

Site Characterization Report

El Sol Energy Storage

Maricopa County, Arizona
February 28, 2019

Table of Contents

1.0	Introduction.....	1
2.0	Methods.....	3
2.1	Existing Information from Publicly Available Sources	3
3.0	Results.....	3
3.1	Land Cover.....	3
3.2	Wetlands	5
3.3	Wildlife Species	5
3.3.1	FEDERALLY PROTECTED SPECIES	14
3.3.2	STATE SPECIES OF GREATEST CONSERVATION NEED.....	14
3.3.3	PLANT SPECIES OF CONCERN	16
4.0	References.....	17

List of Tables

TABLE 1. NATIONAL LAND COVER TYPES WITHIN THE EL SOL PROJECT AREA, MARICOPA, ARIZONA, 2019.	3
TABLE 2. WILDLIFE SPECIES OF CONCERN, STATUS, PREFERRED HABITAT, AND POTENTIAL SEASONS OF OCCURRENCE FOR SPECIES THAT ARE KNOWN OR LIKELY TO OCCUR IN THE EL SOL PROJECT AREA. MARICOPA COUNTY, ARIZONA, 2019.	5

1.0 Introduction

El Sol Energy Storage LLC is pursuing development of a 50 megawatt (MW) stand-alone energy storage facility in the town of Youngtown, Maricopa County, Arizona (Figure 1.1). This project is located on approximately 14 acres of private land (Project Area) immediately adjacent to an existing utility substation. The site is anticipated to house battery energy storage systems within two 20,000 square-foot warehouse buildings. Study objectives were to provide information needed to address questions posed under the *Tier 1 Preliminary Site Evaluation* tier of the U.S. Fish and Wildlife Service's (USFWS) *Land-Based Wind Energy Guidelines* (WEG; USFWS 2012), such as identifying potential wildlife or sensitive habitat issues within the Project boundary.

This space was intentionally left blank.

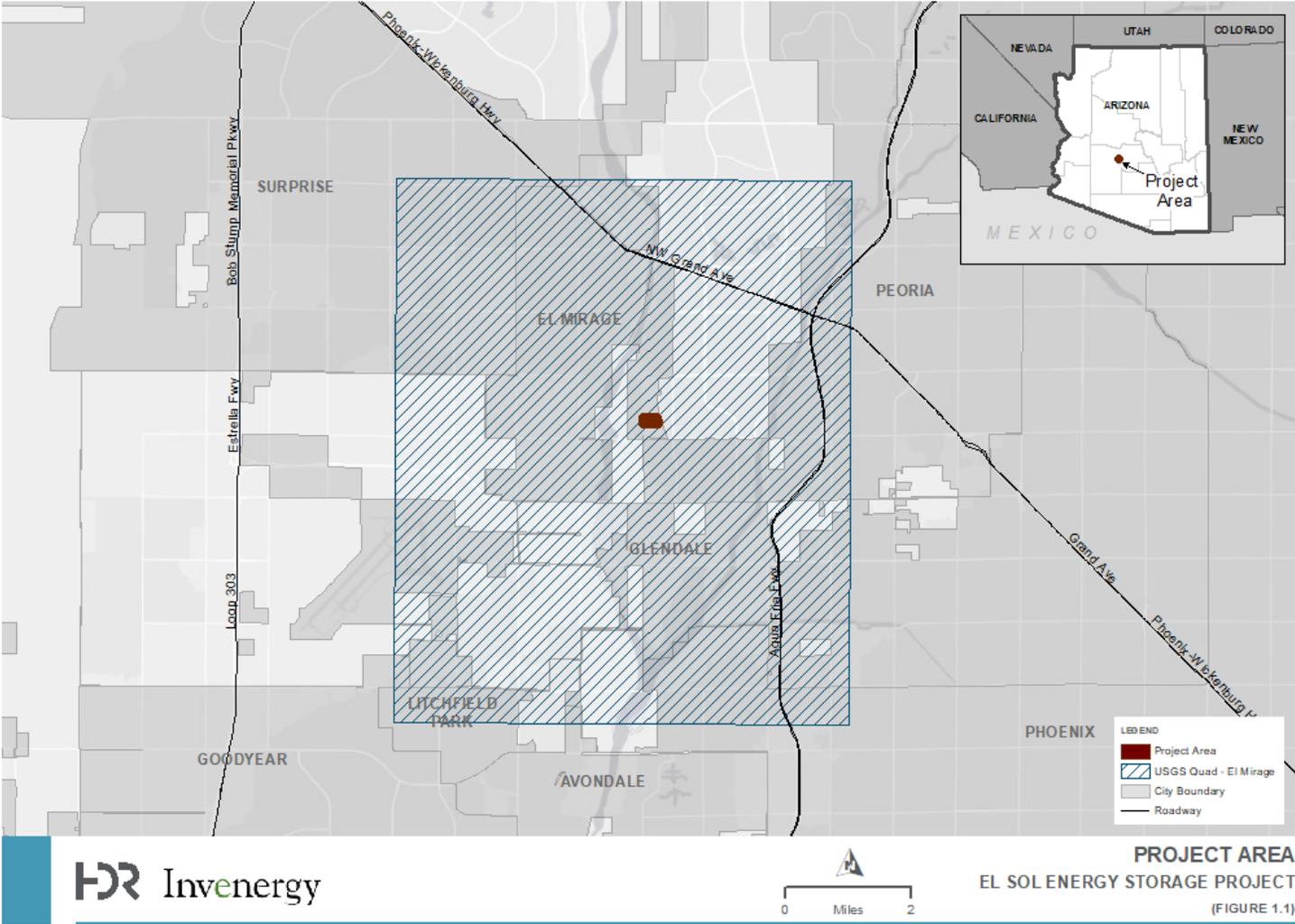


Figure 1.1 El Sol Project Location, Maricopa County, Arizona, 2019.

2.0 Methods

The preliminary site characterization was completed using a combination of existing information obtained from publicly available sources including reports, published literature, on-line databases, and geographic information system (GIS) data.

2.1 Existing Information from Publicly Available Sources

The following data sources were used to complete this study:

- USFWS, Information for Planning and Consultation (IPaC)
- Arizona Game and Fish Department Habimap tool
- Arizona Game and Fish Department Heritage Database Management System (HDMS)
- NatureServe Explorer
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Geospatial Data Giveaway
- USFWS, National Wetlands Inventory (NWI)
- National Land Cover Dataset (NLCD) 2011 Land Cover

From these sources, HDR created a land cover map (Figure 3.1), and a list of species of concern possibly occurring in the Project Area, including habitat requirements and potential ecological attractants of listed species (Table 2). The potential presence of listed species in the Project Area was identified based on a comparison of the mapped land cover types with the habitat requirements of listed species.

3.0 Results

3.1 Land Cover

The NLCD 2011 Land Cover types within the Project Area are shrub/scrub and developed, low intensity (Figure 3.1, Table 1). Shrub/scrub land cover class in Arizona consists of desert plant communities that are a mixture of shrubs, herbs and succulents (MLCD, 2011). Some of the most common plants in shrub/scrub include creosote bush (*Larrea tridentata*), velvet mesquite (*Prosopis velutina*), yellow paloverde (*Parkinsonia microphylla*), and desert-thorn (*Lycium* spp.) (USDA, 2018).

Table 1. National Land Cover Types within the El Sol Project Area, Maricopa, Arizona, 2019.

Cover Type	Acres	Percent (%)
Shrub/Scrub	13	93
Developed, Low Intensity	1	7
Total	14	100

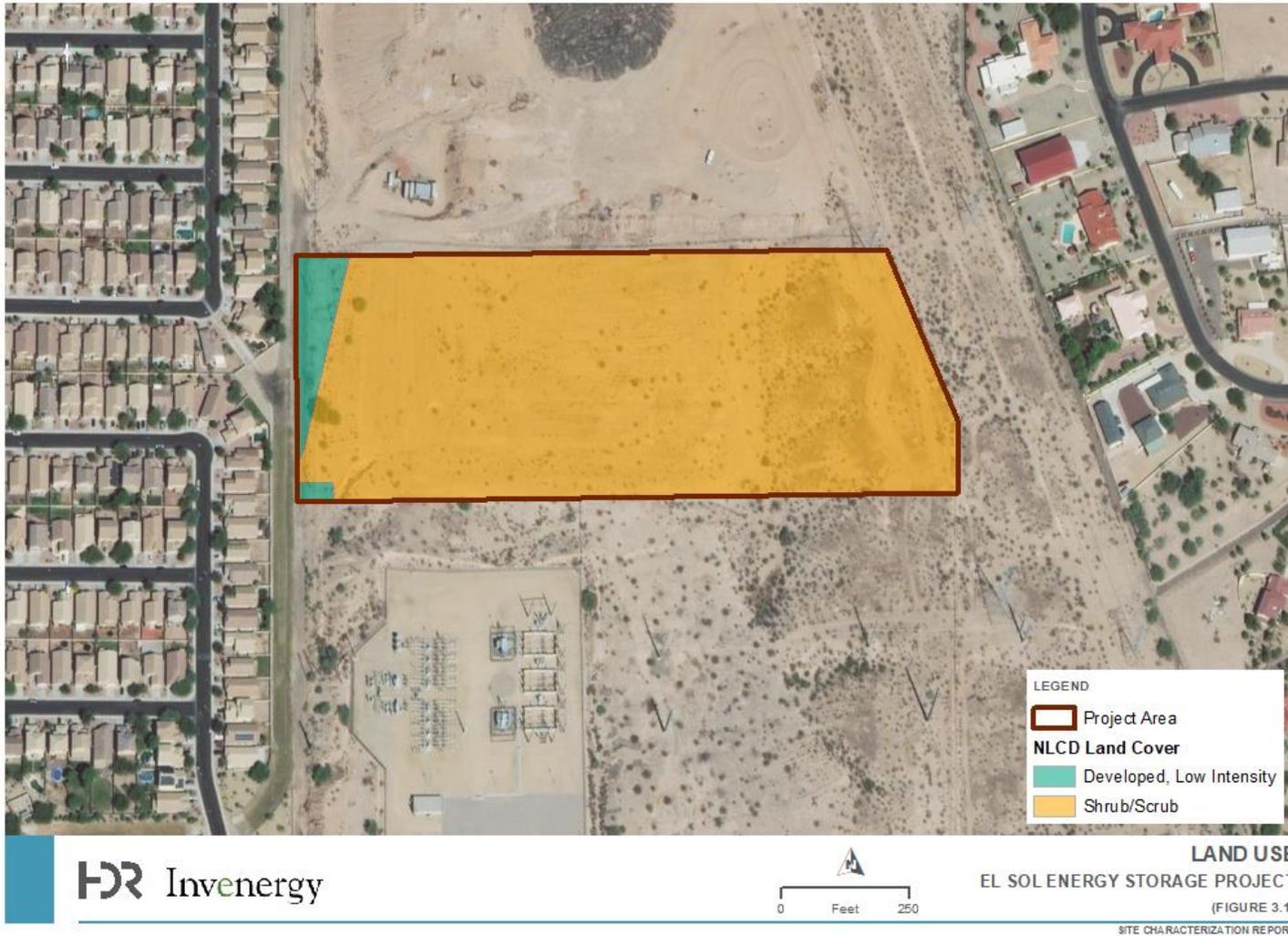


Figure 3.1 National Land Cover Database Land Cover Types.

3.2 Wetlands

No NWI wetlands (USFWS, 2019b) or hydric soils (USDA, 2017) are mapped within the Project Area.

3.3 Wildlife Species

Species in Table 2 were gathered from the Arizona Game and Fish Department Species of Greatest Conservation Need List (AGFD, 2015) and the United States Fish and Wildlife Service Threatened and Endangered Species List via the IPaC online tool (USFWS 2019). Arizona defers to federally listed species, and does not separately list species as threatened or endangered at the state level. Table 2 includes three amphibian, 13 bird, 14 mammal, and 9 reptile species that have the potential to occur within the Project Area. (USFWS, 2019). Habitat requirements for each species were gathered from NatureServe Explorer (NatureServe, 2018).

Table 2. Wildlife species, status, preferred habitat, and potential seasons of occurrence for species that are known or likely to occur in the Project Area. Maricopa County, Arizona, 2019.

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area			
				Spring	Summer	Fall	Winter
AMPHIBIAN							
<i>Lowland Leopard Frog</i>	<i>Rana yavapaiensis</i>	SGCN	<i>Habitat includes montane and river valley cienegas, springs, pools, cattle tanks, lakes, reservoirs, streams, and rivers. Habitat for this species is not likely to occur in the Project Area.</i>				
<i>Sonoran Desert Toad</i>	<i>Bufo alvarius</i>	SGCN	<i>Breeding habitat includes permanent or semi-permanent pools. Non-breeding habitat is likely to occur in the Project Area. This habitat includes the NLCD shrub/scrub land cover class found throughout the majority of the site.</i>		X	X	X
<i>Arizona Toad</i>	<i>Bufo microscaphus</i>	SGCN	<i>Habitat includes rocky stream courses in the pine-oak zone (e.g., Arizona, New Mexico), stream courses bordered by willows and cottonwood. Habitat for this species is not</i>				

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area
<i>likely to occur in the Project Area.</i>				
BIRDS				
<i>California Least Tern</i>	<i>Sterna antillarum browni</i>	<i>FE/SGCN</i>	<i>Breeding and nesting habitat occurs along coastal sandy beaches or along wetlands and rivers. This habitat is not present in the Project Area.</i>	<i>X</i>
<i>Western Yellow-billed Cuckoo</i>	<i>Coccyzus americanus</i>	<i>FT/SGCN</i>	<i>Suitable habitat includes large tracts of riparian woodland or large tracts of mesquite trees adjacent to flowing water. This habitat does not occur in the Project Area.</i>	
<i>Bald Eagle – Sonoran Desert Population</i>	<i>Haliaeetus leucocephalus</i>	<i>SGCN</i>	<i>Foraging or nesting habitat for Bald Eagles does not occur in the Project Area. There is a year round population that is found in the Sonoran Desert.</i>	
<i>Gila Woodpecker</i>	<i>Melanerpes uropygialis</i>	<i>SGCN</i>	<i>Nests in saguaro cactus and Cordon cacti greater than 4 feet tall, and to a lesser extent in cottonwoods and willow. This habitat does not occur in the Project Area.</i>	
<i>Gilded Flicker</i>	<i>Colaptes chrysoides</i>	<i>SGCN</i>	<i>Breeding and nesting habitat is primarily saguaro cacti in the Sonoran Desert. This habitat does not occur in the Project Area. Foraging habitat may occur on site but the site is surrounded by urban developed areas and is far from the nearest saguaro forests.</i>	

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area			
<i>Yuma Clapper Rail</i>	<i>Rallus longirostris yumanensis</i>	FE/SGCN	<i>Non-breeding habitat includes freshwater marshes. Nesting habitat includes small shrubs among dense cattails or bulrushes along the edges of shallow ponds with stable water levels. This habitat does not occur in the Project Area.</i>				
<i>Wood Duck</i>	<i>Aix sponsa</i>	SGCN	<i>Spring and summer habitat includes quiet inland waters near woodlands. Winters on both freshwater and brackish marshes. This habitat does not occur in the Project Area.</i>				
<i>Golden Eagle</i>	<i>Aquila chrysaetos</i>	SGCN	<i>Forage habitat includes open and semi-open or mountainous regions with sufficient mammalian prey base. Nests are most often on rock ledges of cliffs. This habitat does not occur in the Project Area.</i>				
<i>Western Burrowing Owl</i>	<i>Athene cunicularia</i>	SGCN	<i>Habitat includes short vegetation in open grasslands, sometimes in open areas such as vacant lots similar to the NLCD land cover class found throughout the majority of the site. This habitat does occur in the Project Area.</i>	X	X	X	X
<i>American Bittern</i>	<i>Botaurus lentiginosus</i>	SGCN	<i>Breeding habitat includes large freshwater and (less often) brackish marshes, Nests primarily in inland</i>				

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area			
			<i>freshwater wetlands. This habitat does not occur in the Project Area.</i>				
<i>Ferruginous Hawk</i>	<i>Buteo regalis</i>	SGCN	<i>Open country, primarily prairies, plains and badlands; sagebrush, saltbush-greasewood shrubland, periphery of pinyon-juniper and other woodland, desert. This habitat does not occur in the Project Area.</i>				
<i>Yellow Warbler</i>	<i>Setophaga petechia</i>	SGCN	<i>Breeding and nesting habitat includes open scrub, second-growth woodland, thickets, farmlands, and gardens, especially near water. This habitat does not occur in the Project Area.</i>				
<i>Lincoln's Sparrow</i>	<i>Melospiza lincolnii</i>	SGCN	<i>Breeding and nesting habitat includes grassland/herbaceous, old field, shrubland/chaparral and woodland – conifer. Migrant, non-breeding species in AZ. Species could occur as a migrant.</i>	X			
MAMMAL							
<i>Harris' Antelope Squirrel</i>	<i>Ammospermophilus harrisi</i>	SGCN	<i>Habitat includes low dry, sparsely vegetated desert similar to the NLCD shrub/scrub land cover throughout the Project Area. Habitat for this species may occur in the Project Area.</i>	X	X	X	X
<i>Pale Townsend's Big-eared Bat</i>	<i>Corynorhinus townsendii pallescens</i>	SGCN	<i>Roosts primarily in pine forests and arid desert scrub. They prefer large open areas for roosting. This habitat does not</i>				

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area
			<i>occur in the Project Area.</i>	
<i>Spotted Bat</i>	<i>Euderma maculatum</i>	<i>SGCN</i>	<i>Roosting habitat includes cracks and crevices in cliffs located in desert and grassland/herbaceous landscapes. This habitat does not occur in the Project Area.</i>	
<i>Greater Western Mastiff Bat</i>	<i>Eumops perotis californicus</i>	<i>SGCN</i>	<i>Roosting habitat includes large open areas having vertical faces. They will roost in small colonies in rock fissures in high cliff face. This habitat does not occur in the Project Area.</i>	
<i>Western Red Bat</i>	<i>Lasiurus blossevillii</i>	<i>SGCN</i>	<i>Summer roosts usually are in tree foliage, sometimes in large leafy shrubs (rarely found in desert habitats). This habitat does not occur in the Project Area. This species avoids caves and buildings during summer/winter.</i>	
<i>Western Yellow Bat</i>	<i>Lasiurus xanthinus</i>	<i>SGCN</i>	<i>Roosting habitat is primarily trees, often among the dead fronds of fan palms. This habitat does not occur in the Project Area.</i>	
<i>California Leaf-nosed Bat</i>	<i>Macrotus californicus</i>	<i>SGCN</i>	<i>Day roosts are in caves or abandoned mine tunnels. Night roosts are in open buildings, porches, rock shelters, mines, under bridges, or in various other sites. This habitat does not occur in the Project Area.</i>	
<i>Arizona Myotis</i>	<i>Myotis occultus</i>	<i>SGCN</i>	<i>Roosting habitat includes ponderosa</i>	

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area			
			<i>pine and oak-pine woodland near water. This habitat does not occur in the Project Area.</i>				
<i>Cave Myotis</i>	<i>Myotis velifer</i>	SGCN	<i>Primary habitat includes riparian habitats near desert scrub. Roosts are in caves and mines, usually near the entrance. Summer roosts are occasionally in buildings. This species hibernates in winter in humid/wet caves or tunnels. This habitat does not occur in the Project Area.</i>				
<i>Yuma Myotis</i>	<i>Myotis yumanensis</i>	SGCN	<i>Roosting habitat ranges from a variety of upland and lowland habitats, including riparian, desert scrub, but their habitat is closely associated with water. This habitat does not occur in the Project Area.</i>				
<i>Pocketed Free-tailed Bat</i>	<i>Nyctinomops femorosaccus</i>	SGCN	<i>These bats are usually associated with rugged canyons and semiarid landscapes. They roost in crevices in cliffs and shallow caves during the day, and also may roost in buildings or under roof tiles. This habitat does not occur in the Project Area.</i>				
<i>Little Pocket Mouse</i>	<i>Perognathus longimembris</i>	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes sagebrush, creosote bush, and cactus communities similar to the NLCD scrub/shrub located</i>	X	X	X	X

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area			
			<i>throughout the Project Area.</i>				
<i>Mexican Free-tailed Bat</i>	<i>Tadarida brasiliensis</i>	SGCN	<i>Roosting habitat ranges from lowland deserts, shrublands, woodlands, and forests to high mountains. Major roosts are primarily in caves. This habitat does not occur in the Project Area.</i>				
<i>Kit Fox</i>	<i>Vulpes macrotis</i>	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes open desert, shrubby or shrub-grass similar to the NLCD shrub/scrub land cover class throughout the site.</i>	X	X	X	X
REPTILE							
<i>Tucson Shovel-nosed Snake</i>	<i>Chionactis occipitalis klauberi</i>	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes mesquite-creosote bush desert similar to the NLCD shrub/scrub land cover class throughout the site.</i>	X	X	X	X
<i>Sonoran Desert Tortoise</i>	<i>Gopherus agassizii</i> (Sonoran Population)	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes upland habitats of the Sonoran desert scrub similar to the NLCD shrub/scrub land cover class throughout the site.</i>	X	X	X	X
<i>Gila Monster</i>	<i>Heloderma suspectum</i>	SGCN	<i>Habitat includes desert grassland, Mohave and Sonoran desert scrub, typically wetter and rockier palo verde-saguaro desert than in drier and sandier creosote-</i>				

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area			
			<i>bursage desert. This habitat is not present in the Project Area.</i>				
<i>Variable Sandsnake</i>	<i>Chilomeniscus stramineus</i>	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes sandy, or loamy soils of flats, dunes, hummocks, arroyos, and wash borders, in deserts. Similar to the NLCD shrub/scrub land cover class throughout the site.</i>	X	X	X	X
<i>Tiger Rattlesnake</i>	<i>Crotalus tigris</i>	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes desert, shrubland/chaparral similar to the NLCD shrub/scrub land cover class throughout the site.</i>	X	X	X	X
<i>Sonora Mud Turtle</i>	<i>Kinosternon sonoriense sonoriense</i>	SGCN	<i>This species generally inhabits streams, springs, ponds, and pools in intermittent streams. This habitat does not occur in the Project Area.</i>				
<i>Sonoran Whipsnake</i>	<i>Masticophis bilineatus</i>	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes desert, shrubland/chaparral similar to the NLCD shrub/scrub land cover class throughout the site.</i>	X	X	X	X
<i>Sonoran Coralsnake</i>	<i>Micruroides euryxanthus</i>	SGCN	<i>Habitat for this species is likely to occur in the Project Area. Habitat includes desert and grassland/herbaceous similar to the NLCD shrub/scrub land</i>	X	X	X	

Common Name	Scientific Name	Status*	Habitat by Season/Equivalent NLCD Land Cover Types	Seasons of Potential Occurrence and Likelihood of Occurrence in the Project Area			
<i>Regal Horned Lizard</i>	<i>Phrynosoma solare</i>	SGCN	<i>cover class throughout the site. Habitat for this species is likely to occur in the Project Area. Habitat includes level or gently sloping terrain with openly spaced desert vegetation (e.g., creosote bush, mesquite, saguaro), similar to the NLCD shrub/scrub land cover class throughout the site.</i>	X	X	X	X

*Status Key:

FE = USFW IPaC – federally listed-endangered species, FT = USFW IPaC – federally listed threatened species
SGCN = Arizona Game and Fish Department – Species of Greatest Conservation Need

3.3.1 FEDERALLY PROTECTED SPECIES

Federally Listed Species

California Least Tern (*Sterna antillarum browni*)

One federally listed threatened wildlife species, the California least tern has the potential to occur in the Project Area (USFWS, 2019). California least terns are most commonly found breeding and nesting along coastal sandy beaches or along wetlands and rivers, but there has been documented breeding populations in sparsely vegetated areas of Maricopa County (USFWS 2009). Suitable nesting habitat for this species is not present within the Project Area; however, it may occur as a rare migrant.

Eagles

Bald and Golden eagles are federally protected by the Bald and Golden Eagle Protection Act. Bald eagles are unlikely to nest in the Project Area due to the barren landscape, human presence, and lack of suitable nesting sites (i.e. large coniferous or deciduous trees and cliff edges near water). Golden eagles are not likely to nest within the Project Area due to the proximity to neighborhoods and construction sites with steady human presence; however, they may nest in the vicinity and could forage in the Project Area.

3.3.2 STATE SPECIES OF GREATEST CONSERVATION NEED

The Arizona Game and Fish Department lists Species of Greatest Conservation Need (SGCN) which are categorized based on the degree of vulnerability to impacts from specific threats (rural development, drought, invasive species, altered surface geology) (AGFD, 2012). The following species have the highest potential of occurring in the Project Area due to the likelihood of habitat being present in the Project Area.

Birds

Western Burrowing Owl (*Athene cunicularia*)

The western burrowing owl breeds in short vegetation in open grasslands, sometimes in open areas such as vacant lots similar to the NLCD land cover class found throughout the majority of the site. This species is tolerant of human activity and therefore has potential to occur in the Project Area.

Amphibian

Sonoran Desert Toad (*Bufo alvarius*)

Breeding populations of the Sonoran Desert toad require permanent or semi-permanent pools for breeding. Non-breeding populations inhabit areas of desert scrub, specifically in southern Arizona. This species has a potential to occur within the Project Area due to the presence of non-breeding habitat.

Mammals

Harris' Antelope Squirrel (*Ammospermophilus harrisi*)

Harris' antelope squirrels occur throughout the sparsely vegetated deserts of southern Arizona. They burrow under low vegetation, rocks, or cactus clusters. This species has the potential to occur in the Project Area due to the presence of suitable habitat.

Little Pocket Mouse (*Perognathus longimembris*)

This species occurs in the Upper and Lower Sonoran deserts of Arizona, which includes sagebrush, creosote bush, and cactus vegetation communities. This species has the potential to occur within the Project Area due to the presence of suitable habitat.

Kit Fox (Vulpes macrotis)

This species is known to occur in the open desert, shrub grass habitat of western Arizona. This species has a potential to occur within the Project Area due to the presence of habitat.

*Reptiles**Tucson Shovel-nosed Snake (Chionactis occipitalis klauberi)*

This species is known to occur throughout Maricopa, Pima and Pinal counties in Arizona. Primary habitat consists of mesquite-creosote bush desert with sandy washes, dunes, and rocky hillsides. This snake burrows in the soil or under fallen debris. This species has a potential to occur within the 1 Project Area due to the presence of primary habitat.

Sonoran Desert Tortoise (Gopherus morafkai - Sonoran Population)

This Sonoran desert tortoise population occurs in the upland Sonoran desert scrub habitat located throughout Cochise, Gila, Graham, La Paz, Maricopa, Mohave, Pima, Pinal, Santa Cruz, Yavapai and Yuma counties of Arizona. Within desert habitats, they prefer areas with rocky outcrops and palo verde-saguaro cactus communities and ecotonal desert grasslands. This species has a potential to occur within the Project Area due to the presence of primary habitat.

Variable Sandsnake (Chilomeniscus stramineus)

This species is solely found in the shrublands of southern Arizona. General habitat includes burrows in thornscrub and mesquite-creosotebush desert. This species can also be found under rocks or vegetative debris. This species has a potential to occur within the Project Area due to the presence of primary habitat.

Tiger Rattlesnake (Crotalus tigris)

This species is solely found in the rocky desert canyons, foothills, thornscrub, ocotillo-mesquite-creosotebush, saguaro-paloverde, mesquite grasslands of southern Arizona. The tiger rattlesnake is primarily a terrestrial species, but may climb into overhanging vegetation. This species has a potential to occur within the Project Area due to the presence of primary habitat.

Sonoran Whipsnake (Masticophis bilineatus)

This species burrows in the desert and shrublands of southern Arizona. The Sonoran Whipsnake is primarily a terrestrial species, but may climb into overhanging vegetation. This species has a potential to occur within the Project Area due to the presence of primary habitat.

Sonoran Coralsnake (Micruroides euryxanthus)

This species is found in the brushland, thornscrub, thornforest, canyons of upland desert scrub and desert grasslands of southern Arizona. The snake spends the majority of its lifetime underground, and emerges at night or on cloudy days. This species has a potential to occur within the Project Area due to the presence of primary habitat.

Regal Horned Lizard (Phrynosoma solare)

This species is found in areas with openly spaced vegetation where dominant plant communities include creosotebush, mesquite, and saguaro cactus. This species spends the majority of its lifetime underground and is inactive during periods of extreme heat and cold. This species has a potential to occur within the Project Area due to the presence of primary habitat.

3.3.3 PLANT SPECIES OF CONCERN

The Heritage Data Management System (HDMS) Query under the HabiMap tool (AGFD, 2015) lists species that occur within specific USGS Quadrangles. The Project Area is located within the El Mirage USGS Quadrangle shown in Figure 1.1. The desert tansy-aster (*Linosyris arida*), alternatively called arid tansy-aster (*Machaeranthera arida*), is a sensitive plant species listed within the El Mirage USGS Quadrangle. The desert tansy-aster habitat includes low sand dunes, sandy alkaline flats, riverbanks, and sandy roadsides. This species has a low potential of occurring in the Project Area due to lack of suitable habitat.

This space was intentionally left blank.

4.0 References

Arizona Game and Fish Department (AGFD). (May 2012). Arizona's State Wildlife Action Plan 2012 – 2022. Retrieved from https://www.azgfd.com/PortalImages/files/wildlife/2012-2022_Arizona_State_Wildlife_Action_Plan.pdf.

Arizona Game and Fish Department (AGFD). (2015). HabiMap Arizona. Retrieved from <http://www.habimap.org/>.

Homer, C.G., Dewitz, J., Yang, L., Jin, S., Danielson, P., Xian, Coulston, J., Herold, N., Wickham, J. and K. Megown. 2015. Completion of the 2011 National Land Cover Database for the conterminous United States – representing a decade of land cover change information, Photogrammetric Engineering and Remote Sensing, Vol. 81, 345-353.

Multi-Resolution Land Characteristics Consortium (MLCD). (2011). National Land Cover Data (NLCD) Land Cover (CONUS). Retrieved from <https://www.mrlc.gov/data/nlcd-2011-land-cover-conus>.

NatureServe Explorer. (2018, March). NatureServe Explorer - Data Search. Retrieved from <http://explorer.natureserve.org/servlet/NatureServe?init=Species>.

United States Department of Agriculture (USDA), Forest Service. (2018). Desertscrub. Retrieved from https://www.fs.fed.us/wildflowers/beauty/Sky_Islands/communities/desertscrub.shtml.

United States Department of Agriculture (USDA), National Resources Conservation Service (NRCS). (2019). Geospatial Data Giveaway. Retrieved from <https://gdg.sc.egov.usda.gov/>.

United States Department of Agriculture (USDA), National Resources Conservation Service (NRCS). (2017). Web Soil Survey. Retrieved from <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

U.S Fish and Wildlife Service (USFWS). (2019). IPaC Information for Planning and Consultation. Retrieved from <https://ecos.fws.gov/ipac/>.

U.S Fish and Wildlife Service (USFWS). (2019b). National Wetlands Inventory. Retrieved from <https://www.fws.gov/wetlands/>.

U.S. Fish and Wildlife Service (USFWS). (2009). California Least Tern, USFWS Arizona Ecological Services – Southwest Region;

Retrieved from <https://www.fws.gov/southwest/es/arizona/Documents/Redbook/California%20Least%20Tern%20RB.pdf>