Technical memorandum. Phoenix, Arizona: SWCA Environmental Consultants. January 3
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- Siemers, B.M., and A. Schaub. 2011. Hunting at the highway: Traffic noise reduces foraging efficiency in acoustic predators. *Proceedings of the Royal Society B: Biological Sciences* 278:1646–1652.
- U.S. Fish and Wildlife Service. 2013. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Southwestern Willow Flycatcher; Final Rule. Available at: <https://www.gpo.gov/fdsys/pkg/FR-2013-01-03/pdf/2012-30634.pdf>. Accessed September 11, 2018.
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- . 2014. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo (*Coccyzus americanus*); proposed rule. Available at: <https://www.gpo.gov/fdsys/pkg/FR-2014-12-02/pdf/2014-28330.pdf>. Accessed September 11, 2018.
- U.S. Forest Service (Forest Service). 2005. *Chapter 2670.12 – U.S. Department of Agriculture Directives*. In *FSM 2600 – Wildlife, Fish and Sensitive Plant Habitat Management*. Addendum No. 2600-2005-1. Washington, D.C.: U.S. Forest Service National Headquarters. September 23.
- WestLand Resources Inc. 2018. *2017 Fish Survey for the Resolution Copper Project*. Project Number: 807.132 04 04. Prepared for Resolution Copper. Tucson, Arizona: WestLand Resources Inc. March 9.

Wildlife Connectivity

Table 2. Wildlife connectivity elements that overlap the analysis area

Connectivity Element (Type)	Alternatives 2 and 3 Components	Alternative 4 Components	Alternative 5 Components	Alternative 6 Components
Modeled Linkage				
Superior - Miami US 60 (Modelled Linkage)	East Plant Site/Subsidence Zones; MARRCO Disturbance; Silver King Realignment; Tailings Storage Facility Tailings Corridor; West Plant Site	East Plant Site/Subsidence Zones; MARRCO Disturbance; Silver King Road Realignment with Filter Plant; Silver King 500 ft Pipeline ROW; Silver King Fence Line Polygon; Tailings Facility; West Plant Site	500 ft Pipeline ROW; East Plant Site/Subsidence Zones; MARRCO Disturbance; Silver King Realignment; West Plant Site; West Peg Leg 500 ft Pipeline ROW	Access Roads; East Plant Site/Subsidence Zones; MARRCO Disturbance; North Skunk Camp 500 ft Pipeline ROW, Silver King Realignment; Skunk Camp Transmission Line; West Plant Site; South Skunk Camp 500 ft Pipeline ROW
Barrier				
US Highway 60 (Barrier)	East Plant Site/Subsidence Zones; MARRCO Disturbance; Silver King Realignment; West Plant Site	East Plant Site/Subsidence Zones; MARRCO Disturbance; Silver King Road Realignment with Filter Plant; Tailings Facility; West Plant Site	500 ft Pipeline ROW; East Plant Site/Subsidence Zones; MARRCO Disturbance; Silver King Realignment; West Plant Site; West Peg Leg 500 ft Pipeline ROW	Access Roads; East Plant Site/Subsidence Zones; MARRCO Disturbance; North Skunk Camp 500 ft Pipeline ROW, Silver King Realignment; Skunk Camp Transmission Line; West Plant Site; South Skunk Camp 500 ft Pipeline ROW
CAP Canal (Barrier)	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance
Railroad modification (Barrier)	MARRCO Disturbance; Filter Plant Disturbance; Near West Fenceline, Silver King Realignment; Tailings Facility; West Plant Site; Fence and tailings storage facility	Fence and tailings storage facility; Filter Plant Disturbance; MARRCO Disturbance; Near West Fenceline; Silver King Realignment; Tailings Facility; West Plant Site	500 ft Pipeline ROW; Filter Plant Disturbance; MARRCO Disturbance; Silver King Realignment; West Plant Site, West Peg Leg 500 ft Pipeline ROW	Filter Plant Disturbance; MARRCO Disturbance; Silver King Realignment; West Plant Site; South Skunk Camp 500 ft Pipeline ROW
State Route 79 (Barrier)	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance
US Highway 177 (Barrier)	N/A	N/A	500 ft Pipeline ROW	South Skunk Camp 500 ft Pipeline ROW

Connectivity Element (Type)	Alternatives 2 and 3 Components	Alternative 4 Components	Alternative 5 Components	Alternative 6 Components
<i>Diffuse Movement Area (DMA)</i>				
Devil's Canyon (DMA)	East Plant Site/Subsidence Zones	East Plant Site/Subsidence Zones	East Plant Site/Subsidence Zones; 500 ft Pipeline ROW	East Plant Site/Subsidence Zones; Access Roads; North Skunk Camp 500 ft Pipeline ROW; Skunk Camp Transmission Line; South Skunk Camp 500 ft Pipeline ROW
Mineral Mountains (DMA)	N/A	N/A	500 ft Pipeline ROW; Pipeline Access Road; West Peg Leg 500 ft Pipeline ROW	South Skunk Camp 500 ft Pipeline ROW
<i>Landscape Movement Areas (LMA)</i>				
Florence Military Reservation (LMA)	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance
Queen Valley - Middle Gila/Mineral Mountains (LMA)	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance	MARRCO Disturbance
Tonto Forest West of Superior through Gonzales Pass (LMA)	MARRCO Disturbance; Near West Fenceline; Tailings Facility; Fence and tailings storage facility	MARRCO Disturbance	500 ft Pipeline ROW; MARRCO Disturbance; West Peg Leg 500 ft Pipeline ROW	MARRCO Disturbance; South Skunk Camp 500 ft Pipeline ROW
Valley north and east of the San Tan Mountains (LMA)	MARRCO Disturbance; Filter Plant Disturbance	Filter Plant Disturbance; MARRCO Disturbance	Filter Plant Disturbance; MARRCO Disturbance	Filter Plant Disturbance; MARRCO Disturbance
Canyon Passes between Superior and Globe (LMA)	N/A	N/A	500 ft Pipeline ROW	Access Roads; North Skunk Camp 500 ft Pipeline ROW; Skunk Camp Transmission Line; Skunk Camp Fenceline; Tailings Facility; South Skunk Camp 500 ft Pipeline ROW
Tortilla Mountains - Ripsey Wash - Donally Wash (LMA)	N/A	N/A	500 ft Pipeline ROW; Fenceline; Tailings Facility; Peg Leg Fenceline	N/A
Tortolita Mountains - Tortilla Mountains (LMA)	N/A	N/A	Fenceline; Tailings facility; Peg Leg Fenceline; West Peg Leg 500 ft Pipeline ROW	N/A
El Capitan - Aravaipa Canyon (LMA)	N/A	N/A	N/A	Access Roads; North Skunk Camp 500 ft Pipeline ROW; Skunk Camp Transmission Line; Skunk Camp Fenceline; Tailings Facility; South Skunk Camp 500 ft Pipeline ROW
<i>Riparian Movement Area (RMA)</i>				

Connectivity Element (Type)	Alternatives 2 and 3 Components	Alternative 4 Components	Alternative 5 Components	Alternative 6 Components
Queen Creek - Gila River Indian Community (RMA)	East Plant Site/Subsidence Zones; MARRCO Disturbance; Near West Fenceline; Silver King Realignment; Tailings Facility; West Plant Site	East Plant Site/Subsidence Zones; MARRCO Disturbance; Silver King Road Realignment with Filter Plant; Tailings Facility; West Plant Site	500 ft Pipeline ROW, East Plant Site/Subsidence Zones, MARRCO Disturbance; Silver King Realignment; West Plant Site; West Peg Leg 500 ft Pipeline ROW	Access Roads; ESP/Subsidence Zones; MARRCO Disturbance; North Skunk Camp 500 ft Pipeline ROW; Silver King Realignment; West Plant Site; South Skunk Camp 500 ft Pipeline ROW
Gila River (RMA)	N/A	N/A	500 ft Pipeline ROW; Pipeline Access Road; West Peg Leg 500 ft Pipeline ROW	N/A

Special Status Species

Table 3. Special status species potentially occurring within 5 miles of the action alternatives' footprint

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
Amphibians						
Lowland leopard frog (<i>Lithobates yavapaiensis</i>)	TNF: S, SCC AGFD: SGCN 1A	Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and man-made	Known to occur (HDMS 2012; WestLand 2009, 2012, 2018)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Birds						
Northern goshawk (<i>Accipiter gentilis</i>)	TNF: S, MBSC AGFD: SGCN 1B MBTA: Yes	Species is found in wide variety of forest associations including deciduous, coniferous and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9120 feet amsl.	Known to occur (WestLand 2012, 2015)	Unlikely to occur	Unlikely to occur	Possible to occur
Golden eagle (<i>Aquila chrysaetos</i>)	TNF: MBSC AGFD: SGCN 1B MBTA: Yes BGEPA: Yes	Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl.	Known to occur (HDMS 2012; WestLand 2012, 2015; eBird 2009)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Western burrowing owl (<i>Athene cunicularia hypugaea</i>)	BLM: S AGFD: SGCN 1B MBTA: Yes	Species is found in open, dry grasslands, deserts, and agricultural lands; elevation ranges from 650–6,140 feet amsl	Unlikely to occur	Unlikely to occur	Possible to occur.	Unlikely to occur
Juniper titmouse (<i>Baeolophus ridgwayi</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species prefers middle elevation areas where oaks, junipers, and pinyon pine are present	Known to occur (eBird 2009;	Unlikely to occur	Unlikely to occur	Possible to occur

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
			WestLand 2010, 2012)			
Ferruginous hawk (<i>Buteo regalis</i>)	BLM: S AGFD: SGCN 1B MBTA: Yes	Species is found in open grasslands, scrublands, and woodlands in winter; ranges in elevation from 3,500 to 6,000 feet amsl	Unlikely to occur	Unlikely to occur	Possible to occur.	Unlikely to occur
Swainson's hawk (<i>Buteo swainsoni</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species prefers grasslands, semidesert grasslands and open desertscrub for nesting; elevational range of 1,890–5,650 feet amsl.	Known to occur (WestLand 2010, 2012)	Possible to occur	Possible to occur	Possible to occur
Common black hawk (<i>Buteogallus anthracinus</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species only present during breeding season; riparian obligate found along streams between 1,750–7,080 feet amsl.	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Costa's hummingbird (<i>Calypte costae</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Habitat for this species includes desert, semi-desert and brushy foothills	Known to occur (WestLand 2009, 2012, 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Northern beardless-tyrannulet (<i>Camptostoma imberbe</i>)	TNF: MBSC AGFD: N/A MBTA: Yes	Habitat includes arid scrub, mesquite and open riparian woodland often near streams	Known to occur (WestLand 2015)	Unlikely to occur	Possible to occur	Unlikely to occur
Western yellow-billed cuckoo (DPS) (<i>Coccyzus americanus</i>)	ESA: T (All Arizona counties) TNF: MBSC AGFD: SGCN 1A MBTA: Yes	Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection.	Known to occur (HDMS 2012; WestLand 2012, 2013, 2015)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012) Proposed critical habitat at proposed pipeline crossings of the Gila River includes 17.9 acres in the project footprint and 2,232.1 acres within the Analysis Area.	Known to occur (HDMS 2012)
Gilded flicker (<i>Colaptes chrysoides</i>)	TNF: SCC, MBSC AGFD: SGCN 1B MBTA: Yes BLM : S	Habitat includes stands of large saguaros, Joshua tree and low elevation riparian groves	Known to occur (WestLand 2012, 2013, 2015, 2018)	Possible to occur	Possible to occur.	Possible to occur
Olive-sided flycatcher (<i>Contopus cooperi</i>)	TNF: SCC, MBSC AGFD: SGCN 1C MBTA: Yes	Species is only present in summer, breeding habitat includes mixed-conifer forests near open areas with lots of snags; in migration can be found in almost any habitat	Known to occur (WestLand 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
Broad-billed hummingbird (<i>Cynathus latirostris</i>)	TNF: SCC AGFD: SGCN 1B MBTA: Yes BLM: S	Preferred habitat is rocky canyons in desert-like mountain habitats, can be found in foothills, canyons, arroyos, along streams and in deserts	Known to occur (WestLand 2012; eBird 2009)	Possible to occur	Possible to occur.	Possible to occur
Cordilleran flycatcher (<i>Empidonax occidentalis</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species breeds in high elevation riparian forests in mixed conifer woodlands. Travels through low elevation habitats during migration	Possible to occur	Possible to occur	Possible to occur	Possible to occur
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	ESA: E (All AZ counties except Navajo) AGFD: SCGN 1A MBTA: Yes BLM: S	Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (<i>Populus</i> spp.), willow (<i>Salix</i> spp.), boxelder (<i>Acer negundo</i>), saltcedar (<i>Tamarix</i> spp.), Russian olive (<i>Elaeagnus angustifolia</i>), buttonbush (<i>Cephalanthus</i> spp.), and arrowweed (<i>Pluchea sericea</i>) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl.	Known to occur (HDMS 2012; WestLand 2017)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Gray flycatcher (<i>Empidonax wrightii</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species breeds in arid woodlands and brushy areas, particularly in pinyon-juniper woodlands. During nonbreeding species can be found in arid scrub, riparian woodland and mesquite	Known to occur (WestLand 2009, 2010, 2012, 2013, 2015)	Possible to occur	Possible to occur	Possible to occur
Prairie falcon (<i>Falco mexicanus</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Preferred habitat includes open areas in mountainous, steppe, plains, or prairie regions	Known to occur (WestLand 2012, 2015)	Possible to occur	Possible to occur	Possible to occur
American peregrine falcon (<i>Falco peregrinus anatum</i>)	TNF: S, MBSC AGFD: SGCN 1A MBTA: Yes	Species is found near cliffs overlooking habitats that support large numbers of birds; range in elevations from 400–9,000 feet amsl.	Known to occur (HDMS 2010; WestLand 2004, 2009, 2012, 2015, 2017; eBird 2009)	Known to occur (HDMS 2012; WestLand 2018)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
MacGillivray's warbler (<i>Geothlypis tolmiei</i>)	TNF: SCC, MBSC AGFD: SGCN 1B MBTA: Yes	Preferred habitat during breeding season includes mixed-coniferous forests with riparian areas that have low shrubs; in migration species can be found in a variety of habitats	Known to occur (WestLand 2010, 2012, 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	TNF: MBSC AGFD: SGCN 1B MBTA: Yes	Habitat consists of pinyon-juniper woodland, sometimes found in pine	Known to occur (WestLand 2015)	Unlikely to occur	Unlikely to occur	Unlikely to occur

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
		forests and in scrub oak or sagebrush areas				
Bald eagle (<i>Haliaeetus leucocephalus</i>)	TNF: MBSC AGFD: SGCN 1A MBTA: Yes BGEPA: Yes	Habitat components include large bodies of water with lots of coastline and tall perches above water to allow for hunting	Possible to occur	Unlikely to occur	Possible to occur	Unlikely to occur
Lewis's woodpecker (<i>Melanerpes lewis</i>)	TNF: SCC, MBSC AGFD: SGCN 1C MBTA: Yes	Breeding habitat includes open forests and woodlands that include oaks, ponderosa pine, riparian woodlands and orchards	Possible to occur	Unlikely to occur	Unlikely to occur	Unlikely to occur
Gila woodpecker (<i>Melanerpes uropygialis</i>)	TNF: MBSC AGFD: SGCN 1B MBTA: Yes	Habitat includes arid lowland scrub, arid montane scrub, gallery forest and deserts with large cacti or trees	Known to occur (WestLand 2008, 2009, 2012, 2013, 2015, 2018; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Canyon towhee (<i>Melospiza fusca</i>)	TNF: MBSC MBTA: Yes	Habitat includes dense brush, riparian thickets and arid scrub near rocky areas	Known to occur (WestLand 2008, 2009, 2010, 2012, 2013, 2015, 2018; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Elf owl (<i>Micrathene whitneyi</i>)	TNF: SCC, MBSC AGFD: SGCN 1C MBTA: Yes	Species is present during breeding season only, found in desert-woodland washes, riparian forests, upland deserts, evergreen woodlands and canyon riparian forests	Possible to occur	Possible to occur	Known to occur (eBird 2009)	Unlikely to occur
Lucy's warbler (<i>Oreothlypis luciae</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species preferred breeding habitat includes deserts, mesquite along streams, and riparian woodlands	Known to occur (WestLand 2009, 2010, 2012, 2013, 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Phainopepla (<i>Phainopepla nitens</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Habitat includes desert scrub, oak or juniper woodlands, tall brush and riparian woodlands	Known to occur (WestLand 2008, 2009, 2010, 2013, 2015)	Possible to occur	Possible to occur	Possible to occur
Desert purple martin (<i>Progne subis hesperia</i>)	TNF: SCC, MBSC AGFD: SGCN 1B MBTA: Yes	Habitat consists of Sonoran Desert with many large saguaros proximal to water	Known to occur (WestLand 2009, 2012, 2013, 2015)	Possible to occur	Known to occur (eBird 2009)	Possible to occur
Flammulated owl (<i>Psiloscops flammeolus</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species prefers mixed conifer, pine, and pine-oak associations at elevations of 5,000–8,000 feet amsl; species is tied to yellow pine and mixed conifer forests	Unlikely to occur	Unlikely to occur	Unlikely to occur	Possible to occur

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
Golden-crowned kinglet (<i>Regulus satrapa</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species is found in coniferous forest and woodland, occasionally found in scrub and brush in winter	Known to occur (WestLand 2015)	Unlikely to occur	Unlikely to occur	Unlikely to occur
Black-throated gray warbler (<i>Setophaga nigrescens</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Preferred breeding habitat includes a variety of semi-arid woodlands, especially conifers, live oaks and mixed pinyon-juniper woodlands; species migrates through lower elevations in addition	Known to occur (eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Yellow warbler (<i>Setophaga petechia</i>)	TNF: MBSC AGFD: SGCN 1B MBTA: Yes	Breeding habitat includes open scrub, second-growth woodland and riparian woodlands	Known to occur (WestLand 2009, 2012, 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Red-naped sapsucker (<i>Sphyrapicus nuchalis</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Breeding habitat is coniferous forest that includes aspen and other hardwoods; migration and winter habitat includes open woodlands and parks	Known to occur (WestLand 2008, 2012, 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Black-chinned sparrow (<i>Spizella atrogularis</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Habitat includes chaparral, sagebrush, and arid scrub on hillsides with steep rocky slopes or in brushy canyons	Known to occur (WestLand 2008, 2009, 2010, 2012, 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	ESA: T (All Counties except La Paz and Yuma Counties) TNF: MBSC AGFD: SGCN 1A MBTA: Yes	Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine (<i>Pinus ponderosa</i>)–Gambel oak (<i>Quercus gambelii</i>). Nests in live trees on natural platforms (e.g., dwarf mistletoe [<i>Arceuthobium</i> spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Unlikely to occur	Unlikely to occur	Unlikely to occur	Known to occur (HDMS 2012)
Bendire's thrasher (<i>Toxostoma bendirei</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Habitat consists of a variety of desert habitats with large shrubs or cacti and open ground	Possible to occur	Possible to occur	Possible to occur	Possible to occur
Arizona Bell's vireo (<i>Vireo bellii arizonae</i>)	TNF: MBSC AGFD: SGCN 1B MBTA: Yes	Species prefers lowland riparian areas consisting of willows, mesquite and seepwillow with dense vegetation below 3,500 feet amsl in elevation	Known to occur (WestLand 2009, 2012, 2013, 2015; eBird 2009)	Possible to occur	Possible to occur	Possible to occur

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
Gray vireo (<i>Vireo vicinior</i>)	TNF: MBSC AGFD: SGCN 1C MBTA: Yes	Species present mostly during breeding season; preferred breeding habitat consists of semi-arid shrubby habitats including pinyon-juniper woodlands and chaparral	Known to occur (WestLand 2009, 2012, 2013)	Possible to occur	Unlikely to occur	Possible to occur
	TNF: SCC AGFD: SGCN 1B	Habitat varies from intermittent hot low-desert stream to clear, cool streams at higher elevations; prefers medium to small sized streams with sandy/gravelly bottoms and pools with some cover. Species is normally found below 4,900 feet amsl.	Known to occur (WestLand 2009, 2018; AGFD 2008a, 2008b)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Desert sucker (<i>Catostomus clarki</i>)	TNF: S BLM: S AGFD: SGCN 1B	Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl	Unlikely to occur	Unlikely to occur	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Sonora sucker (<i>Catostomus insignis</i>)	TNF: S AGFD: SGCN 1B	Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl	Unlikely to occur	Unlikely to occur	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Desert pupfish (<i>Cyprinodon macularius</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties) AGFD: SGCN 1A	Found in shallow waters of springs, marshes and small streams, prefers soft substrates and clear water; elevational range of 1,200–3,450 feet amsl.	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Gila chub (<i>Gila intermedia</i>)	ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties) BLM: S AGFD: SGCN 1A	Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations below 2,720 and 5,420 feet amsl.	Unlikely to occur	Unlikely to occur	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Spikedace (<i>Meda fulgida</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties) BLM: S AGFD: SGCN 1A	Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl.	Unlikely to occur	Unlikely to occur	Known to occur (HDMS 2012)	Unlikely to occur
Gila topminnow (incl. Yaqui) (<i>Poeciliopsis occidentalis</i>)	ESA: E / NEP (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties) AGFD: SGCN 1A	Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
Monarch butterfly (<i>Danaus plexippus</i> pop. 1)	TNF: SCC	Species present during spring and summer, rarely during winter at varying elevations around the state; prefers riparian habitats with milkweeds present	Possible to occur	Possible to occur	Possible to occur	Possible to occur
Pale Townsend's big-eared bat (<i>Corynorhinus townsendii pallescens</i>)	TNF: S AGFD: SGCN 1B	In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes and mines in higher elevations than summer	Known to occur (WestLand 2018)	Possible to occur	Possible to occur.	Known to occur (HDMS 2012)
Spotted bat (<i>Euderma maculatum</i>)	TNF: S AGFD: SGCN 1B	Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl	Unlikely to occur	Possible to occur	Possible to occur	Possible to occur
Greater western mastiff bat (<i>Eumops perotis californicus</i>)	BLM: S AGFD: SGCN 1B	Species prefers lower and upper Sonoran Desertscrub near cliffs with lots of crevices; elevational range of 240–8,475 feet amsl	Possible to occur	Possible to occur	Possible to occur	Possible to occur
Allen's lappet-browed or big-eared bat (<i>Idionycteris phyllotis</i>)	TNF: S, SCC AGFD: SGCN 1B	Found in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas with cottonwoods, sycamores and willows, also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl.	Unlikely to occur	Unlikely to occur	Unlikely to occur	Possible to occur
Western red bat (<i>Lasiurus blossevillii</i>)	TNF: S, SCC AGFD: SGCN 1B	Habitat consists of riparian and wooded areas, typically roosts in cottonwood trees; elevational range of 1,900–7,200 feet amsl.	Known to occur (HDMS 2012; WestLand 2012)	Known to occur (HDMS 2012)	Possible to occur	Known to occur (HDMS 2012)
Ocelot (<i>Leopardus pardalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties) AGFD: SGCN 1A	In Arizona, this species has typically been observed in subtropical thorn forest, thornscrub, and dense, brushy thickets at elevations below 8,000 feet amsl and is often found in riparian bottomlands. Habitat is dense cover near the ground and complete avoidance of open country	Unlikely to occur	Unlikely to occur	Unlikely to occur	Unlikely to occur
Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>)	BLM: S AGFD: SGCN 1A	Habitat consists of desert grasslands and shrublands in elevations ranging from 1,190–7,320 feet amsl; present only in summer	Unlikely to occur	Unlikely to occur	Possible to occur	Unlikely to occur

Common Name (Scientific Name)	Status	Habitat Components	Alternatives 2 and 3	Alternative 4	Alternative 5	Alternative 6
California leaf-nosed bat (<i>Macrotus californicus</i>)	TNF: SCC AGFD: SGCN 1B	Species prefers Sonoran Desertscrub, roosts in mines, caves and rockshelters that have large areas of ceiling and flying space; elevational range of 160–3,980 feet amsl.	Known to occur (WestLand 2012, 2018)	Possible to occur.	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Cave myotis (<i>Myotis velifer</i>)	BLM: S AGFD: SGCN 1B	Habitat consist of creosote, brittlebush, palo verde and cacti; roosts in caves, tunnels, mineshafts, under bridges and sometimes in buildings. Elevational range of 300–5,000 feet amsl	Possible to occur	Possible to occur	Known to occur (HDMS 2012)	Possible to occur
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)*	AGFD: SGCN 1B	Species prefers the Lower and Upper Sonoran life zones; elevational range of 450–8,475 feet amsl.	Known to occur (HDMS 2012; AGFD 2018)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Sonoran Desert tortoise (<i>Gopherus morafkai</i>)	TNF: S AGFD: SGCN 1A BLM:S	Habitat includes desertscrub to semidesert grassland and interior chaparral; elevational range of 510–5,300 feet amsl.	Known to occur (HDMS 2012; WestLand 2012, 2013, 2014, 2018)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)
Desert ornate box turtle (<i>Terrapene ornata</i>)	BLM: S AGFD: SGCN 1A	Species prefers grasslands but is also occasionally found in desertscrub; elevational range of 2,000–7,100 feet amsl	Unlikely to occur	Unlikely to occur	Known to occur (HDMS 2012)	Unlikely to occur
Bezy's night lizard (<i>Xantusia bezyi</i>)	TNF: S, SCC AGFD: SGCN 1B	Species prefers rocky slopes in upland Sonoran Desertscrub and chaparral vegetation types; elevational range of 2,400–5,800 feet amsl.	Known to occur (HDMS 2012)	Known to occur (HDMS 2012)	Possible to occur	Known to occur (HDMS 2012)

***Status Definitions**

Tonto National Forest (TNF):

S = Sensitive. Species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. significant current or predicted downward trends in population number or density. B. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

SCC¹ = Species of Conservation Concern. A plant or animal for which we have concerns about its ability to remain on a landscape for a long time.

MBSC = Migratory Bird Species of Concern

Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

¹ Note that Species of Conservation Concern is not considered a valid designation at this time and will not be until the revision of the Tonto Forest Plan is complete. This designation does not appear in the EIS and were included at the request of the cooperating agencies and categorized as other species of interest in the draft EIS.

ENE = Reintroduced populations designated as Experimental – Nonessential, under ESA.

Arizona Game and Fish Department (AGFD):

SGCN 1A = Species of Greatest Conservation Need Tier 1A; Species for which the Arizona Game and Fish Department has entered into an agreement or has legal or other contractual obligations, or warrants the protection of a closed season.

SGCN 1B = Species of Greatest Conservation Need Tier 1B; Vulnerable species.

SGCN 1C = Species of Greatest Conservation Need Tier 1C; Species for which insufficient information is available to fully assess the vulnerabilities and therefore need to be watcher for signs of stress.

*=Not all SGCN-listed species are address as part of this analysis; however, this species was added to the analysis are the request of the AGFD, a cooperating agency.

Bureau of Land Management (BLM):

S = Sensitive. Species that could easily become endangered or extinct in the state

Management Indicator Species

Table 4. Tonto National Forest MIS habitat acreages and trends in the analysis area

Vegetation Type/Species	TNF MIS Population Trend*	Key Habitat Components (KHC) Trend**	Total Forest Acres	Acres in Action Alternative 2/3	Acres in Action Alternative 4	Acres in Action Alternative 5, Peg Leg East Pipeline Option	Acres in Action Alternative 5, Peg Leg West Pipeline Option	Acres in Action Alternative 6, Skunk Camp North Pipeline Option	Acres in Action Alternative 6, Skunk Camp South Pipeline Option
Ponderosa Pine/Mixed Conifer			283,204	0	0	0	0	0	0
Elk	S	S	283,204	0	0	0	0	0	0
Wild turkey	S	S	283,204	0	0	0	0	0	0
Pygmy nuthatch	D	S	283,204	0	0	0	0	0	0
Violet-green swallow	S	S	283,204	0	0	0	0	0	0
Western bluebird	S	S	283,204	0	0	0	0	0	0
Hairy woodpecker	S	S	283,204	0	0	0	0	0	0
Northern goshawk	D	S	283,204	0	0	0	0	0	0
Abert's squirrel	D	S	283,204	0	0	0	0	0	0
P/J (woodland)			1,155,722	144 [†]	59	105	87	115	123
Ash-throated flycatcher	D	S	1,155,722	144 [†]	59	105	87	115	123
Gray vireo	D	S	1,155,722	144 [†]	59	105	87	115	123
Townsend's solitaire	D	S	1,155,722	144 [†]	59	105	87	115	123

Vegetation Type/Species	TNF MIS Population Trend*	Key Habitat Components (KHC) Trend**	Total Forest Acres	Acres in Action Alternative 2/3	Acres in Action Alternative 4	Acres in Action Alternative 5, Peg Leg East Pipeline Option	Acres in Action Alternative 5, Peg Leg West Pipeline Option	Acres in Action Alternative 6, Skunk Camp North Pipeline Option	Acres in Action Alternative 6, Skunk Camp South Pipeline Option
Juniper (plain) titmouse	D	S	1,155,722	144 [†]	59	105	87	115	123
Northern flicker	S	S	1,155,722	144 [†]	59	105	87	115	123
Spotted towhee	S	S	1,155,722	144 [†]	59	105	87	115	123
Chaparral			265,480	259 [†]	1,149	1,023	1,017	2,154	2,078
Spotted towhee	S	S	265,480	259 [†]	1,149	1,023	1,017	2,154	2,078
Black-chinned sparrow	S	S	265,480	259 [†]	1,149	1,023	1,017	2,154	2,078
Desert Grassland			316,894	0	1,373	68	59	8,608	8,610
Savannah sparrow	S	U/S	316,894	0	1,373	68	59	8,608	8,610
Horned lark	D	U/S	316,894	0	1,373	68	59	8,608	8,610
Desertscrub			774,220	399 [†]	6,337	14,035	14,436	3,997	4,509
Black-throated sparrow	S	D/S	774,220	399 [†]	6,337	14,035	14,436	3,997	4,509
Canyon towhee	D	D/S	774,220	399 [†]	6,337	14,035	14,436	3,997	4,509
Riparian low elevation (1,500 – 3,500 feet)			31,147	0	2	3	5	27	27
Bald eagle	S	NC	31,147	0	2	3	5	27	27
Bell's vireo	D	NC	31,147	0	2	3	5	27	27
Summer tanager	D	NC	31,147	0	2	3	5	27	27
Hooded oriole	S	NC	31,147	0	2	3	5	27	27
Riparian (> 3,500 feet)			10,232	0	19	8	7	33	34
Hairy woodpecker	S	NC	10,232	0	19	8	7	33	34
Arizona gray squirrel	S	NC	10,232	0	19	8	7	33	34
Warbling vireo	S	NC	10,232	0	19	8	7	33	34
Western wood-pewee	D	NC	10,232	0	19	8	7	33	34
Common black hawk	D	NC	10,232	0	19	8	7	33	34
Aquatic			29,000	0	15	15	15	15	15
Macroinvertebrates	S	N/A	29,000	0	15	15	15	15	15

*MIS population trend column key:

I – Increasing trend for MIS population Forest wide

U – Unknown trend for MIS population Forest wide
S – Stable trend for MIS population Forest wide
D – Decreasing trend for MIS population Forest wide

**KHC trend column key:

U – Upward trend for KHC Forest wide
D – Downward trend for KHC Forest wide
S – Stable trend for KHC Forest wide
NC – No change for KHC Forest wide

APPENDIX A –Wildlife Screening Tables

Table A1. Special Status Wildlife Species Analyzed for the Alternative 2: Near West - Modified Proposed Action – Wet and Alternative 3: Near West - Modified Proposed Action – Dry.

Table A2. Special Status Wildlife Species Analyzed for the Alternative 4: Silver King

Table A3. Special Status Wildlife Species Analyzed for the Alternative 5: Peg Leg

Table A4. Special Status Wildlife Species Analyzed for the Alternative 6: Skunk Camp

Table A1. Special Status Wildlife Species Analyzed for the Alternative 2: Near West - Modified Proposed Action - Wet and Alternative 3: Near West - Modified Proposed Action – Dry.

Unless otherwise noted, range or habitat information is from the following sources: HDMS (2012); USFWS Arizona Ecological Services Field Office (USFWS 2012a); Tonto National Forest Threatened, Endangered and Sensitive (TES) Species Abstracts (2000); Tonto National Forest Final Assessment (2017); NatureServe (NatureServe 2017);

Common Name (<i>Scientific Name</i>)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Proposed Action Analysis Area	Likelihood of Occurrence in Selected Lands Analysis Area
Western barking frog (<i>Craugastor augusti cactorum</i>)	TNF: S				Species prefers outcrops or cave on rocky slopes in oak/pine-oak associations; elevational range of 4,200–6,200 feet amsl.	Occurs in rocky outcrops in Cochise and southern Pima and Santa Cruz Counties, in the Quinlan, Santa Rita, Patagonia, Huachuca, and Pajarito mountain ranges	Unlikely to occur	Unlikely to occur
Chiricahua leopard frog (<i>Lithobates chiricahuensis</i>)	ESA: T (All AZ counties except La Paz, Mohave, Pinal, Yuma Counties)				Species is known from mid-elevation wetland communities such as tanks, lakes, reservoirs, streams, and rivers; often surrounded by an arid environment. Elevational range of 3,281-8,890 feet amsl.	Occurs in all Arizona counties except La Paz, Mohave, Pinal, and Yuma Counties. Occurs along the Mogollon Rim and in mountainous areas of southeastern Arizona	Unlikely to occur	Unlikely to occur
Northern leopard frog (<i>Lithobates pipiens</i>)	TNF: S				Range of habitats that includes grasslands, brush land, and forests, usually in permanent water; elevational range of 2,640–9,155 feet amsl.	Occurs in northern and central Arizona	Unlikely to occur	Unlikely to occur
Lowland leopard frog (<i>Lithobates yavapaiensis</i>)	TNF: S, SCC	Arnett Creek (2010), Telegraph Canyon (2016), Rio Rancho Creek (2017), Queen Creek (1992), Pinal Mountains: west of Iron Canyon (2010)	Tailings corridor; East Plant; Devil's Canyon; Queen Creek; Oak Flat; Mineral Creek (WestLand 2009, 2012, 2018)		Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and man-made	Occurs in central and southeastern Arizona	Known to occur	Known to occur
Northern goshawk (<i>Accipiter gentilis</i>)	TNF: S		East Plant Site (WestLand 2012, 2015)		Species is found in wide variety of forest associations including deciduous, coniferous and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9120 feet amsl.	Occurs in high elevation mountain ranges throughout Arizona	Known to occur	Possible to occur
Clark's grebe (<i>Aechmophorus clarkia</i>)	TNF: SCC				Requires large, deep bodies of water for fishing	Occurs throughout the state in winter; breeding occurs in Mohave and La Paz Counties	Unlikely to occur	Unlikely to occur
Western grebe (<i>Aechmophorus occidentalis</i>)	TNF: SCC				Requires large, deep bodies of water for fishing	Occurs throughout the state in winter; breeding occurs in Coconino, Yavapai, Maricopa, Pinal, and Pima Counties	Unlikely to occur	Unlikely to occur
Golden eagle (<i>Aquila chrysaetos</i>)	BGEPA: Yes	Superstition Mountains: Hewitt Ridge (2014)	Devil's Canyon; Queen Creek; (WestLand 2012, 2015)	eBird: Arnett Creek (2011), Oak Flat (2013, 2014)	Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl.	Occurs in mountainous and occasionally rural areas throughout Arizona	Known to occur	Possible to occur
Red-faced warbler (<i>Cardellina rubrifrons</i>)	TNF: SCC				Summer resident only; occurs in montane fir, pine and pine-oak woodlands	Occurs in mountain ranges from southeastern Arizona to Mogollon Rim	Unlikely to occur	Unlikely to occur
American dipper (<i>Cinclus mexicanus</i>)	TNF: SCC				Requires fast flowing streams in high elevation forests	Occurs in central and northern Arizona	Unlikely to occur	Unlikely to occur
Western yellow-billed cuckoo (DPS) (<i>Coccyzus americanus</i>)	ESA: T (All Arizona counties)	Dripping Springs Mountains: vicinity of Government Mountain (2011), Dripping Springs Mountains: Devils Canyon (2011), Queen Creek: Whitlow Dam (2000)	Devil's Canyon; Queen Creek; Whitlow Dam; Apache Leap; Oak Flat; Rancho Rio Creek; Mineral Creek; Pinto Creek (WestLand 2012, 2013, 2015)		Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection.	Occurs in all Arizona Counties, from below Mogollon Rim to southeast Arizona and along the Colorado River	Known to occur	Unlikely to occur
Gilded flicker (<i>Colaptes chrysoides</i>)	TNF: SCC		Devils Canyon; Queen Creek; Rancho Rio Creek; Mineral Creek; Apache Leap; East Plant Site (WestLand 2012, 2013, 2015, 2018)	eBird: Oak Flat (2014), Apache Leap (2015), Arnett Creek (2017)	Habitat includes stands of large saguaros, Joshua tree and low elevation riparian groves	Occurs in southern, central, and western Arizona	Known to occur	Known to occur

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Proposed Action Analysis Area	Likelihood of Occurrence in Selected Lands Analysis Area
Olive-sided flycatcher (<i>Contopus cooperi</i>)	TNF: SCC		Between Superior and Florence Junction (WestLand 2015)	eBird: Oak Flat (2017), Devil's Canyon (2014), Arnett Creek (2015)	Species is only present in summer, breeding habitat includes mixed-conifer forests near open areas with lots of snags; in migration can be found in almost any habitat	Occurs throughout Arizona	Known to occur	Known to occur
Broad-billed hummingbird (<i>Cynathus latirostris</i>)	TNF: SCC		Apache Leap; Queen Creek; East Plant Site; Rancho Rio Creek; Devils Canyon; Mineral Creek (WestLand 2012)	eBird: Oak Flat (2017), Arnett Creek (2016)	Preferred habitat is rocky canyons in desert-like mountain habitats, can be found in foothills, canyons, arroyos, along streams and in deserts	Occurs in southeast and central Arizona	Known to occur	Unlikely to occur
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	ESA: E (All AZ counties except Navajo)	Robles Butte: Queen Creek (2005)	Queen Creek; Whitlow Canyon (WestLand 2017)		Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (<i>Populus</i> spp.), willow (<i>Salix</i> spp.), boxelder (<i>Acer negundo</i>), saltcedar (<i>Tamarix</i> spp.), Russian olive (<i>Elaeagnus angustifolia</i>), buttonbush (<i>Cephalanthus</i> spp.), and arrowweed (<i>Pluchea sericea</i>) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl.	Occurs in all counties except Navajo County, in lower elevation riparian areas	Known to occur	Unlikely to occur
American peregrine falcon (<i>Falco peregrinus anatum</i>)	TNF: S	East Plant Site (2015)	East Plant; West Plant; Devil's Canyon; Queen Creek; Rancho Rio Creek; Apache Leap (WestLand 2004, 2009, 2012, 2015, 2017)	eBird: Oak Flat (2017), Arnett Creek (2014)	Species is found near cliffs overlooking habitats that support large numbers of birds; range in elevations from 400–9,000 feet amsl.	Occurs throughout Arizona	Known to occur	Known to occur
MacGillivray's warbler (<i>Geothlypis tolmiei</i>)	TNF: SCC		Apache Leap; Queen Creek Canyon; East Plant Site; Rancho Rio Creek; Devils Canyon; Mineral Creek (WestLand 2010, 2012, 2015)	eBird: Oak Flat (2017), Arnett Creek (2017)	Preferred habitat during breeding season includes mixed-coniferous forests with riparian areas that have low shrubs; in migration species can be found in a variety of habitats	Occurs throughout Arizona	Known to occur	Known to occur
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BGEPA: Yes				Habitat components include large bodies of water with lots of coastline and tall perches above water to allow for hunting	Occurs in central and northern Arizona	Possible to occur	Unlikely to occur
Yellow-eyed junco (<i>Junco phaeonotus</i>)	TNF: S, SCC				Habitat consists of open coniferous forest and pine-oak associations	Occurs in central and southeastern Arizona	Unlikely to occur	Unlikely to occur
Lewis's woodpecker (<i>Melanerpes lewis</i>)	TNF: SCC		Apache Leap; Queen Creek Canyon; East Plant Site; Rancho Rio Creek; Devils Canyon; Mineral Creek (WestLand 2012)	eBird: Oak Flat (2007)	Breeding habitat includes open forests and woodlands that include oaks, ponderosa pine, riparian woodlands and orchards	Occurs throughout Arizona	Known to occur	Known to occur
Elf owl (<i>Micrathene whitneyi</i>)	TNF: SCC		MARRCO Corridor, Apache Leap; Queen Creek Canyon; East Plant Site; Rancho Rio Creek; Devils Canyon; Mineral Creek (WestLand 2012, 2014, 2015, 2017)		Species is present during breeding season only, found in desert-woodland washes, riparian forests, upland deserts, evergreen woodlands and canyon riparian forests	Occurs in the southern half of Arizona	Known to occur	Possible to occur
Sulphur-bellied flycatcher (<i>Myiodynastes luteiventris</i>)	TNF: SCC, S				Preferred habitat includes sycamore-walnut canyons; species only present during breeding season	Occurs in southeast and central Arizona	Unlikely to occur	Unlikely to occur

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Proposed Action Analysis Area	Likelihood of Occurrence in Selected Lands Analysis Area
Desert purple martin (<i>Progne subis hesperia</i>)	TNF: SCC			Apache Leap; Queen Creek Canyon; East Plant Site; Rancho Rio Creek; Devils Canyon; Mineral Creek (WestLand 2009, 2012, 2013, 2015)	Habitat consists of Sonoran Desert with many large saguaros proximal to water	Occurs in southern and central Arizona	Known to occur	Possible to occur
Yuma Ridgeway's rail (<i>Rallus longirostris yumanensis</i>)	ESA: E (Gila, La Paz, Maricopa, Mohave, Pinal, and Yuma Counties)				In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (<i>Typha</i> spp.), bulrushes (<i>Issolepis</i> spp.), and sedges (<i>Carex</i> spp.).	Occurs in Gila, La Paz, Maricopa, Mohave, Pinal, and Yuma Counties	Unlikely to occur	Unlikely to occur
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	ESA: T (All AZ counties except La Paz and Yuma)				Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine (<i>Pinus ponderosa</i>)–Gambel oak (<i>Quercus gambelii</i>). Nests in live trees on natural platforms (e.g., dwarf mistletoe [<i>Arceuthobium</i> spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Occurs in all counties in Arizona, except La Paz and Yuma Counties	Unlikely to occur	Unlikely to occur
Pacific wren (<i>Troglodytes pacificus</i>)	TNF: SCC				Breeding habitat includes dark moist areas in canyons draining the Mogollon Rim, typically in mixed coniferous forests with lots of flowing water	Occurs along the Mogollon Rim	Unlikely to occur	Unlikely to occur
Gila longfin dace (<i>Agosia chrysogaster</i>)	TNF: SCC	Mineral Creek (2010)		Mineral Creek; Arnett Creek; Mineral Creek; Queen Creek (AGFD 2008a, 2008b; WestLand 2009, 2018)	Habitat varies from intermittent hot low-desert stream to clear, cool streams at higher elevations; prefers medium to small sized streams with sandy/gravelly bottoms and pools with some cover. Species is normally found below 4,900 feet amsl.	Occurs in central, southern, and southeastern Arizona	Known to occur	Possible to occur
Desert sucker (<i>Catostomus clarki</i>)	TNF: S				Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl.	Occurs in central, southern, and southeastern Arizona	Unlikely to occur	Unlikely to occur
Sonora sucker (<i>Catostomus insignis</i>)	TNF: S				Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl.	Occurs in central, southern, and southeastern Arizona	Unlikely to occur	Unlikely to occur
Desert pupfish (<i>Cyprinodon macularius</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties)	Queen Creek (2003)			Found in shallow waters of springs, marshes and small streams, prefers soft substrates and clear water; elevational range of 1,200–3,450 feet amsl.	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties	Known to occur	Unlikely to occur
Gila chub (<i>Gila intermedia</i>)	ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties)				Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations between 2,720 and 5,420 feet amsl.	Occurs in Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties	Unlikely to occur	Unlikely to occur
Headwater chub (<i>Gila nigra</i>)	TNF: S				Species is found in the middle to headwater reaches of medium-sized streams with large pools and cover; elevational range of 925-2,000 feet amsl	Occurs in Gila, Graham, and Yavapai Counties	Unlikely to occur	Unlikely to occur
Roundtail chub (<i>Gila robusta</i>)	TNF: S				Species prefers cool to warm water in mid-elevation streams and rivers with pools up to 6.6 feet deep near flowing water. Cover consists of boulders, tree roots, deep water and submerged vegetation. Elevational range of 1,210–7,220 feet amsl	Occurs in Apache, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pinal, and Yavapai Counties	Unlikely to occur	Unlikely to occur

Common Name (<i>Scientific Name</i>)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Proposed Action Analysis Area	Likelihood of Occurrence in Selected Lands Analysis Area
Spikedace (<i>Meda fulgida</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties)				Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl.	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties	Unlikely to occur	Unlikely to occur
Gila topminnow (incl. Yaqui) (<i>Poeciliopsis occidentalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties)	Refugium population at Boyce Thompson Arboretum (2003)			Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties. Species is a refugia population in Ayer Lake at Boyce Thompson Arboretum.	Known to occur	Unlikely to occur
Colorado pikeminnow (non-essential experimental) (<i>Ptychocheilus lucius</i>)	ESA: E, ENE (Gila, Maricopa, and Yavapai Counties)				Juveniles prefer slackwater, backwater and side channels with little or no flow and silty substrates; adults utilize turbid, deep and fast flowing waters. Species was reintroduced at an elevation of 1,960 feet amsl.	Occurs in Gila, Maricopa, and Yavapai Counties	Unlikely to occur	Unlikely to occur
Loach minnow (<i>Tiaroga cobitis</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties)				Found in small to large perennial creeks and rivers, typically in shallow, turbulent riffles with cobble substrate, swift currents, and filamentous algae at elevations below 8,000 feet amsl.	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties	Unlikely to occur	Unlikely to occur
Razorback sucker (<i>Xyrauchen texanus</i>)	ESA: E (Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties)				Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl.	Occurs in Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties	Unlikely to occur	Unlikely to occur
Netwing midge (<i>Agathon arizonicus</i>)	TNF: S				Confined to areas in the immediate vicinity of rapidly flowing streams	Occurs in Gila County, Arizona	Unlikely to occur	Unlikely to occur
Parker's cyloepus riffle beetle (<i>Cylloepus parkeri</i>)	TNF: S, SCC				Habitat consists of small, rocky streams	Occurs in Yavapai County, Arizona	Unlikely to occur	Unlikely to occur
Monarch butterfly (<i>Danaus plexippus</i> pop. 1)	TNF: SCC				Species present during spring and summer, rarely during winter at varying elevations around the state; prefers riparian habitats with milkweeds present	Occurs throughout Arizona	Possible to occur	Possible to occur
A mayfly (<i>Fallceon eatoni</i>)	TNF: S				Species prefers riparian areas in canyons	Rediscovered in Salt River Canyon, Gila County	Unlikely to occur	Unlikely to occur
Fossil springsnail (<i>Pyrgulopsis simplex</i>)	TNF: S, SCC				Habitat is only present at headsprings and upper section of the outflow, generally found on rocks or aquatic macrophytes in moderate current	Occurs in Gila and Yavapai Counties	Unlikely to occur	Unlikely to occur
Phoenix talussnail (<i>Sonorella allynsmithi</i>)	TNF: SCC				Species prefers talus slopes in middle elevation areas of the Sonoran Desert	Occurs in Maricopa County, Arizona	Unlikely to occur	Unlikely to occur
A caddisfly (<i>Wormaldia planae</i>)	TNF: S				Species is found in or somewhat near riparian areas, adults tend to disperse farther from emergent sites if surrounding habitat is less dense	Occurs in Gila and Yavapai Counties, recently found in Line Fossil Creek, Fossil Creek, Beaver Creek, below the outlet of Montezuma Well, and an unnamed stream at Ward Ranch	Unlikely to occur	Unlikely to occur
Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>)	ESA: ENE (La Paz, Maricopa, Pima, Pinal, Santa Cruz and Yuma Counties)				Found in Sonoran desertscrub within broad, intermountain, alluvial valleys with creosote (<i>Larrea tridentata</i>)–bursage (<i>Ambrosia</i> spp.) and palo verde–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl.	Occurs in southwestern Arizona.	Unlikely to occur	Unlikely to occur

Common Name (<i>Scientific Name</i>)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Proposed Action Analysis Area	Likelihood of Occurrence in Selected Lands Analysis Area
Mexican gray wolf (<i>Canis lupis baileyi</i>)	ESA: E (Apache and Greenlee Counties) TNF: ENE				Vegetation type not important, species mostly needs sufficient prey such as deer and elk. Reintroduction areas are typically rugged lands in coniferous forest. Elevational range of 3,000–12,000 feet amsl.	Occurs in Apache and Greenlee Counties, reintroductions are occurring in Apache County. All packs are currently located on the Apache-Sitgreaves National Forest (AGFD 2018).	Unlikely to occur	Unlikely to occur
Pale Townsend's big-eared bat (<i>Corynorhinus townsendii pallescens</i>)	TNF: S		Tailings corridor; East Plant; Devil's Canyon; Queen Creek; Oak Creek (vicinity); near west vicinity (WestLand 2018)		In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes and mines in higher elevations than summer	Occurs throughout Arizona	Known to occur	Known to occur
Spotted bat (<i>Euderma maculatum</i>)	TNF: S				Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl.	Occurs in Yuma and Maricopa Counties, and in eastern Arizona	Unlikely to occur	Unlikely to occur
Allen's lappet-browed or big-eared bat (<i>Idionycteris phyllotis</i>)	TNF: S, SCC				Found in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas with cottonwoods, sycamores and willows, also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl.	Occurs throughout Arizona except for deserts in southwestern Arizona	Possible to occur	Unlikely to occur
Western red bat (<i>Lasiurus blossevillii</i>)	TNF: S, SCC	Queen Creek: Whitlow Dam (1965)	East Plant; Devil's Canyon; Queen Creek; near west vicinity (WestLand 2012)		Habitat consists of riparian and wooded areas, typically roosts in cottonwood trees; elevational range of 1,900–7,200 feet amsl.	Occurs from south-central to southern and southeastern Arizona	Known to occur	Known to occur
Western yellow bat (<i>Lasiurus xanthinus</i>)*	*Added per request from Arizona Game and Fish Department				Species may be associated with palm trees, sycamores hackberries and cottonwoods; elevational range of 550–6,000 feet amsl.	Occurs throughout Arizona, historically found near Phoenix and Casa Grande	Unlikely to occur	Unlikely to occur
Ocelot (<i>Leopardus pardalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties)	Devil's Canyon (2011)			In Arizona, this species has typically been observed in subtropical thorn forest, thornscrub, and dense, brushy thickets at elevations below 8,000 feet amsl and is often found in riparian bottomlands. The critical habitat component is probably dense cover near the ground and complete avoidance of open country	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties	Known to occur	Unlikely to occur
California leaf-nosed bat (<i>Macrotus californicus</i>)	TNF: SCC		Oak Flat (immediate vicinity), Near West (WestLand 2012, 2018)		Species prefers Sonoran Desertscrub, roosts in mines, caves and rockshelters that have large areas of ceiling and flying space; elevational range of 160–3,980 feet amsl.	Occurs south of the Mogollon Plateau and in Mohave County	Known to occur	Known to occur
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)*	*Added per request from Arizona Game and Fish Department	Picketpost Mountain: Pott's Canyon (2017)	Devil's Canyon, Oak Flat, Queen Creek (AGFD 2018)		Species prefers the Lower and Upper Sonoran life zones; elevational range of 450–8,475 feet amsl.	Occurs throughout the state during summer, only southern half of state during winter	Known to occur	Possible to occur
Sonoran Desert tortoise (<i>Gopherus morafkai</i>)	TNF: S	Cottonwood Canyon (2007), Arnett Creek (2017), Telegraph Canyon (1990), Belmont Canyon (1990), Picketpost Mountain (1990), Raymert Wash (1990), Queen Creek (2016), Whitlow Ranch (2014), Whitlow Canyon (2014), Hewitt Canyon (2016)	Tailings Area, Far West Parcel, Near West (WestLand 2012, 2013, 2014, 2018)	Picketpost Mountain (TNF 2016)	Habitat includes Mojave desert scrub to semidesert grassland and interior chaparral; elevational range of 510–5,300 feet amsl.	Occurs in the southern and southwest part of Arizona	Known to occur	Unlikely to occur
Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)	ESA: T (All AZ counties except Maricopa and Yuma) TNF: S				Species prefers cienegas, streams, and rivers in habitats ranging from upland Sonoran desertscrub to montane coniferous forests; elevational range of 1,000–6,700 feet amsl.	Occurs throughout Arizona except Maricopa and Yuma Counties	Unlikely to occur	Unlikely to occur

Common Name (<i>Scientific Name</i>)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Proposed Action Analysis Area	Likelihood of Occurrence in Selected Lands Analysis Area
Narrow-headed gartersnake (<i>Thamnophis rufipunctatus</i>)	ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo and Yavapai Counties) TNF: S				Species prefers pinyon-juniper and pine-oak woodlands, ranging into ponderosa pine at elevations between 2,440–8,080 feet amsl; species needs a permanent water source	Occurs in Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties	Unlikely to occur	Unlikely to occur
Bezy's night lizard (<i>Xantusia bezyi</i>)	TNF: S, SCC	Queen Creek Canyon (2008)			Species prefers rocky slopes in upland Sonoran desertscrub and chaparral vegetation types; elevational range of 2,400–5,800 feet amsl.	Occurs in Gila, Pinal and Maricopa Counties	Known to occur	Possible to occur

***Status Definitions**

Tonto National Forest (TNF):

S = Sensitive. Species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. significant current or predicted downward trends in population number or density. B. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

SCC² = Species of Conservation Concern. A plant or animal for which we have concerns about its ability to remain on a landscape for a long time.

Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

ENE = Reintroduced populations designated as Experimental – Nonessential, under ESA.

Bald and Golden Eagle Protection Act (BGEPA):

A United States Federal statute that protects two species of eagle

² Note that Species of Conservation Concern is not considered a valid designation at this time and will not be until the revision of the Tonto Forest Plan is complete. This designation does not appear in the EIS and were included at the request of the cooperating agencies and categorized as other species of interest in the draft EIS.

Table A2. Special Status Wildlife Species Analyzed for the Alternative 4: Silver King.

Unless otherwise noted, range or habitat information is from the following sources: HDMS (2012); USFWS Arizona Ecological Services Field Office (USFWS 2012a); Tonto National Forest Threatened, Endangered and Sensitive (TES) Species Abstracts (2000); Tonto National Forest Final Assessment (2017); NatureServe (NatureServe 2017).

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Silver King Analysis Area
Western barking frog (<i>Craugastor augusti</i> <i>cactorum</i>)	TNF: S				Species prefers outcrops or cave on rocky slopes in oak/pine-oak associations; elevational range of 4,200–6,200 feet amsl.	Occurs in rocky outcrops in Cochise and southern Pima and Santa Cruz Counties, in the Quinlan, Santa Rita, Patagonia, Huachuca, and Pajarito mountain ranges	Unlikely to occur
Chiricahua leopard frog (<i>Lithobates chiricahuensis</i>)	ESA: T (All AZ counties except La Paz, Mohave, Pinal, and Yuma Counties)				Species is known from mid-elevation wetland communities such as tanks, lakes, reservoirs, streams, and rivers; often surrounded by an arid environment. Elevational range of 3,281-8,890 feet amsl.	Occurs along the Mogollon Rim and in mountainous areas of southeastern Arizona	Unlikely to occur
Northern leopard frog (<i>Lithobates pipiens</i>)	TNF: S				Range of habitats that includes grasslands, brush land, and forests, usually in permanent water; elevational range of 2,640–9,155 feet amsl.	Found in northern and central Arizona	Unlikely to occur
Lowland leopard frog (<i>Lithobates yavapaiensis</i>)	TNF: S, SCC	Arnett Creek (2010), Telegraph Canyon (2016), Rio Rancho Creek (2017), Queen Creek (1992), Pinal Mountains: west of Iron Canyon (2010); Happy Camp Tank (2017)			Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and man-made	Occurs in central and southeastern Arizona	Known to occur
Northern goshawk (<i>Accipiter gentilis</i>)	TNF: S				Species is found in wide variety of forest associations including deciduous, coniferous and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9,120 feet amsl.	Occurs throughout Arizona	Unlikely to occur
Clark's grebe (<i>Aechmophorus clarkia</i>)	TNF: SCC				Requires large, deep bodies of water for fishing	Occurs in Mohave and La Paz Counties	Unlikely to occur
Western grebe (<i>Aechmophorus</i> <i>occidentalis</i>)	TNF: SCC				Requires large, deep bodies of water for fishing	Occurs in Coconino, Yavapai, Maricopa, Pinal, and Pima Counties	Unlikely to occur
Golden eagle (<i>Aquila</i> <i>chrysaetos</i>)	BGEPA: Yes	Superstition Mountains: Hewitt Ridge (2014)			Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl	Occurs throughout Arizona	Known to occur
Red-faced warbler (<i>Cardellina rubrifrons</i>)	TNF: SCC				Summer resident only; occurs in montane fir, pine and pine-oak woodlands	Occurs in southeastern Arizona and along the Mogollon Rim	Unlikely to occur
American dipper (<i>Cinclus</i> <i>mexicanus</i>)	TNF: SCC				Requires fast flowing streams in high elevation forests	Occurs in northern and eastern Arizona	Unlikely to occur
Western yellow-billed cuckoo (DPS) (<i>Coccyzus</i> <i>americanus</i>)	ESA: T (all Arizona counties) TNF: S	Dripping Springs Mountains: vicinity of Government Mountain (2011), Dripping Springs Mountains: Devils Canyon (2011), Queen Creek: Whitlow Dam (2000)			Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection.	Occurs throughout Arizona	Known to occur
Gilded flicker (<i>Colaptes</i> <i>chrysooides</i>)	TNF: SCC				Habitat includes stands of large saguaros, Joshua tree and low elevation riparian groves	Occurs in southern, central, and western Arizona	Possible to occur
Olive-sided flycatcher (<i>Contopus cooperi</i>)	TNF: SCC				Species is only present in summer; breeding habitat includes mixed-conifer forests near open areas with lots of snags; in migration can be found in almost any habitat	Occurs throughout Arizona	Possible to occur

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Silver King Analysis Area
Broad-billed hummingbird (<i>Cynathus latirostris</i>)	TNF: SCC				Preferred habitat is rocky canyons in desert-like mountain habitats, can be found in foothills, canyons, arroyos, along streams and in deserts	Occurs in southeast and central Arizona	Possible to occur
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	ESA: E (all counties except Navajo County)	Robles Butte: Queen Creek (2005)			Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (<i>Populus</i> spp.), willow (<i>Salix</i> spp.), boxelder (<i>Acer negundo</i>), saltcedar (<i>Tamarix</i> spp.), Russian olive (<i>Elaeagnus angustifolia</i>), buttonbush (<i>Cephalanthus</i> spp.), and arrowweed (<i>Pluchea sericea</i>) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl.	Occurs in riparian areas in Arizona, only during breeding season	Known to occur
American peregrine falcon (<i>Falco peregrinus anatum</i>)	TNF: S	Oak Flat (2015)	Silver King (WestLand 2018)		Species is found near cliffs overlooking habitats that support large numbers of birds; range in elevations from 400–9,000 feet amsl	Occurs throughout Arizona	Known to occur
MacGillivray's warbler (<i>Geothlypis tolmiei</i>)	TNF: SCC				Preferred habitat during breeding season includes mixed-coniferous forests with riparian areas that have low shrubs; in migration species can be found in a variety of habitats	Occurs throughout Arizona during migration, present during breeding season in high elevation streams	Possible to occur
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BGEPA: Yes				Habitat components include large bodies of water with lots of coastline and tall perches above water to allow for hunting	Occurs in central and northern Arizona	Unlikely to occur
Yellow-eyed junco (<i>Junco phaeonotus</i>)	TNF: S, SCC				Habitat consists of open coniferous forest and pine-oak associations	Occurs in central and southeastern Arizona	Unlikely to occur
Lewis's woodpecker (<i>Melanerpes lewis</i>)	TNF: SCC				Breeding habitat includes open forests and woodlands that include oaks, ponderosa pine, riparian woodlands and orchards	Occurs throughout Arizona	Unlikely to occur
Elf owl (<i>Micrathene whitneyi</i>)	TNF: SCC				Species is present during breeding season only, found in desert-woodland washes, riparian forests, upland deserts, evergreen woodlands and canyon riparian forests	Occurs in the southern half of Arizona	Possible to occur
Sulphur-bellied flycatcher (<i>Myiodynastes luteiventris</i>)	TNF: S, SCC				Preferred habitat includes sycamore-walnut canyons; species only present during breeding season	Occurs in southeast and central Arizona	Unlikely to occur
Desert purple martin (<i>Progne subis hesperia</i>)	TNF: SCC				Habitat consists of Sonoran Desert with many large saguaros proximal to water	Occurs in southern and central Arizona	Possible to occur
Yuma Ridgeway's rail (<i>Rallus longirostris yumanensis</i>)	ESA: E (Gila, La Paz, Maricopa, Mohave, Pinal, and Yuma Counties)				In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (<i>Typha</i> spp.), bulrushes (<i>Isolepis</i> spp.), and sedges (<i>Carex</i> spp.).	Occurs in western and central Arizona.	Unlikely to occur
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	ESA: T (All Counties except La Paz and Yuma Counties)				Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine (<i>Pinus ponderosa</i>)–Gambel oak (<i>Quercus gambelii</i>). Nests in live trees on natural platforms (e.g., dwarf mistletoe [<i>Arceuthobium</i> spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Occurs throughout Arizona, except La Paz and Yuma counties	Unlikely to occur
Pacific wren (<i>Troglodytes pacificus</i>)	TNF: SCC				Breeding habitat includes dark moist areas in canyons draining the Mogollon Rim, typically in mixed coniferous forests with lots of flowing water	Occurs along the Mogollon Rim	Unlikely to occur
Gila longfin dace (<i>Agosia chrysogaster</i>)	TNF: SCC	Mineral Creek (2010)			Habitat varies from intermittent hot low-desert stream to clear, cool streams at higher elevations; prefers medium to small sized streams with sandy/gravelly bottoms and pools with some cover. Species is normally found below 4,900 feet amsl	Occurs in central, southern, and southeastern Arizona	Known to occur

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Silver King Analysis Area
Desert sucker (<i>Catostomus clarki</i>)	TNF: S				Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl	Occurs in central, southern, and southeastern Arizona	Unlikely to occur
Sonora sucker (<i>Catostomus insignis</i>)	TNF: S				Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl	Occurs in central, southern, and southeastern Arizona	Unlikely to occur
Desert pupfish (<i>Cyprinodon macularius</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties)	Queen Creek (2003)			Found in shallow waters of springs, marshes and small streams, prefers soft substrates and clear water; elevational range of 1,200–3,450 feet amsl	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties	Known to occur
Gila chub (<i>Gila intermedia</i>)	ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties)				Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations below 2,720 and 5,420 feet amsl.	Occurs in Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties	Unlikely to occur
Headwater chub (<i>Gila nigra</i>)	TNF: S				Species is found in the middle to headwater reaches of medium-sized streams with large pools and cover; elevational range of 925-2,000 feet amsl	Occurs in Gila, Graham, and Yavapai Counties	Unlikely to occur
Roundtail chub (<i>Gila robusta</i>)	TNF: S				Species prefers cool to warm water in mid-elevation streams and rivers with pools up to 6.6 feet deep near flowing water. Cover consists of boulders, tree roots, deep water and submerged vegetation. Elevational range of 1,210–7,220 feet amsl	Occurs in Apache, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pinal, and Yavapai Counties	Unlikely to occur
Spikedace (<i>Meda fulgida</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties)				Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl.	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties	Unlikely to occur
Gila topminnow (incl. Yaqui) (<i>Poeciliopsis occidentalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties)	Boyce Thompson Arboretum (2003)			Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover.	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties	Known to occur
Colorado pikeminnow (non-essential experimental) (<i>Ptychocheilus lucius</i>)	ESA: E, ENE (Gila, Maricopa, and Yavapai Counties)				Juveniles prefer slackwater, backwater and side channels with little or no flow and silty substrates; adults utilize turbid, deep and fast flowing waters. Species was reintroduced at an elevation of 1,960 feet amsl.	Occurs in Gila, Maricopa, and Yavapai Counties	Unlikely to occur
Loach minnow (<i>Tiaroga cobitis</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties)				Found in small to large perennial creeks and rivers, typically in shallow, turbulent riffles with cobble substrate, swift currents, and filamentous algae at elevations below 8,000 feet amsl	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties	Unlikely to occur
Razorback sucker (<i>Xyrauchen texanus</i>)	ESA: E (Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties)				Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl.	Occurs in Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties	Unlikely to occur
Netwing midge (<i>Agathon arizonicus</i>)	TNF: S				Confined to areas in the immediate vicinity of rapidly flowing streams	Occurs in Gila County, Arizona	Unlikely to occur

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Silver King Analysis Area
Parker's cillopeus riffle beetle (<i>Cylloepus parkeri</i>)	TNF: S, SCC				Habitat consists of small, rocky streams	Occurs in Yavapai County, Arizona	Unlikely to occur
Monarch butterfly (<i>Danaus plexippus</i> pop. 1)	TNF: SCC				Species present during spring and summer, rarely during winter at varying elevations around the state; prefers riparian habitats with milkweeds present	Occurs throughout Arizona	Possible to occur
A mayfly (<i>Fallceon eatoni</i>)	TNF: S					Occurs in Gila County, Arizona	Unlikely to occur
Fossil springsnail (<i>Pyrgulopsis simplex</i>)	TNF: S, SCC				Habitat is only present at headsprings and upper section of the outflow, generally found on rocks or aquatic macrophytes in moderate current	Occurs in Gila and Yavapai Counties, Arizona	Unlikely to occur
Phoenix talussnail (<i>Sonorella allynsmithi</i>)	TNF: SCC				Species prefers talus slopes in middle elevation areas of the Sonoran Desert	Occurs in Maricopa County, Arizona	Unlikely to occur
A caddisfly (<i>Wormaldia planae</i>)	TNF: S					Occurs in Gila and Yavapai Counties	Unlikely to occur
Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>)	ESA: ENE (La Paz, Maricopa, Pima, Pinal, Santa Cruz and Yuma Counties)				Found in Sonoran desertscrub within broad, intermountain, alluvial valleys with creosote (<i>Larrea tridentata</i>)–bursage (<i>Ambrosia</i> spp.) and palo verde–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl.	Occurs in southwestern Arizona.	Unlikely to occur
Mexican gray wolf (<i>Canis lupis baileyi</i>)	ESA: E (Apache and Greenlee Counties) TNF: ENE				Vegetation type not important, species mostly needs sufficient prey such as deer and elk. Reintroduction areas are typically rugged lands in coniferous forest. Elevational range of 3,000– 12,000 feet amsl.	Occurs in Apache and Greenlee counties, reintroductions are occurring in Apache County. All packs are currently located on the Apache-Sitgreaves National Forest (AGFD 2018).	Unlikely to occur
Pale Townsend's big-eared bat (<i>Corynorhinus townsendii pallescens</i>)	TNF: S				In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes and mines in higher elevations than summer	Occurs throughout Arizona	Possible to occur
Spotted bat (<i>Euderma maculatum</i>)	TNF: S				Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl	Occurs throughout Arizona	Possible to occur
Allen's lappet-browed or big-eared Bat (<i>Idionycteris phyllostis</i>)	TNF: S, SCC				Found in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas with cottonwoods, sycamores and willows, also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl	Occurs south central to southern and southeastern Arizona	Unlikely to occur
Western red bat (<i>Lasiurus blossevillii</i>)	TNF: S, SCC	Queen Creek: Whitlow Dam (1965)			Habitat consists of riparian and wooded areas, typically roosts in cottonwood trees; elevational range of 1,900–7,200 feet amsl	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties	Known to occur
Western yellow bat (<i>Lasiurus xanthinus</i>)*	*Added per request from Arizona Game and Fish Department				Species may be associated with palm trees, sycamores hackberries and cottonwoods; elevational range of 550–6,000 feet amsl.	Occurs throughout Arizona, historically found near Phoenix and Casa Grande	Unlikely to occur
Ocelot (<i>Leopardus [Felis] pardalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties)	Devil's canyon (2011)			In Arizona, this species has typically been observed in subtropical thorn forest, thornscrub, and dense, brushy thickets at elevations below 8,000 feet amsl and is often found in riparian bottomlands. The critical habitat component is probably dense cover near the ground and complete avoidance of open country.	Occurs in Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yavapai, and Yuma Counties	Possible to occur
California leaf-nosed bat (<i>Macrotus californicus</i>)	TNF: SCC				Species prefers Sonoran desertscrub, roosts in mines, caves and rockshelters that have large areas of ceiling and flying space; elevational range of 160–3,980 feet amsl	Occurs south of the Mogollon Plateau and in Mohave County	Possible to occur

Common Name (<i>Scientific Name</i>)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Silver King Analysis Area
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)*	*Added per request from Arizona Game and Fish Department	Picketpost Mountain: Pott's Canyon (2017)			Species prefers the Lower and Upper Sonoran life zones; elevational range of 450–8,475 feet amsl.	Occurs throughout the state during summer, only southern half of state during winter	Known to occur
Sonoran Desert tortoise (<i>Gopherus morafkai</i>)	TNF: S	Cottonwood Canyon (2007), Arnett Creek (2017), Telegraph Canyon (1990), Belmont Canyon (1990), Picketpost Mountain (1990), Raymert Wash (1990), Queen Creek (2016), Whitlow Ranch (2014), Whitlow Canyon (2014), Hewitt Canyon (2016)			Habitat includes Mojave desert scrub to semi-desert grassland and interior chaparral; elevational range of 510–5,300 feet amsl	Occurs in the southern and southwest part of Arizona	Known to occur
Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)	ESA: T (All AZ counties except Maricopa and Yuma)TNF: S				Species prefers cienegas, streams, and rivers in habitats ranging from upland Sonoran desertscrub to montane coniferous forests; elevational range of 1,000–6,700 feet amsl	Occurs throughout Arizona except Maricopa and Yuma Counties	Unlikely to occur
Narrow-headed Gartersnake (<i>Thamnophis rufipunctatus</i>)	ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo and Yavapai Counties)TNF: S				Species prefers pinyon-juniper and pine-oak woodlands, ranging into ponderosa pine at elevations between 2,440–8,080 feet amsl; species needs permanent water source	Occurs in Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties	Unlikely to occur
Bezy's night lizard (<i>Xantusia bezyi</i>)	TNF: S, SCC	Queen Creek Canyon (2008)			Species prefers rocky slopes in upland Sonoran desertscrub and chaparral vegetation types; elevational range of 2,400–5,800 feet amsl	Occurs in Gila, Pinal and Maricopa Counties	Known to occur

Tonto National Forest (TNF):

S = Sensitive. Species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. significant current or predicted downward trends in population number or density. B. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

SCC³ = Species of Conservation Concern. A plant or animal for which we have concerns about its ability to remain on a landscape for a long time.

Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

ENE = Reintroduced populations designated as Experimental – Nonessential, under ESA.

Bald and Golden Eagle Protection Act (BGEPA):

A United States Federal statute that protects two species of eagle

³ Note that Species of Conservation Concern is not considered a valid designation at this time and will not be until the revision of the Tonto Forest Plan is complete. This designation does not appear in the EIS and were included at the request of the cooperating agencies and categorized as other species of interest in the draft EIS.

Table A3. Special Status Wildlife Species Analyzed for the Alternative 5: Peg Leg

Unless otherwise noted, range or habitat information is from the following sources: HDMS (2012); USFWS Arizona Ecological Services Field Office (USFWS 2012a); NatureServe (NatureServe 2017); Tonto National Forest Threatened, Endangered and Sensitive (TES) Species Abstracts (2000); Tonto National Forest Final Assessment (2017); NatureServe (NatureServe 2017)

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Occurrence Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Peg Leg Analysis Area
Arizona toad (<i>Anaxyrus microscaphus</i>)	BLM: S				Species prefers rocky stream and canyons in pine-oak associations and in lower deserts. Elevation ranges from sea level to 8,000 feet amsl	Occurs in Apache, Coconino, Gila, Graham, La Paz, Maricopa, Mohave, Navajo, and Yavapai Counties	Unlikely to occur
Sonoran green toad (<i>Anaxyrus retiformis</i>)	BLM: S				Species is found in rain pools, wash bottoms and areas near water in semi-arid mesquite-grassland, creosote desert and upland saguaro-paloverde desert; elevational range of 500–3,225 feet amsl	Found in south-central Arizona, from Organ Pipe Cactus National Monument to 9 miles north of Pima/Pinal county line in Santa Rosa Valley	Unlikely to occur
Western barking frog (<i>Craugastor augusti cactorum</i>)	TNF: S BLM: S				Species prefers outcrops or cave on rocky slopes in oak/pine-oak associations; elevational range of 4,200–6,200 feet amsl	Occurs in rocky outcrops in Cochise and southern Pima and Santa Cruz Counties, in the Quinlan, Santa Rita, Patagonia, Huachuca, and Pajarito mountain ranges	Unlikely to occur
Great Plains narrow-mouthed toad (<i>Gastrophryne olivacea</i>)	BLM: S				Found in mesquite semi-desert grassland to oak woodland near streams, springs and rain pools; elevational range of sea level to 4,100 feet amsl	Found from Santa Cruz County north to Maricopa County and west to near Ajo in Pima County	Unlikely to occur
Plains leopard frog (<i>Lithobates blairi</i>)	BLM: S				Found near stream, ponds, reservoirs, marshes or irrigation ditches in prairies and desert grasslands; elevational range of 4,060–5,880 feet amsl	Isolated population located on the western side of the Chiricahua Mountains, Cochise County, Arizona	Unlikely to occur
Chiricahua leopard frog (<i>Lithobates chiricahuensis</i>)	ESA: T (All AZ counties except La Paz, Mohave, Pinal, and Yuma Counties) BLM: S				Species is known from mid-elevation wetland communities such as tanks, lakes, reservoirs, streams, and rivers; often surrounded by an arid environment. Elevational range of 3,281–8,890 feet amsl	Occurs along the Mogollon Rim and in mountainous areas of southeastern Arizona	Unlikely to occur
Northern leopard frog (<i>Lithobates pipiens</i>)	TNF: S BLM: S				Range of habitats that includes grasslands, brush land, and forests, usually in permanent water; elevational range of 2,640–9,155 feet amsl	Found in northern and central Arizona	Unlikely to occur
Lowland leopard frog (<i>Lithobates yavapaiensis</i>)	TNF: S, SCC BLM: S				Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and man-made	Occurs in central and southeastern Arizona	Known to occur

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Occurrence Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Peg Leg Analysis Area
Northern goshawk (<i>Accipiter gentilis</i>)	TNF: S BLM: S				Species is found in wide variety of forest associations including deciduous, coniferous and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9120 feet amsl	Occurs throughout Arizona	Unlikely to occur
Clark's grebe (<i>Aechmophorus clarkia</i>)	TNF: SCC BLM: S				Requires large, deep bodies of water for fishing	Occurs in Mohave and La Paz Counties during summer, found on large lakes throughout Arizona in winter	Unlikely to occur
Western grebe (<i>Aechmophorus occidentalis</i>)	TNF: SCC				Requires large, deep bodies of water for fishing	Occurs in Coconino, Yavapai, Maricopa, Pinal, and Pima Counties	Unlikely to occur
Arizona grasshopper sparrow (<i>Ammodramus savannarum ammolegus</i>)	BLM: S				Species preferred habitat is open grasslands with some shrubs between 3,800–5,300 feet amsl	Occurs in southeastern and southern Arizona	Unlikely to occur
Golden eagle (<i>Aquila chrysaetos</i>)	BLM: S BGEPA: Yes			Dripping Springs Mountains: Walnut Canyon (2016), Superstition Mountains: Hewitt Ridge (2014)	Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl	Occurs throughout Arizona	Known to occur
Western burrowing owl (<i>Athene cunicularia hypugaea</i>)	BLM: S				Species is found in open, dry grasslands, deserts, and agricultural lands; elevation ranges from 650–6,140 feet amsl	Occurs in southern and southeastern Arizona	Possible to occur
Ferruginous hawk (<i>Buteo regalis</i>)	BLM: S				Species is found in open grasslands, scrublands, and woodlands in winter; ranges in elevation from 3,500 to 6,000 feet amsl	Occurs throughout Arizona	Possible to occur
Red-faced warbler (<i>Cardellina rubrifrons</i>)	TNF: SCC BLM: S				Summer resident only; occurs in montane fir, pine and pine-oak woodlands	Occurs in southeastern Arizona	Unlikely to occur
American dipper (<i>Cinclus mexicanus</i>)	TNF: SCC				Requires fast flowing streams in high elevation forests	Occurs in northern and eastern Arizona	Unlikely to occur
Western yellow-billed cuckoo (DPS) (<i>Coccyzus americanus</i>)	ESA: T (all AZ counties) TNF: S BLM: S			Gila River: Indian Camp Wash (1999), Gila River: Kearny (2003), Gila River: southwest of North Butte (1993), Dripping Springs Mountains: vicinity of Government Mountain (2011), Dripping Springs Mountains: Devil's Canyon (2011), Queen Creek: Whitlow Ranch Dam (2000)	Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection	Occurs throughout Arizona	Known to occur
Gilded flicker (<i>Colaptes chrysoides</i>)	TNF: SCC BLM: S				Habitat includes stands of large saguaros, Joshua tree and low elevation riparian groves	Occurs in southern, central, and western Arizona	Possible to occur
Olive-sided flycatcher (<i>Contopus cooperi</i>)	TNF: SCC				Species is only present in summer; breeding habitat includes mixed-conifer forests near open areas with lots of snags; in migration can be found in almost any habitat	Occurs throughout Arizona	Possible to occur
Broad-billed hummingbird (<i>Cynathus latirostris</i>)	TNF: SCC BLM: S				Preferred habitat is rocky canyons in desert-like mountain habitats, can be found in foothills, canyons, arroyos, along streams and in deserts	Occurs in southeast and central Arizona	Possible to occur

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Occurrence Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Soils, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Peg Leg Analysis Area
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	ESA: E (all AZ counties except Navajo County) BLM: S	Dripping Springs Mountains: Gila River (2015), Tortila Mountains: Gila River near Kearny (2011, 2015), Gila River: near Box Canyon (2008), Gila River: Kelvin vicinity (2015), Gila River: east of North Butte (2010), Gila River: near Zelleweger Wash (2015), Gila River: north of Grayback Mountain (1996), Gila River: The Spine (2011), Dripping Springs Mountains: Mineral Creek (2013), Robles Butte: Queen Creek (2005)			Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (<i>Populus</i> spp.), willow (<i>Salix</i> spp.), boxelder (<i>Acer negundo</i>), saltcedar (<i>Tamarix</i> spp.), Russian olive (<i>Elaeagnus angustifolia</i>), buttonbush (<i>Cephalanthus</i> spp.), and arrowweed (<i>Pluchea sericea</i>) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl.	Occurs throughout Arizona	Known to occur
American peregrine falcon (<i>Falco peregrinus anatum</i>)	TNF: S BLM: S	Oak Flat (2015)			Species is found near cliffs overlooking habitats that support large numbers of birds; range in elevations from 400–9,000 feet amsl	Occurs throughout Arizona	Known to occur
MacGillivray's warbler (<i>Geothlypis tolmiei</i>)	TNF: SCC				Preferred habitat during breeding season includes mixed-coniferous forests with riparian areas that have low shrubs; in migration species can be found in a variety of habitats	Occurs throughout Arizona	Possible to occur
Cactus ferruginous pygmy-owl (<i>Glaucidium brasilianum cactorum</i>)	BLM: S				Species prefers streamside cottonwoods and willows near mesquite bosques; can also be found in dry washes with large mesquite, paloverde, ironwood, and saguaro	Occurs in Organ Pipe Cactus National Monument and suburban Tucson.	Unlikely to occur
California condor (<i>Gymnogyps californianus</i>)	ESA: ENE (Apache, Coconino, Mohave, Navajo and Yavapai Counties)BLM: S				Roosts and nest in steep terrain with rock outcroppings, cliffs, and caves. High perches are necessary to create the strong updrafts the bird requires to lift into flight, and open grasslands or savannahs are essential for searching for food	Occurs mostly along the Grand Canyon and Kaibab Plateau in northern Arizona	Unlikely to occur
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	BLM: S				Habitat consists of pinyon-juniper woodland, sometimes found in pine forests and in scrub oak or sagebrush areas	Occurs in northern Arizona	Unlikely to occur
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BLM: S BGEPA: Yes				Habitat components include large bodies of water with lots of coastline and tall perches above water to allow for hunting	Occurs in central and northern Arizona	Unlikely to occur
Yellow-eyed junco (<i>Junco phaeonotus</i>)	TNF: S, SCC				Habitat consists of open coniferous forest and pine-oak associations	Occurs in central and southeastern Arizona	Unlikely to occur
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	BLM: S				Habitat in Arizona consists of shallow water habitat with emergent and shoreline vegetation. Prefers areas where water levels do not fluctuate.	Occurs only in southwestern part of state along the Colorado River in Yuma County	Unlikely to occur
Lewis's woodpecker (<i>Melanerpes lewis</i>)	TNF: SCC				Breeding habitat includes open forests and woodlands that include oaks, ponderosa pine, riparian woodlands and orchards	Occurs throughout Arizona	Unlikely to occur
Elf owl (<i>Micrathene whitneyi</i>)	TNF: SCC BLM: S			eBird	Species is present during breeding season only, found in desert-woodland washes, riparian forests, upland deserts, evergreen woodlands and canyon riparian forests	Occurs in the southern half of Arizona	Known to occur

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Sulphur-bellied flycatcher (<i>Myiodynastes luteiventris</i>)	TNF: S, SCC				Preferred habitat includes sycamore-walnut canyons; species only present during breeding season	Occurs in southeast and central Arizona	Unlikely to occur
Arizona Botteri's sparrow (<i>Peucaea botterii arizonae</i>)	BLM: S				Species is found in grasslands with scattered mesquite trees	Occurs in southeastern Arizona	Unlikely to occur
Desert purple martin (<i>Progne subis hesperia</i>)	TNF: SCC BLM: S			eBird	Habitat consists of Sonoran Desert with many large saguaros proximal to water	Occurs in southern and central Arizona, only present during breeding season	Known to occur
Yuma Ridgeway's rail (<i>Rallus longirostris yumanensis</i>)	ESA: E (Gila, La Paz, Maricopa, Mohave, Pinal, and Yuma Counties) BLM: S				In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (<i>Typha</i> spp.), bulrushes (<i>Isolepis</i> spp.), and sedges (<i>Carex</i> spp.).	Occurs in western and central Arizona.	Unlikely to occur
California least tern (<i>Sternula antillarum browni</i>)	BLM: S				Habitat includes seacoasts, beaches, bays, estuaries, lagoons, lakes, and rivers	Species is rarely found in the state, one breeding record occurred in 2009 in Maricopa County but the species has not bred in the state since	Unlikely to occur
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	ESA: T (All AZ Counties except La Paz and Yuma Counties) BLM: S				Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine (<i>Pinus ponderosa</i>)– Gambel oak (<i>Quercus gambelii</i>). Nests in live trees on natural platforms (e.g., dwarf mistletoe [<i>Arceuthobium</i> spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Occurs throughout Arizona, except in La Paz and Yuma Counties	Unlikely to occur
Le Conte's thrasher (<i>Toxostoma lecontei</i>)	BLM: S				Flat, open saltbush deserts with a few scattered mesquites or creosote present	Occurs in southwestern Arizona	Unlikely to occur
Pacific wren (<i>Troglodytes pacificus</i>)	TNF: SCC				Breeding habitat includes dark moist areas in canyons draining the Mogollon Rim, typically in mixed coniferous forests with lots of flowing water	Occurs along the Mogollon Rim	Unlikely to occur
Gila longfin dace (<i>Agosia chrysogaster</i>)	TNF: SCC BLM: S				Habitat varies from intermittent hot low-desert stream to clear, cool streams at higher elevations; prefers medium to small sized streams with sandy/gravelly bottoms and pools with some cover. Species is normally found below 4,900 feet amsl	Occurs in central, southern, and southeastern Arizona	Known to occur
Desert sucker (<i>Catostomus clarki</i>)	TNF: S BLM: S				Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl	Occurs in central, southern, and southeastern Arizona	Known to occur
Bluehead sucker (<i>Castostomus discobolus</i>)	BLM: S				Species occurs in a variety of habitats from small streams to large rivers ranging from cold clear streams to warm, turbid rivers; elevational range of 2,001-6,759 feet amsl	Occurs in the Colorado River mainstem and Grand Canyon tributaries	Unlikely to occur

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Sonora sucker (<i>Catostomus insignis</i>)	TNF: S BLM: S	Gila River: Kelvin (1994), Gila River: Riverside (1994), Gila River: Cochran (2001)			Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl	Occurs in central, southern, and southeastern Arizona	Known to occur
Little Colorado sucker (<i>Catostomus</i> sp.)	BLM: S				Species prefers creeks, small to medium rivers and impoundments most often with abundant cover; elevational range of 2,200–7,100 feet amsl	Species is endemic to the upper portion of the Little Colorado River and some of its north flowing tributaries	Unlikely to occur
Desert pupfish (<i>Cyprinodon macularius</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties) BLM: S	Mineral Mountain vicinity: West of Box Canyon (1983), Queen Creek: West of Superior (2003)			Found in shallow waters of springs, marshes and small streams, prefers soft substrates and clear water; elevational range of 1,200–3,450 feet amsl	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties	Known to occur
Gila chub (<i>Gila intermedia</i>)	ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties) BLM: S	Dripping Springs Mountains: Mineral Creek (1999), Dripping Springs Mountains: Devil's Canyon (2000)			Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations between 2,720 and 5,420 feet amsl.	Occurs in Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties	Known to occur
Headwater chub (<i>Gila nigra</i>)	TNF: S BLM: S				Species is found in the middle to headwater reaches of medium- sized streams with large pools and cover; elevational range of 925- 2,000 feet amsl	Occurs in Gila, Graham, and Yavapai Counties	Unlikely to occur
Roundtail chub (<i>Gila robusta</i>)	TNF: S BLM: S				Species prefers cool to warm water in mid-elevation streams and rivers with pools up to 6.6 feet deep near flowing water. Cover consists of boulders, tree roots, deep water and submerged vegetation. Elevational range of 1,210–7,220 feet amsl	Occurs in Apache, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pinal, and Yavapai Counties	Unlikely to occur
Little Colorado spinedace (<i>Lepidomeda vittata</i>)	ESA: T (Apache, Coconino and Navajo Counties) BLM: S				Habitat consists of medium to small streams and is characteristically found in pools with water flowing over fine gravel and silt-mud substrates; elevational range of 4,000– 8,000 feet amsl	Found in East Clear Creek and its tributaries, Chevelon and Silver Creeks, and Nutrioso Creek and the Little Colorado River	Unlikely to occur
Spikedace (<i>Meda fulgida</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties) BLM: S	Gila River: Cochran (1991), Gila River: Donnelly Wash vicinity (1991)			Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl.	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties	Known to occur
Gila topminnow (incl. Yaqui) (<i>Poeciliopsis occidentalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties) BLM: S	Boyce Thompson Arboretum (2003)			Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover.	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties	Known to occur
Colorado pikeminnow (<i>Ptychocheilus lucius</i>)	ESA: E, ENE (Gila, Maricopa, and Yavapai Counties)				Juveniles prefer slackwater, backwater and side channels with little or no flow and silty substrates; adults utilize turbid, deep and fast flowing waters. Species was reintroduced at an elevation of 1,960 feet amsl.	Occurs in Gila, Maricopa, and Yavapai Counties	Unlikely to occur
Speckled dace (<i>Rhinichthys ocellus</i>)	BLM: S				Species prefers rocky areas of riffles, runs, pools, creeks, and small to medium rivers.	Occurs in the Colorado, Bill Williams and Gila River drainages	Unlikely to occur

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Loach minnow (<i>Tiaroga cobitis</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties) BLM: S				Found in small to large perennial creeks and rivers, typically in shallow, turbulent riffles with cobble substrate, swift currents, and filamentous algae at elevations below 8,000 feet amsl	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties	Unlikely to occur
Razorback sucker (<i>Xyrauchen texanus</i>)	ESA: E (Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties) BLM: S				Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl.	Occurs in Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties	Unlikely to occur
Netwing midge (<i>Agathon arizonicus</i>)	TNF: S				Confined to areas in the immediate vicinity of rapidly flowing streams	Occurs in Gila County, Arizona	Unlikely to occur
Parker's cyloepus riffle beetle (<i>Cylloepus parkeri</i>)	TNF: S, SCC				Habitat consists of small, rocky streams	Occurs in Yavapai County, Arizona	Unlikely to occur
Monarch butterfly (<i>Danaus plexippus</i> pop. 1)	TNF: SCC BLM: S				Species present during spring and summer, rarely during winter at varying elevations around the state; prefers riparian habitats with milkweeds present	Occurs throughout Arizona	Possible to occur
A mayfly (<i>Fallceon eatoni</i>)	TNF: S					Occurs in Gila County, Arizona	Unlikely to occur
Bylas springsnail (<i>Pyrgulopsis arizonae</i>)	BLM: S				Species is found in springs ranging from 26-32 degrees Celsius with submergent vegetation	Found in three springs along the Gila River between Bylas and Pima in Graham County, Arizona	Unlikely to occur
Fossil springsnail (<i>Pyrgulopsis simplex</i>)	TNF: S, SCC				Habitat is only present at headsprings and upper section of the outflow, generally found on rocks or aquatic macrophytes in moderate current	Occurs in Gila and Yavapai Counties, Arizona	Unlikely to occur
Phoenix talussnail (<i>Sonorella allynsmithi</i>)	TNF: SCC BLM: S				Species prefers talus slopes in middle elevation areas of the Sonoran Desert	Occurs in Maricopa County, Arizona	Unlikely to occur
Sonoran talussnail (<i>Sonorella magdalenensis</i>)	BLM: S				Species prefers talus slopes of coarse broken rock; elevational range of 2,750–6,000 feet amsl	Occurs in Pima and Santa Cruz Counties, Arizona	Unlikely to occur
Arizona cave amphipod (<i>Stygobromus arizonensis</i>)	BLM: S				Species prefers aquatic habitat in subterranean caves and mines; found at elevations of 5,245 feet amsl	Found only at two locations in Cochise County, Arizona	Unlikely to occur
Gila tryonia (<i>Tryonia gilae</i>)	BLM: S				Species is found in mildly thermal springs with submergent vegetation; elevational range of 2,600–2,800 feet amsl	Found in an unnamed spring north of Bylas, also in Cold Springs and Porter Wash in Graham County, Arizona	Unlikely to occur
A caddisfly (<i>Wormaldia plana</i>)	TNF: S				Species is found in or somewhat near riparian areas, adults tend to disperse farther from emergent sites if surrounding habitat is less dense	Occurs in Gila and Yavapai Counties, recently found in Line Fossil Creek, Fossil Creek, Beaver Creek, below the outlet of Montezuma Well, and an unnamed stream at Ward Ranch	Unlikely to occur
Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>)	ESA: ENE (La Paz, Maricopa, Pima, Pinal, Santa Cruz and Yuma Counties) BLM: S				Found in Sonoran desertscrub within broad, intermountain, alluvial valleys with creosote (<i>Larrea tridentata</i>)–bursage (<i>Ambrosia</i> spp.) and palo verde–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl.	Occurs in southwestern Arizona	Unlikely to occur

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Mexican gray wolf (<i>Canis lupis baileyi</i>)	ESA: E (Apache and Greenlee Counties) TNF: ENE BLM: S				Vegetation type not important, species mostly needs sufficient prey such as deer and elk. Reintroduction areas are typically rugged lands in coniferous forest. Elevational range of 3,000–12,000 feet amsl	Occurs in Apache and Greenlee counties, reintroductions are occurring in Apache County. All packs are currently located on the Apache-Sitgreaves National Forest (AGFD 2018).	Unlikely to occur
Mexican long-tongued bat (<i>Choeronycteris mexicana</i>)	BLM: S				Habitat includes mesic areas in canyons of mixed oak-conifer forests in mountains rising from the desert. Roosts in daytime in caves, abandoned mines, and rockshelters; occasionally in palo verde-saguaro areas. Typically at elevations of 2,540–7,320 feet amsl	Occurs in southeast Arizona from the Chiricahua Mountains west to the Baboquivari Mountains and as far north as the Santa Catalina Mountains. HDMS unpublished records from Pinal, Pima, Graham, Santa Cruz and Cochise Counties	Unlikely to occur
Pale Townsend's big-eared bat (<i>Corynorhinus townsendii pallescens</i>)	TNF: S BLM: S				In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes and mines in higher elevations than summer	Occurs throughout Arizona	Possible to occur
Gunnison's prairie dog (<i>Cynomys gunnisoni</i>)	BLM: S				Species prefers high mountain valleys and plateaus; elevational range of 6,000–12,000 feet amsl	Occurs in central and eastern Arizona	Unlikely to occur
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	BLM: S				Habitat is dry, flat, open plains and desert grasslands; elevational range of 2,300–7,200 feet amsl	Occurs in southeast Arizona where they are reintroduced to the Las Cienegas National Conservation Area	Unlikely to occur
Banner-tailed kangaroo rat (<i>Dipodomys spectabilis</i>)	BLM: S				Habitat is Great Basin desertscrub, desert grasslands with mesquite, junipers or shrubs; elevational range of 3,500–4,000 feet amsl	Occurs in Apache County	Unlikely to occur
Spotted bat (<i>Euderma maculatum</i>)	TNF: S BLM: S				Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl	Occurs in Yuma and Maricopa County, and eastern Arizona	Unlikely to occur
Greater western mastiff bat (<i>Eumops perotis californicus</i>)	BLM: S				Species prefers lower and upper Sonoran desertscrub near cliffs with lots of crevices; elevational range of 240–8,475 feet amsl	Occurs throughout Arizona	Possible to occur
Allen's lappet-browed or big-eared bat (<i>Idionycteris phyllotis</i>)	TNF: S, SCC BLM: S				Found in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas with cottonwoods, sycamores and willows, also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl	Occurs throughout Arizona except for deserts in southwestern Arizona	Unlikely to occur
Western red bat (<i>Lasiurus blossevillii</i>)	TNF: S, SCC				Habitat consists of riparian and wooded areas, typically roosts in cottonwood trees; elevational range of 1,900–7,200 feet amsl.	Occurs from south-central to southern and southeastern Arizona	Possible to occur
Western yellow bat (<i>Lasiurus xanthinus</i>)*	*Added per request from Arizona Game and Fish Department				Species may be associated with palm trees, sycamores hackberries and cottonwoods; elevational range of 550–6,000 feet amsl.	Occurs throughout Arizona, historically found near Phoenix and Casa Grande	Unlikely to occur
Ocelot (<i>Leopardus pardalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties) BLM: S	Devil's Canyon (2011)			In Arizona, this species has typically been observed in subtropical thorn forest, thornscrub, and dense, brushy thickets at elevations below 8,000 feet amsl and is often found in riparian bottomlands. The critical habitat component is probably dense cover near the ground and complete avoidance of open country	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties	Possible to occur
Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>)	BLM: S				Habitat consists of desert grasslands and shrublands in elevations ranging from 1,190–7,320 feet amsl; present only in summer	Occurs in Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yavapai, and Yuma Counties	Possible to occur
California leaf-nosed bat (<i>Macrotus californicus</i>)	TNF: SCC BLM: S	Tortilla Mountains: Gila River (2000), Dripping Springs Mountains: Mineral Creek (1999)			Species prefers Sonoran desertscrub, roosts in mines, caves and rockshelters that have large areas of ceiling and flying space; elevational range of 160–3,980 feet amsl	Occurs south of the Mogollon Plateau and in Mohave County	Known to occur

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Arizona myotis (<i>Myotis occultus</i>)	BLM: S				Found in ponderosa pine and oak-pine woodlands near water, can also be found in riparian forests along the lower Colorado and Verde rivers; elevational ranges of 150–1,000 feet (lower Colorado River) and 3,200–8,620 feet amsl	Occurs in central and eastern Arizona	Unlikely to occur
Cave myotis (<i>Myotis velifer</i>)	BLM: S	Dripping Springs Mountains: Mineral Creek (2001)			Habitat consist of creosote, brittlebush, palo verde and cacti; roosts in caves, tunnels, mineshafts, under bridges and sometimes in buildings. Elevational range of 300–5,000 feet amsl	Occurs south of the Mogollon Plateau	Known to occur
Jaguar (<i>Panthera onca</i>)	ESA: E (Cochise, Pima and Santa Cruz Counties)BLM: S				Variety of habitats, prefers lowland wet habitats but also occurs in drier habitats such as oak-pine woodlands; elevational range of sightings in Arizona were from 5,200–5,700 feet amsl	Occurs in Cochise, Pima, and Santa Cruz Counties	Unlikely to Occur.
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)*	*Added per request from Arizona Game and Fish Department	Picketpost Mountain: Pott's Canyon (2017)			Species prefers the Lower and Upper Sonoran life zones; elevational range of 450–8,475 feet amsl	Occurs throughout the state during summer, only southern half of state during winter	Known to occur
Arizona striped whiptail (<i>Aspidoscelis arizonae</i>)	BLM: S				Species prefers Semi-desert Grasslands in low valleys and sandy flats	Species only occurs near Willcox, Cochise County, Arizona and in Whitlock Valley, Graham County, Arizona	Unlikely to occur
New Mexico ridge-nosed rattlesnake (<i>Crotalus willardi obscurus</i>)	ESA: T (Cochise County) BLM: S				Habitat includes rocks, bunchgrass and leaf litter in steep rocky canyons in the pine-oak and pine-fir belts at elevations of 5,600–9,000 feet amsl	Occurs only in the Pelloncillo Mountains of Cochise County	Unlikely to occur
Sonoran Desert tortoise (<i>Gopherus morafkai</i>)	TNF: S BLM: S	Gila River: southeast of Kearny (1995), Tortilla Mountains (2011, 2014), South Butte: south of the Gila River (1990), North of Gila River: east of Dozer Hill (1997), Walnut Canyon (1994), northeast of Florence: south of Mineral Mountain (2015), Black Hill vicinity (1984), Cottonwood Canyon (2007), Arnett Creek (2017), Telegraph Canyon (1990), Belmont Canyon (1990), Picketpost Mountain (1990), Raymert Wash (1990), Queen Creek (2016), Whitlow Ranch (2014), Whitlow Canyon (2014), Hewitt Canyon (2016)	Yes- remains		Habitat includes Mojave desert scrub to semidesert grassland and interior chaparral; elevational range of 510–5,300 feet amsl	Occurs in the southern and southwest part of Arizona	Known to occur
Sonora mud turtle (<i>Kinosternon sonoriense sonoriense</i>)	BLM: S				Species prefers springs, creeks and ponds of intermittent streams	Found in the Gila River drainage of central and southeast Arizona; Quitobaquito Spring; Laguna Dam area; and Big Sandy-Burro River drainages	Unlikely to occur

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Slevin's bunchgrass lizard (<i>Sceloporus slevini</i>)	BLM: S				Species prefers coniferous forests around bunchgrass in open sunny areas; elevational range of 4,300–9,480 feet amsl	Found only in the mountains of extreme southeast Arizona	Unlikely to occur
Desert massasauga (<i>Sistrurus catenatus edwardsii</i>)	BLM: S				Species prefers tobosa grasslands in sloping bajadas with surface rocks; elevational range of 4,400–4,700 feet amsl	Occurs in extreme southeastern Arizona in San Bernardino and Sulphur springs valley	Unlikely to occur
Desert ornate box turtle (<i>Terrapene ornata</i>)	BLM: S	Gila River: Town of Keamy (2003)			Species prefers grasslands but is also occasionally found in desertscrub; elevational range of 2,000–7,100 feet amsl	Occurs in the southeast corner of the state from Winkelman to the Huachuca Mountains	Known to occur
Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)	ESA: T (All Counties Except Maricopa and Yuma Counties) TNF: BLM: S				Species prefers cienegas, streams and rivers in habitats ranging from upland Sonoran desertscrub to montane coniferous forests; elevational range of 1,000–6,700 feet amsl	Occurs throughout Arizona except Maricopa and Yuma Counties	Unlikely to occur
Narrow-headed gartersnake (<i>Thamnophis rufipunctatus</i>)	ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties) TNF: S BLM: S				Species prefers pinyon-juniper and pine-oak woodlands, ranging into ponderosa pine at elevations between 2,440–8,080 feet amsl; species needs permanent water source	Occurs in Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties	Unlikely to occur
Bezy's night lizard (<i>Xantusia bezyi</i>)	TNF: S, SCC				Species prefers rocky slopes in upland Sonoran desertscrub and chaparral vegetation types; elevational range of 2,400– 5,800 feet amsl.	Occurs in Gila, Pinal and Maricopa Counties	Possible to occur

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Endangered Species Act (ESA):

E = Endangered. Endangered species are those in imminent jeopardy of extinction. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = Threatened. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

ENE = Reintroduced populations designated as Experimental – Nonessential, under ESA.

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SCC⁴ = Species of Conservation Concern. A plant or animal for which we have concerns about its ability to remain on a landscape for a long time.

Bureau of Land Management (BLM):

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Bald and Golden Eagle Protection Act (BGEPA):

A United States Federal statute that protects two species of eagle.

⁴ Note that Species of Conservation Concern is not considered a valid designation at this time and will not be until the revision of the Tonto Forest Plan is complete. This designation does not appear in the EIS and were included at the request of the cooperating agencies and categorized as other species of interest in the draft EIS.

Table A4. Special Status Wildlife Species Analyzed for the Alternative 6: Skunk Camp

Unless otherwise noted, range or habitat information is from the following sources: HDMS (2012); USFWS Arizona Ecological Services Field Office (USFWS 2012a); Tonto National Forest Threatened, Endangered and Sensitive (TES) Species Abstracts (2000); Tonto National Forest Final Assessment (2017); NatureServe (NatureServe 2017);

Common Name (Scientific Name)	Status*	HDMS Records within 5 miles	Baseline Data Records	Other Occurrence Records (eBird, SWCA or TNF Site Visits)	Habitat Components (Elevation, Vegetation Association, Slope, Aspect, etc.)	Geographical Range in Arizona	Likelihood of Occurrence in Skunk Camp Analysis Area
Western barking frog (<i>Craugastor augusti</i> <i>cactorum</i>)	TNF: S				Species prefers outcrops or cave on rocky slopes in oak/pine-oak associations; elevational range of 4,200–6,200 feet amsl	Occurs in rocky outcrops in Cochise and southern Pima and Santa Cruz Counties, in the Quinlan, Santa Rita, Patagonia, Huachuca, and Pajarito mountain ranges	Unlikely to occur
Northern leopard frog (<i>Lithobates [Rana]</i> <i>pipiens</i>)	TNF: S				Range of habitats that includes grasslands, brush land, and forests, usually in permanent water; elevational range of 2,640–9,155 feet amsl	Found in northern and central Arizona	Unlikely to occur
Lowland leopard frog (<i>Lithobates</i> <i>yavapaiensis</i>)	TNF: S, SCC	Amett Creek (2010), Telegraph Canyon (2016), Rio Rancho Creek (2017), Queen Creek (1992), Pinal Mountains: west of Iron Canyon (2010), Pinal Mountains: west of El Capitan Canyon (1990), Wood Canyon (2016), Government Mountain (2017), Pinto Creek (2005)			Aquatic systems in elevations ranging from 480–6,200 feet amsl; species is found using a variety of habitats both natural and man-made	Occurs in central and southeastern Arizona	Known to occur
Chiricahua leopard frog (<i>Rana chiricahuensis</i>)	ESA: T (All AZ counties except La Paz, Mohave, Pinal, Yuma Counties)				Species is known from mid-elevation wetland communities such as tanks, lakes, reservoirs, streams, and rivers; often surrounded by an arid environment. Elevational range of 3,281-8,890 feet amsl	Occurs along the Mogollon Rim and in mountainous areas of southeastern Arizona	Unlikely to occur
Northern goshawk (<i>Accipiter gentilis</i>)	TNF: S				Species is found in wide variety of forest associations including deciduous, coniferous and mixed forests; prefers mature forests for breeding in elevations ranging from 4,750–9,120 feet amsl	Occurs throughout Arizona	Possible to occur
Clark's grebe (<i>Aechmophorus</i> <i>clarkia</i>)	TNF: SCC				Requires large, deep bodies of water for fishing	Occurs throughout the state in winter; breeding occurs in Mohave and La Paz Counties	Unlikely to occur
Western grebe (<i>Aechmophorus</i> <i>occidentalis</i>)	TNF: SCC				Requires large, deep bodies of water for fishing	Occurs throughout the state in winter; breeding occurs in Coconino, Yavapai, Maricopa, Pinal, and Pima Counties	Unlikely to occur
Golden eagle (<i>Aquila</i> <i>chrysaetos</i>)	BGEPA: Yes	Walnut Canyon (2016), Hewitt Ridge (2014)			Species prefers mountainous areas, nesting occurs at elevations between 4,000–10,000 feet amsl	Occurs throughout Arizona	Known to occur
Red-faced warbler (<i>Cardellina rubrifrons</i>)	TNF: SCC				Summer resident only; occurs in montane fir, pine and pine-oak woodlands	Occurs along the Mogollon Rim and in southeastern Arizona	Unlikely to occur
American dipper (<i>Cinclus mexicanus</i>)	TNF: SCC				Requires fast flowing streams in high elevation forests	Occurs in central and northern Arizona	Unlikely to occur
Western yellow-billed cuckoo (DPS) (<i>Coccyzus</i> <i>americanus</i>)	ESA: T (all Arizona counties) TNF: S	Dripping Spring Mountains: vicinity of Government Mountain (2011), Devil's Canyon (2011), Whittow Ranch Dam (2000)			Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection.	Occurs throughout Arizona	Known to occur
Gilded flicker (<i>Colaptes chrysoides</i>)	TNF: SCC				Habitat includes stands of large saguaros, Joshua tree and low elevation riparian groves	Occurs in southern, central, and western Arizona	Possible to occur

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Olive-sided flycatcher (<i>Contopus cooperi</i>)	TNF: SCC				Species is only present in summer, breeding habitat includes mixed-conifer forests near open areas with lots of snags; in migration can be found in almost any habitat	Occurs throughout Arizona	Possible to occur
Broad-billed hummingbird (<i>Cynathus latirostris</i>)	TNF: SCC				Preferred habitat is rocky canyons in desert-like mountain habitats, can be found in foothills, canyons, arroyos, along streams and in deserts	Occurs in southeast and central Arizona	Possible to occur
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	ESA: E (all counties except Navajo County)	Dripping Spring Mountain: vicinity of Government Mountain (2011), Devil's Canyon (2011), Queen Creek: Whitlow Ranch Dam (2000)			Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (<i>Populus</i> spp.), willow (<i>Salix</i> spp.), boxelder (<i>Acer negundo</i>), saltcedar (<i>Tamarix</i> spp.), Russian olive (<i>Elaeagnus angustifolia</i>), buttonbush (<i>Cephalanthus</i> spp.), and arrowweed (<i>Pluchea sericea</i>) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl.	Occurs throughout Arizona	Known to occur
American peregrine falcon (<i>Falco peregrinus anatum</i>)	TNF: S	Oak Flat (2015)			Species is found near cliffs overlooking habitats that support large numbers of birds; range in elevations from 400–9,000 feet amsl	Occurs throughout Arizona	Known to occur
MacGillivray's warbler (<i>Geothlypis tolmiei</i>)	TNF: SCC				Preferred habitat during breeding season includes mixed-coniferous forests with riparian areas that have low shrubs; in migration species can be found in a variety of habitats	Occurs throughout Arizona	Possible to occur
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BGEPA: Yes				Habitat components include large bodies of water with lots of coastline and tall perches above water to allow for hunting	Occurs in central and northern Arizona	Unlikely to occur
Yellow-eyed junco (<i>Junco phaeonotus</i>)	TNF: S, SCC				Habitat consists of open coniferous forest and pine-oak associations	Occurs in central and southeastern Arizona	Unlikely to occur
Lewis's woodpecker (<i>Melanerpes lewis</i>)	TNF: SCC				Breeding habitat includes open forests and woodlands that include oaks, ponderosa pine, riparian woodlands and orchards	Occurs throughout Arizona	Unlikely to occur
Elf owl (<i>Micrathene whitneyi</i>)	TNF: SCC				Species is present during breeding season only, found in desert-woodland washes, riparian forests, upland deserts, evergreen woodlands and canyon riparian forests	Occurs in the southern half of Arizona	Unlikely to occur
Sulphur-bellied flycatcher (<i>Myiodynastes luteiventris</i>)	TNF: S, SCC				Preferred habitat includes sycamore-walnut canyons; species only present during breeding season	Occurs in southeast and central Arizona	Unlikely to occur
Desert purple martin (<i>Progne subis hesperia</i>)	TNF: SCC				Habitat consists of Sonoran Desert with many large saguaros proximal to water	Occurs in southern and central Arizona	Possible to occur
Yuma Ridgeway's rail (<i>Rallus longirostris yumanensis</i>)	ESA: E (Gila, La Paz, Maricopa, Mohave, Pinal, and Yuma Counties)				In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (<i>Typha</i> spp.), bulrushes (<i>Issolepis</i> spp.), and sedges (<i>Carex</i> spp.).	Occurs in western and central Arizona.	Unlikely to occur
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	ESA: T (All AZ counties except La Paz and Yuma Counties)	Pinal Mountains: Mill Creek (2003)			Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types; generally nests in older forests of mixed conifers or ponderosa pine (<i>Pinus ponderosa</i>)–Gambel oak (<i>Quercus gambelii</i>). Nests in live trees on natural platforms (e.g., dwarf mistletoe [<i>Arceuthobium</i> spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Occurs throughout Arizona, except La Paz and Yuma Counties	Known to occur

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Pacific wren (<i>Troglodytes pacificus</i>)	TNF: SCC				Breeding habitat includes dark moist areas in canyons draining the Mogollon Rim, typically in mixed coniferous forests with lots of flowing water	Occurs along the Mogollon Rim	Unlikely to occur
Gila longfin dace (<i>Agosia chrysogaster chrysogaster*</i>)	TNF: SCC	Tortilla Mountains: Gila River (1994), Mineral Creek (1999, 2000, 2010), Government Hill: Pinto Creek (2013)			Habitat varies from intermittent hot low-desert stream to clear, cool streams at higher elevations; prefers medium to small sized streams with sandy/gravelly bottoms and pools with some cover. Species is normally found below 4,900 feet amsl	Occurs in central, southern, and southeastern Arizona	Known to occur
Desert sucker (<i>Catostomus clarki</i>)	TNF: S	Gila River: Riverside (1994), northwest of Kearny: vicinity of Ray Junction (1998), Government Hill: Pinto Creek (2005)			Species is found in flowing pools of streams and rivers with a gravel substrate; elevational range of 480–8,840 feet amsl	Occurs in central, southern, and southeastern Arizona	Known to occur
Sonora sucker (<i>Catostomus insignis</i>)	TNF: S	Gila River: Riverside (1994)			Found in a variety of habitats from warm rivers to cool streams, prefers gravelly or rocky pools in elevations ranging from 1,210–8,730 feet amsl	Occurs in central, southern, and southeastern Arizona	Known to occur
Desert pupfish (<i>Cyprinodon macularius</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties)	Queen Creek: west of Superior (2003)			Found in shallow waters of springs, marshes and small streams, prefers soft substrates and clear water; elevational range of 1,200–3,450 amsl	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, and Yavapai Counties	Known to occur
Gila chub (<i>Gila intermedia</i>)	ESA: E (Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties)	Dripping Spring Mountains: Mineral Creek (1999), Devil's Canyon (2000)			Normally found in smaller headwater streams, cienegas, and springs or marshes of the Gila River Basin at elevations below 2,720 and 5,420 feet amsl.	Occurs in Cochise, Coconino, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai Counties	Known to occur
Headwater chub (<i>Gila nigra</i>)	TNF: S				Species is found in the middle to headwater reaches of medium-sized streams with large pools and cover; elevational range of 925-2,000 feet amsl	Occurs in Gila, Graham, and Yavapai Counties	Unlikely to occur
Roundtail chub (<i>Gila robusta</i>)	TNF: S				Species prefers cool to warm water in mid-elevation streams and rivers with pools up to 6.6 feet deep near flowing water. Cover consists of boulders, tree roots, deep water and submerged vegetation. Elevational range of 1,210–7,220 feet amsl	Occurs in Apache, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pinal, and Yavapai Counties	Unlikely to occur
Spikedace (<i>Meda fulgida</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties)				Found in medium-sized to large perennial streams, where it inhabits moderate-velocity to fast waters over gravel and rubble substrates, typically at elevations below 6,000 feet amsl.	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Pinal, and Yavapai Counties	Unlikely to occur
Gila topminnow (incl. Yaqui) (<i>Poeciliopsis occidentalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties)	West of Mescal Mountains: south of Pasader Mountain (1987), Boyce Thompson Arboretum (2003)			Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover.	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties	Known to occur

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Colorado pikeminnow (non-essential experimental) (<i>Ptychocheilus Lucius</i>)	ESA: E (Gila, Maricopa, and Yavapai Counties)				Juveniles prefer slackwater, backwater and side channels with little or no flow and silty substrates; adults utilize turbid, deep and fast flowing waters. Species was reintroduced at an elevation of 1,960 feet amsl	Occurs in Gila, Maricopa, and Yavapai Counties	Unlikely to occur
Loach minnow (<i>Tiaroga cobitis</i>)	ESA: E (Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties)				Found in small to large perennial creeks and rivers, typically in shallow, turbulent riffles with cobble substrate, swift currents, and filamentous algae at elevations below 8,000 feet amsl	Occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Pinal, and Yavapai Counties	Unlikely to occur
Razorback sucker (<i>Xyrauchen texanus</i>)	ESA: E (Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties)				Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl.	Occurs in Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, and Yuma Counties	Unlikely to occur
Netwing midge (<i>Agathon arizonicus</i>)	TNF: S				Confined to areas in the immediate vicinity of rapidly flowing streams	Occurs in Gila County in Arizona	Unlikely to occur
Parker's cyloopeus riffle beetle (<i>Cyloopeus parkeri</i>)	TNF: S, SCC				Habitat consists of small, rocky streams	Occurs in Yavapai County, Arizona	Unlikely to occur
Monarch butterfly (<i>Danaus plexippus</i> pop. 1)	TNF: SCC				Species present during spring and summer, rarely during winter at varying elevations around the state; prefers riparian habitats with milkweeds present.	Occurs throughout Arizona	Possible to occur
A mayfly (<i>Fallceon eatonii</i>)	TNF: S				Aquatic areas.	Occurs in Salt River Canyon, Gila County, Arizona	Unlikely to occur
Fossil springsnail (<i>Pyrgulopsis simplex</i>)	TNF: S, SCC				Habitat is only present at headsprings and upper section of the outflow, generally found on rocks or aquatic macrophytes in moderate current	Occurs in Gila and Yavapai Counties, Arizona	Unlikely to occur
Phoenix talussnail (<i>Sonorella allynsmithi</i>)	TNF: SCC				Species prefers talus slopes in middle elevation areas of the Sonoran Desert	Occurs in Maricopa County, Arizona	Unlikely to occur
A caddisfly (<i>Wormaldia planae</i>)	TNF: S					Occurs in Gila and Yavapai Counties	Unlikely to occur
Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>)	ESA: ENE (La Paz, Maricopa, Pima, Pinal, Santa Cruz and Yuma Counties)				Found in Sonoran desertscrub within broad, intermountain, alluvial valleys with creosote (<i>Larrea tridentata</i>)–bursage (<i>Ambrosia</i> spp.) and palo verde–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl.	Occurs in southwestern Arizona.	Unlikely to occur
Mexican gray wolf (<i>Canis lupus baileyi</i>)	ESA: E (Apache and Greenlee Counties)				Vegetation type not important, species mostly needs sufficient prey such as deer and elk. Reintroduction areas are typically rugged lands in coniferous forest. Elevational range of 3,000–12,000 feet amsl	Occurs in Apache and Greenlee Counties, reintroductions are occurring in Apache County	Unlikely to occur
Pale Townsend's big-eared bat (<i>Corynorhinus townsendii pallescens</i>)	TNF: S	Dripping Spring Wash (2004)			In summer the species is found in caves and mines in elevations ranging from 550–7,520 feet amsl; in winter the species is found in cold caves, lava tubes and mines in higher elevations than summer	Occurs throughout Arizona	Known to occur

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Spotted bat (<i>Euderma maculatum</i>)	TNF: S				Habitat can vary widely from dry deserts to conifer forest, prefer to roost in crevices and cracks in cliff faces; elevational range of 110–8,670 feet amsl	Occurs in Yuma and Maricopa County, and eastern Arizona	Possible to occur
Allen's lappet-browed or big-eared bat (<i>Idionycteris phyllotis</i>)	TNF: S, SCC				Found in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas with cottonwoods, sycamores and willows, also have records from desertscrub and white fir habitats; elevational range of 1,320–9,800 feet amsl	Occurs throughout Arizona except for deserts in southwestern Arizona	Possible to occur
Western red bat (<i>Lasiurus blossevillii</i>)	TNF: S, SCC	Queen Creek: Whitlow Dam (1965), J K Mountain: Pinto Creek (2002)			Habitat consists of riparian and wooded areas, typically roosts in cottonwood trees; elevational range of 1,900–7,200 feet amsl	Occurs south central to southern and southeastern Arizona	Known to occur
Western yellow bat (<i>Lasiurus xanthinus</i>)*	*Added per request from Arizona Game and Fish Department				Species may be associated with palm trees, sycamores hackberries and cottonwoods; elevational range of 550–6,000 feet amsl.	Occurs throughout Arizona, historically found near Phoenix and Casa Grande	Unlikely to occur
Ocelot (<i>Leopardus [Felis] pardalis</i>)	ESA: E (Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties)	Devil's Canyon (2011)			In Arizona, this species has typically been observed in subtropical thorn forest, thornscrub, and dense, brushy thickets at elevations below 8,000 feet amsl and is often found in riparian bottomlands. The critical habitat component is probably dense cover near the ground and complete avoidance of open country.	Occurs in Cochise, Gila, Graham, Maricopa, Pima, Pinal, and Santa Cruz Counties	Possible to occur
California leaf-nosed bat (<i>Macrotus californicus</i>)	TNF: SCC	Tortilla Mountains: Gila River (2000), Dripping Springs Mountains: Dripping Springs Wash (2000), Dripping Springs Mountains: Dripping Spring Wash vicinity (1993), Mineral Creek (1999)			Species prefers Sonoran desertscrub, roosts in mines, caves and rockshelters that have large areas of ceiling and flying space; elevational range of 160–3,980 feet amsl	Occurs south of the Mogollon Plateau and in Mohave County	Known to occur
Jaguar (<i>Panthera onca</i>)	ESA: E (Cochise, Pima, and Santa Cruz Counties)				Variety of habitats, prefers lowland wet habitats but also occurs in drier habitats such as oak-pine woodlands; elevational range of sightings in Arizona were from 5,200–5,700 feet amsl	Occurs in Cochise, Pima, and Santa Cruz Counties	Unlikely to occur
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)*	*Added per request from Arizona Game and Fish Department	Picketpost Mountain: Pott's Canyon (2017)			Species prefers the Lower and Upper Sonoran life zones; elevational range of 450–8,475 feet amsl.	Occurs throughout the state during summer, only southern half of state during winter	Known to occur
Sonoran Desert tortoise (<i>Gopherus morafkai</i>)	TNF: S	Cottonwood Canyon (2007), Arnett Creek (2017), Telegraph Canyon (1990), Belmont Canyon (1990), Picketpost Mountain (1990), Raymert Wash (1990), Queen Creek (2016), Whitlow Ranch (2014), Whitlow Canyon (2014), Hewitt Canyon (2016), Gila River: southeast of Kearny (1995), Kane Spring Canyon (1990)			Habitat includes Mojave desert scrub to semidesert grassland and interior chaparral; elevational range of 510–5,300 feet amsl	Occurs in the southern and southwest part of Arizona	Known to occur
Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)	ESA: T (All AZ Counties except Maricopa and Yuma) TNF: S				Species prefers cienegas, streams and rivers in habitats ranging from upland Sonoran desertscrub to montane coniferous forests; elevational range of 1,000–6,700 feet amsl	Occurs throughout Arizona except Maricopa and Yuma Counties	Unlikely to occur

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Narrow-headed gartersnake (<i>Thamnophis rufipunctatus</i>)	ESA: T (Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties) TNF: S				Species prefers pinyon-juniper and pine-oak woodlands, ranging into ponderosa pine at elevations between 2,440–8,080 feet amsl; species needs permanent water source	Occurs in Apache, Coconino, Gila, Graham, Greenlee, Navajo, and Yavapai Counties	Unlikely to occur
Bezy's night lizard (<i>Xantusia bezyi</i>)	TNF: S, SCC	Queen Creek Canyon (2008)			Species prefers rocky slopes in upland Sonoran desertscrub and chaparral vegetation types; elevational range of 2,400–5,800 feet amsl	Occurs in Gila, Pinal and Maricopa Counties	Known to occur

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