Apache Leap
Special Management Area

Wildlife and Vegetation Specialist Report

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for:

Globe Ranger District
Tonto National Forest

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Introduction

The Forest Service, an agency within the United States Department of Agriculture, is preparing a management plan for the proposed Apache Leap Special Management Area (Apache Leap SMA). The purpose of the proposed special management area is to preserve the natural character of Apache Leap, to allow for traditional use of the area by tribal members, and to protect and conserve cultural and archaeological resources of the area. The following report summarizes the affected environment and effects from the no action and proposed action alternative on species listed under the Endangered Species Act (ESA), as well as Forest Service Sensitive species, migratory bird species, and Management Indicator Species. This specialist report was developed in consideration of the best available science.

Apache Leap SMA includes approximately 839 acres of land currently under federal and private ownership, and lies within the administrative boundaries of the Globe Ranger District of the Tonto National Forest in Pinal County, Arizona. Upon completion of the Southeast Arizona Land Exchange, directed as part of the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (NDAA) (Public Law [PL] 113–291) (113th Congress, 2014), the private lands would become federal lands within the Apache Leap SMA. The effects on vegetation and wildlife resources of the project area from this change in management objectives and standards are included for analysis in this report.

The general location of the proposed Apache Leap SMA is illustrated in Figure 1. The SMA is located approximately 0.5 mile southeast of the Town of Superior, in the following townships, ranges, and sections of the Gila and Salt River Baseline and Meridian:

- Township 1 South, Range 12 East, in a portion of Section 26;
- Township 1 South, Range 13 East, in a portion of Section 31; and
- Township 2 South, Range 12 East, in portions of Sections 1, 2, 11, and 12.

One non-significant Tonto National Forest Land and Resource Management Plan (forest plan) (Forest Service, 1985) amendment is proposed under the action alternative. The amendment would designate approximately 839 acres as the Apache Leap SMA within the General Management Area as a special management area, and implement corresponding management actions.

Relevant Laws, Regulations, and Policy

Regulatory Framework

Land and Resource Management Plan

Management of the National Forest System lands where the project would occur is directed by the forest plan and applicable amendments. The forest plan determines existing standards for managing vegetation and wildlife habitat. As stated in the forest plan, "the purpose of the forest plan is to provide for multiple use and sustained yield of goods and services from the Forest in a way that maximizes long-term net benefits in an environmentally sound manner" (36 CFR 219.1a) (Forest Service, 1985:1). All of the information regarding management prescriptions in the following pages is taken directly from the forest plan.

Management Prescriptions: Wildlife and Fish

Wildlife and fish habitat elements will be recognized in all resource planning and management activities to ensure coordination that provides for species diversity and greater wildlife and fish populations through improvement of habitat; ensure that fish and wildlife habitats are managed to maintain viable populations of existing native vertebrate species; improve habitat for selected species; cooperate with appropriate state fish and wildlife agencies; prevent destruction or adverse modification of critical habitats for threatened and endangered species and manage for a goal of increasing population levels that will remove them from the lists.

Desired Condition

The forest plan promotes the implementation of projects that target species diversity and greater wildlife populations through improvement of habitat. The overall goal of the forest plan is "to achieve a management situation that can respond to local or nation demands for . . . livestock production, water yield and a wide mix of recreation opportunities, including wildlife related uses. . . . The goal is to produce these outputs and opportunities on a sustained basis while maintaining air, soil, and water resources at or above minimum local, State, or Federal standards" (Forest Service, 1985:19). Additionally, the overall goal of the ESA, as administered by the U.S. Fish and Wildlife Service (USFWS), is to protect and recover imperiled species and the ecosystems upon which they depend.

Management Area

The project area occurs entirely within Management Area (MA) 2F, which is currently designated as a General Management Area. As stated in the forest plan, there are two categories of standards and guidelines:

> 1) Forest-wide standards and guidelines, and 2) management area standards and guidelines. Forest-wide standards and guidelines apply to the Forest as a whole. The management area standards and guidelines are specific either to the management area as a whole or to individual analysis areas within a management area. In some cases, there is a difference between the Forest-wide standards and guidelines and the management area standards and guidelines for a resource area and/or activity. In these cases, the management area standards and guidelines supersede the Forest-wide standards and guidelines. (Forest Service, 1985:85)

As stated in the forest plan, pertaining to MA 2F:

> Management Emphasis: Manage for a variety of renewable natural resources with primary emphasis on wildlife habitat improvement, water quality maintenance, livestock forage production, and dispersed recreation. Watersheds will be managed so as to improve them to a satisfactory or better condition. Improve or manage the included riparian areas (as defined by FSM 2526) to benefit riparian dependent resources. Wildlife fires will be managed consistent with resource objectives. (Forest Service, 1985:85)

Special Area Designations

The Apache Leap SMA was designated a special management area through the NDAA (PL 113–291) (113th Congress, 2014). The management direction in the plan is designed to protect the values for which the area was designated, and to guide limited uses compatible with the area's primary purpose.
The Apache Leap SMA management plan (Forest Service, 2017) establishes a comprehensive framework for managing the natural character of the Apache Leap SMA and its values, as specified in the NDAA (NDAA, Section 3003(g)(5)(A)). The purpose of this document is to analyze the effects of this designation on the vegetation and wildlife resources in the project area.

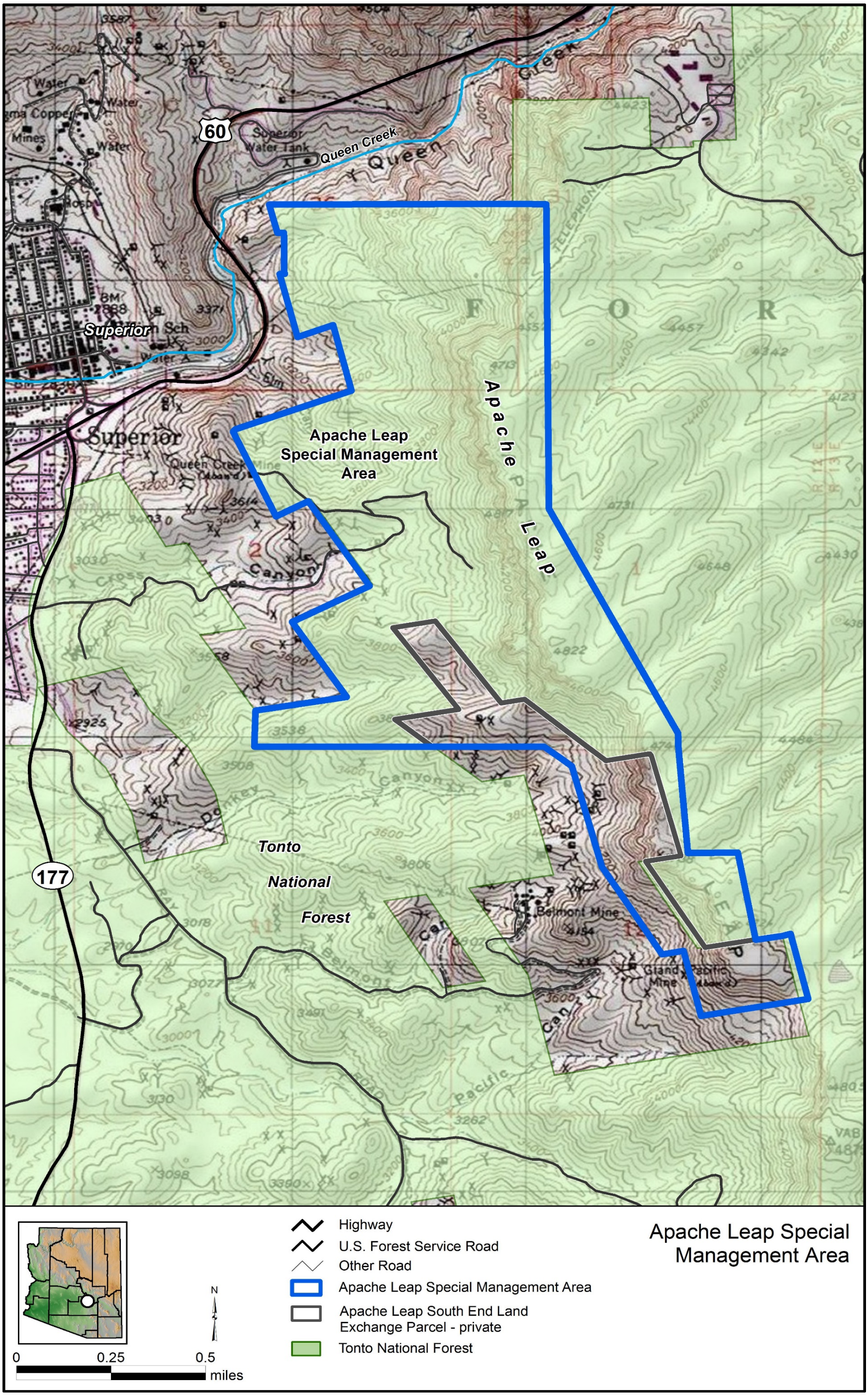

Figure 1. Overview of the project area.

Federal Law

The Forest Service is legally required to comply with federal regulatory requirements associated with sections of the Endangered Species Act of 1973, as amended; the Migratory Bird Treaty Act of 1918, as amended (MBTA); the Bald and Golden Eagle Protection Act of 1940, as amended; Executive Orders (EOs) 13186 (migratory birds) and 13112 (invasive species); the National Environmental Policy Act of 1969 (NEPA); and the National Forest Management Act of 1978 (NFMA).

Endangered Species Act

The ESA outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat. Section 7(a)(2) states that "each federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of their habitats." It requires that federal agencies consult with the USFWS on actions that are authorized, funded, or carried out by such agencies that may affect listed species and/or their designated critical habitat. The ESA also mandates conference with the Secretary of the Interior whenever an action is likely to jeopardize the continued existence of any species proposed for listing as threatened or endangered, or whenever an action might result in destruction or adverse modification of critical habitat proposed for listing.

Migratory Bird Treaty Act

The MBTA prohibits the commercial trade of migratory birds and migratory bird parts, including feathers, which, by the early years of the twentieth century, had severely impacted the populations of many native birds. The MBTA protects all migratory birds and their parts (including eggs, nests, and feathers). The MBTA is a domestic law that enforces treaties between the United States, Mexico, and Canada for the protection of a shared migratory bird resource.

Bald and Golden Eagle Protection Act

This act prohibits, without a permit issued by the Secretary of the Interior, the take, possession, sale, barter, offer to sell, purchase, or barter, transport, export, or import of any bald or golden eagle, alive or dead, including any part nest, or egg (16 United States Code 668(a); 50 Code of Federal Regulations [CFR] 22). "Take" is defined as "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." The term "disturb" under the Eagle Act means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, either injury to an eagle; a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (*Federal Register* 72:31332).

National Forest Management Act

This act amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which mandated the management of renewable resources on national forest lands. The NFMA is the primary statute governing the administration of national forests. The main objective of this act was to mandate the Forest Service to develop plans for national forests, with the intention that resource use on federal land be thoroughly assessed, researched, and planned. The 1982 Rule (36 CFR 219), which revised regulations implementing the 1976 NFMA, directed identification and selection of MIS during development of forest plans.

Executive Orders

EO 13112, Invasive Species, February 3, 1999

EO 13112, enacted in 1999, requires federal agencies to take steps to prevent the introduction and spread of invasive species, and to support efforts to eradicate and control invasive species that are established. This EO also created the Invasive Species Council, a coordinating body to oversee implementation of the order.

EO 13186, Migratory Birds, January 10, 2001

EO 13186, enacted in 2001, requires federal agencies to consider the effect of management impacts on migratory birds, with emphasis on species of concern. Species of concern are described by the USFWS in "Birds of Conservation Concern" (USFWS, 2008a) and by the Arizona Partners in Flight (PIF) "Bird Conservation Plan" (Latta et al., 1999). The determination of possible impacts that would occur though implementation of an alternative must be disclosed.

Topics and Issues Addressed in this Analysis

Purpose and Need

The Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (PL 113–291) directs the Secretary of Agriculture to "establish a special management area consisting of Apache Leap, which shall be known as the 'Apache Leap Special Management Area'" (Section 3003(g)(1)). The NDAA directs the Secretary, in consultation with affected Indian tribes, the Town of Superior, Resolution Copper Mining, LLC (Resolution Copper), and interested members of the public, to prepare a management plan for the Apache Leap SMA (NDAA (g)(5)(A)).

Direction contained in Forest Service Manual (FSM) 2370 – Special Recreation Designations (Forest Service, 1990) clearly specifies that management direction for special areas shall be incorporated into the forest plan. Thus, there is a need to amend the forest plan to incorporate management direction for the Apache Leap SMA.

The purpose of this proposal is to develop and adopt long-range direction for managing natural resources and human uses of the Apache Leap SMA, consistent with Section 3003 of the NDAA, and incorporate that direction into the forest plan.

Issues

Issues regarding vegetation and wildlife resources that were identified during scoping include the following:

- How will the Forest Service preserve the natural character of the Apache Leap SMA and account for the area's unique ecological characteristics and habitats?
- Considering the proposed Resolution Copper Mine and Land Exchange on lands adjacent to the Apache Leap SMA, how will the Forest Service preserve the natural character and scenery from mining impacts, including subsidence, light pollution, noise, and dust?
- How will the Forest Service preserve the natural character and scenery while allowing for wildland fire management, invasive species control, and livestock grazing?

Resource Indicators

Because vegetation and wildlife resources are subject to direct and indirect and short-term and long-term impacts, indicators focus on effects on habitat quantity and quality, as well as effects on individuals and populations for each resource element. Table 1 describes indicators used to determine impacts to vegetation and wildlife elements in this document.

Table 1. Indicators by Resource Element

Resource Element	Indicator
General Vegetation	Disturbance to, or loss of, any one species, population, or community.
Threatened and Endangered Plant Species	Disturbance or loss of habitat, individuals, or populations.
Plant Species of Conservation Concern	Disturbance or loss of habitat, individuals, or populations.
Non-native (Invasive) Species	Risk of spread or establishment.
General Wildlife	Disturbance or loss of habitat, or loss of any one species or population.
Threatened and Endangered Wildlife Species	Disturbance or loss of habitat, individuals, or populations.
Migratory Bird Species of Conservation Concern	Disturbance or loss of habitat, individuals, or populations.
Wildlife Species of Conservation Concern	Disturbance or loss of habitat, individuals, or populations.
Management Indicator Species	Change in habitat or population trend.

Methodology

Information Sources

Habitats for wildlife species were identified using the Southwest Regional Gap Analysis (SWReGAP) (U.S. Geological Survey, 2004) and the crosswalk included in The Nature Conservancy's (TNC's) "Ecological and Biological Diversity of National Forests in Region 3" (Lee et al., n.d. [2004]) to compare with potential natural vegetation type (PNVT). The Natural Resources Conservation Service (2017) PLANTS database was used for plant naming conventions.

Plant and wildlife species occurrence was determined using Arizona Game and Fish Department (AGFD) Heritage Data Management System (HDMS) (AGFD, 2017) information (Appendix A), USFWS Information for Planning and Consultation (IPaC) review tool (USFWS, 2017a) (Appendix B), SEINet (2017) Arizona–New Mexico Chapter information, and the results of site visits performed by Forest Service and SWCA Environmental Consultants biologists. The potential for occurrence of species not recorded by any of the above methods was determined using habitat and known range information from the USFWS Arizona Ecological Services Field Office (USFWS, 2017b), "Arizona Rare Plant Field Guide" (Arizona Rare Plant Committee, n.d. [2000]), "Arizona Breeding Bird Atlas" (Corman and Wise-Gervais, 2005), "Guide to North American Birds" (Audubon, 2017), and "Online Field Guide to the Reptiles and Amphibians of Arizona" (Brennan, 2008).

Incomplete and Unavailable Information

The entirety of the Apache Leap SMA has not been surveyed for every species that may occur, and data are not always available for plant and wildlife species occurrences. Determinations of the potential for occurrence of species included in this document used habitat and range information from the sources listed above.

Spatial and Temporal Context for Effects Analysis

Direct/Indirect Effects Boundaries

The spatial boundary for analyzing the direct and indirect effects on vegetation and wildlife resources is the entire 839-acre Apache Leap SMA (697 acres of Forest Service land, and 142 acres of private land). The temporal boundary for analyzing the direct and indirect effects is the development of a new forest plan, which is likely to occur in the next 20 years.

Cumulative Effects Boundaries

The geographic cumulative effects area consists of the Globe Ranger District. The district is the appropriate cumulative effects analysis area because it incorporates areas potentially affected by amending the forest plan (thereby creating a new management area, MA 2G, Globe Ranger District–Apache Leap SMA) and implementing the Apache Leap SMA management plan. The area evaluated considers potential effects on resources from surface disturbance to the extent where impacts become non-measurable. The cumulative effects assessment area encompasses a total of approximately 100,000 acres currently under federal and private ownership.

The temporal boundary of cumulative effects is also taken into consideration when determining the appropriate reasonably foreseeable future actions. The temporal boundary is 20 years, when a new forest plan revision would likely be needed (regulations indicate that forest plan revisions are required as conditions warrant, or every 15 years).

Affected Environment

Existing Condition

Vegetation

The biotic communities and vegetation within the project area include the Arizona Upland subdivision of the Sonoran Desertscrub biotic community in lower elevations (approximately 312 acres), with the Interior Chaparral community along the top of the Apache Leap escarpment (approximately 422 acres) (Brown, 1994). Interior Chaparral species also occur on north-facing slopes in lower elevations west of the Apache Leap escarpment. Elevations within the project range from 3,151 to 4,770 feet above mean sea level (amsl).

General Vegetation

Vegetation found in the Arizona Upland subdivision typically consists of shrubs, cacti, and leguminous trees such as foothills paloverde (*Parkinsonia microphylla*), saguaro (*Carnegiea gigantea*), and velvet mesquite (*Prosopis velutina*). Additional species common to this area include golden flower century plant (*Agave chrysantha*), Mormon tea (*Ephedra* sp.), fairyduster (*Calliandra eriophylla*), barrel cactus (*Ferocactus* spp.), catclaw mimosa (*Mimosa aculeaticarpa*), jojoba (*Simmondsia chinensis*), catclaw acacia (*Senegalia greggii*), wolfberry (*Lycium* spp.), brittlebush (*Encelia farinosa*), teddybear cholla

(*Cylindropuntia bigelovii*), buckhorn cholla (*C. acanthocarpa*), prickly pear (*Opuntia engelmannii*), Engelmann's hedgehog (*Echinocereus engelmannii*), shrubby buckwheat (*Eriogonum wrightii*), flattop buckwheat (*E. fasciculatum*), Louisiana sagewort (*Artemisia ludoviciana),* desert marigold (*Baileya multiradiata*), Coues' cassia (*Senna covesii*), globemallow (*Sphaeralcea ambigua*), and purple three-awn (*Aristida purpurea*).

The Interior Chaparral vegetation type is characterized by dense stands of woody evergreen shrubs. A common (diagnostic) species of Interior Chaparral in central Arizona is scrub live oak (*Quercus turbinella*). In the Apache Leap SMA, this community is best represented by scrub live oak, pointleaf manzanita (*Arctostaphylos pungens*), red barberry (*Berberis haematocarpa*), alderleaf mountain mahogany (*Cercocarpus montanus*), deerbrush (*Ceanothus integerrimus*), and sugar sumac (*Rhus trilobata*). Other common species include crucifixion thorn (*Canotia holacantha*), hopbush (*Dodonaea viscosa*), Wright's silktassel (*Garrya wrightii*), and broom snakeweed (*Gutierrezia sarothrae*). Along the upper portion of the escarpment, singleleaf pinyon pine (*Pinus monophylla*), Emory oak (*Quercus emoryi*), and Arizona white oak (*Quercus arizonica*) are also present.

Table 2 describes the existing vegetation communities within the project area. Vegetation types were discerned using SWReGAP data (U.S. Geological Survey, 2004) crosswalked between Brown (1994) and Forest Service PNVT based on TNC's "Ecological and Biological Diversity of National Forests in Region 3" (Lee et al., 2004). Figure 2 shows the vegetation types within, and in the vicinity of, the project area.

Table 2. Existing Vegetation in the Project Area

Brown	PNVT	SWReGAP	Acres
Interior Chaparral	Interior Chaparral	Mogollon Chaparral	272
Sonoran Desertscrub; Arizona Upland subdivision	Desert Communities	Sonoran Mid-Elevation Desert Scrub	254
Interior Chaparral	Madrean Encinal Woodland	Madrean Pinyon-Juniper Woodland	150
Sonoran Desertscrub; Arizona Upland subdivision	Desert Communities	Sonoran Paloverde-Mixed Cacti Desert Scrub	81
Sonoran Desertscrub; Arizona Upland subdivision	Semi-Desert Grasslands	Apacherian-Chihuahuan Mesquite Upland Scrub	77
Sonoran Desertscrub; Arizona Upland subdivision	Desert Communities	Sonora-Mojave Creosotebush-White Bursage Desert Scrub	1
Total			**835**

Note: Total acreage may not sum to total area of the special management area due to the nature of spatial data.

Drainages within the project area do not contain permanent surface water features and do not support riparian vegetation. Instead, the drainages generally contain greater densities of the same species present in the adjacent uplands. Additionally, no known springs occur within the project area. Two cattle tanks occur approximately 100 feet east of the southeastern border of the project area, and a third cattle tank occurs approximately 600 feet east of the southeast corner of the project area.

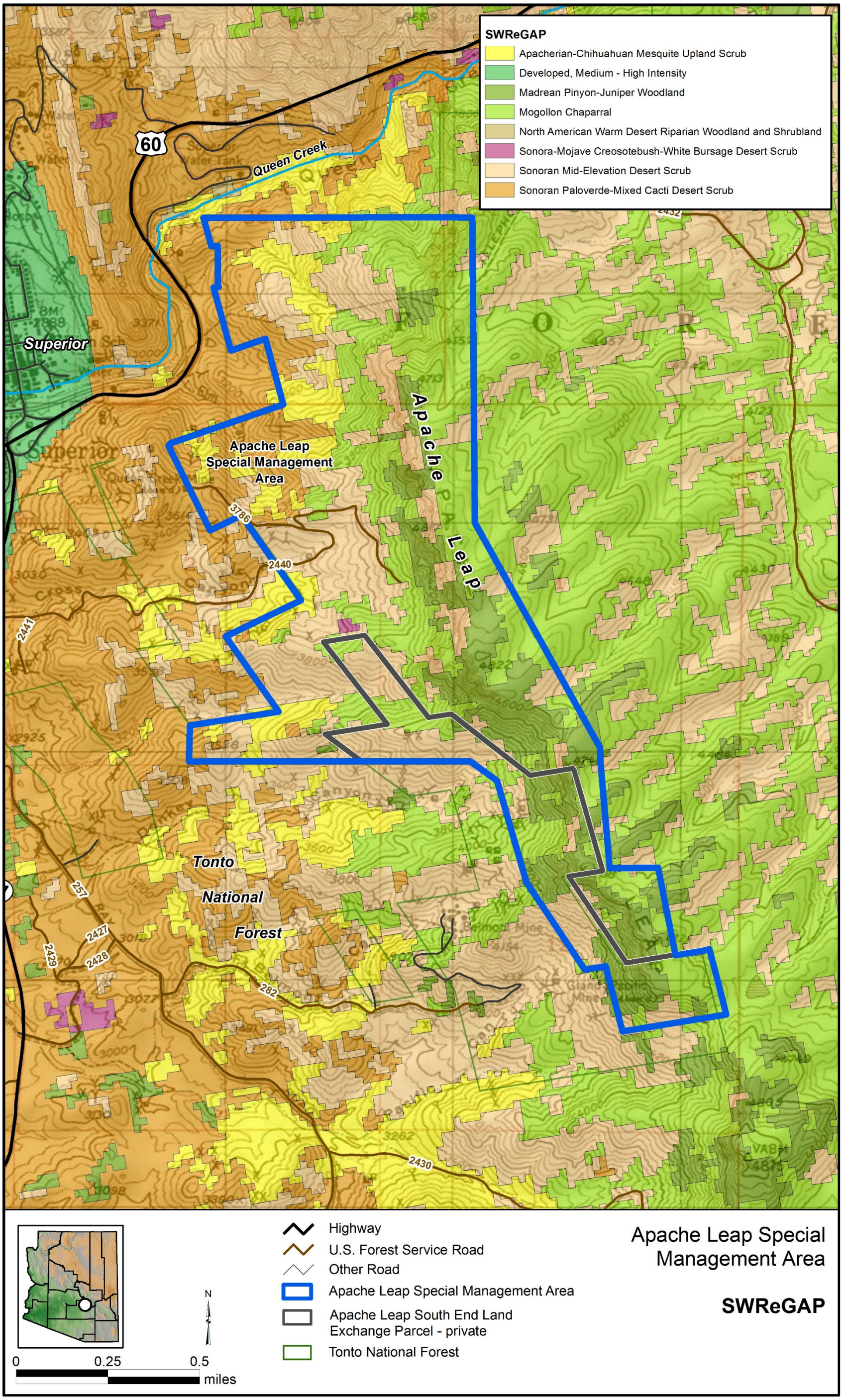

Figure 2. Vegetation communities (SWReGAP) of the project area and vicinity.

Threatened, Endangered, and Candidate Species

Species addressed in this section are those listed under the ESA as threatened or endangered. Table 3 describes those species listed as threatened and endangered for Pinal County, associated habitat, and potential for occurrence within the project area.

All federally listed plant species are unlikely to occur in the project area; however, the Arizona hedgehog cactus (*Echinocereus triglochidiatus* var. *arizonicus*[1]) is not known to occur within the special management area. Individual plants are known to occur north and east of the special management area. This species is more abundant north of U.S. Route 60, adjacent to the project area.

Table 3. Threatened, Endangered, and Candidate Plant Species of Pinal County

Common Name	Scientific Name	Status	Habitat	Potential for Occurrence
Acuña cactus	*Echinomastus erectocentrus* var. *acunensis*	E	Found on the tops or upper halves of the side slopes of broad, dissected hills of granite or andesite at elevations between 1,200 and 2,600 feet amsl in the Arizona Upland subdivision of the Sonoran Desertscrub biome. In Arizona, known from the Puerto Blanco Mountains; Little Ajo and Sauceda Mountains; and hills between Florence and Kearney, north and south of the Gila River.	Unlikely to occur. The project area does not contain broad, dissected hills of granite or andesite within Sonoran Desertscrub and is outside the known range of the species.
Arizona hedgehog cactus	*Echinocereus triglochidiatus* var. *arizonicus*	E	Found on open slopes of rugged, steep-walled canyons with granite or dacite bedrock among boulder piles in Arizona desert grassland and in the understory of shrubs in the ecotone between Madrean Evergreen Woodland and Interior Chaparral at elevations between 3,400 and 5,300 feet amsl. Its range is restricted to the Superstition Mountains on the Tonto National Forest.	**Not known to occur.** Suitable habitat for the species is present in the northern portion of the project area, and the project area is near known populations of the species. However, the species' presence has not been confirmed during site visits and informal surveys specifically searching for the species by Forest Service biologists over the past several years.
Nichol's Turk's head cactus	*Echinocactus horizonthalonius* var. *nicholii*	E	Found in Sonoran Desertscrub with limestone-derived alluvium at elevations between 2,000 and 3,600 feet amsl. In Arizona, its known range is limited to the Waterman and Vekol Mountains.	Unlikely to occur. The project area contains areas of limestone-derived alluvium within Sonoran Desertscrub but is outside the known range of the species.

Note: Range or habitat information is from HDMS (AGFD, 2017); USFWS Arizona Ecological Services Field Office (USFWS, 2017b); and "Arizona Rare Plant Field Guide" (Arizona Rare Plant Committee, n.d. [2000]).

USFWS Status Definition:

E= Endangered

[1] Recent nomenclature changed the species to *Echinocereus arizonicus*; however, the federally listed name is still *Echinocereus triglochidiatus* var. *arizonicus*.

No species listed under the ESA as threatened or endangered were recorded during site visits of the project area or during numerous site visits to the area by Forest Service biologists over the years; however, species-specific surveys were not conducted within the project area. Species-specific surveys for the Arizona hedgehog cactus have been conducted just north of the project area.

Forest Sensitive Species (Plants)

The responsibility for designation of forest sensitive species is delegated to each Regional Forester. Sensitive species are defined in FSM 2670.5 as "those plant and animal 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 numbers or density. b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution" (Forest Service, 2005:19).

Objectives for sensitive species are described in FSM 2670.22 as "1. Develop and implement management practices to ensure that species do not become threatened or endangered because of Forest Service actions. 2. Maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands. 3. Develop and implement management objectives for populations and/or habitat of sensitive species" (Forest Service, 2005:4).

Table 4 discusses the potential for occurrence in the project area of Tonto National Forest Sensitive species (Forest Service, 2016a) (included in Appendix C). Species determined to have the potential to occur are brought forward for effects analysis.

Table 4. Potential for Occurrence of Tonto National Forest Sensitive Plant Species

Common Name	Scientific Name	Habitat	Potential for Occurrence
Hohokam agave	*Agave murpheyi*	Occurs on open hilly slopes or alluvial terraces in desertscrub, usually in proximity to major drainage systems, at elevations between 1,350 and 2,950 feet amsl. This species is known from Queen Creek near Superior, in Arizona.	Unlikely to occur. While the project area contains desertscrub and the species is known from Queen Creek in the vicinity of the project area, the project area is outside the known range of this species.
Tonto Basin agave	*Agave delamateri*	Occurs in gravelly soils with desertscrub in vicinity of drainage systems and ridge tops, in desert scrub, chaparral, or pinyon-juniper woodlands, at elevations between 2,300 and 5,200 feet amsl.	Unlikely to occur. The project area is outside the known range of the species.
Verde breadroot	*Pediomelum verdiensis*	Occurs on Verde limestone substrate in high desertscrub, and compacted roadsides, at elevations between 3,200 and 4,350 feet amsl. An endemic species, it is known from the Camp Verde area in Arizona.	Unlikely to occur. The project area is outside the known range of the species.

Common Name	Scientific Name	Habitat	Potential for Occurrence
Ripley wild buckwheat	*Eriogonum ripleyi*	Occurs in Tertiary lakebeds on well-drained powdery soils derived from limestone, sandstone, or volcanic tuffs and ashes, at elevations between 2,000 and 6,000 feet amsl. The species is known from northeast of Peach Spring, the Verde River drainage, and adjacent to Horseshoe Lake, in Arizona.	Unlikely to occur. The project area is outside the known range of the species.
Arizona bugbane	*Cimicifuga arizonica*	Occurs in moist, loamy soil within riparian deciduous forests, at elevations between 4,800 and 6,900 feet amsl. The range of this species is limited and includes the Havasu Canyon, Upper Salt, Upper Verde, and Lower Verde (in Coconino and Gila Counties) watersheds in Arizona.	Unlikely to occur. The project area does not contain wooded ravines with rich soil or riparian habitat and is outside the known range of the species.
Blumer's dock	*Rumex orthoneurus*	Occurs in moist, loamy soils or shallowly inundated areas within riparian and cienega habitats, at elevations between ~ 5,400 and 9,200 feet amsl. This southwestern endemic species is known from the Chiricahua, Sierra Ancha, Pinaleño, Huachuca, San Francisco, and White Mountains in Arizona.	Unlikely to occur. The project area does not contain perennial sources of water and is outside the known range of the species.
Fish Creek fleabane	*Erigeron piscaticus*	Occurs in sand/silt alluvium under mature walnut, alder, and hackberry, on upper floodplain terraces in moist, shady canyon bottoms, at elevations between 2,250 and 3,500 feet amsl. This species is known from Fish Creek Canyon, Turkey Creek, Oak Grove Canyon, and the Superstition and Galiuro Mountains in Arizona.	Unlikely to occur. The project area does not contain moist, shady canyon bottoms with mature walnut, alder, and hackberry and is outside the known range of the species.
Mogollon (Sierra Ancha) fleabane	*Erigeron anchana*	Occurs on granite cliff faces, in rock crevices or ledges on boulders, in chaparral through pine forests usually in canyons, at elevations between 3,500 and 7,000 feet amsl. This species is known from the Sierra Ancha, Pine, Mazatzal, Mescal, and Superstition Mountains in Arizona.	Unlikely to occur. It is outside the known range of the species.
Toumey groundsel	*Packera neomexicana* var. *toumeyi* [synonym *Senecio n.* var. *t.*]	Occurs on loose rocky soil in oak chaparral and pine forests, at elevations between 3,000 and 9,000 feet amsl. This species is known from the Chiricahua, Huachuca, and Pinal Mountains.	Unlikely to occur. It is outside the known range of the species.

Common Name	Scientific Name	Habitat	Potential for Occurrence
Pima Indian mallow	*Abutilon parishii*	Occurs on bouldery, rocky, shallow soils in lower Sonoran desertscrub, the transition zone of upper Sonoran grassland communities, and Sonoran deciduous riparian forest, at elevations between 1,700 to 5,000 feet amsl. This species is widespread and is known from the Superstition, Santa Catalina, Rincon, Silverbell, Tucson, Mineral Hills, Picacho, Tortolita, Dripping Springs, Santa Rita, and Tumacacori Mountains, as well as Cottonwood Creek, Little Shipp Wash, and Sabino Canyon.	**May occur.** The project area contains bouldery, rocky, shallow soils in lower Sonoran Desertscrub and is within the elevational range for the species.
Hualapai milkwort	*Polygala rusbyi*	Occurs on sandy flats and limestone bedrock, as well as rock, gravel, and silt in desert grasslands and juniper woodland at elevations between 3,000 and 5,000 feet amsl. This species is known from Yavapai and Mohave Counties.	Unlikely to occur. The project area is outside the known range of the species.
Arizona phlox	*Phlox amabilis*	Occurs on open, exposed limestone-rocky slopes, clay soils, and volcanic silt in pinyon-juniper and ponderosa pine–Gambel oak communities at elevations between 3,500 and 7,800 feet amsl. This species is known from southern Coconino, Mohave, Navajo, and Yavapai Counties, as well as occasionally Gila and Graham Counties.	Unlikely to occur. The project area is outside the known range of the species.
Fish Creek rock daisy	*Perityle saxicola*	Occurs on rocky slopes and cliffs of canyons and buttes, Barnes conglomerate and Mescal limestone, or igneous rocks of Sonoran Desertscrub, at elevations between 2,500 and 3,400 feet amsl. This species ranges from the Sierra Ancha Mountains west to the Superstition Mountains along the Salt River drainage.	Unlikely to occur. This species is endemic to a small area near Tonto National Monument and Roosevelt Dam. The project area is outside the known range of the species.
Salt River rock daisy	*Perityle gilensis* var. *salensis*	Occurs in crevices and ledges of igneous canyon walls, at elevations between 1,640 and 6,265 feet amsl. The species is known only from the Salt River Canyon, Arizona.	Unlikely to occur. The project area is not located within the Salt River Canyon.
Arizona alum root	*Heuchera glomerulata*	Occurs on shaded rocky slopes in humus soils near seeps, streams, and riparian areas in oak, pine-oak, and pinyon-juniper woodlands, and in ponderosa pine and mixed conifer forests at elevations between 4,000 and 9,000 feet amsl. This species is know from the Pinaleño, Santa Theresa, Galiuro, Santa Catalina, Chiricahua, and Pinal Mountains.	Unlikely to occur. The project area does not contain seeps, streams, or riparian areas.

Common Name	Scientific Name	Habitat	Potential for Occurrence
Eastwood alum root	*Heuchera eastwoodiae*	Occurs on rocky clay on moist, shaded slopes in ponderosa pine forests and canyons, at elevations between 3,400 and 8,000 feet amsl. This species is endemic to central Arizona and is known from Coconino, Gila, Maricopa, and Yavapai Counties.	Unlikely to occur. The project area does not contain ponderosa pine forest or canyons and is outside the known range of the species.
Galiuro (Aravaipa) sage	*Salvia amissa*	Occurs in upper floodplain terraces with soils of gravel, sand, and silt in shady canyon understory of mature sycamore, ash, walnut, and mesquite, at elevations between 1,500 and 5,000 feet amsl. This species is known from the Galiuro and Superstition Mountains in Arizona.	Unlikely to occur. The project area does not contain shady canyon understories of mature sycamores, ash, walnut, and mesquite and is outside the known range of the species.
Mt. Dellenbaugh sandwort	*Eremogone aberrans* [synonym *Arenaria aberrans*]	Occurs primarily in oak-pine forests. May also occur in open pine forests, and among junipers, at elevations between 5,500 and 9,000 feet amsl. The species is known only from northern Arizona.	Unlikely to occur. The project area is outside the known range of the species.
Chihuahuan sedge	*Carex chihuahuensis*	Occurs on wet soil in streambeds and shallower draws in pine-oak forest and riparian woodland, as well as in wet meadows, cienegas, marshy areas, and canyon bottoms at elevations between 3,600 and 7,200 feel amsl (in Arizona). This species is known from the Chiricahua, Huachuca, Pinaleño, Sierra Ancha, Santa Catalina, San Luis, Rincon, Atascosa, and Santa Rita Mountains, as well as the San Bernardino Valley and Santa Cruz River.	Unlikely to occur. The project area does not contain perennial sources of water and is outside the known range of the species.
Cochise (Arizona giant) sedge	*Carex ultra* [synonym *C. spissa* var. *ultra*]	Occurs in saturated soil near or in perennial seeps, streams, and springs, at elevations between 2,500 and 6,000 feet amsl. This species is known from the Santa Catalina, Huachuca, Dragoon, Chiricahua, and Atascosa Mountains in Arizona.	Unlikely to occur. The project area does not contain perennial sources of water and is outside the known range of the species.
Mapleleaf false snapdragon	*Mabrya acerifolia*	Occurs on rock overhangs, on shaded cliffs and rock ledges in rhyolite rock crevices on north and east-facing canyon walls, at elevations between 1,800 and 3,350 feet amsl. This endemic species is known from the Superstition and Pinal Mountains, above Canyon Lake, near Horse Mesa Dam in Arizona.	**May occur.** Rock overhangs, shaded cliffs, and rock ledges are present in the project area providing habitat elements, though this species is not known to occur in the area.

Common Name	Scientific Name	Habitat	Potential for Occurrence
Horseshoe deer vetch	*Lotus mearnsii* var. *equisolensis*	Occurs on late Tertiary lacustrine deposits of interbedded white limestone and ash flows within the Sonoran Desert, at an elevation of 2,100 feet amsl. This species is a soil endemic, known only from Horseshoe Reservoir in Arizona.	Unlikely to occur. The project area does not contain deposits of interbedded white limestone and ash flows and is outside the known range of the species.
Aravaipa woodfern	*Thelypteris puberula* var. *sonorensis*	Occurs on moist soil in the shade of boulders in mesic canyons, on riverbanks, seepage areas, and meadows at elevations between 2,200 and 4,500 feet amsl. This species is known from Coconino, Maricopa, Pima, Pinal, and Yavapai Counties.	Unlikely to occur. The project area does not contain riparian habitats or perennial sources of water.

Note: Range or habitat information is from HDMS (AGFD, 2017); USFWS Arizona Ecological Services Field Office (USFWS, 2017b); and "Arizona Rare Plant Field Guide" (Arizona Rare Plant Committee, n.d. [2000]).

No sensitive plant species were recorded during site visits; however, species-specific surveys were not conducted. Two species were determined to have the potential for occurrence and are discussed below.

Pima Indian Mallow

This shrubby, perennial herb is in the mallow family (Malvaceae), and consists of one or multiple tall (typically up to 3 feet, but can reach 6 feet in height) and nearly naked stems, covered in hairs, with larger, velvety heart-shaped leaves (up to 2 inches wide and 4 inches long). Flowers are light orange to orange-yellow, with six petals, and open only under sunny conditions (generally between 3:30 and 4:30 p.m.). This plant is widespread across Arizona and Sonora, Mexico. The type locality is from the Santa Catalina Mountains, though species occurrence has been recorded as far north as Little Shipp Wash in Yavapai County, Arizona. Population numbers appear to fluctuate with moisture availability. Threats to this species include mining and related activities, trampling from recreation or livestock grazing, and non-native species invasions, such as buffelgrass (*Pennisetum ciliare*). Because of its growth habits (steep habitat) and widespread distribution, the susceptibility of this species to these threats is limiting.

Mapleleaf False Snapdragon

This herbaceous perennial vine/forb is in the snapdragon family (Scrophulariaceae) and has white to greenish white five-lobed tubular flowers. Leaves are dark green, downy, sticky, and heart or kidney shaped. This plant grows prostrate, up to 10 inches long. It inhabits shaded cliffs and rock ledges at about 2,000 feet amsl. It is a mat-forming plant with brittle stems. Stems often hang down from moist rock ledges. This plant is known only from south-central Arizona. The type locality is from Fish Creek Canyon, and most occurrence records are from side canyons of the Salt River. Because of its growth habitats, it is less susceptible to human disturbance.

Plant Species of Conservation Concern

The species addressed in this section are those determined by Tonto National Forest and identified in the forest plan as species of conservation concern. A species of conservation concern is a Forest Service–specific classification that comes from the 2012 Planning Rule and subsequent direction in Forest Service Handbook 1909, Chapter 12 (Forest Service, 2015). The regulations describe species of conservation concern as species for which the best available science indicates there is a substantial concern about the species' capability to persist over the long term in the plan area. The species of conservation concern list is created as a proactive step intended to prevent species from becoming federally listed. These species may

not necessarily provide information about the larger ecosystem, but because of their rarity or population threats, these species were identified for monitoring and assessments of their viability.

Most of these species tend to be habitat specialists, which are closely linked to specific habitat types and generally have an uneven distribution across the landscape. Many species that are listed on the Forest Sensitive Species list may also occur on the species of conservation concern list. The development of a species of conservation concern list is mandated by the 2012 Planning Rule; upon revision of the forest plan, the species of conservation concern list will be used in place of the Forest Sensitive Species list.

Non-native (Invasive) Species

Non-native animal species, nor their habitats, with significance to the proposed project are known to be present within the project area. Therefore, only non-native plant species are discussed in this document.

Non-native plant species are present in the project area, including red brome (*Bromus rubens*), an annual grass that presents a wildfire hazard. Additional non-native species include Mediterranean grass (*Schismus* sp.), buffelgrass (*Cenchrus ciliaris*), fountain grass (*Pennisetum setaceum*), red-stem stork's (*Erodium cicutarium*), Malta starthistle (*Centaurea solstitialis*), Russian thistle (*Salsola tragus*), silver-leaf nightshade (*Solanum elaeagnifolium*), and wild oats (*Avena fatua*).

Field surveys observed an extensive proliferation of red brome throughout the lower elevations of the project area, with other species present primarily in disturbed areas, including roadways and mining exploration areas; however, species-specific surveys have not been conducted. Buffelgrass is listed as a noxious weed species in the state of Arizona. The Tonto National Forest Weed List classifies red brome, Mediterranean grass, buffelgrass, fountain grass, Malta starthistle, prickly Russian thistle, and wild oats as Class C weeds, described as weeds that "have spread beyond our ability to eradicate them. Management goal is to contain spread to present size, then decrease the population if possible" (Forest Service, n.d. [2005]).

Wildlife

General Wildlife

Mammal species known from the project area include desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), cliff chipmunk (*Tamias dorsalis*), white-throated woodrat (*Neotoma albigula*), pocket mouse (*Chaetodipus intermedius*), white-tailed deer (*Odocoileus virginianus*), mule deer (*Odocoileus hemionus*), and javelina (*Pecari tajacu*). Reptiles include eastern fence lizard (*Sceloporus undulates*), Sonoran whipsnake (*Coluber bilineatus*), western patch-nosed snake (*Salvadora hexalepis*), side-blotched lizard (*Uta stansburiana*), western diamondback rattlesnake (*Crotalus atrox*), glossy snake (*Arizona elegans*), and Gila monster (*Heloderma suspectum*).

There are known abandoned mines in the project area. Because of the long history of mining in the area surrounding the project area, the likelihood of additional abandoned mines' occurring within and near the project area is fairly high. Abandoned mine (vertical or horizontal workings) have the potential to provide habitat for a variety of species, such as javelinas, pack rats, and snakes. They are of particular importance to some bat species, which can use these habitats as a hibernacula, or as day, night, or maternity roosts. Beyond these features, an abundance of naturally occurring crevice habitat occurs within the project area. Bat species recorded within the project area include pale Townsend's big-eared bat (*Corynorhinus townsendii*), cave myotis (*Myotis velifer*), and California myotis (*Myotis californicus*). Species that have been recorded in the vicinity of the project area include pallid bat (*Antrozous pallidus*), big brown bat (*Eptesicus fuscus*), western small-footed myotis (*Myotis ciliolabrum*), Mexican free-tailed bat (*Tadarida brasiliensis*), canyon bat (*Parastrellus hesperus*), greater western mastiff bat (*Eumops perotis*), pocketed

free-tailed bat (*Nyctinomops femorosaccus*), California leaf-nosed bat (*Macrotus californicus*), western red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and Yuma myotis (*Yuma myotis*) (WestLand Resources, 2004; 2012a). Of these species, four species are tree-roosting bats, while the remainder are crevice and/or cavern roosting bats.

Bird species observed during site visits include pinyon jay (*Gymnorhinus cyanocephalus*), canyon wren (*Catherpes mexicanus*), black-tailed gnatcatcher (*Polioptila melanura*), black-chinned sparrow (*Spizella atrogularis*), turkey vulture (*Cathartes aura*), zone-tailed hawk (*Buteo albonotatus*), white-throated swift (*Aeronautes saxatalis*), red-tailed hawk (*Buteo jamaicensis*), phainopepla (*Phainopepla nitens*), Anna's hummingbird (*Calypte anna*), verdin (*Auriparus flaviceps*), northern mockingbird (*Mimus polyglottos*), Gila woodpecker (*Melanerpes uropygialis*), black-throated sparrow (*Amphispiza bilineata*), black-chinned hummingbird (*Archilochus alexandri*), spotted towhee (*Pipilo maculatus*), peregrine falcon (*Falco peregrinus*), Woodhouse's scrub jay (*Aphelocoma woodhouseii*), Costa's hummingbird (*Calypte costae*), ash-throated flycatcher (*Myiarchus cinerascens*), Gambel's quail (*Callipepla gambelii*), American kestrel (*Falco sparverius*), blue-gray gnatcatcher (*Polioptila caerulea*), northern cardinal (*Cardinalis cardinalis*), lesser goldfinch (*Carduelis psaltria*), rock wren (*Salpinctes obsoletus*), ladder-backed woodpecker (*Dryobates scalaris*), and curve-billed thrasher (*Toxostoma curvirostre*). Some of these species are listed as migratory bird species of concern by the Tonto National Forest and are discussed in more detail in the following sections.

Non-native animal species, nor their habitats, with significance to the proposed project are known to be present within the project area.

Threatened, Endangered, and Candidate Species

The species addressed in this section are those listed under the ESA as threatened or endangered. Table 5 describes threatened and endangered species of Pinal County, their associated habitat, and the potential for occurrence within the project area. No designated or proposed critical habitat is present within the project area (USFWS, 2017a).

Table 5. Threatened, Endangered, and Candidate Wildlife Species of Pinal County

Common Name	*Scientific Name*	Status	Habitat	Potential for Occurrence
Chiricahua leopard frog	*Lithobates chiricahuensis*	T	Historically found in cienegas, pools, livestock tanks, lakes, reservoirs, streams, and rivers, the species is now often restricted to springs, livestock tanks, and streams in the upper portions of watersheds where non-native predators either have yet to invade or habitats are marginal, at elevations between 3,281 and 8,890 feet amsl.	Unlikely to occur. There are no perennial water sources, such as springs, livestock tanks, or streams, in the project area, and the project area is outside the known range of the species.

Common Name	*Scientific Name*	Status	Habitat	Potential for Occurrence
Mexican spotted owl	*Strix occidentalis lucida*	T	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 (*Pinus ponderosa*)–Gambel oak (*Quercus gambelii*). Nests in live trees on natural platforms (e.g., dwarf mistletoe [*Arceuthobium* spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Unlikely to occur. There are no montane forests within the project area. In addition, the project area is outside the known range of the species.
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood, willow, boxelder (*Acer negundo*), saltcedar, Russian olive (*Elaeagnus angustifolia*), buttonbush (*Cephalanthus* spp.), and arrowweed (*Pluchea sericea*) 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.	Unlikely to occur. The species has been recorded in the vicinity of the project area (generally including at Roosevelt Lake and the Santa Cruz and Gila Rivers); however, the project area does not contain riparian vegetation suitable for nesting or as migratory habitat for the species.
Yellow-billed cuckoo	*Coccyzus americanus*	T	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. The highest concentrations in Arizona are along the Agua Fria, San Pedro, upper Santa Cruz, and Verde River drainages and Cienega and Sonoita Creeks.	Unlikely to occur. The species has been recorded in the vicinity of the project area (including at Queen Creek near Superior, Whitlow Ranch Dam, Devil's Canyon, Mineral Creek, etc.); however, the project area does not contain riparian vegetation suitable for nesting or as migratory habitat for the species.
Yuma clapper rail	*Rallus longirostris yumanensis*	E	In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (*Typha* spp.), bulrushes (*Isolepis* spp.), and sedges (*Carex* spp.). The range includes the Colorado River from Lake Mead to Mexico; the Gila and Salt Rivers upstream to the area of the Verde confluence; Picacho Reservoir; and the Tonto Creek arm of Roosevelt Lake. This species may be expanding into other suitable marsh habitats in western and central Arizona.	Unlikely to occur. There are no freshwater marshes dominated by riparian herbaceous vegetation located within the project area.
Gila chub	*Gila intermedia*	E	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. There are no perennial water sources in the project area.

Common Name	*Scientific Name*	Status	Habitat	Potential for Occurrence
Gila topminnow (incl. Yaqui)	*Poeciliopsis occidentalis*	E	Found in small streams, springs, and cienegas in vegetated shallows. Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs. In Arizona, this species is found in Cochise, Gila, Graham, La Paz, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties.	Unlikely to occur. There are no perennial water sources in the project area.
Loach minnow	*Tiaroga cobitis*	E	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. Its range in Arizona is limited to reaches in the East Fork of the White River (Navajo County); Aravaipa, Deer, and Turkey Creeks (Graham and Pinal Counties); San Francisco and Blue Rivers; and Eagle, Campbell Blue, and Little Blue Creeks (Greenlee County). A population was discovered in the Black River in 1996.	Unlikely to occur. There are no fast-moving perennial water sources in the project area.
Razorback sucker	*Xyrauchen texanus*	E	Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl. In Arizona, populations are restricted to Lakes Mohave and Mead and the lower Colorado River below Havasu in the Lower Basin. In the Upper Basin, small remnant populations are found in the Green, Yampa, and main stem Colorado Rivers.	Unlikely to occur. There are no perennial water sources in the project area.
Spikedace	*Meda fulgida*	E	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. In Arizona, populations are found in the middle Gila, lower San Pedro, and Verde Rivers and Aravaipa and Eagle Creeks.	Unlikely to occur. There are no perennial water sources in the project area.

Common Name	*Scientific Name*	Status	Habitat	Potential for Occurrence
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E (PD)	Found in southern Arizona from the Picacho Mountains southwesterly to the Agua Dulce Mountains and southeasterly to the Galiuro and Chiricahua Mountains at elevations between 1,600 and 11,500 feet amsl. Roosts in caves, abandoned mines, and unoccupied buildings at the base of mountains where agave, saguaro, and organ pipe cacti (*Stenocereus thurberi*) are present. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. The foraging radius may be 30 to 60 miles per night or more.	**Not known to occur**. The project area is not within the known range of this species, and it has not been recorded on the Tonto National Forest or vicinity. The project area does contain saguaros that could be used for foraging, but other more favorable foraging plants (e.g., Palmer's agave [*Agave palmeri*] and nightblooming cereus [*Peniocereus greggii*]) are not present. Additionally, the nearest known roost for this species is farther than the bats' foraging distance.
Ocelot	*Leopardus pardalis*	E	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. In Arizona, there are five recent confirmed sightings of ocelot: one in Cochise County (2009), two in the Huachuca Mountains (2011 and 2012), one near Globe (2010), and one in the Santa Rita Mountains (2013). One of the individuals from the Huachuca Mountains was detected in the Patagonia Mountains before subsequently returning to the Huachuca Mountains (USFWS, 2016).	**Not known to occur.** There is only one 2010 record of a roadkill individual in the project vicinity, and connectivity to other individuals in southern Arizona is lacking. In addition, vegetation in the project area is not as dense as in areas with which this species is associated.
Northern Mexican gartersnake	*Thamnophis eques megalops*	T	This species is most abundant at elevations between 3,000 and 5,000 feet amsl in densely vegetated habitat surrounding cienegas, streams, and stock tanks, in or near water along streams in valley floors and generally open areas, but not in steep mountain canyon stream habitat. The five known populations are: (1) The Page Springs and Bubbling Ponds State Fish Hatcheries along Oak Creek, (2) lower Tonto Creek, (3) the upper Santa Cruz River in the San Rafael Valley, (4) the Bill Williams River, and (5) the upper and middle Verde River.	Unlikely to occur. There are no perennial water sources to support this species within the project area.

Note: Range or habitat information is from HDMS (AGFD, 2017); USFWS Arizona Ecological Services Field Office (USFWS, 2017b); and Corman and Wise-Gervais (2005).

USFWS Status Definitions:

E= Endangered; PD= Proposed for Delisting; T= Threatened

No wildlife species listed under the ESA as threatened or endangered were recorded during site visits of the project area; however, species-specific surveys were not conducted.

Ocelot

The ocelot is a nocturnal and highly secretive medium-sized spotted cat. The current distribution of this species extends from Mexico into southern Arizona, though dispersing individuals may range more widely. Dispersal in areas of fragmented habitat is facilitated by densely vegetated movement corridors and small, semi-isolated habitat patches (USFWS, 2016). Habitats used by this species can be variable and range from tropical semi-deserts to brushy forests and semiarid deserts, particularly in the northern part of its range, though little is known about habitat use in Arizona. A recovery plan was completed in 2016 (USFWS, 2016).

It is currently unknown whether established or breeding populations are present in Arizona. There is not sufficient information available to determine the state-wide distribution of this species, though there have been recent substantiated sightings of ocelots near the U.S.–Mexico border (see Table 5 above for general locations). It is likely that the 2010 roadkill individual recorded within 5 miles of the project area near Globe, Arizona, may have been an extreme occurrence and had dispersed well beyond its reasonable range. Since that time, numerous game cameras in the project area vicinity have not confirmed any additional sightings. In addition, vegetation in the project area does not appear suitable to attract or hold this species. Apparently, ocelots in south Texas prefer greater than 95% canopy cover and avoid areas of intermediate (50%–75%) to no cover (USFWS, 2010). Connectivity to southern Arizona where recent sightings of this species also appear limiting for dispersing individuals. Therefore, this species is unlikely to occur in the project area or vicinity.

Lesser Long-nosed Bat

The lesser long-nosed bat was listed as endangered in 1988 without critical habitat (USFWS, 1988). A recovery plan was completed in 1994 (USFWS, 1995). In Arizona, lesser long-nosed bat roosts have been found from the Picacho Mountains (Pinal County) southwest to the Agua Dulce Mountains (Pima County), southeast to the Chiricahua Mountains (Cochise County), and south to the international boundary (USFWS, 2008b). Individuals have also been observed near the Pinaleño Mountains (Graham County) and as far north as Phoenix and Glendale (Maricopa County) (USFWS, 1995). The observation records in Phoenix have not been verified. There are three known lesser long-nosed bat maternity roosts (Copper Mountain, Bluebird, and Old Mammon) and approximately 40 total lesser long-nosed bat roosts in Arizona (USFWS, 2007). Population estimates at Arizona roosts (maternity and postmaternity) were identified in the “Lesser Long-nosed Bat Recovery Plan” (USFWS, 1995). The primary threats to the lesser long-nosed bat are roost site loss or disturbance and impacts to forage availability (USFWS, 2007). Individuals have been observed in the Phoenix area (approximately 50 miles from the Apache Leap SMA) (USFWS, 1995). A night roost or an area of unknown use occurs approximately 45 miles southwest of the project area, and a known day roost occurs approximately 50 direct miles southwest of the project area (USFWS, 1995; 2016).

In the United States, suitable lesser long-nosed bat habitat includes desert grasslands and shrublands up to the oak transition zone; plant communities typically occupied by the species are paloverde-saguaro, semidesert grassland, and oak woodland (USFWS, 1995). Suitable day roosts are typically a cave or mine, probably the most important habitat requirement; however, potential suitable roosts must be within reasonable foraging distances of sufficient amounts of foods (the nectar and pollen of paniculate agave flowers and fruit produced by columnar cacti). The lesser long-nosed bat is known to fly long distances from roost sites to foraging sites, with a foraging radius of 30 to 60 miles (USFWS, 1995). Night flights from maternity colonies to flowering columnar cacti have been documented in Arizona at 15 miles and in

Mexico at 25 and 38 miles, and observed at hummingbird feeders, including during the winter in Tucson, many miles from the closest potential roost site (Lowery et al., 2009; USFWS, 2007).

The project area is not within the currently known range of this species, and it has not been recorded on the Tonto National Forest or vicinity (personal communication, M. Taylor, 2017; USFWS, 2008b). The project area does contain foraging plants (i.e., saguaros) but other more favorable foraging plants (e.g., Palmer's agave [*Agave palmeri*] and Arizona queen of the night [*Peniocereus greggii*]) are not present. Additionally, the nearest known roost for this species is farther than their known foraging distance. Therefore, this species is unlikely to occur in the project area or vicinity.

Tonto National Forest Sensitive Wildlife Species

The species addressed in this section are those determined to be sensitive species. Table 6 describes Tonto National Forest Sensitive wildlife species, associated habitat, and the potential for occurrence within the project area. Species determined to have potential to occur are brought forward for effects analysis.

Table 6. Potential for Occurrence of Tonto National Forest Sensitive Wildlife Species

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Allen's big-eared bat	*Idionycteris phyllotis*	Uses ponderosa pine, pinyon-juniper, Mexican woodland, and riparian areas of sycamores, cottonwoods, and willows. Roosting sites include caves and abandoned mine shafts.	**May occur.** Some scattered pinyon and juniper trees are present in the project area. Abandoned mine shafts are present in the project area and vicinity.
Pale Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	Uses desertscrub, oak woodland, oak-pine, pinyon-juniper, and coniferous forests. Roosting sites include caves, mines, and abandoned buildings, while hibernacula include cold caves, lava tubes, and mines in uplands and mountains.	**Known to occur.** The project area contains suitable habitat for this species, and it has been recorded roosting in the vicinity of the project area (WestLand Resources, 2012a).
Spotted bat	*Euderma maculatum*	This species uses a wide variety of habitats, from low desert to conifer forests, though in Arizona most individuals are captured in dry, rough desertscrub. Roosting habitat may include crevices and cracks on cliff faces, and cliffs and water sources occur in the vicinity.	**May occur.** The project area contains suitable habitat for this species, though the species has not been recorded in the vicinity of the project area.
Western red bat	*Lasiurus blossevillii*	Uses broadleaf deciduous riparian forests and wooded areas, and preferentially roosts in cottonwood trees and dense foliage.	**May occur.** While the project area does not contain roosting habitat, the species has been recorded in the vicinity of the project area (WestLand Resources, 2012a) and may use it for foraging.
Peregrine falcon	*Falco peregrinus*	This species is strongly associated with steep, rocky areas with cliffs near water.	**Known to occur.** This species was observed during site visits.

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Sulphur-bellied flycatcher	*Myiodynastes luteiventris*	Uses sycamore-walnut canyons.	Unlikely to occur. The project area does not contain sycamore-walnut canyons and is outside the known range for the species.
Northern goshawk	*Accipiter gentilis*	This species occurs primarily in ponderosa pine, mixed-species forest, spruce-fir woodlands, and some riparian communities, at elevations between 4,750 and 9,120 feet amsl.	Unlikely to occur. The project area does not contain forested habitat and is outside the known range for this species.
Yellow-eyed junco	*Junco phaeonotus*	Uses conifer forests and pine-oak woods. This species breeds at middle and upper elevations of mountains near Mexican border, mostly in forests of pine and Douglas-fir, but also down into pine-oak woods.	Unlikely to occur. The project area contains a small amount of pine-oak species but is outside the known range of the species.
Bezy's night lizard	*Xantusia bezyi*	Found in rugged, rocky slopes and boulder fields within Arizona Upland Sonoran Desertscrub and Interior Chaparral. Uses large outcroppings and large boulder clusters and is occasionally encountered in and under plant debris.	**May occur.** Boulder fields and rocky slopes in desertscrub and chaparral are present throughout the project area.
Morafka's (Sonoran) desert tortoise	*Gopherus morafkai*	Uses Sonoran and Mojave Desertscrub, most often in palo verde-mixed cacti associations and primarily on rocky slopes and bajadas.	**Known to occur.** This species has been recorded within the project area.
Lowland leopard frog	*Lithobates yavapaiensis*	Uses aquatic systems in desert grasslands to pinyon-juniper, and breeds in a variety of natural and human-made aquatic systems. This species is found in central and southern Arizona below the Mogollon Rim.	Unlikely to occur. The project area does not contain perennial water sources and is not suitable habitat for the species. Species-specific surveys were conducted within the project area, and this species was not observed (WestLand Resources, 2012b).
Western barking frog	*Eleutherodactylus augusti cactorum*	Uses Madrean Evergreen Woodlands. This species inhabits outcrops and caves on rocky slopes, at elevations between 4,200 and 6,200 feet amsl. Permanent water is not a necessary component of habitat. This species is found in Cochise, southern Pima, and Santa Cruz Counties.	Unlikely to occur. The project area contains a small amount of pine-oak species but is outside the known range of the species.
Northern leopard frog	*Lithobates pipiens*	Uses a variety of habitats, including grassland, shrubland, woodland, and forests, at elevations between 0 and 11,000 feet amsl, usually in permanent waters with rooted aquatic vegetation, or other aquatic systems. This species is found in northern and central Arizona.	Unlikely to occur. The project area is beyond the known range of the species, and does not contain perennial water sources and is not suitable habitat for the species. Species-specific surveys were conducted within the project area, and this species was not observed (WestLand Resources, 2012b).

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Headwater chub	*Gila nigra*	Occupy cool to warm water in mid- to headwater stretches of mid-sized streams found within the Gila River basin, in deep, near-shore pools adjacent to swift riffles and runs, and near obstructions. This species is identified from Ash, Tonto, Spring, Marsh, Upper Fossil, and Deadman Creeks, as well as the East Verde River.	Unlikely to occur. There are no perennial water sources in the project area.
Roundtail chub	*Gila robusta*	Occupy cool to warm water in mid- to headwater stretches of mid-sized streams and rivers, in pools up to 6.6 feet deep adjacent to swifter riffles and runs. This species is identified from tributaries of the Little Colorado, Bill Williams, San Pedro, Gila, Salt, and Verde Rivers.	Unlikely to occur. There are no perennial water sources in the project area.
Desert sucker	*Catostomus clarki*	Occupy rapids and flowing pools of streams and rivers, primarily over bottoms of gravel with sandy silt in the interstitial spaces. This species is identified from the Gila River basin and tributaries of the Bill Williams River.	Unlikely to occur. There are no perennial water sources in the project area.
Sonoran sucker	*Catostomus insignis*	Occupy a variety of habitats, from warm-water rivers to colder trout streams, though they prefer deep, relatively quiet waters. This species is identified from the Gila and Bill Williams River basins.	Unlikely to occur. There are no perennial water sources in the project area.
Parker's cylloepus riffle beetle	*Cylloepus parkeri*	Found in permanent, clean, slow moving small streams, with loose gravelly substrate and very little sand.	Unlikely to occur. The project area does not contain perennial waters and is outside the known range of the species.
A caddisfly	*Wormaldia planae*	Adults of the genus *Wormaldia* (fingernet caddisflies) are found in damp woods, wetlands, and perennial streamside habitats, while larvae are entirely aquatic.	Unlikely to occur. There are no perennial water sources in the project area.
A mayfly	*Fallceon eatoni*	Mayfly species (order Ephemeroptera), including those of genus *Fallceon*, have an immature larval stage during which it is entirely aquatic. Owing to the short life cycle of this order and limited flight ability of gravid females, most species dispersal is restricted to less than 2 miles from water sources. This species is known from three individual specimens collected from northern Sonora, the Salt River Canyon, Arizona, and the San Bernardino Mountains, California.	Unlikely to occur. There are no perennial water sources in the project area.

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Netwing midge	*Agathon arizonicus*	This species is confined to areas in immediate vicinity of rapidly flowing streams in pinyon-juniper woodland communities at elevations between 6,000 and 9,300 feet amsl. This species is known from the Pinaleño Mountains.	Unlikely to occur. The project area does not contain perennial waters and is outside the known range of the species.
Fossil springsnail	*Pyrgulopsis simplex*	This species occurs only in the headspring and upper sections of outflow of perennial-flowing springs between elevations of 4,140 and 4,310 feet amsl. This species is known from one spring near Strawberry, Arizona, and Fossil Springs.	Unlikely to occur. The project area does not contain perennial springs and is outside the known range of the species.

Note: Range or habitat information is from HDMS (AGFD, 2017); USFWS Arizona Ecological Services Field Office (USFWS, 2017b); Corman and Wise-Gervais (2005); Brennan (2008); and Audubon (2017).

One sensitive species described in the table above (see Table 6) was recorded during site visits in the project area: peregrine falcon, discussed in more detail below. No other wildlife species listed as sensitive were recorded during site visits of the project area; however, species-specific surveys were not conducted. Six other species were determined to have the potential to occur or are known to occur within the project area. These are discussed in more detail below and are brought forward for effects analysis.

Allen's Big-eared Bat

Allen's big-eared bat (*Idionycteris phyllotis*) is medium sized, with a 12- to 13-inch wingspan and large (1.5-inch-long), forward-projecting lappets (flaps), which is the distinguishing characteristic for this species. The long fur of this bat is black at the base with yellowish-gray tips, with a white patch at the base of each ear. Typically found in mountainous regions at higher elevations, it can be found in ponderosa pine, pinyon-juniper, Mexican woodland, and riparian areas, and less commonly in desertscrub and white fir. This species appears to feed mainly on softer-bodied insects such as moths. Roosts are generally in cave and abandoned mine habitats, though on the Coconino and Apache-Sitgreaves National Forests, the species commonly uses trees. While little is known about threats to this species, disturbance to maternity colonies can result in abandonment.

There are no records of this species within the vicinity of the project area. Allen's big-eared bat ranges from the Colorado River Valley in Arizona to Mexico City, Mexico. Maternity colonies have been recorded near Kingman, Arizona, and Aravaipa Canyon, while most specimens have been collected from the southern Colorado Plateau, the Mogollon Rim, and adjacent mountain ranges. No records are known from the southwestern deserts of Arizona. As the project area contains suitable foraging and roosting habitat and is within the known range of the species, there is the potential for this species to occur within the project area.

Pale Townsend's Big-eared Bat

Pale Townsend's big-eared bat is medium sized (weighing between 8 and 14 grams), with a 12- to 13-inch wingspan and large hairless ears (1.2 to 1.56 inches long) that are joined across the forehead. Dorsal hairs are generally slate or gray, with pale cinnamon brown tips. Large glandular lumps occur on each side of the nose, which is a distinguishing characteristic from other large-eared species in Arizona. Found in desertscrub, pinyon-juniper woodlands, oak woodlands, and coniferous forests, this species forages for small moths and will often glean prey from vegetation while in flight. A cavern-obligate species (does not use cracks or crevices), this species roosts communally in small colonies in caves or inactive mines during

the day. Hibernation roosts are generally different from those used during warm months, and maternity roosts usually occur in a cave or mine with open ceilings near the dim light zone, with high air movement and multiple openings. The greatest threats to this species are human disturbance and/or vandalism at hibernacula or maternity roosts (as this species is sensitive to disturbance while roosting), the loss of foraging habitat as a result of deforestation, and the loss of roosting habitat as a result of mine closures.

This species was observed using abandoned mines within and in the vicinity of the project area, in addition to mist net captures (Apache Leap) and acoustical identification (Apache Leap, Devil's Canyon, Oak Flat, and Boyce Thompson) (WestLand Resources, 2012a). The project area provides roosting and foraging habitat for this species.

Spotted Bat

The spotted bat (*Euderma maculatum*) is a medium-sized (average weight approximately 15 grams) bat, with an average wingspan of 14 inches, and large, hairless, pinkish-red ears (approximately 2 inches long). The color of the fur is generally blackish, with three distinct white spots on the dorsal side (one at each shoulder and one at the base of the tail), and a circular, bare throat patch. This species also has a distinctive voice and low-frequency echolocation call. Evidence suggests that moths are an important food source. This bat uses a wide variety of habitat types, most usually in desertscrub, but individuals have been recorded in pine and conifer forests, riparian habitats, and marshes. Preferred roosting habitat characteristics are largely unknown, but evidence suggests that this species tends to roost singly in crevices and cracks in cliff faces, in proximity to water. Small groups may hibernate together.

There are no records of this species within the vicinity of the project area. The spotted bat ranges throughout central western North America, from southern British Columbia and Montana to California, Big Bend, Texas, and Durango and Queretaro, Mexico. Specimens have been taken near Yuma, Maricopa Junction, Tempe, and Littlefield, Arizona, while individuals have been recorded on the Kaibab Plateau, near Seligman, near Fort Pierce Wash, an aural record from eastern Arizona, and a known roost in Marble Canyon, Arizona. This species tends to be patchily distributed across this range and locally abundant, with potential to occur in the project area, as the project area contains suitable foraging and roosting habitat and is within the known range of the species.

Western Red Bat

The western red bat is a migratory, medium-sized (weighing between 8 and 11 grams) bat, with an 11- to 13-inch wingspan, short, rounded ears, and an interfemoral membrane that is completely furred on the dorsal side. The color of the fur of this species can range from bright orange to yellow-brown, with white-tipped hairs and whitish patches on the shoulders, and a distinct white bib under the neck. Wing membranes are jet black. This bat uses broad-leaf deciduous riparian areas and woodlands for roosting and foraging; it usually forages in areas of cottonwoods, sycamores, oaks, and walnuts. This bat roosts individually in dense foliage of large trees and shrubs near water, usually in large cottonwood trees, though it may occasionally roost in saguaro boots. Populations of this species appear to be declining, which may be a result of the decline of dense, mature cottonwood tree habitat across the western United States.

This species was captured using mist nets (Devil's Canyon) and recorded using acoustical identification (Devil's Canyon and Oak Flat) (WestLand Resources, 2012a). While the project area does not contain the preferred roosting site characteristics for this species, western red bats have been recorded at two sites in the vicinity of the project area and may potentially use the project area for foraging.

Peregrine Falcon

The peregrine falcon is a raven-sized bird (approximately 2 pounds for females, 1 to 1.5 pounds for males) and has pointed wings with a wingspan of approximately 3 feet. The plumage of adult peregrines is variable

in color and pattern. Most birds are dark blue-grey or brownish on the back with dark brown to black barring and streaking on a buff breast. This species has a distinctive dark "helmet" that covers the head to the nape of neck and down the side of face in dark malar stripes. Optimum peregrine habitat is generally considered to be steep, sheer cliffs overlooking an open expanse of woodlands, riparian areas, or other habitats supporting avian prey species in abundance. This species feeds primarily on birds and, to a lesser extent, on bats. Breeding begins in mid-February or March, and egg-laying can occur between mid-March and mid-May. Nestlings generally fledge between May and August. On August 25, 1999, the American peregrine falcon, formerly an endangered species, was delisted from the federal list of endangered species and designated as "Delisted Taxon, Recovered, Being Monitored in the Entire Range." Historic and current threats include the accumulation of pesticides or other toxins contained in prey species, though since the discontinuation of the use of DDT (dichloro-diphenyl-trichloroethane), an insecticide, these threats have been reduced. While previous peregrine falcon population declines coincided with the increasing use of DDT, other limiting factors include availability of cliffs for nesting and prey, which can limit distribution or numbers of breeding falcons, competition for nesting cliffs with other raptors, and possible predation to eggs and young.

This species was recorded at a historic breeding territory (aerie) on the face of the Apache Leap escarpment within the project area during site visits and past surveys. During site visits in support of this analysis, a pair of peregrine falcons was observed displaying territorial defense and courtship behavior. The project area contains appropriate breeding habitat for the peregrine falcon.

Bezy's Night Lizard

Bezy's night lizard (*Xantusia bezyi*) is small (approximately 2.4 inches snout to vent) and soft skinned, with a broad, flattened head. The scales on the head are plate like, large, and smooth, while the scales on the dorsal portion of the body are small and granular. Markings consist of dark blotches on a light yellow to olive green background. The eyes are lidless, with orange or reddish brown irises. Habitat for this species consists of rocky slopes and boulder fields, within rock outcroppings or in boulder clusters, in rugged portions of Sonoran desertscrub and interior chaparral communities. Bezy's night lizard spends the majority of its life within shelters that generally consist of rock crevices but may include plant debris. Forage includes a variety of insects, primarily ants, flies, and beetles. This endemic reptile is also live bearing, though little is known about its reproductive biology. Due to the rugged nature of this species' preferred habitat, it is not likely susceptible to threats resulting from human disturbance.

There are no records of this species in the project area. Bezy's night lizard ranges from the Mazatzal Mountains south to the Galiuro Mountains in Arizona. The project area contains suitable habitat for this species and is within the known range; therefore, there is the potential for this species to occur within the project area.

Morafka's (Sonoran) Desert Tortoise

Morafka's desert tortoises reach adult sizes between 8 and 15 inches, with stocky limbs, the forelimbs of which are covered with large, conical scales. The carapace is usually brownish with a definite pattern and growth lines. The plastron is yellowish, flat, and pear shaped, with males having large gular shields. Forage consists of a variety of annual and perennial grasses, forbs, and succulents, and habitat consists of rocky slopes and bajadas in Sonoran and Mojave Desertscrub and related ecotones. Adequate shelter is an important habitat characteristic for this species. This consists of loose soil that can be excavated below rocks and boulders, or rock crevices. Mating occurs during the summer monsoon season, and females lay the fertilized eggs at the onset of the following summer's rains in late June or early July, generally inside burrows. This species occurs south and east of the Colorado River in Arizona, ranging south of the U.S.–Mexico border to northern Sinaloa. This species does not tend to be distributed uniformly across a landscape. Densities vary, depending on a variety of resources, such as the availability of suitable cover and

other factors. Threats to this species include habitat loss, disease transferred from captive populations, collection, and predation.

Morafka's desert tortoise has been recorded within the project area, in addition to areas in the vicinity of the project area. The project area contains habitat with characteristics suitable for this species.

Tonto National Forest Migratory Bird Species of Concern

Species discussed in this section include migratory bird species listed as migratory bird species of concern by the Tonto National Forest. EO 13186 requires federal agencies to consider the effects of land management planning and project implementation on migratory birds, particularly those for which there is conservation concern. Factors such as naturally small ranges, loss of habitat, or observed population declines influence the listing of species as being of conservation concern. These species are identified in the Arizona PIF Bird Conservation Plan (Latta et al., 1999) and are included on the Tonto National Forest Migratory Bird Species of Concern list (Forest Service, 2016a). Table 7 describes migratory birds of concern for the Tonto National Forest, associated habitat, and potential for occurrence within the project area.

Table 7. Potential for Occurrence of Tonto National Forest Migratory Bird Species

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Flammulated owl	*Psiloscops flammeolus*	Found in mountainous areas with pine forests. Nests in relatively open forest, typically ponderosa pine, in cool and fairly dry zones such as mountains of the interior. In some areas, favors groves of aspen. During migration, the species may be found at lower elevations in dense vegetation.	**May occur.** While there are no ponderosa pine forests in the project area, the species could use the project area during migration.
Northern goshawk	*Accipiter gentilis*	This species occurs primarily in ponderosa pine, mixed-species forest, spruce-fir woodlands, and some riparian communities, at elevations between 4,750 and 9,120 feet amsl.	Unlikely to occur. The project area does not contain forested habitat and is outside the known range for this species.
Olive-sided flycatcher	*Contopus cooperi*	Breeds in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds. Winters at forest edges and clearings where tall trees or snags are present.	Unlikely to occur. The project area does not contain montane or coniferous forests and is not suitable habitat for the species.
Grace's warbler	*Setophaga graciae*	Found primarily in ponderosa pine-oak forests of mountains in Arizona. Also in spruce, fir, and oak thickets in higher mountains of the Southwest.	Unlikely to occur. The project area does not contain ponderosa pine-oak forests and is not suitable habitat for the species.
Lewis's woodpecker	*Melanerpes lewis*	Use open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest. Breeding distribution is widely associated with ponderosa pine distribution in western North America.	Unlikely to occur. The project area does not contain ponderosa pine forest or riparian woodland and is not suitable habitat for the species.

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Olive warbler	*Peucedramus taeniatus*	Found in high mountains in pine and fir forests of high mountains, generally at elevations of 6,000 feet and above. Prefers ponderosa pine, but also occurs in other pines, firs, Douglas-firs, and adjacent oaks.	Unlikely to occur. The project area does not contain pine or fir forests and is not suitable habitat for the species.
Band-tailed pigeon	*Patagioenas fasciata*	Found in wooded or semi-open habitats in canyons with oaks, chaparral, and mountain forests. May forage along streams in lowland desert.	**May occur.** Suitable chaparral habitat is present in the project area.
Mexican spotted owl	*Strix occidentalis lucida*	This species occurs in canyons and dense, generally older forests of mixed conifer or ponderosa pine–Gambel oak, at elevations between 4,100 and 9,000 feet amsl.	Unlikely to occur. The project area does not contain suitable mixed conifer or ponderosa pine–Gambel oak forest habitat.
Cordilleran flycatcher	*Empidonax occidentalis*	Found in moist woods, forests, and shady canyons along streams through mixed or coniferous forest. Often forages in conifers such as pines or Douglas-firs, but not common in purely coniferous forest.	Unlikely to occur. There are no coniferous forests or streams in the project area.
Golden-crowned kinglet	*Regulus satrapa*	Mostly found in conifers, especially those of spruce, fir, and hemlock; less often found in Douglas-fir or pines. In migration and winter, may be found in deciduous trees, but tends to seek out conifers even then.	Unlikely to occur. The project area does not contain coniferous forests.
Red-faced warbler	*Cardellina rubrifrons*	Found in montane fir, pine, and pine-oak woodland. In migration and winter, this species uses humid montane forest, pine-oak association, and lowland riparian woodland. Breeding occurs at elevations between 6,400 and 9,000 feet amsl.	Unlikely to occur. The project area does not contain fir, pine, pine oak woodlands, or riparian woodlands.
Red-naped sapsucker	*Sphyrapicus nuchalis*	Found in woodlands and aspen groves in winter. In summer, mostly in mountains in mixed coniferous and deciduous forest, especially around aspens. During migration and winter, it occurs in both mountains and lowlands, deciduous trees, riverside willow groves, pine-oak woods, and orchards.	Unlikely to occur. No mixed coniferous woodlands, aspen groves, or riverside habitats are present in the project area.
Black-throated gray warbler	*Setophaga nigrescens*	Found in areas with pinyons and junipers in open mixed woods. Breeds in dry coniferous and mixed woods, especially of oak, juniper, and pinyon pine. Also frequents manzanita thickets and chaparral.	**May occur.** The project area contains chaparral and is suitable habitat for the species.

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Golden eagle	*Aquila chrysaetos*	Open areas over tundra, prairie, rangelands, and desert.	**May occur.** The project area is suitable habitat for the species, and the species is known from the project vicinity, though there are no records of breeding territories within the project area.
Gray flycatcher	*Empidonax wrightii*	Great basin desert in sagebrush; pinyon and juniper. In winter, willows, and brush. Winters in mesquite groves and in streamside willows and other trees in lowlands.	**May occur.** There is no sagebrush; however, there are scattered pinyon pines and junipers in the project area.
Gray vireo	*Vireo vicinior*	Found in desertscrub, mixed juniper, or pinyon pine and oak scrub associations, and chaparral, in hot, arid mountains and high plains scrubland.	**May occur.** The project area contains chaparral and oak scrub and is suitable habitat for the species.
Juniper titmouse	*Baeolophus ridgwayi*	Found mainly in open woods of pinyon pine and juniper, as well as in oak or pine-oak woods.	**May occur.** Pinyon pine and juniper are scattered in the upper elevations of the project area.
Peregrine falcon	*Falco peregrinus*	This species is strongly associated with steep, rocky areas with cliffs near water.	**Known to occur.** This species was observed during site visits.
Pinyon jay	*Gymnorhinus cyanocephalus*	Found in areas with pinyon pines, junipers, and sagebrush. Elsewhere in streamside groves, oak woods, or other habitats.	**May occur.** There is no sagebrush; however, there are scattered pinyon pines and junipers in the project area.
Black-chinned sparrow	*Spizella atrogularis*	During breeding season, black-chinned sparrows can be found in arid brushlands on rugged mountain slopes from sea level to almost 8,850 feet amsl.	**Known to occur.** This species was observed during site visits.
Swainson's hawk	*Buteo swainsoni*	Found in shrub-steppe areas with scattered trees, large shrubs, and riparian areas. They will often feed in agricultural areas. Areas they inhabit require at least small tracks of adjacent land containing lightly irrigated agricultural areas, particularly with alfalfa and grass hay (their preferred habitat), or non-agricultural areas with low- or moderate-height vegetated areas.	**May occur.** Breeding habitat is not present in the project area; however, the project area could be used for foraging.
Bendire's thrasher	*Toxostoma bendirei*	Found in relatively open grassland, shrubland, or woodland with scattered shrubs or trees.	**May occur.** The shrublands in the project area are suitable habitat for the species.
Gila woodpecker	*Melanerpes uropygialis*	Desert washes, saguaros, river groves, cottonwoods, towns. Uses nesting cavities in cottonwood groves along rivers, large mesquites or willows, palms, giant cactus, such as saguaro (*Carnegiea gigantea*) or cardon (*Pachycereus pringlei*).	**Known to occur.** This species was observed during site visits.

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Gilded flicker	*Colaptes chrysoides*	Strongly associated with, but not completely restricted to, giant cactus forests of southwestern deserts.	**May occur.** The project area contains numerous saguaros and is suitable habitat for the species.
Phainopepla	*Phainopepla nitens*	Desertscrub, mesquites, oak foothills, mistletoe clumps, chaparral, streamside trees, and oak woodlands.	**Known to occur.** This species was observed during site visits.
Canyon towhee	*Melozone fusca*	Found in open pinyon-juniper woodland, chaparral on dry hillsides, grasslands with cholla and mesquite, thickets of scrub oak, similar habitats.	**Known to occur.** Chaparral and open desert are present in the project area and are suitable habitat for the species.
Prairie falcon	*Falco mexicanus*	Grasslands and deserts.	**May occur.** The project area contains suitable desert habitat for the species.
Costa's hummingbird	*Calypte costae*	Dry, open habitats, including desertscrub, semi-desert, and chaparral.	**Known to occur.** This species was observed during site visits.
Elf owl	*Micrathene whitneyi*	Occupies semi-arid wooded canyons, gallery forests, thorn forest, and semi-open areas with scattered trees, including nesting in abandoned cavities of saguaros. Saguaro deserts, wooded canyons. Within its U.S. range, found in any lowland habitat providing cover and good nesting cavities. Most common in deserts with many tall saguaro cactus or large mesquites, and in canyons in the foothills, especially around sycamores or large oaks.	**May occur.** The project area contains lowland habitat with saguaros, large mesquites, and oaks and is within the known range of the species.
Purple martin	*Progne subis* (subspecies *P. s. hesperia* is included in the draft Tonto National Forest Species of Conservation Concern list below)	Uses densely vegetated Sonoran Desertscrub habitats with large saguaros, containing an abundance of cavities, at elevations between 1,800 and 4,060 feet amsl.	**May occur.** Sonoran Desertscrub is present in the project area, and it is suitable habitat for the species.
MacGillivray's warbler	*Geothlypis tolmiei*	Uses coniferous forest edges, burns, brushy cuts, second-growth alder thickets, and streamside growth.	Unlikely to occur. There are no coniferous forest edges, alder thickets, burns, brushy cuts, or streamside growth in the project area.

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Yuma clapper rail	*Rallus longirostris yumanensis*	In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (*Typha* spp.), bulrushes (*Isolepis* spp.), and sedges (*Carex* spp.). The range includes the Colorado River from Lake Mead to Mexico; the Gila and Salt Rivers upstream to the area of the Verde confluence; Picacho Reservoir; and the Tonto Creek arm of Roosevelt Lake. This species may be expanding into other suitable marsh habitats in western and central Arizona.	Unlikely to occur. There are no freshwater marshes dominated by riparian herbaceous vegetation located within the project area.
Common black hawk	*Buteogallus anthracinus*	Deciduous riparian habitats with permanent water.	Unlikely to occur. There is no riparian habitat in the project area for the species.
Northern beardless-tyrannulet	*Camptostoma imberbe*	Mesquite or cottonwood/willow groves.	Unlikely to occur. There are no mesquite or cottonwood/willow groves in the project area.
Yellow warbler	*Setophaga petechia*	Streamside thickets.	Unlikely to occur. There are no streams or streamside thickets in the project area.
Bald eagle	*Haliaeetus leucocephalus*	Bald eagles typically breed and winter in forested areas adjacent to large bodies of water. Throughout its range, the species selects large roost trees that are open and accessible.	Unlikely to occur. There are no large bodies of water or large roost trees in the project area.
Bell's vireo	*Vireo bellii*	Inhabits lowland riparian areas with willows, mesquite, and seep willows. The vireo prefers dense, low, shrubby vegetation in riparian areas. Locally found in chaparral, woodlands, and areas with scrub oaks.	**May occur.** Chaparral and scrub oaks are present in the project area, and it is not suitable habitat for the species.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood, willow, boxelder (*Acer negundo*), saltcedar, Russian olive (*Elaeagnus angustifolia*), buttonbush (*Cephalanthus* spp.), and arrowweed (*Pluchea sericea*) 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.	Unlikely to occur. The species has been recorded in the vicinity of the project area; however, the project area does not contain riparian vegetation suitable for nesting or migratory habitat for the species.

Common Name	*Scientific Name*	Habitat	Potential for Occurrence
Yellow-billed cuckoo	*Coccyzus americanus*	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. The highest concentrations in Arizona are along the Agua Fria, San Pedro, upper Santa Cruz, and Verde River drainages and Cienega and Sonoita Creeks.	Unlikely to occur. The species has been recorded in the vicinity of the project area; however, the project area does not contain riparian vegetation suitable for nesting or migratory habitat for the species.
Lucy's warbler	*Oreothlypis luciae*	Lowland mesquite woodlands.	Unlikely to occur. No mesquite woodlands are present in the project area.

Note: Range or habitat information is from HDMS (AGFD, 2017); USFWS Arizona Ecological Services Field Office (USFWS, 2017b); Corman and Wise-Gervais (2005); and Audubon (2017).

There are no Important Bird Areas (IBAs) or overwintering areas within the project area, though Boyce Thompson Arboretum IBA is located approximately 4 miles west of the proposed Apache Leap SMA. IBAs are sites that provide essential habitat for one or more bird species, including sites for breeding, wintering, and/or migrating birds. Six migratory bird species identified in the table above (see Table 7) were recorded during site visits in the project area. These species include peregrine falcon, pinyon jay, Gila woodpecker, phainopepla, canyon towhee (*Melozone fusca*), and Costa's hummingbird. Two peregrine falcons were observed exhibiting breeding behavior along the Apache Leap escarpment, which has been previously recorded as an aerie. Gila woodpeckers, canyon towhees, and phainopepla appeared to be abundant within the desertscrub communities, and canyon towhees appeared to also be abundant within the chaparral communities.

Tonto National Forest Species of Conservation Concern

See the discussion in Tonto National Forest Plant Species of Conservation Concern.

Tonto National Forest Management Indicator Species

MIS are a category of focal species, the key characteristic of which is that the status and population trend of these species provide insights into the integrity of the larger ecological system. The populations of these species are believed to indicate the effects of management activities. Considerations include: species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; non-game species of special interest; and habitat and animal species whose population changes are believed to indicate the effects of management activities on other species or selected communities.

MIS are addressed in order to implement NFMA regulations (see National Forest Management Act description under Regulatory Framework).The management indicator approach is designed to function as a means to provide insight into the effects of forest management on plant and animal communities. Management indicators may be used as a tool for assessing changes in specialized habitats, formulating habitat objectives, and establishing standards and guidelines to provide for a diversity of wildlife, fish, and plant habitats.

The forest plan identifies 29 wildlife species and one macroinvertebrate species group as MIS for the Tonto National Forest (Forest Service, 1985). The forest plan provides direction on managing quality habitat for MIS by management area. Site-specific occurrence records are not available for most MIS,

but each species' occurrence in its respective habitat is assumed, as documented in the "Tonto National Forest Management Indicator Species Status Report" (Klein et al., 2005). Habitats for a moderate number of the Tonto National Forest MIS occur in the project area. As most MIS are not rare species, it is assumed that some individuals of each MIS associated with the habitat types in the project area are also present. Additionally, it is expected that individuals of MIS associated with habitat not present within the project area have the potential to occur.

Nine species or communities (ash-throated flycatcher, gray vireo [*Vireo vicinior*], Townsend's solitaire [*Myadestes townsendii*], juniper titmouse [*Baeolophus ridgwayi*], northern flicker [*Colaptes auratus*], spotted towhee, black-chinned sparrow, black-throated sparrow, and canyon towhee) were selected based on their associations with the habitat types present in the project area and their suitability as indicators of habitat changes brought about by the proposed alternative. The 20 MIS species and one macroinvertebrate species group for which habitat does not occur within the project area were omitted from further analysis. Although these species may occur within the project area, the proposed action is not expected to affect representative habitats that are not present. These species and their indicators/habitats, as well as trends, are detailed in Table 8 below.

Table 8. Tonto National Forest Management Indicator Species

Species (Scientific Name)	Vegetation Community	Indicator	Potential for Occurrence	Habitat Trend (1985–2005)	Population Trend (1985–2005)
Elk (*Cervus canadensis*)	Ponderosa pine, mixed conifer	General forest conditions	Habitat not present.	Static	Stable
Turkey (*Meleagris gallopavo merriami*)	Ponderosa pine, mixed conifer	Vertical diversity; forest mix	Habitat not present.	Static	Stable
Pygmy nuthatch (*Sitta pygmaea*)	Ponderosa pine	Old growth pine	Habitat not present.	Static	Decrease
Violet-green swallow (*Tachycineta thalassina*)	Ponderosa pine, mixed conifer	Cavity-nesting habitat	Habitat not present.	Static	Stable
Western bluebird (*Sialia mexicana*)	Ponderosa pine, mixed conifer	Forest openings	Habitat not present.	Static	Stable
Hairy woodpecker (*Leuconotopicus villosus*)	Ponderosa pine, mixed conifer	Snags	Habitat not present.	Static	Stable
Goshawk (*Accipiter gentilis*)	Ponderosa pine, mixed conifer	Vertical diversity	Habitat not present.	Static	Decrease
Abert's squirrel (*Sciurus aberti*)	Ponderosa pine, mixed conifer	Successional stages of pine	Habitat not present.	Static	Decrease
Ash-throated flycatcher (*Myiarchus cinerascens*)	Pinyon-juniper chaparral, pinyon-juniper grassland	Ground cover	**Habitat present.**	Static	Stable
Gray vireo (*Vireo vicinior*)	Pinyon-juniper chaparral, pinyon-juniper grassland	Tree density	**Habitat present.**	Static	Decrease

Species (Scientific Name)	Vegetation Community	Indicator	Potential for Occurrence	Habitat Trend (1985–2005)	Population Trend (1985–2005)
Townsend's solitaire (*Myadestes townsendi*)	Pinyon-juniper chaparral, pinyon-juniper grassland	Juniper berry production	**Habitat present.**	Static	Stable
Juniper (plain) titmouse (*Baeolophus ridgwayi*)	Pinyon-juniper chaparral, pinyon-juniper grassland	General woodland conditions	**Habitat present.**	Static	Decrease
Northern flicker (*Colaptes auratus*)	Pinyon-juniper chaparral, pinyon-juniper grassland	Snags	**Habitat present.**	Static	Stable
Spotted towhee (*Pipilo maculatus*)	Pinyon-juniper chaparral, pinyon-juniper grassland, interior chaparral	Successional stages of pinyon-juniper; shrub density	**Habitat present.**	Static	Stable
Black-chinned sparrow (*Spizella atrogularis*)	Interior chaparral	Shrub diversity	**Habitat present.**	Static	Stable
Savannah sparrow (*Passerculus sandwichensis*)	Colorado plateau grassland, pinyon-juniper grassland	Grass species diversity	Habitat not present.	Upward/static	Stable
Horned lark (*Eremophila alpestris*)	Colorado plateau grassland, pinyon-juniper grassland	Vegetation aspect	Habitat not present.	Upward/static	Decrease
Black-throated sparrow (*Amphispiza bilineata*)	Desert communities	Shrub diversity	**Habitat present.**	Downward/ static	Stable
Canyon towhee (*Melozone fusca*)	Desert communities	Ground cover	**Habitat present.**	Downward/ static	Decrease
Bald eagle (*Haliaeetus leucocephalus*)	Cottonwood willow riparian forest	General riparian	Habitat not present.	No change	Stable
Bell's vireo (*Vireo bellii*)	Cottonwood willow riparian forest	Well-developed understory	Habitat not present.	No change	Decrease
Summer tanager (*Piranga rubra*)	Cottonwood willow riparian forest	Tall, mature trees	Habitat not present.	No change	Decrease
Hooded oriole (*Icterus cucullatus*)	Cottonwood willow riparian forest	Medium-sized trees	Habitat not present.	No change	Stable
Arizona gray squirrel (*Sciurus arizonensis*)	Mixed broadleaf deciduous riparian forest	General riparian	Habitat not present.	No change	Stable
Warbling vireo (*Vireo gilvus*)	Mixed broadleaf deciduous riparian forest	Tall overstory	Habitat not present.	No change	Stable
Western wood pewee (*Contopus sordidulus*)	Mixed broadleaf deciduous riparian forest	Medium overstory	Habitat not present.	No change	Decrease

Species (Scientific Name)	Vegetation Community	Indicator	Potential for Occurrence	Habitat Trend (1985–2005)	Population Trend (1985–2005)
Common black hawk (*Buteogallus anthracinus*)	Mixed broadleaf deciduous riparian forest	Riparian streamside	Habitat not present.	No change	Decrease
Macroinvertebrates	Aquatic	Water quality	Habitat not present.	N/A	N/A

Five MIS species were recorded within the project area during site visits. These include ash-throated flycatcher, spotted towhee, black-chinned sparrow, black-throated sparrow, and canyon towhee.

Wildlife Species of Greatest Conservation Need

The HDMS report (AGFD, 2017) showed records of 10 Wildlife Species of Greatest Conservation Need (SGCN) within 5 miles of the project area. These species include Gila longfin dace (*Agosia chrysogaster chrysogaster*), golden eagle (*Aquila chrysaetos*), yellow-billed cuckoo (*Coccyzus americanus*), desert pupfish (*Cyprinodon macularius*), greater western bonneted bat (*Eumops perotis californicus*), American peregrine falcon (*Falco peregrinus anatum*), Sonoran desert tortoise (*Gopherus morafkai*), ocelot, lowland leopard frog (*Lithobates yavapaiensis*), Yuma myotis (*Myotis yumanensis*), and Bezy's night lizard. Yellow-billed cuckoo and ocelot are listed under the ESA. Ocelot is addressed above under Threatened, Endangered, and Candidate Species. There is no habitat for yellow-billed cuckoo, Gila longfin dace, or desert pupfish in the project area, and these species are unlikely to occur. Species-specific surveys for lowland leopard frog were conducted, and no evidence of occupancy of this species was observed in the project vicinity (WestLand Resources, 2012b). American peregrine falcon was observed in the project area during field visits, and Sonoran desert tortoise was previously recorded within the project area. Greater western bonneted bat and Yuma myotis have been observed in the project vicinity (WestLand Resources, 2012a). Bezy's night lizard could occur in the project area but was not observed during project surveys, nor recorded during previous surveys of the project area. An additional 75 SGCN have the potential to occur in the project vicinity based on predicted range models.

Wildlife Species of Economic and Recreation Importance

The HDMS (AGFD, 2017) report indicated that nine Wildlife Species of Economic and Recreation Importance are predicted to occur in the project area, including Gambel's quail, mule deer, white-tailed deer, desert bighorn sheep (*Ovis canadensis nelsoni*), band-tailed pigeon (*Patagioenas fasciata*), javelina, mountain lion (*Puma concolor*), white-winged dove (*Zenaida asiatica*), and mourning dove (*Zenaida macroura*). Gambel's quail, white-winged dove, and mourning dove were observed during field visits. In addition, habitat for black bear is present in the project area.

Environmental Consequences

Alternative 1 – No Action

Under the no action alternative, current management of the Apache Leap area would continue in accordance with the forest plan, as amended. A special management area for the Apache Leap area would not be designated, and there would be no implementation of the Apache Leap SMA management plan. The plan components of the Apache Leap SMA management plan do not apply to the no action alternative. Because the no action alternative is a continuation of current management and prescriptions and would not change the existing forest plan, there would be no amendment to the forest plan to include the Apache Leap

SMA management plan. Continuing current management under the no action alternative would include the use of desired conditions, objectives, standards, guidelines, and suitability of lands as defined in the forest plan.

Alternative 2 – Proposed Action

The Forest Service is proposing to amend the forest plan and implement the Apache Leap SMA management plan. Direction contained in the management plan would be incorporated into the forest plan.

1985 Plan Amendment

The proposed forest plan amendment includes changes to the existing management area descriptions and maps, as well as new plan components that would be added in accordance with the 2012 Planning Rule. All other relevant direction from the forest plan would still apply to the Apache Leap SMA.

Implementation of the proposed forest plan amendment would not significantly alter the multiple-use goals and objectives of the current forest plan. The amendment proposes changes in management direction for the Apache Leap SMA only. The Apache Leap SMA management direction is restricted in geographic extent and would not have wide-ranging effects across the Tonto National Forest. Significant changes in the multiple-use goals and objectives for long-term land and resource management are not expected.

Management Area 2G (Globe Ranger District – Apache Leap SMA)

A new management area would be added with the title MA 2G Globe Ranger District – Apache Leap SMA. The new management area would include the following:

1. The new MA 2G would be carved out from the existing management area, MA 2F.
2. The management emphasis for the Apache Leap SMA would include the primary purposes as stated in the NDAA Section 3003(g)(3): to preserve the natural character of Apache Leap; to allow for traditional uses of the area by Native American people; and to protect and conserve the cultural and archaeological resources of the area.
3. The plan components found in Chapter 3 of the Apache Leap SMA plan would be added.

Management Area 2F (Globe Ranger District – General Management Area)

Within the boundaries of the MA 2F, the forest plan would be amended in the following ways to ensure appropriate management of the Apache Leap SMA:

1. The existing MA 2F comprises approximately 385,848 acres. Addition of the new MA 2G Globe Ranger District – Apache Leap SMA would reduce the acreage of the visual quality objectives (VQOs) of the existing MA 2F would be amended to exclude approximately 697 acres of Tonto National Forest land.
2. The recreation opportunity spectrum (ROS) classifications of the existing MA 2F would be amended to exclude approximately 697 acres of Tonto National Forest land.
3. Projected changes in range condition acreages of the existing MA 2F would be amended to exclude approximately 697 acres of Tonto National Forest land.

Note: Upon completion of the Southeast Arizona Land Exchange, an additional 142 acres of privately owned land within the Apache Leap SMA would be conveyed to the Tonto National Forest. Thus, the final acreage for MA 2F would be 385,073. Thus, the final acreages for VQOs, ROS, and range condition would be reduced by 839 acres each.

No other applicable aspects of the forest plan would change as part of this proposed action.

Apache Leap SMA Plan Components

The following Apache Leap SMA plan components for wildlife and vegetation resources were developed by the Forest Service interdisciplinary team to reduce or eliminate adverse impacts, as well as promote beneficial impacts from Apache Leap SMA plan implementation. Plan components are intended to promote the three stated purposes of the special management area as specified by the NDAA: (1) maintain the natural character, (2) allow for traditional use by Native American people, and (3) protect and conserve cultural and archaeological resources of the area. The best available scientific information is incorporated to inform the development of plan components and other plan content.

Plan components identified below would only apply to the 839 acres forming the Apache Leap SMA. As previously stated, existing forest plan components will be tiered to where no changes are necessary to promote the three stated purposes of the special management area provided within the NDAA. These plan components address key issues that were identified during the April 2017 scoping period. As such, the Apache Leap SMA management plan would include the following new and modified plan components to provide a detailed management framework for planning-level direction (Forest Service, 2017) on all lands encompassed by the special management area.

It is important to note that the Apache Leap SMA management plan is a management plan and forest plan amendment and does not direct any surface-disturbing activities. Future proposed actions within the special management area would be subject to project-specific NEPA analysis and separate Forest Supervisor decision.

The following information regarding the proposed desired conditions and management approaches for vegetation and wildlife resources within the Apache Leap SMA comes directly from the proposed Apache Leap SMA management plan.

Wildlife

Desired Conditions

1. The Apache Leap SMA provides wildlife habitat (food, water, and shelter) over a relatively undisturbed landscape.
2. Current habitat characteristics enable continued use by wildlife for movement, cover (protective/breeding), and forage across the landscape. Diverse vegetation and functioning ecosystem processes ensure ongoing sustainability for a variety of wildlife species.

Guidelines

1. Adits and other remnants of historic mining that do not pose a public safety hazard should be evaluated for continued wildlife use (bats, owls, javelina, etc.).

Management Approaches

Manage to provide diverse habitats with ecological conditions that enable native species to persist long term. In conjunction with Resolution Copper, develop and implement a monitoring plan to assess impacts to wildlife from mining activities, including low-frequency effects from blasting, conveyor and machinery operation, and mining-induced micro-seismic responses.

Support wildlife by implementing management practices that reduce or eliminate negative impacts and take into special consideration species which may be imperiled. Work with the Arizona Game and Fish Department to minimize or avoid impacts to seasonally permitted hunting opportunities within the Apache Leap SMA.

Vegetation

Desired Conditions

1. Natural ecological processes (e.g., plant growth and die-off, nutrient cycling, soil formation) and disturbances (e.g., fire, insects, drought, and disease) are the primary forces affecting the composition, structure, and growth of vegetation.
2. Plant communities within the Apache Leap SMA are dominated by native species. Woody and herbaceous native vegetation is present and consistent with potential composition, density, and structural diversity.
3. Undesirable non-native species do not adversely affect ecosystem composition, structure, or function, including native species populations or the natural fire regime. Introduction of additional invasive species rarely occurs and is detected at an early stage.

Management Approaches

Develop an integrated management approach with the goal of preventing, controlling, or eradicating invasive species. This should involve prioritizing species and areas for treatment and identifying the most appropriate method(s) for control and eradication. Treatment efforts should focus on areas of high use (roads/trails) and on drainages, washes, and low-lying areas subject to flowing or standing water, due to increased dispersal means in these habitats.

Inventory areas of invasive species' occurrence. Because of the often aggressive and tenacious nature of invasive species, the Forest Service should apply timely initial treatments with follow-up for appropriate intervals to meet objectives.

Consider management tools that include, but are not limited to, timing restrictions, signage, visitor outreach, or physical barriers as a means to reduce impacts on the vegetative community.

Included in the Apache Leap SMA management plan are other proposed desired conditions, guidelines, and management approaches that would change from the existing management of the area with the amendment of the forest plan and that with implementation may affect vegetation and wildlife resources.

Direct and Indirect Effects – Alternative 2

The proposed action is a management plan and forest plan amendment and does not direct any surface-disturbing activities or immediate actions on the ground. Removal of livestock grazing from the Superior and Devil's Canyon Allotments pastures within the Apache Leap SMA could improve future conditions for vegetation resources. Grazing can directly affect vegetation by altering soil and vegetation composition, density and structure, and species composition (Trimble and Mendel, 1995). The removal of grazing could provide improved soil conditions, directly benefiting vegetation resources. This could eventually lead to an increase in herbaceous and shrub density, cover, and diversity. The removal of grazing from portions of the project area would have a direct and indirect beneficial impact to vegetation and habitats.

Indirect effects from the forest plan amendment are limited to the Apache Leap SMA and MA 2F. All other relevant direction from the forest plan, such as forest-wide standards and guidelines, would still apply to the Apache Leap SMA. Indirect effects would result from future implementation of the management plan. Because the Apache Leap SMA management plan is designed to maintain the natural character within the entire Apache Leap SMA, the proposed action is not anticipated to result in adverse indirect effects. Rather, the approval and implementation of the plan would likely have an overall beneficial impact to vegetation and habitat within the Apache Leap SMA. The management plan includes desired conditions and guidelines to return lands where past mineral development has occurred to more stable conditions and to mitigate

public safety hazards associated with the historic mine features in the Apache Leap SMA within 5 years of detection, which would also benefit vegetation.

Implementation actions and their direct effects, which may consist of ground-disturbing activities and/or changes in management strategy (such as removal of existing range improvements, or prohibition of overnight camping), would be analyzed under a separate NEPA process. Discussed below, by plan component (identified in parentheses), are the indirect, overall effects on vegetation and wildlife resources that could result from specific changes in management strategy and desired conditions outlined in the proposed action. Habitat or species-specific effects are discussed by resource, following the plan components.

Decommissioning of Existing Roads on Private Parcels (Public Access)

The decommissioning of unapproved roads on acquired private lands would result in a minor, localized, indirect benefit to vegetation and wildlife resources within an approximately 0.35-mile area proposed for decommissioning in Arizona Upland subdivision–Sonoran Desertscrub vegetation community within the Apache Leap SMA. Roads generally degrade native vegetation, and these effects have been well documented (Forman and Alexander, 1998; Jones et al., 2008; Trombulak and Frissell, 2000; Walker and Everett, 1987). Improved vegetation characteristics from these decommissioning activities would have a minor, localized, indirect impact to the vegetation community in the approximately 0.35-mile area by allowing native vegetation to return and reduce fragmentation, benefiting habitat long term.

Maintenance of Existing Infrastructure and/or Trails (Natural Character, Recreation, and Scenery)

Maintenance of existing transmission infrastructure and/or trails within the proposed Apache Leap SMA would be performed in a manner consistent with the protection of the natural character and values of the Apache Leap SMA. The long-term effects of maintaining trails could include a minor increase in potential disturbance to wildlife as a result of non-motorized recreation within the special management area, and continue ongoing risk of establishment and spread of non-native plant species. Goals described in the proposed Apache Leap SMA management plan include the treatment of non-native plant species with the intent to protect the natural values of the special management area, the risk from establishment and spread of non-native species as a result of trail maintenance would be minor.

Limits on the Construction of New Communication Sites, Utility Lines, and Transmission Lines (Natural Character and Scenery); Withdrawal of the SMA from Mineral Leasing and Mining (Mineral Resources)

The limits on the construction of new communication sites, utility and transmission lines (referred to as utility infrastructure), and mineral leasing and mining within the Apache Leap SMA would result in a net benefit to vegetation and wildlife habitat in the project area. There would be no potential for new construction related to communications or utilities, and there would be no potential for mining and associated mining infrastructure, to include roads impacting habitat. The proposed action would maintain the ecological values of the project area.

Prohibition of Overnight Camping within the Apache Leap SMA (Recreation)

Prohibition of overnight camping within the proposed Apache Leap SMA could improve vegetation and wildlife habitat conditions in the project area. Overnight camping activities can lead to a decline in vegetative cover through trampling and repeated use at camp sites over time (Marion and Cole, 1996) and potentially increase the likelihood for human-caused wildfires. Eliminating these activities could lead to a beneficial effect on vegetation, wildlife, and wildlife habitats in the project area.

Closure of Abandoned Mining Infrastructure (Mineral Resources)

The closure of abandoned mining features that have been identified to be a public safety hazard could indirectly result in adverse effects on wildlife species that used these habitats. Indirect effects would be species specific, generally focusing upon bat species with greater detail provided in sections below.

Vegetation

General Vegetation

Overall, the proposed action would result in long-term, beneficial direct and indirect effects on vegetation resources within the project area. The proposed action would manage the project area to protect the natural character of the area, and management activities to include decommissioning of roads, removal of existing range improvements, and limits on new construction of utility infrastructure would maintain and protect the vegetation resources of the project area. Long-term, beneficial effects could result from an increase in vegetative cover and from revegetation of existing disturbed areas.

Threatened and Endangered Plant Species

The proposed action, which includes the elimination of potentially affecting activities, would have long-term, beneficial direct and indirect effects on potentially suitable habitat for the Arizona hedgehog cactus (*Echinocereus triglochidiatus* var. *arizonicus*). Although Arizona hedgehog cacti have not been recorded within the project area, potentially suitable habitat is present, and the species is known to occur to the north and east.

The proposed action would manage the project area to protect the natural character of the area, and management activities such as such as decommissioning of roads, removal of existing range improvements, and limits on new construction of utility infrastructure would maintain, protect, and potentially increase suitable habitat for the species. Therefore, the proposed action would have no effect on the Arizona hedgehog cactus and would have beneficial direct and indirect impacts on potentially suitable habitat for the species.

Tonto National Forest Sensitive Plant Species

The proposed action would have beneficial direct and indirect effects on Tonto National Forest sensitive plant species and associated habitat. Forest Sensitive plant species were not observed within the project area during site visits though, species-specific surveys had not been completed. Potentially suitable habitat is present within the project area for both Pima Indian mallow (*Abutilon parishii*) and mapleleaf false snapdragon (*Mabrya acerifolia*).

The proposed action would manage the project area to protect the natural character of the Apache Leap SMA, and management activities such as decommissioning of roads, removal of existing range improvements, and limits on new construction of utility infrastructure could result in an increase in vegetative cover and in revegetation of existing disturbed areas. This would maintain, protect, and potentially increase available habitat for sensitive plant species. Therefore, the proposed action would result in long-term, beneficial impacts to Forest Sensitive plant species and habitats within the project area.

Plant Species of Conservation Concern

A result similar to that discussed for Forest Sensitive Species is expected for proposed Species of Conservation Concern species.

Non-native (Invasive) Species

The proposed action would have beneficial indirect effects on the risk of spread and/or establishment of populations of non-native plant species in the project area, as ground-disturbing activities would be limited

within the SMA and therefore the potential for the spread and/or establishment would be limited, and control of existing populations would be implemented. The management approaches outlined in the proposed management plan would result in an inventory of existing populations of invasive plants and an integrated approach for preventing, controlling, or eradicating invasive species where they are currently present or may be present in the future. Treatments would result in a long-term, direct beneficial effect on vegetation resources in the project area, as native vegetative could revegetate areas occupied by non-native species, thereby improving and potentially increasing available habitat for native plants and wildlife, compared with the current condition. The proposed action would result in long-term, beneficial impacts on the risk of spread and/or establishment of populations of invasive plants, thereby having a beneficial impact by maintaining and improving the ecological values of the project area.

Wildlife

General Wildlife

Overall, the proposed action is expected to result in direct and indirect beneficial effects on wildlife and associated habitat in the project area. The proposed action would manage the project area to protect the natural character of the area through decommissioning of roads, removal of livestock grazing and existing range improvements, and limiting (or eliminating) construction of utility infrastructure. Long-term, beneficial effects are expected through reducing competition for forage, increasing vegetative cover, and allowing natural revegetation of disturbed areas to move toward recovery, increasing species diversity and quality of habitat.

Threatened and Endangered Wildlife Species

Ocelot is not known to occur in the project area, and the proposed action will have no effect on this species. Although there is an occurrence record within 5 miles of the Apache Leap SMA, the individual killed near Top of The World between Superior and Globe along U.S. Route 60 may have been an extreme occurrence and dispersed well beyond its reasonable range. Since that time, numerous game cameras in the project area vicinity have not confirmed any additional sightings. Current information is lacking to draw conclusions about ocelot populations in Arizona, although more sightings have been substantiated recently in southern Arizona in the vicinity of the U.S.–Mexico border. No information exists regarding any established or breeding populations in Arizona. In addition, vegetation in the project area does not appear suitable to attract or hold this species. Apparently, ocelots in south Texas prefer greater than 95% canopy cover and avoid areas of intermediate (50%–75%) to no cover (USFWS, 2010). Connectivity to southern Arizona also appears limiting for dispersing individuals. Further, the proposed Apache Leap SMA management plan does not authorize any ground-disturbing activities, and any effects arising from future activities will be evaluated on case-by-case basis during future NEPA analysis and subject to a separate decision process. Thus, the proposed action will have no effect on the ocelot.

Tonto National Forest Sensitive Wildlife Species

The proposed action would result in long-term, minor, beneficial effects on bat species in the project area. The proposed action would manage the project area to protect the natural character of the area, and management activities such as decommissioning of roads, removal of existing range improvements, and limits on new construction of utility infrastructure would maintain and protect vegetative communities of the project area and result in a reduction in the potential for human disturbance due to presence or noise. An increase in the vegetative cover within the project area could provide enhanced habitat conditions, benefiting many species. Overall, the proposed action is expected to result in beneficial effects toward habitat quality and improved species diversity.

The proposed action could result in indirect effects on cave-roosting bat species such as Allen's big-eared bat, pale Townsend's big-eared bat, and spotted bat. Implementation of the proposed Apache

Leap SMA management plan would include provisions for closure of abandoned mining features (adits/shafts) that pose a risk to human safety. These features may provide suitable bat habitat. Future actions to mitigate safety risks associated with abandoned mining infrastructure would be analyzed under separate NEPA process since the management plan considers potential bat habitat (abandoned mines). Any features deemed necessary to close, would follow bat friendly standards for any such action. In addition, the project area contains extensive, existing natural rock and crevice habitat, as well as a number of known abandoned mine features in the vicinity of the project area, all of which could provide suitable roosting sites for bat species that use those habitats. Therefore, the potential loss of a limited number abandoned mine features is not likely to result adverse impacts to bats or associated habitat in the proposed Apache Leap SMA.

The proposed action would also result in long-term, beneficial direct and indirect effects on peregrine falcon habitat and breeding areas. The potential to improve vegetative cover related to the removal of grazing, prohibition of overnight camping, and other activities impacting habitat (quantity/quality) could result in an increase in the prey base. Additionally, the decrease in the potential for human-caused disturbances, such as noise, could positively aid in breeding success. Overall, the proposed action could benefit the peregrine falcon.

The proposed action is expected to result in beneficial direct and indirect effects on habitat for reptile species, including Morafka's (Sonoran) desert tortoise and Bezy's night lizard. The proposed action would manage the project area to protect the natural character of the area, through decommissioning of roads, removal of livestock grazing and existing range improvements, and limiting (or eliminating) construction of utility infrastructure, which would maintain and protect burrowing and rock habitat for these species within the project area. Additionally, the removal of grazing could result in an increase in vegetative cover through eliminating livestock use and improving vegetation recovery, reducing the opportunity for invasive plant species to spread or new populations to establish. These changes would be expected to have beneficial effects, resulting in habitat improvement for both Morafka's (Sonoran) desert tortoise and Bezy's night lizard. .

Tonto National Forest Migratory Bird Species of Concern

Tonto National Forest Migratory Bird Species of Concern determined to have potential for occurrence within the project area include flammulated owl (*Psiloscops flammeolus*), band-tailed pigeon, black-throated gray warbler (*Setophaga nigrescens*), golden eagle, gray flycatcher (*Empidonax wrightii*), gray vireo, juniper titmouse, pinyon jay, black-chinned sparrow, Swainson's hawk (*Buteo swainsoni*), Bendire's thrasher (*Toxostoma bendirei*), Gila woodpecker, gilded flicker (*Colaptes chrysoides*), phainopepla, canyon towhee, prairie falcon (*Falco mexicanus*), Costa's hummingbird, elf owl (*Micrathene whitneyi*), purple martin (*Progne subis*), and Bell's vireo (*Vireo bellii*). Effects from the implementation of the Apache Leap SMA management plan are similar to those described for general wildlife, and additional impacts specific to nesting birds are described in this section. Peregrine falcons are discussed above in Tonto National Forest Sensitive Wildlife Species.

The proposed action is expected to result in direct and indirect beneficial effects on migratory birds within the project area. The limitation of ground- or vegetation-disturbing activities could increase ground cover and reduce potential disturbance to migratory bird nesting habitat. The proposed action is expected to have long-term, beneficial, indirect effect on raptors, such as golden eagles, Swainson's hawk, elf owl, and flammulated owl, through removing grazing, and limiting other ground or vegetation-disturbing activities. These factors are expected to increase ground cover and available forage for prey species, in turn increasing availability of prey.

Wildlife Species of Conservation Concern

A result similar to that discussed for Forest Sensitive Species is expected for proposed Species of Conservation Concern species.

Management Indicator Species

Population and habitat trends for MIS on national forest lands are addressed at the landscape level. These project-level effects should not be used to infer effects on forest-wide MIS populations. Table 9 describes the vegetation community trends, and percentage of those communities within the project area.

Table 9. Tonto National Forest Vegetation Type, Trends, and Acreages

Vegetation Type	Acres on Tonto National Forest	1985–2005 Vegetation Trend	Acres in Project Area	%
Ponderosa pine/Mixed conifer	421,138	Static	0	0%
Chaparral/Pinyon-Juniper	1,413,986	Static	422	<0.01%
Desert grassland	38,978	Upward/Static	0	0%
Desertscrub	896,771	Downward/Static	412	<0.01%
Riparian	41,379	No change	0	0%

Source: Klein et al. (2005)
Note: Total acreage may not sum to total area of the special management area due to the nature of spatial data.

No authorizations to conduct ground-disturbing activities are included in the proposed Apache Leap SMA management plan. Therefore, future activities will be limited by the management plan to conserve the natural character of the project area, and any effects on MIS species or habitat would be evaluated on case-by-case basis during future NEPA analysis and subject to a separate decision process. A general discussion of impacts from the proposed action on MIS species and habitats follows.

Ash-throated Flycatcher (*Myiarchus cinerascens*)

The ash-throated flycatcher is an MIS species for pinyon-juniper chaparral, with ground cover as an indicator. The habitat trend for this species between 1985 and 2005 was determined to be static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement a management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. An increase in vegetative cover could result in a small increase in available habitat or an increase in quality of habitat for the species. Implementation of the proposed Apache Leap SMA management plan would not result in a change in forest-wide habitat or population trend, and both would remain static for the ash-throated flycatcher.

Gray Vireo (*Vireo vicinior*)

The gray vireo is an MIS species for pinyon-juniper chaparral, with tree density as an indicator. The habitat trend for this species between 1985 and 2005 was determined to be static, and the population trend for the same time period was determined to be decreasing due to drought-related effects on habitat (Klein et al., 2005). The proposed action would implement a management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. This could result in an increase in vegetative cover, including tree density, within the project area. An increase in vegetative cover could result in a small

increase in available habitat or an increase in quality of habitat for the species. Implementation of the proposed Apache Leap SMA management plan would not result in change in forest-wide habitat trend or a decrease in population trend for the gray vireo.

Townsend's Solitaire (*Myadestes townsendi*)

The Townsend's solitaire is an MIS species for pinyon-juniper chaparral, with juniper berry production as an indicator. The habitat trend for this species (indicator: juniper berry production of pinyon-juniper chaparral) between 1985 and 2005 was determined to be static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement a management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. This could result in an increase in vegetative cover, including juniper, within the project area. An increase in vegetative cover could result in a small increase in available habitat or an increase in quality of habitat for the species. Implementation of the proposed Apache Leap SMA management plan would not result in a change in forest-wide habitat or population trend for the Townsend's solitaire.

Juniper (plain) Titmouse (*Baeolophus ridgwayi*)

The juniper titmouse is an MIS species for pinyon-juniper chaparral, with general woodland conditions as an indicator. The habitat trend for this species between 1985 and 2005 was determined to be static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement an Apache Leap SMA management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. This could result in an increase in total vegetative cover, as well as a potential for general conditions across all vegetative communities to improve within the project area. An increase in vegetative cover could result in a small increase in available habitat or an increase in quality of habitat for the species. Implementation of the proposed special management plan would not result in a change in forest-wide habitat or population trend for the juniper titmouse.

Northern Flicker (*Colaptes auratus*)

The northern flicker is an MIS species for pinyon-juniper chaparral, with snags as an indicator. The habitat trend for this species between 1985 and 2005 was determined to be static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement an Apache Leap SMA management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. This is expected to increase the protection of snag habitat in addition to increasing vegetative cover. Implementation of the proposed management plan would not result in a change in forest-wide habitat or population trend for the northern flicker.

Spotted Towhee (*Pipilo maculatus*)

The spotted towhee is an MIS species for pinyon-juniper chaparral and interior chaparral, with successional stages of pinyon juniper and shrub density as indicators. The habitat trend for this species between 1985 and 2005 was determined to be static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement a management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. This would result in an increase in vegetative cover. Implementation of the proposed management plan would not result in a change in forest-wide habitat or population trend for the spotted towhee.

Black-chinned Sparrow (*Spizella atrogularis*)

The black-chinned sparrow is an MIS species for interior chaparral, with shrub diversity as an indicator. The habitat trend for this species between 1985 and 2005 was determined to be static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement an Apache Leap SMA management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. This would result in an increase in vegetative cover, with a potential for an increase in diversity of cover species. Implementation of the proposed management plan would not result in a change in forest-wide habitat or population trend for the black-chinned sparrow.

Black-throated Sparrow (*Amphispiza bilineata)*

The black-throated sparrow is an MIS species for desert communities, with shrub diversity as an indicator. The habitat trend for this species between 1985 and 2005 was determined to be downward/static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement an Apache Leap SMA management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. This would result in an increase in vegetative cover, with a potential for an increase in diversity of cover species. Implementation of the proposed special management plan would not result in a decrease in forest-wide habitat or population trend for the black-throated sparrow.

Canyon Towhee (*Melozone fusca*)

The canyon towhee is an MIS species for desert communities, with ground cover as an indicator. The habitat trend for this species between 1985 and 2005 was determined to be downward/static, and the population trend for the same time period was determined to be stable (Klein et al., 2005). The proposed action would implement an Apache Leap SMA management plan that establishes a goal of maintaining the natural character of the project area, including limitations on the types of ground-disturbing or vegetation-modifying activities that would be permitted. An increase in vegetative cover could result in a small increase in available habitat or an increase in quality of habitat for the species. Implementation of the proposed management plan would not result in a decrease in forest-wide habitat or population trend, and both would remain static for the canyon towhee.

Wildlife Species of Greatest Conservation Need

Potential impacts on SGCN from the proposed action would be similar to those described above for general wildlife and Tonto National Forest Sensitive Wildlife Species.

Wildlife Species of Economic and Recreation Importance

Potential impacts on Species of Economic and Recreation Importance from the proposed action would be similar to those described above for general wildlife.

Cumulative Effects – Alternative 2

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

There are three known reasonable and foreseeable actions that may affect wildlife and vegetation resources: the Resolution Copper Project, Resolution Copper Pre-feasibility Hydrological Monitoring Wells, and NDAA-authorized activities.

Resolution Copper Project and Land Exchange

The Resolution Copper Project consists of a mining proposal (i.e., "General Plan of Operations") and a land exchange between Resolution Copper and the United States. Resolution Copper proposes to conduct underground mining of a copper-molybdenum deposit located 5,000 to 7,000 feet below the ground surface. Resolution Copper estimates that the mine would take approximately 10 years to construct, with an operational life of approximately 40 years, followed by 5 to 10 years of reclamation activities. The mining operation would take place under the Oak Flat land exchange parcel (East Plant Site), on lands to be transferred to private ownership within the Globe Ranger District. Subsequent mining operations would consist of crushing and transporting ore underground to the West Plant facility, located about 2.5 miles at the West Plant, north of the town of Superior.

Resolution Copper Pre-Feasibility Hydrological Monitoring Wells

Resolution Copper's pre-feasibility hydrological monitoring wells were previously permitted by the Forest Service consistent with the 2010 Prefeasibility Plan of Operations, which included NEPA analysis and associated consultation and coordination with stakeholders. Resolution Copper has the statutory right to conduct operations (36 CFR 228(A)) that are reasonably incidental to exploration and development of mineral deposits on its unpatented mining claims pursuant to U.S. mining laws. The purpose of the monitoring wells is to collect hydrological, geochemical, and geotechnical data associated with the West Boundary Fault located below the Apache Leap area. These wells are permitted until 2025, at which time their use would be determined through modification of the "General Plan of Operations."

NDAA Authorized Activities

Section 3003 of the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 authorized specific activities in the special management area. These authorized activities are directed by the Secretary of Agriculture to Resolution Copper, permit No. 03-12-02-006:

- installation of seismic monitoring equipment on the surface and subsurface to protect the resources located within the special management area;
- installation of fences, signs, or other measures necessary to protect the health and safety of the public; and
- operation of an underground tunnel and associated workings, as described in the Resolution Copper "General Plan of Operations," subject to any terms and conditions the Secretary may reasonably require.

Wildlife

The proposed action is not expected to result in adverse effects on wildlife or vegetation; therefore, it would not contribute to adverse cumulative effects of these projects.

Resolution Copper Project – If the Resolution Copper Project is approved and implemented as currently proposed, future activities associated with the construction and operation of the Resolution Copper Project East Plant Site (e.g., land clearing, equipment and motor vehicle use, operation of surface facilities, mining subsidence) could affect wildlife species through direct and indirect impacts, as well as to habitat. These impacts could extend into the Apache Leap SMA, including impacts from noise, dust, night lighting, and loss of habitat connectivity. The wildlife management plan encourages the Forest Service to "develop and implement a monitoring plan to assess impacts to wildlife from mining activities, including low-frequency effects from blasting, conveyor and machinery operation, and mining-induced micro-seismic responses."

Additionally, the environmental analysis process for the Resolution Copper Project is expected to include mitigation measures to reduce impacts to wildlife and habitat.

Resolution Copper Pre-Feasibility Hydrological Monitoring Wells – Resolution Copper would continue to have permitted administrative use of FR2440 in the Apache Leap SMA which covers continued administrative use of FR2440, including road maintenance. The administrative use would continue to be subject to environmental protection measures, including those for biological resources, as described in the "Final Environmental Assessment: Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations" (Forest Service, 2016b).

NDAA-Authorized Activity – The NDAA-authorized activities of "installation of fences, signs, or other measures necessary to protect the health and safety for the public" and "installation of seismic monitoring equipment on the surface and subsurface," potentially impacting wildlife and habitat in the Apache Leap SMA. Impacts associated with these activities could include noise, vibration, and human disturbance, affecting wildlife behavior (use/connectivity/foraging and breeding behavior). However, future environmental analyses for these NDAA-authorized activities would likely include mitigation measures to reduce impacts to wildlife. An additional NDAA-authorized activity is operation of an underground tunnel and associated workings. It is unknown at this time how this action would affect wildlife and habitat. As discussed above under the Resolution Copper Project, effects from this proposed future action would be addressed in the wildlife monitoring plan.

Vegetation

Resolution Copper Project – If the Resolution Copper Project is approved and implemented as proposed, future activities associated with the construction and operation of the Resolution Copper Project East Plant Site (e.g., land clearing, equipment and motor vehicle use, operation of surface facilities, mining subsidence) would affect plant species and vegetation communities through direct and indirect impacts to the species themselves, as well as to their habitat. These impacts could extend into the Apache Leap SMA, including impacts from dust during mine construction and operation. However, the environmental analysis process is likely to include numerous mitigation measures to reduce these impacts.

Resolution Copper Pre-Feasibility Hydrological Monitoring Wells – Resolution Copper would continue to have permitted administrative use of FR2440 in the Apache Leap SMA. Continued administrative use of FR2440, including road maintenance, could impact plant species. The administrative use would continue to be subject to environmental protection measures, including those for biological resources, as described in the "Final Environmental Assessment: Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations" (Forest Service, 2016b).

NDAA-Authorized Activity – The NDAA-authorized activities of "installation of fences, signs, or other measures necessary to protect the health and safety of the public" and "installation of seismic monitoring equipment on the surface and subsurface" could result in impacts to plant species and vegetation communities in the Apache Leap SMA. However, the environmental analysis process for these NDAA-authorized activities would include mitigation measures to reduce these impacts.

Cumulative effects from these three anticipated future actions would contribute to impacts to vegetation resources, primarily from vegetation removal and risk of spreading invasive and noxious weeds. The management plan addresses cumulative effects on vegetation through inclusion of desired conditions for retaining the natural ecological processes and native plant communities that are inherent to the area.

Summary

Degree to which the Purpose and Need for Action Is Met

Alternative 1, the no action alternative, partially meets the purpose and need by continuing current Forest Service management practices for the Apache Leap SMA but does not provide any additional protections for vegetation or wildlife resources.

Alternative 2, the proposed action, meets the purpose and need by providing direction for managing and protecting vegetation and wildlife resources and their habitats in the Apache Leap SMA.

Degree to which the Alternatives Address the Issues

Alternative 2, the proposed action, best addresses the issues by providing direction for managing and protecting vegetation and wildlife resources in the Apache Leap SMA, as well as providing management direction for invasive species control, which includes inventorying and reducing existing and future populations.

Summary of the Environmental Effects

The proposed action would manage the project area to protect the natural character of the area, and management activities, such as decommissioning of roads, removal of grazing from 839 acres, and limits on new construction of utility infrastructure that would maintain, protect, and potentially increase suitable habitat for general wildlife and special status wildlife species. The proposed action would have a net beneficial impact to species that use the area, and potentially to habitat for species that currently do not use the area. The proposed action would not affect any ESA-listed species since none are likely to occur or are not known to occur in the project area.

Compliance with LRMP and Other Relevant Laws, Regulations, Policies and Plans

Both alternatives would comply with the Tonto National Forest Land and Resource Management Plan (Forest Service, 1985), ESA, MBTA, Bald and Golden Eagle Protection Act, NFMA, EO 13112, and EO 13186; however, only Alternative 2 would comply with the stipulations of the NDAA.

Other Relevant Mandatory Disclosures

Intensity Factors for Significance (FONSI) (40 CFR 1508.27(b))

The proposed action is expected to have a beneficial impact on vegetation and wildlife resources because the Apache Leap SMA management plan provides a framework for protecting and preserving the natural character of the area. No adverse impacts are anticipated; therefore, the proposed action will have no significant adverse impacts on vegetative and wildlife resources. Because the proposed action is designed to protect and preserve the natural character of the area, the proposed action is expected to benefit vegetation and wildlife resources.

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Appendix A Arizona Game and Fish Department Environmental Review Tool and Heritage Data Management System

Appendix B U.S. Fish and Wildlife Service Information for Planning and Consultation

Appendix C Tonto National Forest Federal Endangered, Threatened, and Sensitive Species