

Appendix C – Biological Resources Report

**BIOLOGICAL RESOURCES REPORT FOR THE PROPOSED
PALO VERDE REGIONAL PARK PROJECT**

Prepared for:

Bureau of Land Management
Lower Sonoran Field Office
Phoenix, Arizona

On Behalf of:

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INTRODUCTION

Pinal County has filed a Recreation and Public Purposes (R&PP) Act application with the Bureau of Land Management (BLM) Lower Sonoran Field Office. The R&PP Act allows the Secretary of the Interior, upon application filed by a qualified applicant, to dispose of public lands to a state, territory, county, municipality, or nonprofit corporation for any recreational or public purpose consistent with its articles of incorporation or other creating authority. The application is for a lease under the R&PP Act for approximately 412 acres of land across three parcels, which together would be managed as a county regional park.

The parcels of land are located within an unincorporated area of Pinal County, and the proposed park was previously adopted as a regional park in the Pinal County Comprehensive Plan (Pinal County 2015 [2009]). As currently proposed, the park would provide access to the surrounding BLM-administered land through a trail network totaling approximately 26.5 miles. The park and surrounding BLM land is bounded by the Gila River Indian Community to the north, Hidden Valley Road to the east, Amigos Road to the south, and the Pinal County limits and Black Mountain Road to the west. The Palo Verde Mountains are the central focus of the recreational opportunities within the proposed park boundaries. The proposed Palo Verde Regional Park (the Project) comprises approximately 412 acres within a Sonoran desertscrub landscape and would provide recreational experiences for picnickers, hikers, mountain bikers, equestrians, dark-sky observers, tent campers, and other low-impact outdoor recreation users. Additionally, limited areas would be designated and managed for other recreational uses, including camping and off-highway vehicle staging.

The BLM is planning to prepare an Environmental Assessment (EA) to analyze and disclose the potential effects of granting the R&PP lease requested by Pinal County, as required by the National Environmental Policy Act (NEPA). This document has been prepared to support the analysis in the EA. The boundaries of the BLM's proposed action (i.e., the parcels that would be leased and the location of the trail network) are shown in maps attached to the EA. All Project features would be located within BLM-administered lands shown on Figure 1.

At the request of Pinal County, Environmental Planning Group, LLC (EPG) performed a general reconnaissance survey and prepared this report to document the status of species listed, proposed, or candidates for listing under the Endangered Species Act (ESA), sensitive species including BLM Sensitive (BLMS) and Birds of Conservation Concern (BCC), and other biological resources that are present or have the potential to occur in or near the location of Pinal County's proposed Palo Verde Regional Park Project (the study area).

METHODS

EPG reviewed existing information on sensitive species to identify those with potential to occur in the study area. These species included ESA-listed species returned in a list provided by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database (Attachment A), species protected under the Bald and Golden Eagle Protection Act (BGEPA), BCC as determined by the USFWS, and BLMS as determined by the BLM State Director for Arizona. All BLMS species listed by the BLM as being present in the Phoenix District Office

management area were reviewed for potential presence in the study area. EPG reviewed known distribution information and habitat preferences for all species and considered whether any may be present.

Additionally, EPG conducted field reconnaissance surveys for biological resources throughout the entire study area on March 13 and 25, 2020, to support the analyses to be used in the NEPA process. These field surveys also support the conclusions reached in this report.

ENVIRONMENTAL SETTING

The study area is located entirely within Pinal County, south of the Phoenix metropolitan area. The study area is within the Lower Vekol Wash watershed, north of Interstate 8. The Palo Verde Mountains are a small range south of the Sierra Estrella, and the study area also includes surrounding alluvial plains and xeroriparian areas. The entire study area is administered by the BLM. Other than ephemeral flows following heavy rains, no surface water is present in the study area. A livestock watering tank is present on the western edge of the study area.

The study area is dominated by native vegetation, with some human modification including grazing, existing roadways, and evidence of target shooting. Vegetation in the area is characteristic of the Arizona Upland Subdivision of Sonoran desertscrub, as defined by Brown (1994). Dominant plants include: saguaro (*Carnegiea gigantea*), yellow paloverde (*Parkinsonia microphylla*), ocotillo (*Fouquieria splendens*), candy barrel cactus (*Ferocactus wislizeni*), teddybear cholla (*Cylindropuntia bigelovii*), triangle bur ragweed (*Ambrosia deltoidea*), desert ironwood (*Olneya tesota*), and creosote bush (*Larrea tridentata*). Because no surface water is present, no aquatic habitat is present in the study area, and the ephemeral washes that cross the Project do not support riparian vegetation. Xeroriparian species such as mesquite trees (*Prosopis* spp.) are present, particularly along larger washes. No true riparian trees such as cottonwoods (*Populus* spp.) or willows (*Salix* spp.) are present.

Figure 1 shows the location of the study area, and Figure 2 through Figure 5 show representative habitat of the study area.

Wildlife Linkages

The Arizona Wildlife Linkages Workgroup, a partnership of land management agencies, Northern Arizona University, and other stakeholders, conducted a statewide assessment to identify areas for further detailed evaluation (Arizona Wildlife Linkages Working Group 2006). After the initial effort to identify potential corridors, some were selected as priorities for detailed modeling. Linkage modeling attempts to predict where the ‘cost’ (in energy or survival) to an animal moving across the landscape would be lowest, so that those areas can be prioritized to minimize or mitigate barriers to movement. Modeling for the Gila Bend – Sierra Estrella Linkage was completed in 2008, with the following selected as “focal species” used to model corridor suitability (Beier et al. 2008): bobcat, bighorn sheep, collared peccary, mountain lion, mule deer, desert tortoise, and gila monster.



Figure 2 Representative Habitat in the Study Area



Figure 3 Representative Habitat in the Study Area



Figure 4 Representative Habitat in the Study Area



Figure 5 Representative Habitat in the Study Area

Pinal County and Maricopa County each began separate assessments of wildlife linkages, using methods similar to each other. These assessments used stakeholder input to identify several categories of areas that would support or impede wildlife movement across the landscape (Perkl 2013, AGFD 2013). The study area includes habitat identified both in the early stakeholder-driven step and in the detailed modeling of wildlife linkages used to identify the Gila Bend – Sierra Estrella Linkage. Much of the study area was identified as a potential landscape movement area (AGFD 2013), but only the northwestern part of the study area was included as part of the Gila Bend – Sierra Estrella Linkage in the detailed model (Beier et al. 2008).

Sensitive Species Habitat

The BLM prepared a policy to direct the management of the desert tortoise, at the time considered a single species (BLM 1988). Since then, the desert tortoise has been split into two species: the Mojave desert tortoise (*Gopherus agassizii*), listed as Threatened under the ESA and not present in the study area, and the Sonoran desert tortoise (*G. morafkai*), which is currently a Candidate species for ESA listing and is managed under a multi-agency Candidate Conservation Agreement in Arizona. The BLM's policy, as it applies to the Sonoran desert tortoise, includes identification of three categories of habitat, ranked in conservation value to the species. Management objectives and mitigation requirements vary with the habitat category. A portion of the project has been identified as Category II Sonoran desert tortoise habitat by the BLM, which includes areas of moderate or high conservation importance and goals of stable or increasing populations. Sonoran desert tortoise Category II habitat in the study area is shown on Map 3 attached to the EA.

No critical habitat for ESA-listed species has been designated or proposed within the study area, and no other types of mapped or defined habitat areas for sensitive species are within the study area.

SPECIAL-STATUS SPECIES

Table 1 provides the results of the review of special-status species in the study area. This section provides additional detail on species identified by the IPaC query and any species with some potential to occur in or near the study area. Because of the Project's regional location, several riparian-associated species were identified. However, the ephemeral washes in the study area do not support the development of riparian habitat. Suitable habitat is not present in the study area for the BLM sensitive plants listed in Table 1 that occur in the vicinity of the Project.

Mammals

Special-status mammals that may be present in the study area include several species of bats, all listed as Sensitive by the BLM (Table 1). The lesser long-nosed bat, a migratory, nectar-feeding species, was recently determined to be recovered and delisted under the ESA. No known lesser long-nosed bat roosts are present in the study area, although the species can travel long distances and known roosts are within foraging range of the study area. All other special-status bats are small insectivorous species, and both roosting and foraging habitat is present in the study area for some species. The spotted bat is uncommon and roosting habitat is not likely to be present, but poor distributional information makes a detailed determination of potential presence difficult. No

specific roost sites were identified in information reviewed for this report or seen during field surveys, but abandoned mining features, old buildings, natural caves, trees, and other features all can be used by various species of special-status bats.

A nonessential experimental population (NEP) of Sonoran desert pronghorn was introduced to southwestern Arizona. Introductions have occurred in the Kofa and Cabeza National Wildlife Refuges. Although the study area is within the overall administrative boundary of the NEP, species management objectives and manmade barriers such as highways minimize the potential for natural or human-assisted dispersal into the study area.

Birds

Several special-status bird species have potential to occur in the study area (Table 1).

Yellow-billed cuckoos are ESA-listed as Threatened, and typically occur in large patches of mature riparian woodlands. However, the species does sometimes nest in dense patches of mesquite (*Prosopis* sp.) and has been recorded outside the study area upstream in Vekol Wash. During dispersal, yellow-billed cuckoos may also use habitat unsuitable for nesting. Yellow-billed cuckoos could be present in dense patches of mesquite near but outside the study area if those patches have the structural characteristics the species requires. No areas proposed for the R&PP action by the BLM contain suitable habitat for yellow-billed cuckoos.

Several species of BCC may occur in the study area, although the species may vary in their seasonal presence in the study area (Table 1). The USFWS created the non-regulatory category of BCC to identify birds that would benefit from conservation and management actions. Most BCC species are either declining, or risks have been identified that could cause population declines and an eventual need for ESA listing if the causes of declines are not addressed. The BLM's policy is to consider potential impacts to BCC species in management decisions. The BCC species discussed in the following paragraphs have the potential to occur in the study area and are associated with Sonoran desertscrub, the dominant habitat type that is present:

Bald eagles and golden eagles are both protected under the BGEPA, which prohibits harm, harassment, and collection. No bald eagle nesting habitat is present in the study area, although the species is present in the region and individuals could be seen in nearly any location outside the nesting season. Golden eagles are present in the study area. Golden eagle nest sites are typically remote cliff ledges in areas with minimal human activity.

Ferruginous hawks are listed as Sensitive by the BLM, but only in nesting habitat. No nesting habitat is present in the study area, but ferruginous hawks are present in winter, particularly in agricultural areas. Other special-status raptors include peregrine falcons and burrowing owls, which have the potential to be present in the study area.

Table 1. Special-Status Species That Were Evaluated for Potential Occurrence within the Study Area				
BCC: USFWS Bird of Conservation Concern BGEPA: Bald and Golden Eagle Protection Act BLMS: Bureau of Land Management Sensitive SCGN, 1A: Species of Greatest Conservation Need, Vulnerable C: Candidate		D: Delisted E: ESA Endangered Species T: ESA Threatened Species NEP: Non-essential Experimental Population		
Common Name <i>Latin Name</i>	Status	Critical Habitat	Habitat and Notes	Potential Presence in or near the Study Area
Mammals				
Pale Townsend's Big-eared Bat <i>Corynorhinus townsendii pallescens</i>	BLMS	NA	Occurs in desertscrub up into montane coniferous forest. Day roosts in caves or mine tunnels, night roosts in buildings.	Yes
Spotted Bat <i>Euderma maculatum</i>	BLMS	NA	Desertscrub, riparian woodlands, and mixed conifer forests. Roosts in caves and cliff crevices.	Yes
Greater Western Bonneted Bat <i>Eumops perotis californicus</i>	BLMS	NA	Sonoran desertscrub communities near cliffs, and rugged rocky canyons. Roosts in rock crevices.	Yes
Lesser Long-nosed Bat <i>Leptonycteris curasoae yerbabuenae</i>	D	NA	Migratory. Present in Sonoran desertscrub in early summer. Large colonial roosts in caves and mines.	Yes
California Leaf-nosed Bat <i>Macrotus waterhousii californicus</i>	BLMS	NA	Occurs in desertscrub communities. Roosts in rock crevices and abandoned mine shafts.	Yes
Cave Myotis <i>Myotis velifer</i>	BLMS	NA	Sonoran desertscrub communities. Roosts in caves, tunnels, mineshafts, under bridges, and sometimes in buildings.	Yes
Sonoran Pronghorn <i>Antilocapra americana sonoriensis</i>	E (NEP)	NA	Study area is within an administrative boundary for an experimental, non-essential population in western Arizona	Study area outside of known distribution.
Birds				
Bald Eagle <i>Haliaeetus leucocephalus</i>	BCC; BGEPA; BLMS	NA	Present in winter along watercourses and reservoirs. Nest sites are often groups of mature, deciduous trees in riparian areas.	Yes
Golden Eagle <i>Aquila chrysaetos</i>	BCC; BGEPA; BLMS	NA	Mountain cliffs and canyons. Hunts in open habitats.	Yes
Ferruginous Hawk <i>Buteo regalis</i>	BCC; BLMS	NA	Arid grasslands and agriculture fields, semidesert grasslands and grass desertscrub	Yes
Yellow-billed Cuckoo, Western Distinct Population Segment (<i>Coccyzus americanus</i>)	T	Proposed, outside Study area	Mature riparian woodlands; generally in relatively large patches of habitat. Occasionally present in dense mesquite bosques along ephemeral drainages.	Suitable habitat not present in the study area.

Table 1. Special-Status Species That Were Evaluated for Potential Occurrence within the Study Area				
BCC: USFWS Bird of Conservation Concern		D: Delisted		
BGEPA: Bald and Golden Eagle Protection Act		E: ESA Endangered Species		
BLMS: Bureau of Land Management Sensitive		T: ESA Threatened Species		
SCGN, 1A: Species of Greatest Conservation Need, Vulnerable		NEP: Non-essential Experimental Population		
C: Candidate				
Common Name <i>Latin Name</i>	Status	Critical Habitat	Habitat and Notes	Potential Presence in or near the Study Area
California Least Tern <i>Sterna antillarum browni</i>	E	No	Estuaries, lagoons, lakes and rivers, breeding on sandy beaches and banks of rivers or lakes.	Suitable habitat not present in the study area.
Western Burrowing Owl <i>Athene cunicularia hypugaea</i>	BCC; BLMS	NA	Dry, open short-grass habitats, valley bottoms, and farmland.	Yes
Cactus Ferruginous Pygmy Owl <i>Glaucidium brasilianum</i>	BLMS	NA	Desert scrub thicket habitat dominated by saguaros at elevations below 4,000 feet.	No
Gilded Flicker <i>Colaptes chrysoides</i>	BCC; BLMS	NA	Sonoran desertscrub communities and riparian woodlands with plants large enough for nest sites.	Yes
Desert Purple Martin <i>Progne subis hesperia</i>	BLMS	NA	Dense stands of saguaros in Sonoran desertscrub.	Yes
Le Conte's Thrasher <i>Toxostoma lecontei</i>	BLMS	NA	Sparsely vegetated desertscrub.	Study area outside of known distribution.
Reptiles				
Northern Mexican Gartersnake <i>Thamnophis eques megalops</i>	T	Proposed, outside Study area	Riparian obligate inhabiting densely vegetated permanent bodies of water. Formerly present in the Gila River and Santa Cruz River near the study area.	Study area outside of known distribution.
Sonoran Desert Tortoise <i>Gopherus morafkai</i>	C	NA	Rugged uplands with steep terrain and caliche caves in incised wash banks in Sonoran desertscrub.	Yes
Amphibians				
Sonoran Green Toad <i>Anaxyrus retiformis</i>	BLMS	NA	Valley bottoms in Sonoran desertscrub.	Yes
Invertebrates				
Monarch Butterfly <i>Danaus plexippus plexippus</i>	BLMS	NA	Plant communities that include suitable species of milkweeds and adult nectar sources.	Yes
Plants				
California Flannelbush <i>Fremontodendron californicum</i>	BLMS	NA	Occupies mid-elevation plant communities in shady, rocky canyons.	Suitable habitat not present in study area.
Arizona Hedgehog Cactus <i>Echinocereus triglochidiatus arizonicus</i>	E	No	Madrean woodlands and interior chaparral	Study area outside of known distribution.

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Common Name <i>Latin Name</i>	Status	Critical Habitat	Habitat and Notes	Potential Presence in or near the Study Area
Sonoran Rosewood <i>Vauquelinia californica</i> spp. <i>sonorensis</i>	BLMS	NA	Interior chaparral at higher elevations and mainly within bajadas or shaded drainages in lower elevations.	Study area outside of known distribution.
Murphey Agave <i>Agave murpheyi</i>	BLMS	NA	Occupies low elevation desert foothills near major drainage systems on open slopes or alluvial terraces with pre-Columbian agricultural features.	Suitable habitat not present in study area.
Parish's Indian Mallow <i>Abutilon parishii</i>	BLMS	NA	Occupies high elevation Sonoran desertscrub on rocky hillsides in mesic soils.	Suitable habitat not present in study area.
Schott's Wirelettuce <i>Stephanomeria exigua exigua</i> [schottii]	BLMS	NA	Occupies sandy soils in desertscrub communities.	Study area outside of known distribution.
Kofa Mountain Barberry <i>Berberis harrisoniana</i>	BLMS	NA	Rocky or talus slopes, deep, shady canyons, thorn scrub, endemic to Kofa and Ajo mountain ranges	Study area outside of known distribution.

Western burrowing owls are a species of concern by the USFWS, protected by the Migratory Bird Treaty Act and by the State of Arizona. Burrowing owls are partially migratory and are generally present in higher numbers during the breeding season. In Arizona, this ranges from mid-February through August (Klute 2003). Burrowing owls typically require excavated holes by mammals such as ground squirrels, badgers, coyotes, and foxes, and soils must be suitable for burrowing. These burrows are required for their survival and reproduction. Suitable habitat is present but no suitable burrowing owl burrows were observed in the study area.

Gilded flickers occupy areas that contain adequate nesting cavities, and they can be common in Sonoran desert scrub communities where saguaros offer ample opportunities for the species to nest. Gilded flickers also frequently nest in riparian areas with mature trees. An EPG surveyor observed gilded flickers in the study area.

BLM sensitive bird species that may be present and are associated with Sonoran desert scrub include the desert purple martin and LeConte's thrasher. Desert purple martins are migratory and use nest cavities in saguaros and some riparian tree species. LeConte's thrashers prefer low-elevation, highly arid valleys.

Reptiles

One species of special-status reptile may occur in undeveloped portions of the study area (Table 1).

The Sonoran desert tortoise occupies rugged, steeply inclined desert hills and mountains as well as caliche caves in desert washes. The hills in the study area are suitable habitat for Sonoran desert tortoises. EPG surveyors observed a Sonoran desert tortoise, potential burrow locations with fresh scat, and a Sonoran desert tortoise carcass in the study area. The study area also includes BLM Category II mapped Sonoran desert tortoise habitat.

Amphibians

The Sonoran green toad is currently listed by the BLM as a sensitive species. It is unlikely that the Sonoran green toad will be present in the study area due to a lack of perennial washes. The closest wash within their range is the Vekol Wash, which does not intersect the study area (Nigro and Rorabaugh 2008). The Sonoran green toad is considered to be an "explosive" breeder. Clutch size ranges from 5 to 200 eggs. After emerging from a period of dormancy, individuals move into breeding ponds (sometimes cattle tanks) at the onset of the monsoon season. In Arizona, the species is present from the Vekol Wash and Mobile southeast to the Altar Valley and San Xavier Mission and south through the Tohono O'odham Reservation into Mexico (Nigro and Rorabaugh 2008). There is potential for the species to be present near major washes and ephemeral ponds in the study area.

Invertebrates

The monarch, a butterfly, is the only special-status invertebrate likely to occur in the study area. Monarchs are migratory and pass through Arizona annually. Milkweed species are required food plants for monarch larvae, and reproduction on native and ornamental milkweed species has been recorded in Arizona. Milkweed is not common in the general vicinity of the study area; therefore, monarch butterflies are not likely to reproduce in the study area. Monarch butterflies are migratory

and may occur outside of typical habitat during migratory flights. Arizona is not a part of a major migration corridor for the species, although some individuals pass through the region (Morris et al. 2015). Small groups of monarchs may be observed near Phoenix during the fall migration but most migrate at higher elevations to take advantage of monsoon-season montane wildflowers as a nectar source.

OTHER WILDLIFE SPECIES

Other wildlife species that may occur in the study area are consistent with those that occur in the Arizona Upland Subdivision of Sonoran desertscrub. Mammals that may occur in the study area include but are not limited to coyote (*Canis latrans*), ring-tailed cat (*Bassariscus astutus*), black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), and desert pocket mouse (*Chaetodipus penicillatus*). Common birds that may occur in the study area include but are not limited to greater roadrunner (*Geococcyx californianus*), mourning dove (*Zenaida macroura*), and cactus wren (*Campylorhynchus brunneicapillus*). Common reptiles that may occur in the study area include but are not limited to western diamondback (*Crotalus atrox*), ornate tree lizard (*Urosaurus ornatus*), and desert iguana (*Dipsosaurus dorsalis*). The red-spotted toad (*Anaxyrus punctatus*) is a common amphibian that may occur in the study area.

PLANTS

Crested individuals of the saguaro are the only Arizona special-status plants that occur in the study area. Numerous saguaros are present in the Palo Verde Mountains, and crested individuals were found to be present. While saguaros are provided some state protection under the Arizona Native Plant Law, any individual plants with a crested growth form are subject to additional protection in recognition of the potential for illegal collection for ornamental use. One crested saguaro was located during the reconnaissance survey, on the western side of the mountains, between the proposed, northern parcels.

Noxious Weeds and Nonnative Invasive Plants

At least two invasive plants, mouse barley (*Hordeum murinum*) and Mediterranean grass (*Schismus* spp.) were observed by EPG surveyors. The survey occurred during spring when most nonnative and noxious plants are visible. The BLM may recommend that the BLM Integrated Weed Management (BLM 2015) plan be followed during construction.

POTENTIAL EFFECTS

This section briefly discusses the potential effects of the Project but is not intended to be a detailed analysis. Construction activities, including vegetation removal, road grading, cut and fill, and structure erection, would be required to improve access into the study area and to construct planned visitor facilities. A total of approximately 52.4 acres of new permanent disturbance would occur as a result of the Project, of which approximately 12.5 acres have been previously disturbed from prior human activity. All proposed park access is aligned as closely as possible with existing two-

track roads to reduce the amount of disturbance. A complete description of the Project is provided in the Plan of Development (Pinal County 2020), including Environmental Commitments to avoid, minimize, or reduce potential impacts described in this section. After construction of the visitor facilities, human presence associated with recreational activities and facilities maintenance would continue for the foreseeable future.

Vegetation

Ground-disturbing activities would result in the removal of vegetation. Temporary disturbance would be allowed to reclaim naturally. However, recovery of natural vegetation in arid systems such as the Sonoran Desert is slow, and this habitat would not likely recover to its pre-disturbance condition for several decades. Vegetation is likely to recover in those areas but would present an altered structure and species composition during early stages of succession, potentially providing different or fewer resources to wildlife.

Wildlife Movement

Human presence and recreational activity can affect wildlife behavior and movement. However, the model used to identify the Gila Bend – Sierra Estrella Linkage within the study area was based on a set of major human-caused barriers to wildlife movement that did not include dispersed recreation or similar activities. Major barriers to wildlife movement include existing high-density development, highways and other roads, and agriculture (Beier et al. 2008). The incremental effect the Project may have on wildlife movement within the identified corridors cannot be predicted in detail but would be much less biologically significant than the existing barriers that surround the Project area that were identified in the corridor analysis.

Bats

Ground-disturbing activities do not typically create a risk for adult bats, unless roost sites are disturbed. If mine shafts are to be reclaimed, remediated, or closed as part of the Project development process, this could affect sensitive bat species. Additionally, loss of vegetation that may occur during the construction process may cause permanent loss of foraging habitat. To mitigate the disturbance to bats, mine shafts should be checked for bat use before they are closed, and native vegetation should be preserved to the maximum extent possible.

Birds

Ground-disturbing activities do not typically create a risk for most adult birds. However, active nests (containing eggs or young) are at risk during vegetation removal during preconstruction. To mitigate the disturbance to birds that nest in vegetation during construction, nest clearance surveys, and possibly seasonal avoidance during nesting season, should be implemented. In addition to ground-disturbing activities, construction activities that may affect the rock outcroppings and ledges could potentially disturb bird species that nest there. To mitigate the disturbance to birds that nest on rock outcroppings and ledges, seasonal avoidance during construction, as well as following the completion of the Project, should be implemented.

Terrestrial Wildlife

Ground-disturbing activities place terrestrial wildlife at risk of disturbance, injury, or death. Burrowing species, such as the Sonoran desert tortoise and several other reptile species, are at the greatest risk, as avoidance of construction areas is unlikely to occur because burrowing owls may take shelter in their burrows, and Sonoran desert tortoises spend the majority of their time underground (AGFD 2001). Focused surveys at the time of construction are typically required to avoid harm.

Ground-disturbing activities associated with the Project are anticipated to cause temporary and permanent loss of wildlife habitat. Temporary disturbance would be allowed to reclaim naturally. However, recovery of natural vegetation in arid systems such as the Sonoran Desert is slow, and this habitat would not likely recover to its pre-disturbance condition for several decades. Vegetation is likely to recover in those areas but would present an altered structure and species composition during early stages of succession, potentially providing different or fewer resources to wildlife.

During construction activities for the Project, short-term noise and disturbance associated with human presence would occur and could cause some species to avoid the general vicinity of construction activities.

Once the construction activities for Project are complete, human activity can attract coyotes and common ravens (*Corvus corax*), particularly if food waste is not properly contained. These species are predators on sensitive wildlife species and providing supplementary nutrition can indirectly increase the predation risk for those sensitive species. Additionally, human presence can result in avoidance by some wildlife species, although this can be dependent on the context and setting. In the absence of harassment, hunting, and other activities perceived as a threat, wildlife may become acclimatized to human presence.

To mitigate the disturbance to the Sonoran desert tortoise, mitigation measures established in the Recommended Standard Mitigation Measures for Projects in Sonoran desert tortoise habitat should be followed (Arizona Interagency Desert Tortoise Team 2008). These measures may protect other terrestrial wildlife as well. Burrowing owl clearance surveys would be conducted, and removal protocol would be followed prior to any construction on the Project (Arizona Burrowing Owl Working Group 2009).

SUMMARY

No ESA-listed species are known to be present or have any reasonable potential to occur in the study area. No designated or proposed critical habitat is crossed by the study area, and no species that are proposed for listing under the ESA may be present in the study area. One candidate for listing, the Sonoran desert tortoise, is known to be present.

Twenty-two BLM Sensitive and/or Birds of Conservation Concern (Table 1) may regularly or occasionally occur in the study area. Ground-disturbing activities may remove habitat for the sensitive species or potentially injure individuals that escape into hidden burrows. Once

construction activities for the Project are complete, avian and bat species may be affected by ongoing human activity. To mitigate disturbing sensitive wildlife, measures such as seasonal avoidance, mine shaft clearance, and monitoring may be put into place.

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Attachment A – IPaC Query

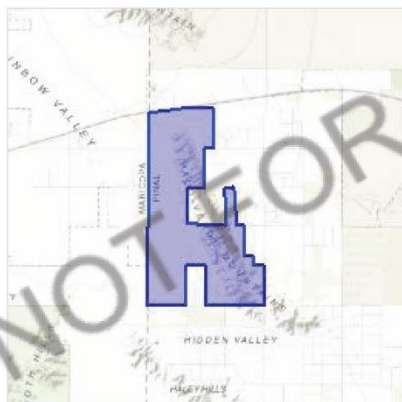
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Maricopa and Pinal counties, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📅 (602) 242-2513

9828 North 31st Ave

#c3

Phoenix, AZ 85051-2517

<http://www.fws.gov/southwest/es/arizona/>

http://www.fws.gov/southwest/es/EndangeredSpecies_Main.html

<https://ecos.fws.gov/ipac/location/531BVBX7CZDW3OAOUE7JVM46VM/resources>

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
------	--------

Sonoran Pronghorn *Antilocapra americana sonoriensis*

EXPN

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4750>

Birds

NAME

STATUS

California Least Tern *Sterna antillarum browni*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8104>Yellow-billed Cuckoo *Coccyzus americanus*

Threatened

There is **proposed** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/3911>

Reptiles

NAME

STATUS

Northern Mexican Gartersnake *Thamnophis eques megalops*

Threatened

There is **proposed** critical habitat for this species. Your location is outside the critical habitat.<https://ecos.fws.gov/ecp/species/7655>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

<https://ecos.fws.gov/ipac/location/53IBVBX7CZDW3OAOUE7JVM46VM/resources>

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- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE
BIRD MAY BREED IN YOUR
PROJECT AREA SOMETIME WITHIN
THE TIMEFRAME SPECIFIED,
WHICH IS A VERY LIBERAL
ESTIMATE OF THE DATES INSIDE
WHICH THE BIRD BREEDS
ACROSS ITS ENTIRE RANGE.
"BREEDS ELSEWHERE" INDICATES
THAT THE BIRD DOES NOT LIKELY
BREED IN YOUR PROJECT AREA.)

Gila Woodpecker *Melanerpes uropygialis*

This is a Bird of Conservation Concern (BCC) only in particular Bird
Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/5960>

Breeds Apr 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

“Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Gila Woodpecker
BCC - BCR (This is a
Bird of Conservation
Concern (BCC) only in
particular Bird
Conservation Regions
(BCRs) in the
continental USA)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

[Palustrine](#)

RIVERINE

[Riverine](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.