

BIOLOGICAL EVALUATION

**SUPERIOR TO SILVER KING 115 KV
POWERLINE SEGMENT RE-ROUTE**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	3
2. METHODS	4
3. RESULTS	5
3.1 Site Description.....	5
3.2 Screening Analysis.....	9
4. SPECIES EVALUATIONS	12
4.1 Desert tortoise	12
4.2 Lesser Long-nosed Bat.....	12
4.3 Ocelot.....	13
5. CONCLUSIONS AND RECOMMENDATIONS.....	15
6. REFERENCES.....	17

LIST OF TABLES

Table 1.	List of Plant Species Commonly Noted in Upland Sonoran Desertscrub in the Vicinity of the Project Area	8
Table 2.	Screening Analysis for USFWS Special-Status Species in Pinal County	9

LIST OF FIGURES

(figures follow text)

Figure 1.	Vicinity Map
Figure 2.	Aerial Overview
Figure 3.	Geology Map
Figure 4.	Arizona Range of the Lesser Long-nosed Bat
Figure 5.	Known Major Roost Sites of Lesser Long-nosed Bat in Arizona

LIST OF PHOTOGRAPHS

Photo 1.	Typical upland Sonoran desertscrub habitat along Silver King Road within the Project Area in previously disturbed area	5
Photo 2.	Typical upland Sonoran desertscrub habitat along southern portion of Silver King Road within the Project Area.....	7
Photo 3.	Typical upland Sonoran desertscrub habitat along northern portion of Silver King Road within the Project Area.....	7

LIST OF APPENDICES

- Appendix A. USFWS Special-status Species
- Appendix B. AGFD HDMS Special-status Species Results from Online Review Tool
- Appendix C. Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects

EXECUTIVE SUMMARY

WestLand Resources, Inc. (WestLand) has prepared this Biological Evaluation (BE) for proposed re-route of a 115 kV powerline segment (the Project). The powerline is located entirely on privately owned lands. Salt River Project (SRP) plans to reroute the 115 kV powerline segment to continue provide electrical service from Superior, Pinal County, to the Silver King Substation, Gila County, Arizona (**Figure 1**). The Project is located west of Superior in Pinal County, and north of U.S. Highway 60 (US 60) within Township 1 South, Range 12 East, portions of Sections 26, 27, and 34; Gila and Salt River Baseline and Meridian (**Figure 1**). The area evaluated in this BE is approximately 1.1 mi (1.8 km) long, 200 ft (61 m) to 660 ft (200 m) wide and encompasses approximately 36.6 ac (14.8 hectares) (the Project Area).

The purpose of this BE is to identify the potential for any special-status species to occur within the Project Area, and determine whether the Project would potentially impact any special-status species. Special-status species are those currently listed by the U.S. Fish and Wildlife Service (USFWS) in Pinal County as endangered, threatened, or candidate for listing under the Endangered Species Act (ESA).

A screening analysis was conducted to evaluate the potential for occurrence of 18 special-status species. Three special-status species have limited potential to occur within the Project Area, the Sonoran population of the desert tortoise (*Gopherus agassizii*), lesser long-nosed bat (LLNB; *Leptonycteris curasoae yerbabuenae*), and ocelot (*Leopardus [Felis] pardalis*). There is no designated or proposed critical habitat within the Project Area.

The listing of LLNB and ocelot as endangered species triggers “take” prohibition as outlined in Section 9 of the ESA. As a candidate species, the desert tortoise has no formal protection under the ESA.

The desert tortoise has not been recorded from the Project Area, but is considered to have limited potential to occur in the Project Area because the Project Area is within the range of the tortoise and the Project Area contains desertscrub habitat. The desert tortoise uses rocky slopes and bajadas in Mohave and Sonoran desertscrub. This species was not observed in the Project Area, which lacks rocky habitat often associated with this species, and the slopes observed during field surveys appear to offer little opportunity for excavation to create shelters. The Project Area appears to provide marginally suitable habitat and the likelihood of adverse impacts to this species as a result of loss of habitat is improbable. However, it is possible that individual tortoise could be encountered during surface disturbance activities, and measures for avoiding impacts to Sonoran desert tortoise are recommended. Any individual tortoises encountered could be avoided and allowed to move out of the way prior to activities. If encountered near ground disturbing activities, work could stop until the tortoise vacates to an adequate safe distance. Guidelines for handling desert tortoise published by Arizona Game and Fish Department (AGFD) (2007) could be used if it were found absolutely necessary to move individual tortoises.

The LLNB has not been recorded from the Project Area, but is considered to have a limited potential for occurrence in the Project Area because the Project Area occurs along the northeastern extent of its range and the Project Area contains appropriate foraging habitat for this species. Saguaro (*Carnegiea gigantea*) and agave (*Agave* sp.), forage plants for LLNB, occur within portions of the Project Area and individual

forage plants may be impacted by proposed activities. This species has not been detected within the Tonto National Forest (Tonto National Forest 2000), which encompasses the private lands that include the Project Area, and there have been no detections of this bat during surveys conducted by AGFD (Bill Burger, AGFD, pers. comm.) and WestLand (WestLand 2011 Bat Survey Report in prep.) in the Project vicinity. No LLNB are anticipated to be directly impacted and no potential roosts (caves or abandoned mines) will be impacted by the Project.

The ocelot has not been recorded within the Project Area, but is considered to have limited potential to occur within the Project Area because a male ocelot was killed by a vehicle in 2010 between Globe and Superior (approximately 4 miles east of the Project Area), and the Project Area contains desertscrub habitat, which is used by ocelot, although the vegetation in the Project Area is marginally suitable based on this species' preference. Confirmed sightings of ocelot in Arizona are sparse, and numerous unconfirmed sightings are also reported for this species (USFWS 2011b). Overall, this cat utilizes dense, brushy, and shrubby vegetation, especially along streams, which provides thick cover (Hoffmeister 1986, AGFD 2011b, USFWS 2011b). In Arizona, this species uses desertscrub habitat, but it is usually found in habitat with greater than 75 percent cover (USFWS 2010). There are only seven confirmed records of ocelots in Arizona, the closest of which was a roadkill between Globe and Superior in April 2010 approximately 4 miles east of the Project Area. This sighting is the northernmost recent sighting of this species. Breeding ocelots have never been confirmed in Arizona. There are no confirmed records of female ocelots within the State of Arizona. Because the Project Area lacks dense vegetation cover for this species, the likelihood of adverse impacts to ocelot as a result of loss of habitat is highly improbable. No direct impacts to ocelot individuals are anticipated, because this species will not likely be traveling through the Project Area during surface disturbance activities.

1. INTRODUCTION

WestLand Resources, Inc. (WestLand) has prepared this Biological Evaluation (BE) for the proposed re-route of a 115 kV powerline segment (the Project). The powerline is located entirely on privately owned lands. Salt River Project (SRP) plans to re-route a segment of the 115 kV powerline to continue provide electrical service from Superior, Pinal County, to the Silver King Substation, Gila County, Arizona (**Figure 1**). The Project is located west of Superior in Pinal County, and north of U.S. Highway 60 (US 60) within Township 1 South, Range 12 East, portions of Sections 26, 27, and 34; Gila and Salt River Baseline and Meridian (**Figure 1**). The area evaluated in this BE is approximately 1.1 mi (1.8 km) long, 200 ft (61 m) to 660 ft (200 m) wide and encompasses approximately 36.6 ac (14.8 hectares) (the Project Area).

The purpose of this BE is to identify the potential for any special-status species to occur within the Project Area, and determine whether the Project would potentially impact any special-status species. Special-status species are those species designated as threatened, endangered, proposed/candidate by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) as endangered, threatened, candidate, and conservation agreement species in Pinal County. The BE includes an ecological description of the Project Area and documents dominant vegetation and wildlife observed within the Project Area during field surveys.

2. METHODS

Eighteen special-status species are listed for Pinal County by the Arizona Ecological Field Office of the USFWS (2011a, **Appendix A**). A screening analysis was conducted to evaluate the potential for occurrence of 18 special-status species and proposed or designated critical habitat for listed species within the Project Area. Special-status species are those which are classified as endangered, threatened, or candidate for listing by the USFWS for Pinal County, Arizona.

Our determination of the potential for special-status species to be present and to utilize habitats within the Project Area is based upon: 1) field observations and habitat assessments of the Project Area; 2) review of information regarding the natural history of the special-status species; 3) evaluation of known range and distribution for the special-status species; and 4) comparisons of this information with habitats present in the Project Area.

Special-status species lists for the Project Area vicinity were obtained from the Arizona Ecological Field Office of the U.S. Fish and Wildlife Service for Pinal County (USFWS 2011a), the Arizona Game and Fish Department (AGFD) Heritage Database Management System (HDMS [AGFD 2011a]). Special-status species lists obtained from USFWS and used in WestLand's screening analysis are provided in **Appendix A**. A site-specific HDMS online search (AGFD 2011a) resulted in a list of special-status species known to be present within 3 miles of the Project Area (**Appendix B**). Natural history for each of these species was reviewed to determine habitat and life history requirements and to identify the parameters requiring investigation during the field reconnaissance portion of the evaluation. A more rigorous literature review was conducted for any species known to occur in proximity to or within the Project Area.

Field reconnaissance was conducted October 25, 2011, by WestLand biologists to identify habitat types in the area, to evaluate the Project Area's potential to support any special-status species. No species-specific survey was conducted during the site visit.

Based on results of the background research and field reconnaissance described above, a screening analysis was conducted to determine the potential for occurrence of special-status species on or near the Project Area. Species were eliminated from further consideration if the Project Area is located outside of their known range or distribution, or if require habitat components are not present. In addition, the location of proposed or designated critical habitat was reviewed for each federally listed species in reference to proposed activity areas.

3. RESULTS

3.1 SITE DESCRIPTION

The Project Area is situated on the low ridges on the west side of Silver King Wash. Access to the Project Area for the project would be gained through Silver King Road.

Historical land use within the Project Area vicinity has primarily been associated with mineral exploration and mining, low-density cattle grazing, and dispersed public recreation, off-road vehicle use, and recreational shooting. Mining activities have been fundamental to the economy of the area for many years, beginning with the establishment of the Silver King Mine in 1875 and the Magma Mine in the early 1900s (Buckles 2009). Disturbance is most evident along existing roadways that currently appear to be used mainly for recreation, grazing activities, and powerline maintenance. Numerous pullout areas are found along the roadways, generally in flat areas. Older disturbance associated with mining and ranching is also apparent (**Photo 1**).



Photo 1. Typical upland Sonoran desertscrub habitat along Silver King Road within the Project Area in previously disturbed area. Transmission line will follow existing corridor. October 25, 2011.

The Project Area is within the Central Highlands Physiographic Province, a geologic transitional zone between the Colorado Plateau and the Basin and Range provinces. This zone is characterized by a series of smooth-floored basins separated by rugged mountain ranges (Chronic 1983). The topography of the Project Area is characterized by long south-southwest-oriented ridges of moderate height and with moderate slopes. The majority of the Project Area, along Silver King Wash, is the largest relatively level area along the ridge top with a drainage located near the northernmost portion. Elevations within the Project Area range around approximately 3,100 feet above mean sea level (amsl).

Geology within the south and central portions of the Project Area consists of primarily of Gila Conglomerate formation consisting of Quaternary-Tertiary gravel and conglomerate (QTg) (Arizona Land Resource Information System 2011; **Figure 4**). Gila Conglomerate consists of deposits of grains, pebbles and boulders that have been eroded from the surrounding volcanic mountains and then transported and deposited by streams. Dripping Springs quartzite (Yds) and Late Crustacean diabase (Kdb) can be found in the northern portion of the Project Area.

The Project Area is located within the Gila River watershed west of Apache Leap. No surface water is present within the Project Area because the majority of the Project Area lies along the ridge tops. A drainage located at the northern edge of the Project Area is ephemeral and is subject only to run off events occurring during seasonal thunderstorms.

The Project Area lies entirely within an area classified as the Arizona Upland subdivision of the Sonoran Desertscrub biotic community, as mapped by Brown and Lowe (1980). Brown and Lowe's Arizona Upland corresponds to the USDA Forest Service's (Forest Service's) Sonoran upland desertscrub vegetation community. Arizona Upland is typically wetter than other desert communities (averaging 12 to 18 inches of annual rainfall) and is characterized by its appearance as a scrubland or low woodland of leguminous trees with shrubs and perennial succulents in the open areas (Brown 1994).

Vegetation within the Project Area in general is dominated by species that include velvet mesquite (*Prosopis velutina*), blue paloverde (*Parkinsonia florida*), littleleaf paloverde (*P. microphylla*), saguaro (*Carnegiea gigantea*), ocotillo (*Fouquieria splendens*), jojoba (*Simmondsia chinensis*), flattop buckwheat (*Eriogonum fasciculatum*), fairy duster (*Calliandra eriophylla*), cholla species and prickly pear cactus (*Opuntia* spp.), and fishhook barrel cactus (*Ferocactus wislizenii*). In general, the north facing slopes are more densely vegetated than south facing areas (**Photo 2**).

The vegetation community is relatively consistent throughout the Project Area. However, a slight vegetation shift was noted in the northern portion, which is slightly higher elevation in elevation and spans an ephemeral wash (**Photo 3**). In the northern reach, saguaros are present and tree density increases. WestLand compiled a general species list of vegetation within the Project Area during field surveys on October 25, 2011 (**Table 1**).



Photo 2. Typical upland Sonoran desertscrub habitat along southern portion of Silver King Road within the Project Area. Transmission line will follow existing corridor seen in background. October 25, 2011.



Photo 3. Typical upland Sonoran desertscrub habitat along northern portion of Silver King Road within the Project Area. Transmission line will bisect this image horizontally and connect the two lines located left and right of this image (outside of view). October 25, 2011.

Table 1. List of Plant Species Commonly Noted during field reconnaissance in the Project Area on October 25, 2011. Taxonomy follows ITIS (2011).

Plant Species Common Name	Plant Species Scientific Name	Plant Species Common Name	Plant Species Scientific Name
Catclaw acacia	<i>Acacia greggii</i>	Wolfberry	<i>Lycium</i> sp.
Agave	<i>Agave</i> sp.	Teddybear cholla	<i>Opuntia bigelovii</i>
Canyon ragweed	<i>Ambrosia ambrosioides</i>	Jumping cholla	<i>O. fulgida</i>
Thistle	<i>Asteraceae</i>	Prickly pear	<i>Opuntia</i> spp.
Saguaro	<i>Carnegiea gigantea</i>	Staghorn cholla	<i>O. versicolor</i>
Fairyduster	<i>Calliandra eriophylla</i>	Blue paloverde	<i>Parkinsonia florida</i>
Desert hackberry	<i>Celtis pallida</i>	Littleleaf paloverde	<i>P. microphylla</i>
Brittlebush	<i>Encelia farinosa</i>	Velvet mesquite	<i>Prosopis velutina</i>
Jointfir	<i>Ephedra</i> sp.	Globe mallow	<i>Sphaeralcea ambigua</i>
Fishhook barrel cactus	<i>Ferocactus wislizenii</i>	Jojoba	<i>Simmondsia chinensis</i>
Ocotillo	<i>Fouquieria splendens</i>	Banana yucca	<i>Yucca bacata</i>
Broom snakeweed	<i>Gutierrezia sarothrae</i>	Gray thorn	<i>Ziziphus obtusifolia</i>

Mammals noted during field reconnaissance include observations of mule deer (*Odocoileus hemionus*) as well as tracks and scat of javelina (*Pecari tajacu*) and gray fox (*Urocyon cinereoargenteus*). Bird species detected during field reconnaissance include cactus wren (*Campylorhynchus brunneicapillus*), common raven (*Corvus corax*), and curve-billed thrasher (*Toxostoma curvirostre*).

3.2 SCREENING ANALYSIS

Special-status species considered in this BE include those that are currently listed by USFWS as occurring in Pinal County, Arizona; they include endangered, threatened, and candidates for listing.

A composite list was created that includes 18 special-species (3 plants, 15 vertebrates, 0 invertebrates). Of the 18 special-status species, 9 are listed as endangered, 3 as threatened, and 6 as candidates for listing. A screening analysis of these 18 special-status species was then completed to determine which have the potential to be present within the Project Area (**Table 2**).

An AGFD HDMS search identified ten species that have been reported within three miles of the Project Area (**Appendix B**), including, Bat colony (species not identified), desert pupfish (*Cyprinodon macularius*), Arizona hedgehog cactus (*Echinocereus triglochidiatus* var. *arizonicus*), greater western mastiff bat (*Eumops perotis californicus*), American peregrine falcon (*Falco peregrinus anatum*), Yuma myotis (*Myotis yumanensis*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), saddled leaf-nosed snake (*Phyllorhynchus browni*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), and lowland leopard frog (*Lithobates [Rana] yavapaiensis*). Three of these species are protected under the ESA: Arizona hedgehog cactus, desert pupfish, and Gila topminnow. The Project Area does not provide surface water or suitable substrate for any these special-status species.

Based on WestLand's screening analysis, three special-status species have the potential to occur within the Project Area, the Sonoran population of the desert tortoise (*Gopherus agassizii*), lesser long-nosed bat (LLNB; *Leptonycteris curasoae yerbabuenae*), and ocelot (*Leopardus [Felis] pardalis*). These species are discussed further in the following sections. No proposed or designated critical habitat is located within the Project Area.

Table 2. Screening Analysis for USFWS Special-Status Species in Pinal County. Species shown in bold have potential to occur in the project vicinity and are discussed further in this BE.

Species	USFWS Status ¹	Potential Occurrence at Project Area; Basis for Potential Occurrence Determination
Plants (3)		
Arizona hedgehog cactus (<i>Echinocereus triglochidiatus</i> var. <i>arizonicus</i>)	Endangered	No potential to occur. Occupies open slopes and cracks and crevices between boulders in Interior Chaparral and Madrean Evergreen Woodland habitats (sensu Brown 1994) at elevations between 3,300 to 5,700 feet (TNF 1996). Associated with Apache Leap Tuft and Pinal Schist substrates (WestLand 2009). This cactus has been recorded from within 3 miles of the Project Area (Appendix B). However, elevations found within the Project Area are lower than its typical distribution, does not possess associated vegetation community, or crevice habitat, and the does not provide the specific substrates associated with this cactus.

¹ U.S. Fish & Wildlife Service Categories

Endangered Taxa in danger of extinction throughout all, or a significant portion, of its range.

Threatened Taxa likely to become Endangered in the foreseeable future throughout all, or a significant portion, of its range.

Candidate Taxa for which sufficient data exist to support proposals to list, but formal proposals to list the species as Threatened or Endangered have not been made by the USFWS because this action is precluded by other listing activity.

Table 2. Screening Analysis for USFWS Special-Status Species in Pinal County. Species shown in bold have potential to occur in the project vicinity and are discussed further in this BE.

Species	USFWS Status ¹	Potential Occurrence at Project Area; Basis for Potential Occurrence Determination
Acuña cactus (<i>Echinomastus erectocentrus acunensis</i>)	Candidate	No potential to occur. Occupies knolls and ridges between ridges in granitic soils at elevations between 1,300 to 2,000 feet or 1,300 to 3,610 feet (AGFD 2011b). The closest known population is in the hills between Florence and Kearney that is well outside the Project Area and not found within TNF. The Project Area lacks suitable habitat and it outside of the range for this cactus.
Nichol's Turk's head cactus (<i>Echinocactus horizonthalonius nicholii</i>)	Endangered	No potential to occur. Occupies Sonoran Desertscrub habitats at the foot of limestone mountains and on inclined terraces and saddles on limestone mountains (AGFD 2011b). No suitable habitat of limestone substrates are present on the Project Area, and it is well outside the known range of this cactus.
Fish (6)		
Desert pupfish (<i>Cyprinodon macularis</i>)	Endangered	No potential to occur. Occupies shallow clear waters with soft substrates (AGFD 2011b). No naturally occurring populations remain in Arizona. Project Area lacks aquatic habitat for this fish.
Gila chub (<i>Gila intermedia</i>)	Endangered	No potential to occur. Uses small headwater streams, cienegas, marshes and springs of Gila River Drainage (AGFD 2011b). Suitable aquatic habitat may be present on Queen Creek south of the Project Area, but this species is not known to be present in this drainage (AGFD 2011b). Project Area lacks aquatic habitat for this fish.
Razorback sucker (<i>Xyrauchen texanus</i>)	Endangered	No potential to occur. Utilizes a variety of stream habitats, big rivers and reservoirs (AGFD 2011b). This species is endemic to the Colorado river basin and is not found on TNF. Project Area lacks aquatic habitat for this fish.
Spikedace (<i>Meda fulgida</i>)	Threatened	No potential to occur. Inhabit shallow streams with eddies and riffles (AGFD 2011b). Suitable aquatic habitat may be present near Queen Creek south of the Project Area, but this species is not known to be present in this drainage (AGFD 2011b). Project Area lacks aquatic habitat for this fish.
Loach minnow (<i>Tiaroga cobitis</i>)	Threatened	No potential to occur. Occupies turbulent habitats of rocky areas with riffles in large rivers and tributaries (AGFD 2011b). Suitable aquatic habitat may be present on Queen Creek south of the Project Area, but this species is not known to be present in this drainage (AGFD 2011b). Project Area lacks aquatic habitat for this fish.
Roundtail chub (<i>Gila robusta</i>)	Candidate	No potential to occur. Inhabits warm to cool mid-elevation rivers and streams (AGFD 2011b). Marginal aquatic habitat may be present on Queen Creek south of the Project Area, but this species is not known to be present in this drainage (AGFD 2011b). Project Area lacks aquatic habitat for this fish.
Reptiles (3)		
Tucson shovel-nosed snake (<i>Chionactis occipitalis klauberi</i>)	Candidate	No potential to occur. Utilizes creosote-mesquite floodplains with loose substrates at elevations between 785-1,662 feet (AGFD 2011b). Project Area lacks suitable habitat and is above the known elevation range of this snake.
Desert tortoise, Sonoran population (<i>Gopherus agassizii</i>)	Candidate	Limited potential to occur. Species primarily occurs in rocky foothills and lower bajadas of the Sonoran desert (AGFD 2011b). The Project Area lacks suitable rocky habitat for this tortoise but individuals may move through the area. This species is considered further in Section 5.1.

Table 2. Screening Analysis for USFWS Special-Status Species in Pinal County. Species shown in bold have potential to occur in the project vicinity and are discussed further in this BE.

Species	USFWS Status ¹	Potential Occurrence at Project Area; Basis for Potential Occurrence Determination
Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)	Candidate	No potential to occur. Inhabits densely vegetated habitats along water sources (AGFD 2011b). Populations are generally found south of Gila River. Suitable aquatic habitat may be present on Queen Creek south of the Project Area, but this species is not known to be present in this drainage (AGFD 2011b). Project Area lacks suitable riparian habitat and surface water for this snake.
Birds (8)		
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Endangered	No potential to occur. Inhabits densely vegetated multilayered blocks of willow/cottonwood/exotic riparian vegetation and standing water/saturated soils present mid-summer (AGFD 2011b). The Project Area lacks the well-developed riparian habitat used by this bird.
Yuma clapper rail (<i>Rallus longirostris yumaensis</i>)	Endangered	No potential to occur. Occupies fresh water and brackish marshes with dense emergent riparian vegetation (AGFD 2011b). The Project Area lacks aquatic habitat for this bird.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	Threatened	No potential to occur. Inhabits canyons and dense forests between 4,100 to 9,000 feet (USFWS 2011a). The Project Area lacks suitable habitat and is below the lower elevation limit for this bird.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Candidate	No potential to occur. Utilizes large blocks of riparian woodlands at elevations below 6,710 feet in Arizona (AGFD 2011b). Project Area lacks suitable habitat for this bird.
Bat (1)		
Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>)	Endangered	Limited potential to occur. The Project Area is outside the known range of this bat as denoted by Hoffmeister (1986) and Cockrum (1991). This species roosts in caves or abandoned mines during the warm months (Hoffmeister 1986). This species could occasionally fly over the survey area while foraging; however, proposed activities will not likely eliminate roosting habitat. This species is considered further in Section 5.2.
Mammal (1)		
Ocelot (<i>Leopardus [Felis] pardalis</i>)	Endangered	Limited potential to occur. Occupies dense thickets that are almost impenetrable (AGFD 2011b). Established sightings in Arizona are rare for this species. However, a male was killed by a vehicle along Highway 60 between Globe and Superior in April 2010 (AGFD 2011b). The Project Area lacks suitable dense habitat for this mammal but because it has been confirmed between Globe and Superior, approximately 4 miles east of the Project Area, it is considered further in Section 5.3.

4. SPECIES EVALUATIONS

4.1 DESERT TORTOISE (*GOPHERUS AGASSIZII*)

Sonoran desert tortoises occur throughout much of the central and southwestern portions of the Arizona. The northeastern extent of their range abuts the Salt River in Gila County, while the easternmost records are located along the middle San Pedro River drainage in Cochise County. Tortoises have been recorded as far southwest as the Yuma Proving Ground, the Barry M. Goldwater Range, and the Cabeza Prieta National Wildlife Refuge (AGFD 2011b).

Habitat for the desert tortoise includes rocky slopes and bajadas in Mohave and Sonoran desertscrub, including a variety of biotic communities within or extending from the Sonoran Desert (AGFD 2011b). Specifically, Sonoran desert tortoises are found in the Arizona Upland and Lower Colorado River subdivisions of Sonoran Desertscrub, in desert grassland communities, and in ecotonal areas consisting of Sonoran desertscrub with elements of Mojave desertscrub and juniper woodland, interior chaparral, and desert grassland (Averill-Murray and Klug 2000). Populations occur at elevations from approximately 510 to 5,300 feet (AGFD 2011b).

Although no specimens or sign was observed during field surveys, the vegetation throughout much of the Project Area provides potentially suitable habitat for the Sonoran desert tortoise. The Project Area generally lacks rocky habitat often associated with this species, and the slopes observed during field surveys appear to offer little opportunity for excavation to create shelters. The area appears to provide only marginally suitable habitat. However, it is possible that individual tortoise could be encountered during surface disturbance activities, and measures for avoiding impacts to Sonoran desert tortoise are recommended. Any individual tortoises encountered could be avoided and allowed to move out of the way prior to activities. If encountered near ground disturbing activities, work could stop until the tortoise vacates to an adequate safe distance. Guidelines for handling desert tortoise published by AGFD (2007) and included as **Appendix C** could be used if it were found absolutely necessary to move individual tortoises.

4.2 LESSER LONG-NOSED BAT (*LEPTONYCTERIS YERBABUENAE*)

The lesser long-nosed bat is known to be present in parts of Arizona, New Mexico, and Central America. In Arizona, this bat has been found throughout much of the southern portion of the state, from the Picacho Mountains southwest to the Agua Dulce Mountains and southeast to the Chiricahua Mountains (**Figure 4**). It is a seasonal resident in Arizona, usually arriving in early April and departing in mid-to-late September. The Project Area occurs just northeast of the documented range of this bat. A few individuals have been reported northwest of the normal range during July and August in the Phoenix and Bill Williams River areas (Cole and Wilson 2006), but these occurrences appear to be anomalous. This species has not been detected within the Tonto National Forest (Tonto National Forest 2000), which encompasses the private lands that include the Project Area.

The lesser long-nosed bat is found in arid and semiarid habitats, and is associated primarily with desertscrub, semidesert grassland, and oak woodland vegetative communities below approximately 6,000 feet amsl (USFWS 2011b). This species roosts in caves and abandoned mines. In Arizona, this species feeds almost exclusively on the nectar and pollen of agaves (primarily *Agave palmeri*) and the nectar, pollen, and fruit of saguaro (*Carnegiea gigantea*) and organ pipe (*Stenocereus thurberi*) cacti (Cole and Wilson 2006; USFWS 1994). Extensive populations of suitable agave and cactus species are required to support this species (USFWS 1994).

The AGFD has captured 11 different species of bats during their mist netting efforts at the Boyce Thompson Arboretum, but the lesser long-nosed bat was not detected (Tim Snow, AGFD, pers. comm.). The AGFD has no records of this species in the Project Area region (Bill Burger, AGFD, pers. comm.). Similarly, this species was not detected during WestLand's bat survey of areas along Queen Creek, Apache Leap, Devil's Canyon, and Oak Flat area (WestLand 2011 Bat Survey Report in prep.).

Suitable roosting substrate (caves or abandoned mines) occurs within vicinity of the Project Area, but would not be disturbed by the Project. Given that this species has not been detected in the Project Area vicinity, it is unlikely for the lesser long-nosed bat to occur in the Project Area. There is limited potential for this species to forage on the saguaro and agave plants in the Project Area during summer and fall months. Impacts associated with the loss of forage plants for this species are improbable due to the availability of forage plants in proximity to known major roost sites and areas where this species is known to occur and roost (**Figures 4 and 5**).

4.3 OCELOT (*LEOPARDUS [FELIS] PARDALIS*)

In Arizona, the current range includes three counties: Cochise, Pima, and Santa Cruz (AGFD 2011b, USFWS 2011b). Confirmed sightings in Arizona are sparse, and numerous unconfirmed sightings are also reported for this species (USFWS 2011b). Ocelot records in Arizona are described below. The global range extends from the southern Arizona and southern Texas in the north, through the lowlands of Mexico and Central America, and into the lowlands of Columbia, Ecuador, and Peru in the south (AGFD 2011b). Historically, their range included areas from Arkansas and Arizona to Paraguay, Uruguay, and northern Argentina (AGFD 2011b). They were also found throughout much of Texas, and possibly into Louisiana (AGFD 2011b).

This cat is generally nocturnal, is a good swimmer, and frequently spends the day lying in branches of large trees (AGFD 2011b). Though primarily solitary, ocelots sometimes hunt in pairs (AGFD 2011b). Their diet is mostly comprised of small mammals (rodents), birds, rabbits, amphibians, insects, fish, and reptiles (Wilson and Ruff 1999, AGFD 2011b). Ocelots have also been known to consume armadillos, squirrel monkeys, lesser anteaters, land tortoises, and land crabs (AGFD 2011b). They typically hunt on the ground and in the trees (AGFD 2011b). Individuals may travel as much as 3.7 miles (6 km) a night while hunting (Wilson and Ruff 1999).

Overall, this cat utilizes dense, brushy, and shrubby vegetation, especially along streams, which provides thick cover (Hoffmeister 1986, AGFD 2011b, USFWS 2011b). This species is usually found in habitat with greater than 75% cover, with 95% being preferred in Texas (USFWS 2010). In Arizona, this species

uses desertscrub habitat, and in Texas is typically found in impenetrable thickets of chaparral including mesquite and acacia (AGFD 2011b, USFWS 2011b). In the southern United States they occupy moist tropical thorn forests, coastal mangroves, and swampy savannahs (USFWS 2011b). Throughout their range they have been observed in rainforests, tropical deciduous forests, gallery forests, savannahs, and xeric scrub (Wilson and Ruff 1999). This species may have a higher level of adaptability in habitat use than previously thought (Caso et al. 2008).

Dens are typically found in areas of bare ground within dense vegetation cover (Wilson and Ruff 1999, AGFD 2011b, NatureServe 2010). They have been shown to use thickets, caves, rocky areas, hollow trees, and buttress roots of large trees as den sites (Wilson and Ruff 1999, NatureServe 2010).

Confirmed Ocelot Sightings:

1. 1927. West side of Dragoon Mountains, Cochise County, AZ. Trapped by Mr. Stewart. Sex unknown. This animal was mounted and the mount still exists. A photograph of this mounted specimen is presented in Brown and Lopéz-González (2001 - Figure 26).
2. 1932. Camp Verde, Yavapai County, AZ. Collected by U.S. Biological Survey Predator and Rodent Control Agent. Sex of the ocelot is unknown. (Brown and Lopéz-González 2001; Hoffmeister 1986; USFWS 1990; FWS 2010)
3. 1964. Pat Scott Peak, Huachuca Mountains, Cochise County, AZ. Treed by hounds and lawfully shot by Sewell Goodwin. Male. Photograph record exists. (Brown and Lopéz-González 2001; Hoffmeister 1986; USFWS 1990; USFWS 2010)
4. 2009. Cochise County, AZ. Specific location has not been released. Photographed by camera trap placed by the Sky Island Alliance. Sex unknown (USFWS 2010).
5. 2010. Pinal Mountains near Superior, Pinal County, AZ. Male collected as road kill by AGFD in April (USFWS 2010).
6. 2011. A male was treed at a ranch in the Huachuca Mountains, AZ in February (AGFD 2011b).
7. 2011. Huachuca Mountains near Sierra Vista, Cochise County, AZ. Individual ocelots were photographed by a landowner (February 2011) and a camera trap placed by hunters in the Huachuca Mountains (May 2011) (AGFD unpublished data). The observations may be of the same cat (AGFD unpublished data).

Unconfirmed Ocelot Sightings:

1. 1887. Fort Verde, Yavapai County, AZ. Collected/reported by E.A. Mearns. Sex unknown. A skin (minus skull) was sent to the American Museum of Natural History (Brown and Lopéz-González 2001; Hoffmeister 1986; USFWS 1990; USFWS 2010). The validity of this record is questioned by Hoffmeister who believes the animal may have originated in Texas or Mexico.

2. 1963. San Simon River, north of San Simon, Cochise County, AZ. John Phelps of AGFD along with two seasonal BLM employees visually observed what they reported as an ocelot. Mr. Phelps went on to become the State Predator and Furbearer Biologist. Unconfirmed but reliable. Sex unknown (USFWS 1990).
3. Early 1980's. San Pedro River at Dudleyville, Pinal County, AZ. Two ocelots, including one lactating female, reportedly trapped. One male, one female (USFWS 1990).
4. 1980's. Sasabe, Pima County, AZ. Sex unknown. Reportedly trapped. (USFWS 1990).
5. 1980's. Holbrook/Concho area, Apache/Navajo County, AZ. Male. Reportedly trapped. (USFWS 1990).

There are only seven confirmed records of ocelots in Arizona. Breeding ocelots have never been confirmed in Arizona. There are no confirmed records of female ocelots within the State of Arizona. Breeding ocelots are not known to occupy Madrean evergreen woodlands. The northern-most confirmed record of a female ocelot in Sonora, Mexico is approximately 60 miles south of the international border (López-González et al. 2003). Several camera records of ocelots document their presence within about 30 miles of the border in Sonora, Mexico (USFWS 2011b). A male ocelot was collected as road kill in April 2010 along US Highway 60 approximately 4 miles east of the Project Area (see confirmed ocelot sighting No. 5, above).

Planned activities require little disturbance. No individual ocelot, if present, would be impacted because dense vegetative habitat is lacking and individuals would likely only to move through the area if at all. It is WestLand's opinion that the activities will have no effect on the ocelot.

5. CONCLUSIONS AND RECOMMENDATIONS

A screening analysis was conducted to evaluate the potential for occurrence of 18 special-status species. Three special-status species have limited potential to occur within the Project Area, the Sonoran population of the desert tortoise (*Gopherus agassizii*), lesser long-nosed bat (LLNB; *Leptonycteris curasoae yerbabuenae*), and ocelot (*Leopardus [Felis] pardalis*). There is no designated or proposed critical habitat within the Project Area.

The listing of LLNB and ocelot as endangered species triggers "take" prohibition as outlined in Section 9 of the ESA. As a candidate species, the desert tortoise has no formal protection under the ESA.

The desert tortoise has not been recorded from within 3 miles of the Project Area (**Appendix B**), but is considered to have limited potential to occur in the Project Area because the Project Area is within the range of the tortoise and the Project Area contains desertscrub habitat. The desert tortoise uses rocky slopes and bajadas in Mohave and Sonoran desertscrub. This species was not observed in the Project Area, which lacks rocky habitat often associated with this species, and the slopes observed during field surveys appear to offer little opportunity for excavation to create shelters. The Project Area appears to

provide marginally suitable habitat and the likelihood of adverse impacts to this species as a result of loss of habitat is improbable. However, it is possible that individual tortoise could be encountered during surface disturbance activities, and measures for avoiding impacts to Sonoran desert tortoise are recommended. Any individual tortoises encountered could be avoided and allowed to move out of the way prior to activities. If encountered near ground disturbing activities, work could stop until the tortoise vacates to an adequate safe distance. Guidelines for handling desert tortoise published by Arizona Game and Fish Department (AGFD) (2007) could be used if it were found absolutely necessary to move individual tortoises.

The LLNB has not been recorded from within 3 miles of the Project Area (**Appendix B**), but is considered to have a limited potential for occurrence in the Project Area because the Project Area occurs along the northeastern extent of its range and the Project Area contains appropriate foraging habitat for this species. Saguaro (*Carnegiea gigantea*) and agave (*Agave* sp.), forage plants for LLNB, occur within portions of the Project Area and individual forage plants may be impacted by proposed activities. This species has not been detected within the Tonto National Forest (Tonto National Forest 2000), which encompasses the private lands that include the Project Area, and there have been no detections of this bat during surveys conducted by AGFD (Bill Burger, AGFD, pers. comm.) and WestLand (WestLand 2011 Bat Survey Report in prep.) in the Project vicinity. No LLNB are anticipated to be directly impacted and no potential roosts (caves or abandoned mines) will be impacted by the Project.

The ocelot has not been recorded from within 3 miles of the Project Area (**Appendix B**), but is considered to have limited potential to occur within the Project Area because a male ocelot was killed by a vehicle in 2010 between Globe and Superior (approximately 4 miles east of the Project Area), and the Project Area contains desertscrub habitat, which is used by ocelot, although the vegetation in the Project Area is marginally suitable based on this species' preference. Confirmed sightings of ocelot in Arizona are sparse, and numerous unconfirmed sightings are also reported for this species (USFWS 2011b). Overall, this cat utilizes dense, brushy, and shrubby vegetation, especially along streams, which provides thick cover (Hoffmeister 1986, AGFD 2011b, USFWS 2011b). In Arizona, this species uses desertscrub habitat, but it is usually found in habitat with greater than 75 percent cover (USFWS 2010). There are only seven confirmed records of ocelots in Arizona. The roadkill between Globe and Superior in April 2010 is the northernmost recent sighting of this species. Breeding ocelots have never been confirmed in Arizona. There are no confirmed records of female ocelots within the State of Arizona. Because the Project Area lacks dense vegetation cover for this species, the likelihood of adverse impacts to ocelot as a result of loss of habitat is highly improbable. No direct impacts to ocelot individuals are anticipated, because this species will not likely be traveling through the Project Area during surface disturbance activities.

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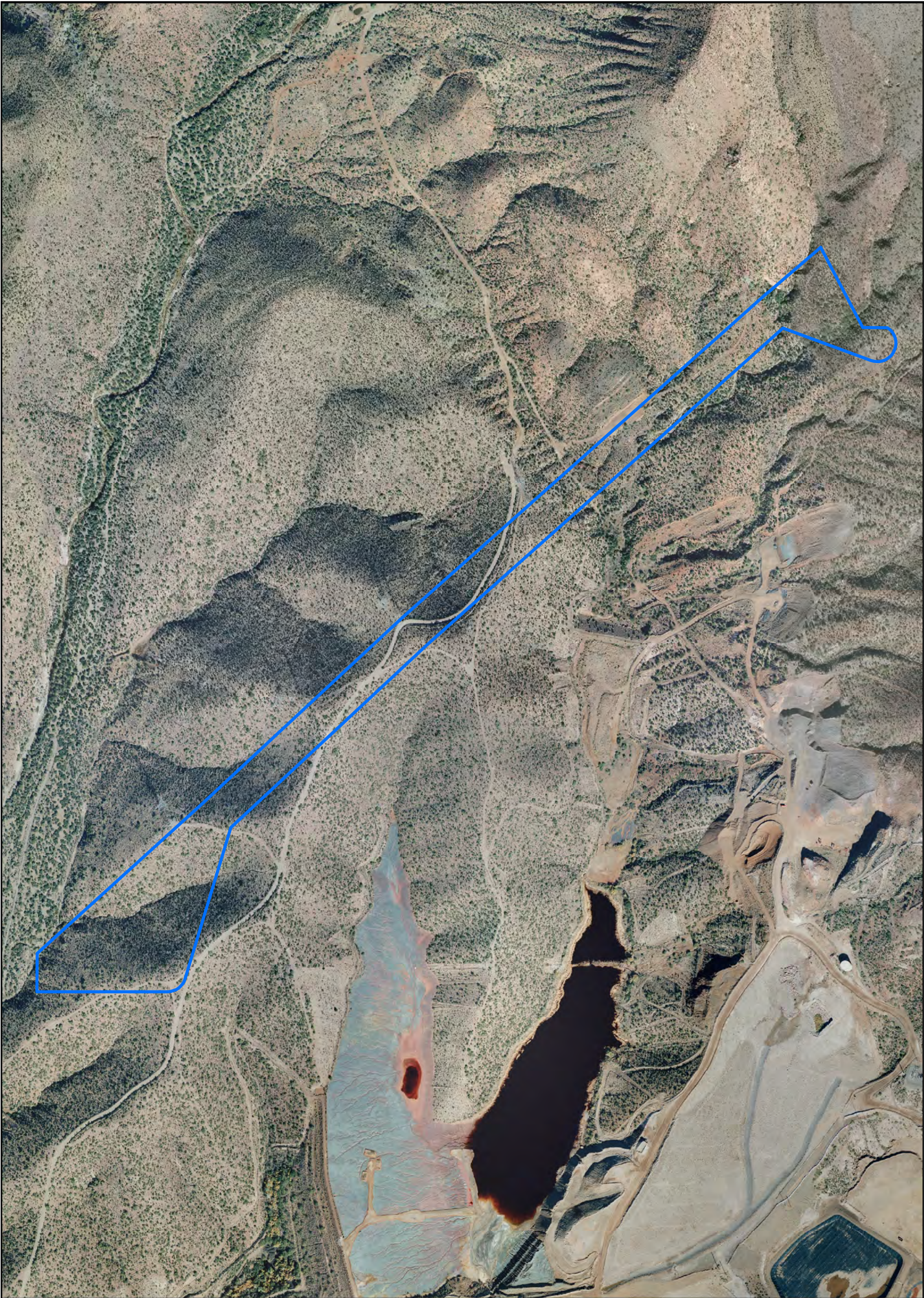
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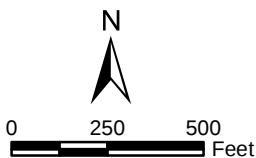
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FIGURES

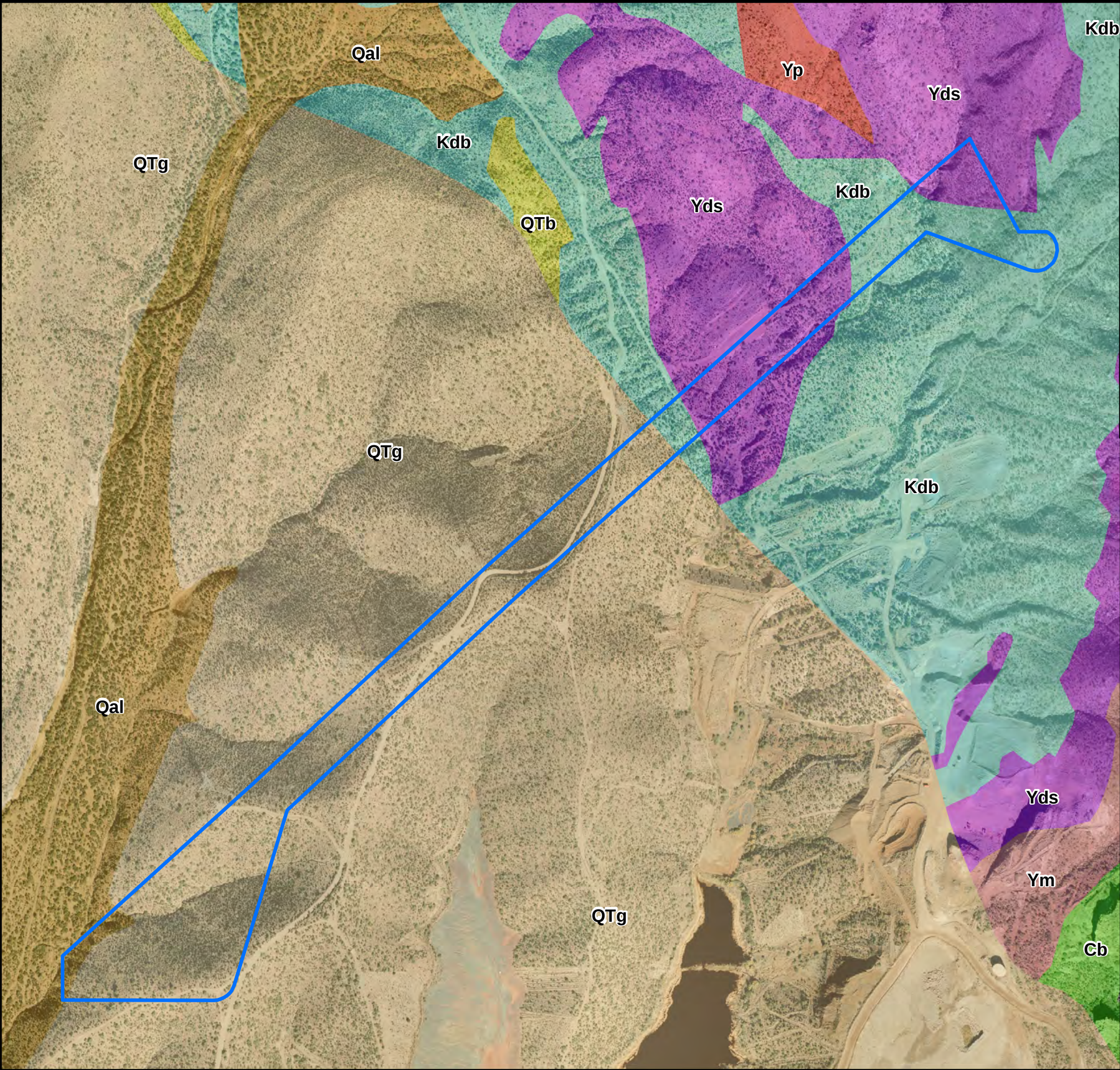


T1S, R12E, Portion of Sections 26, 27, & 34,
Pinal County, Arizona
Photo Source: 2010 Cooper Aerial Surveys Co.



Legend
 Project Area

SUPERIOR TO SILVER KING 115kV
POWERLINE SEGMENT RE-ROUTE
Biological Evaluation
AERIAL OVERVIEW
Figure 2



Legend

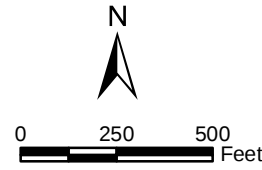
 Project Area

Geology

-  Cambrian Bolsa Quartzite (Cb)
-  Late Cretaceous diabase (Kdb)
-  Quaternary unconsolidated alluvium, talus and colluvium (Qal)
-  Quaternary-Tertiary basalt (QTb)
-  Quaternary-Tertiary gravel and conglomerate (Gila Conglom) (QTg)
-  Younger Precambrian Mescal limestone (Ym)
-  Younger Precambrian Dripping Spring quartzite (Yds)
-  Younger Precambrian Pioneer shale (Yp)

Geology Source:
Geologic Map of the Superior Quadrangle, Pinal County, AZ
Geology by Donald W. Peterson, 1969.

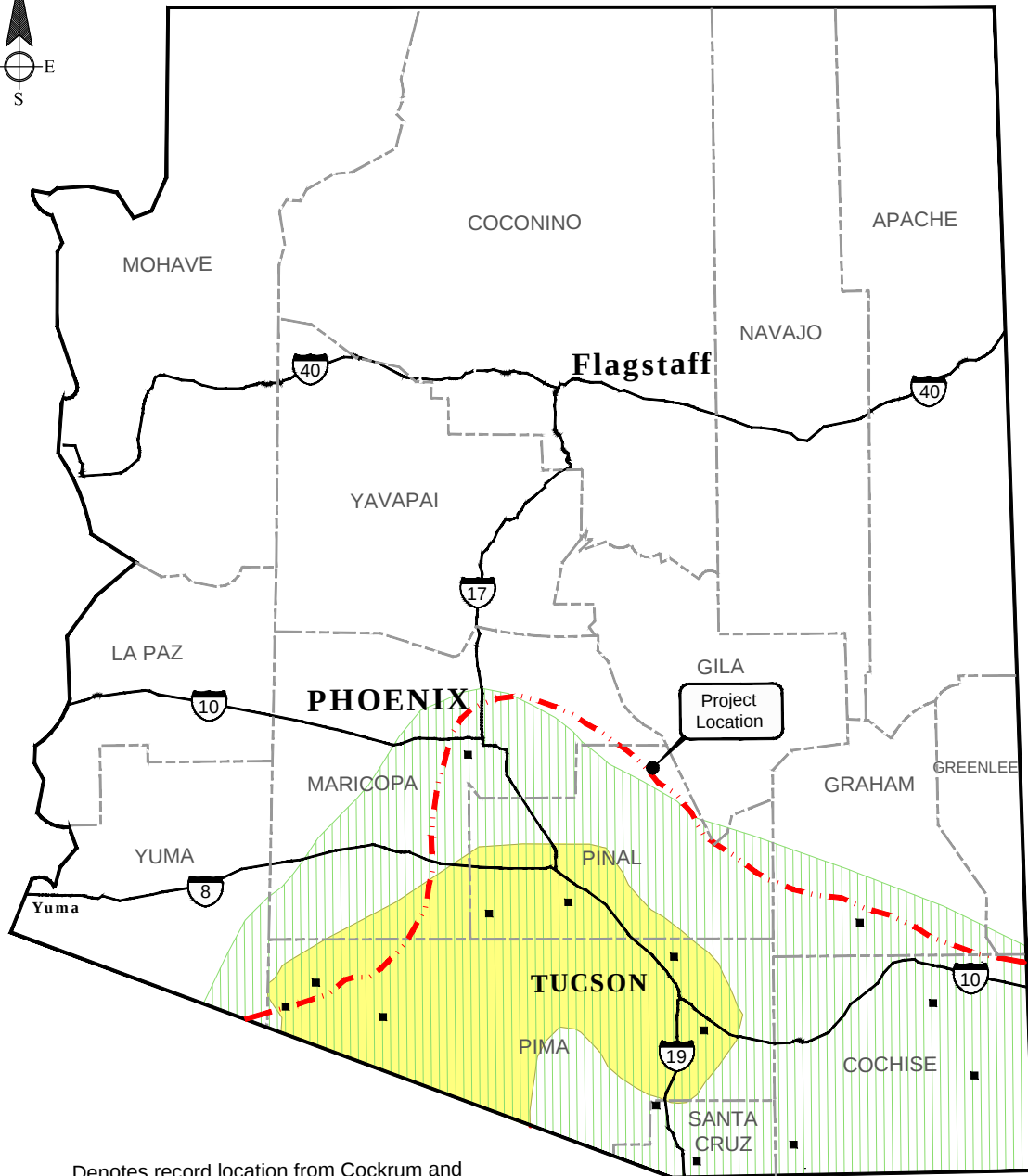
T1S, R12E, Portion of Sections 26, 27, & 34,
Pinal County, Arizona
Photo Source: 2010 Cooper Aerial Surveys Co.



**SUPERIOR TO SILVER KING 115kV
POWERLINE SEGMENT RE-ROUTE
Biological Evaluation**

GEOLOGY MAP
Figure 3

ARIZONA



■ Denotes record location from Cockrum and Petryszyn 1991

--- Limits of range shown by Hoffmeister 1986 (summer only)

■ Late spring and early summer records from Cockrum and Petryszyn 1991

■ Late summer and fall records from Cockrum and Petryszyn 1991

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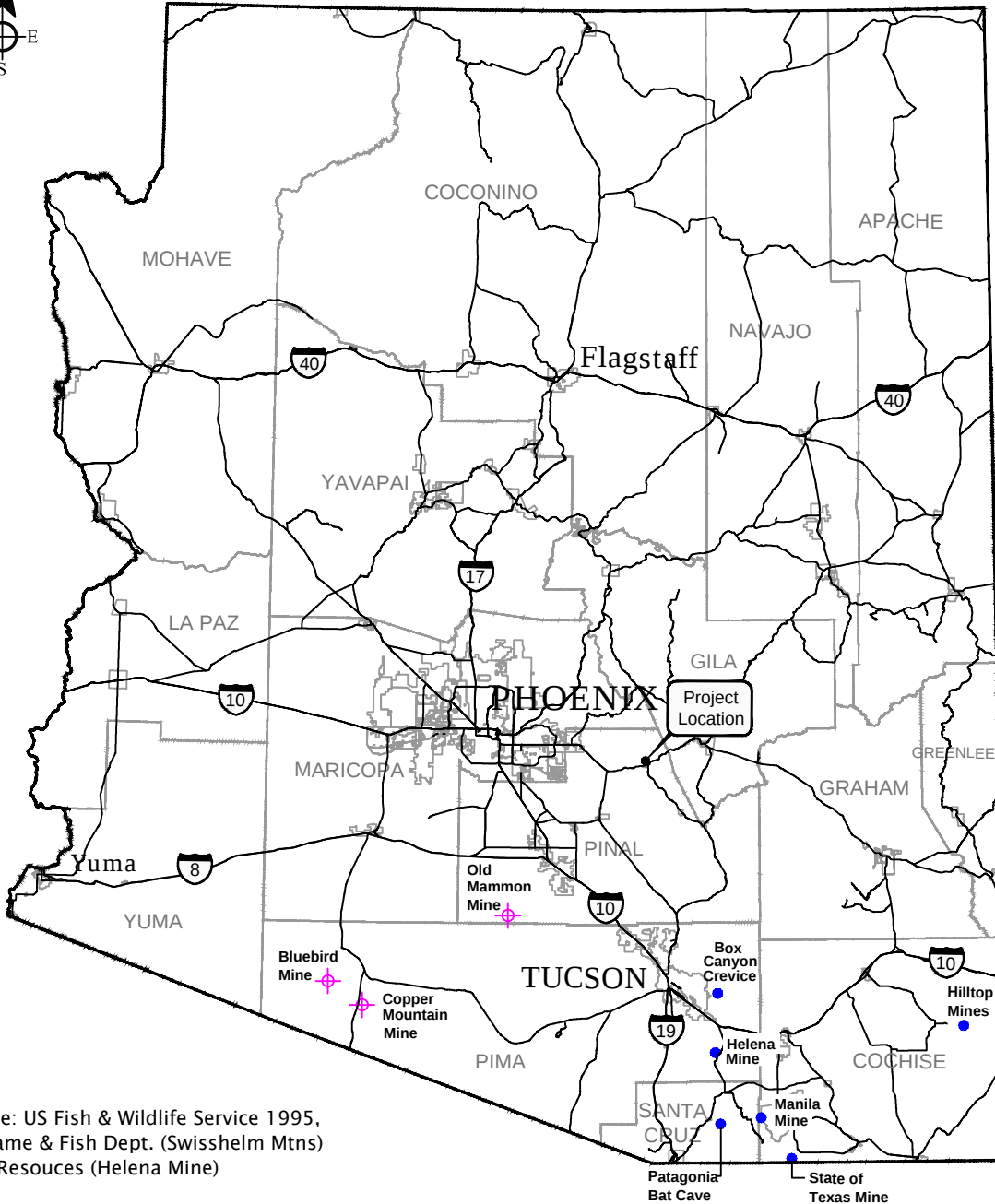
APPROX. SCALE: 1" = 60 MILES

SUPERIOR TO SILVER KING 115kV POWERLINE SEGMENT RE-ROUTE Biological Evaluation

ARIZONA RANGE OF THE LESSER
LONG-NOSED BAT (FROM HOFFMEISTER
1986, AND COCKRUM AND PETRYSZYN 1991)

Figure 4

ARIZONA



Data Source: US Fish & Wildlife Service 1995,
Arizona Game & Fish Dept. (Swisshelm Mtns)
WestLand Resources (Helena Mine)

-  Maternity Roosts
-  Post Maternity Roosts

SUPERIOR TO SILVER KING 115kV POWERLINE SEGMENT RE-ROUTE Biological Evaluation

KNOWN MAJOR ROOST SITES OF
LESSER LONG-NOSED BAT IN ARIZONA

Figure 5