

Biological Evaluation of the Greasewood Flat Project in Scottsdale, Maricopa County, Arizona

Prepared for

Taylor Morrison – Arizona Division

Prepared by

SWCA Environmental Consultants

Revised January 2014

BIOLOGICAL EVALUATION OF THE GREASEWOOD FLAT PROJECT IN SCOTTSDALE, MARICOPA COUNTY, ARIZONA

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EXECUTIVE SUMMARY

This biological evaluation (BE) has been prepared as part of an effort to address the Endangered Species Act of 1973 (ESA) for a proposed residential development project located in Section 33, Township 5 North, Range 5 East in Scottsdale, Maricopa County, Arizona. This BE covers approximately 43 acres for the Greasewood Flat project (the project).

The objectives of this BE are to 1) describe vegetation communities in the project area; and 2) evaluate habitat suitability for both federally listed and special-status species.

Seventeen federally listed species are addressed in this BE, 12 of which are listed by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered and are therefore protected under the authority of the ESA. The remaining five species are listed by USFWS as candidate or proposed threatened; thus, they currently do not receive statutory protection under the ESA.

One of the 17 species on the USFWS Maricopa County list, Sonoran desert tortoise (*Gopherus morafkai*) may occur in the project area. The project may impact Sonoran desert tortoise, but it is unlikely to lead to federal listing of the species or loss of population viability. The project area is clearly beyond the known geographic or elevational range of the remaining 16 species, or it does not contain vegetation or landscape features known to support these species, or both. Therefore, the proposed project will have no effect on these additional 16 listed species or their habitat. The lead permitting agency has the authority and final decision regarding what effect this project would have on any federally listed species and whether to require species-specific surveys for any protected species.

1.0 INTRODUCTION

SWCA Environmental Consultants (SWCA) was contracted by Taylor Morrison – Arizona Division to complete a biological evaluation (BE) for an approximately 43-acre parcel referred to as the Greasewood Flat Project (the project), located on the southeast corner of intersection of North Alma School and East Pinnacle Vista Drive, Scottsdale, Maricopa County, Arizona (Figure 1). The project area is located in Section 33, Township 5 North, Range 5 East, Gila and Salt River Baseline and Meridian (Figure 2). The project will involve the construction of a new residential development, including new road construction and utilities.

The purpose of this BE is to address the Endangered Species Act of 1973, as amended (ESA) (16 United States Code [USC] 1531 *et seq.*). The scope of work for this BE included:

- review of the U.S. Fish and Wildlife Service (USFWS) species list for Maricopa County;
- review of the Arizona Game and Fish Department (AGFD) online occurrence records for special-status species near the project area;
- results of the field reconnaissance of the property; and
- evaluation of the potential for the species listed in this report to occur in the project area.

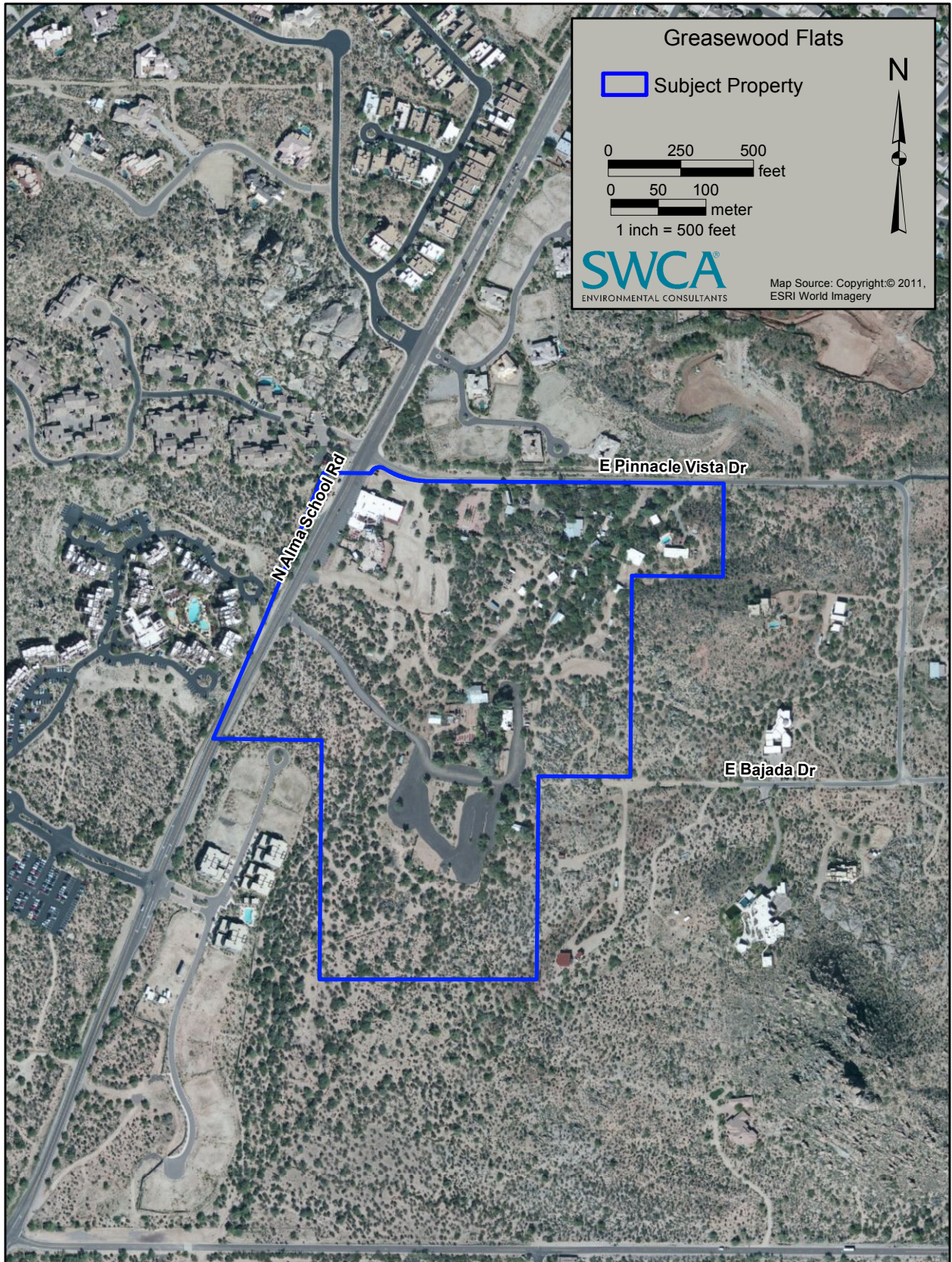
2.0 METHODS

An SWCA biologist conducted a field reconnaissance of the project area on December 10, 2013 and on January 13, 2014. A U.S. Geological Survey 7.5-minute quadrangle (McDowell Peak, Arizona) and maps provided by Taylor Morrison – Arizona Division were used for general orientation and to locate the project boundaries. The field reconnaissance consisted of a pedestrian survey of the project area to evaluate vegetation and landscape features considered important to the potential occurrence of special-status plant and animal species. Vegetation was classified to the community level according to the map “Biotic Communities of the Southwest” (Brown 1994).

2.1 Species Identification

The USFWS maintains a list of protected species and the critical habitat that is known to occur in each Arizona county. These species are currently listed or are proposed for listing as endangered or threatened under the ESA. The list also includes candidate species proposed as threatened or endangered, species delisted from protection under the ESA, and species delisted from protection under the ESA but currently proposed for relisting. The ESA specifically prohibits the “take” of a listed species. Take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.” Some bird species also receive legal protection under the federal Migratory Bird Treaty Act (16 USC 703–712).

Only species listed by the USFWS are afforded protection under the ESA. The special-status species evaluated in this BE were based on the list of endangered, threatened, proposed endangered, and candidate species for Maricopa County, Arizona, available at the USFWS website (USFWS 2013). The American peregrine falcon (*Falco peregrinus anatum*), Arizona agave (*Agave arizonica*), bald eagle (*Haliaeetus leucocephalus*), and California brown pelican (*Pelecanus occidentalis californicus*) have been delisted and no longer receive protection under the ESA; thus, these four species are not addressed in this BE. The USFWS species list is provided in Appendix A.



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Figure 2. Subject property.

The AGFD maintains a statewide database, the Heritage Data Management System (HDMS), which tracks records for federally listed species and other species of special concern. SWCA accessed HDMS through the Arizona Heritage Geographic Information System (AZHGIS) online environmental review tool to determine whether any federally proposed or designated critical habitat or special-status species have been documented in or near the project area (AZHGIS 2013). The search results are included in Appendix B.

The potential for occurrence on the property of the species addressed in this BE was based on 1) documented records; 2) existing information on distribution; and 3) qualitative comparisons of the habitat requirements of each species with vegetation communities or landscape features in the project area.¹ Possible impacts to these species were evaluated based on reasonably foreseeable project-related activities.

2.2 Species Evaluation

The potential for occurrence of each species was summarized according to the categories listed below. Because not all species are accommodated precisely by a given category (i.e., category definitions may be too restrictive), an expanded rationale for each category assignment is provided. Potential for occurrence categories are as follows:

- *Known to occur*—the species has been documented in the project area by a reliable observer.
- *May occur*—the project area is within the species' currently known range, and vegetation communities, soils, etc., resemble those known to be used by the species.
- *Unlikely to occur*—the project area is within the species' currently known range, but vegetation communities, soils, etc., do not resemble those known to be used by the species, or the project area is clearly outside the species' currently known range.

Those species listed by the USFWS were assigned to one of three categories of possible effect, following USFWS recommendations. The effects determinations recommended by USFWS are as follows:

- *May affect, is likely to adversely affect*—the proposed project is likely to adversely affect a species if 1) the species occurs or may occur in the project site; and 2) any adverse effect on listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. In the event that the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects, then the proposed action “is likely to adversely affect” the listed species.
- *May affect, is not likely to adversely affect*—the project is not likely to adversely affect a species if 1) the species may occur but its presence has not been documented and/or surveys following approved protocol have been conducted with negative results; and/or 2) project activity effects on a listed species are expected to be discountable, insignificant, or completely beneficial.

¹ We agree with Hall et al. (1997) that habitat is organism specific and thus not synonymous with vegetation community. However, we have refined their definition to read as follows: habitat is an area in which some members of a species regularly occur continuously or seasonally. In the field, habitat is operationally defined by the presence or absence of a species. Areas that appear suitable for a species but that have not been surveyed are considered possible habitat. We avoid using the term *potential* with respect to habitat because potential is defined as ‘capable of becoming but not yet in existence’; *possible*, on the other hand, is defined as ‘of uncertain likelihood’. We also avoid using the terms “unoccupied habitat” or “suitable, but unoccupied habitat,” which represent a contradiction in terms.

Beneficial effects are contemporaneous positive effects without any adverse effects on the species. **Insignificant effects** relate to the size of the impact and should never reach the scale where take occurs. **Discountable effects** are those extremely unlikely to occur. Based on best judgment, a person would not 1) be able to meaningfully measure, detect, or evaluate insignificant effects; or 2) expect discountable effects to occur.

- *No effect*—the project will have no effect on a species if 1) it has no likelihood of effect on a listed species or its designated critical habitat (including effects that may be beneficial, insignificant, or discountable); or 2) the species' habitat does not occur in the project site.

Because species not listed as threatened or endangered are not protected under the authority of the ESA, impact determinations for these species do not follow the above USFWS recommendations. Instead, the impact determinations for any species listed as candidate or proposed endangered and not protected under the ESA are as follows:

- *No impact*—the project would have no impact on a species if 1) the species is considered unlikely to occur (range, vegetation, etc., are inappropriate); and 2) the species or its sign was not observed during surveys of the project area.
- *Beneficial impact*—the project is likely to benefit the species, whether it is currently present or not, by creating or enhancing habitat elements known to be used by the species.
- *May impact individuals but is not likely to result in a trend toward federal listing or loss of viability*—the project is not likely to adversely impact a species if 1) the species may occur but its presence has not been documented; and 2) project activities would not result in disturbance to areas or habitat elements known to be used by the species.
- *May impact individuals and is likely to result in a trend toward federal listing or loss of viability*—the project is likely to adversely impact a species if 1) the species is known to occur in the project area; and 2) project activities would disturb areas or habitat elements known to be used by the species, or would directly affect an individual.

3.0 RESULTS

3.1 Ecological Overview

The project area is located in the Arizona Upland subdivision of the Sonoran Desertscrub biome (Brown 1994), at an elevation of approximately 2,520 to 2,600 feet above mean sea level (amsl). The project area is surrounded by low-density residential and commercial development and open desert. The project area consists of buildings intermixed with native vegetation. There are several dirt roads throughout the project area. Several washes that support xeroriparian vegetation run from north to south through the project area. The project site is surrounded by low- to high-density housing.

No agaves (*Agave* spp.), aquatic habitats (including stock ponds), or suitable bat roost sites (e.g., natural caves or mine features) occur in the project area. Scattered saguaros (*Carnegiea gigantea*) and cottonwoods (*Populus* spp.) were observed within the project area.

3.2 Vegetation

The dominant native vegetation observed within the project area was creosote bush (*Larrea tridentata* var. *tridentata*), yellow paloverde (*Parkinsonia microphylla*), and blue paloverde (*P. florida*). Other less dominant, but native vegetation observed within the project area include Coues' cassia (*Senna covesii*), desert broom (*Baccharis sarothroides*), desert-thorn (*Lycium* sp.), Engelmann's hedgehog cactus

(*Echinocereus engelmannii*), flatcrown buckwheat (*Eriogonum deflexum* var. *deflexum*), Fremont cottonwood (*Populus fremontii*), ocotillo (*Fouquieria splendens*), purple threeawn (*Aristida purpurea*), saguaro (*Carnegiea gigantea*), goldeneye (*Viguiera* sp.), small whitemargin sandmat (*Chamaesyce albomarginata*), small wirelettuce (*Stephanomeria exigua*), turpentine bush (*Ericameria laricifolia*), velvet mesquite (*Prosopis velutina*), and smoketree (*Psoralea arguta*). Additional non-native species observed within the project area include London rocket (*Sisymbrium irio*), Mediterranean grass (*Schismus* sp.), saltcedar (*Tamarix* sp.), and prickly lettuce (*Lactuca serriola*).

3.3 Species Evaluation

One of the 17 species listed for Maricopa County by the USFWS, Sonoran desert tortoise (*Gopherus morafkai*) is likely to occur in the project area. For the remaining 16 species, the project area is clearly beyond the known geographic or elevational of these species, or it does not contain vegetation or landscape features known to support these species, or both. Habitat requirements, potential for occurrence, and possible effects of the project on these 17 species are summarized in Table 1.

According to AZHGIS, the project area does not occur in or near any federally proposed or designated critical habitat. However, there are records of one special status species, Sonoran desert tortoise, occurring within 3 miles of the project area (AZHGIS 2013).

Table 1. Federally Listed Species Potentially Occurring in Maricopa County, Arizona

Range or habitat information is from HDMS (2013); USFWS Arizona Ecological Services Field Office (USFWS 2013); *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.); and Corman and Wise-Gervais (2005).

Common Name (Species Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
Acuña cactus (<i>Echinomastus erectocentrus</i> var. <i>acunensis</i>)	USFWS E	This cactus occurs in disjunct populations across southern Arizona on well-drained gravel ridges and knolls on granite-derived soils. It grows in the Arizona Upland subdivision of the Sonoran desertscrub plant association at elevations between 1,198 and 2,789 feet amsl. This species occurs in Maricopa, Pima, and Pinal Counties.	Unlikely to occur. There are no gravel ridges or knolls with granite-derived soils, and the site is highly disturbed.	No effect.
Arizona cliffrose (<i>Purshia subintegra</i>)	USFWS E	Found in rolling limestone hills in Sonoran desertscrub, usually on white Tertiary limestone lakebed deposits high in lithium, nitrates, and magnesium at elevations between 2,500 and 4,000 feet amsl. All four localities of this species are in central Arizona below the Mogollon Rim and include Burro Creek drainage (Mohave County); Horseshoe Lake (Maricopa County); Verde Valley (Yavapai County); and the San Carlos Indian Reservation (Graham County).	Unlikely to occur. There are no rolling limestone hills in the project area, and the site is highly disturbed. The project area is also below the known elevational range of this species.	No effect.
California least tern (<i>Sterna antillarum browni</i>)	USFWS E	Forms nesting colonies on barren to sparsely vegetated areas. Nests in shallow depressions on open sandy beaches, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, and drainage systems. Found in Maricopa, Mohave, and Pima Counties.	Unlikely to occur. There are no aquatic areas with suitable nesting sites in the project area. This species is only an occasional migrant to Maricopa County.	No effect.
Desert pupfish (<i>Cyprinodon macularius</i>)	USFWS E	Found in shallow waters of desert springs, small streams, and marshes at elevations below 5,000 feet amsl. One natural population still occurs in Quitobaquito Spring and Quitobaquito Pond in Pima County, and reintroductions have been made in Pima, Pinal, Maricopa, Graham, Cochise, La Paz, and Yavapai Counties.	Unlikely to occur. There are no permanent water sources suitable for this species in the project area.	No effect.

Table 1. Federally Listed Species Potentially Occurring in Maricopa County, Arizona (Continued)

Range or habitat information is from HDMS (2013); USFWS Arizona Ecological Services Field Office (USFWS 2013); *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.); and Corman and Wise-Gervais (2005).

Common Name (Species Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
Sonoran desert tortoise (<i>Gopherus morafkai</i>)	USFWS C	Occurs on primarily rocky, and often steep, hillsides and bajadas of Mohave and Sonoran desertscrub, typically at elevations below 7,800 feet amsl. May occur, but is less likely to occur, in desert grassland, juniper woodland, and interior chaparral habitats and even pine communities.	May occur. Suitable habitat for this species is located within the project area. In addition, AZHGIS (2013) records document this species to occur within 3 miles of the project area.	This project may affect this species but the level of effect is unknown; thus, further analysis may be warranted. If tortoises are encountered during construction of the project, the AGFD Tortoise Handling Guidelines should be followed (Appendix C).
Gila topminnow (<i>Poeciliopsis occidentalis occidentalis</i>)	USFWS E	Occurs in small streams, springs, and cienegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover. In Arizona, most of the remaining native populations are in the Santa Cruz River system.	Unlikely to occur. There are no permanent water sources suitable for this species in the project area.	No effect.
Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuenae</i>)	USFWS E	Found in southern Arizona from the Picacho Mountains southwesterly to the Agua Dulce Mountains and southeasterly to the Galiuro and Chiricahua Mountains at elevations between 1,600 and 11,500 feet amsl. Roosts in caves, abandoned mines, and unoccupied buildings at the base of mountains where agave, saguaro, and organ pipe cacti (<i>Stenocereus thurberi</i>) are present. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. The foraging radius may be 30 to 60 miles per night or more.	Unlikely to occur. Although there is suitable foraging habitat within the project area and potential roosting habitat within the vicinity of the project area, the project area is outside the known distribution range for this species.	No effect.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	USFWS T	Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine-oak vegetation types. Generally nests in older forests of mixed conifers or ponderosa pine (<i>Pinus ponderosa</i>)—Gambel oak (<i>Quercus gambelii</i>). Nests in live trees on natural platforms (e.g., dwarf mistletoe [<i>Arceuthobium</i> spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Unlikely to occur. There are no montane forests or shady, wooded canyons in the project area. The project area is also well below the known elevational range of this species.	No effect.
Razorback sucker (<i>Xyrauchen texanus</i>)	USFWS E	Found in backwaters, flooded bottomlands, pools, side channels, and other slower-moving habitats at elevations below 6,000 feet amsl. In Arizona, populations are restricted to Lakes Mohave and Mead and the lower Colorado River below Havasu in the Lower Basin. In the Upper Basin, small remnant populations are found in the Green, Yampa, and main stem Colorado Rivers.	Unlikely to occur. There are no permanent water sources suitable for this species in the project area.	No effect.

Table 1. Federally Listed Species Potentially Occurring in Maricopa County, Arizona (Continued)

Range or habitat information is from HDMS (2013); USFWS Arizona Ecological Services Field Office (USFWS 2013); *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.); and Corman and Wise-Gervais (2005).

Common Name (Species Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
Roundtail chub (<i>Gila robusta</i>)	USFWS C	Found in cool to warm water, mid-elevation streams and rivers with pools adjacent to swifter riffles and runs. In Arizona, this fish occurs at elevations between 1,210 and 7,220 feet amsl in two tributaries of the Little Colorado River, several tributaries of the Bill Williams River basin, the Salt River and four of its tributaries, the Verde River and five of its tributaries, Aravaipa Creek, and Eagle Creek.	Unlikely to occur. There are no permanent water sources suitable for this species in the project area.	No impact.
Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>)	USFWS E	Found in Sonoran desertscrub within broad, intermountain alluvial valleys with creosote (<i>Larrea tridentata</i>)–bursage (<i>Ambrosia</i> spp.) and palo verde (<i>Parkinsonia</i> spp.)–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl. The only extant U.S. population is in southwestern Arizona.	Unlikely to occur. The project area is over 80 miles northwest of the known range of this species. In addition, the elevation of the project area is below the known range of this species.	No effect.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	USFWS E	Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood, willow, boxelder (<i>Acer negundo</i>), saltcedar (<i>Tamarix</i> spp.), Russian olive (<i>Elaeagnus angustifolia</i>), buttonbush (<i>Cephalanthus</i> spp.), and arrowweed (<i>Pluchea sericea</i>) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall, among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl.	Unlikely to occur. There is no dense riparian vegetation and no perennial water sources in the project area.	No effect.
Sprague's pipit (<i>Anthus spragueii</i>)	USFWS C	Winters mainly in San Rafael, Sonoita, and Sulphur Springs grasslands in southeastern Arizona. A few individuals have also been found wintering in grassy (sometimes mixed with alfalfa) fields along the lower Colorado River from north of Yuma to Parker and grass and alfalfa fields near Phoenix and Sierra Vista. Arrives on wintering grounds by mid-October and is usually gone by early April.	Unlikely to occur. There are no grassy fields within the project area.	No impact.
Tucson shovel-nosed snake (<i>Chionactis occipitalis klauberi</i>)	USFWS C	This snake is typically observed in creosote-mesquite (<i>Prosopis</i> spp.) floodplain habitats in soft, sandy loam soils at elevations between 785 and 1,662 feet amsl in Pima, western Pinal, and eastern Maricopa Counties.	Unlikely to occur. There are no creosote-mesquite floodplain habitats in the project area. In addition, the project site is well above the known elevation range for this species.	No impact.
Woundfin (<i>Plagopterus argentissimus</i>)	USFWS E	Found in shallow, warm, turbid, fast-flowing rivers at elevations below 4,500 feet amsl. Extirpated from almost all of its historical range except the main stem Virgin River from Pah Tempe Springs to Lake Mead in northwestern Arizona. In Arizona, critical habitat accounts for approximately 31.6 miles of the main stem Virgin River and its 100-year floodplain in Mohave County. Experimental, nonessential designation in portions of the Verde, Gila, San Francisco, and Hassayampa Rivers and Tonto Creek.	Unlikely to occur. There are no permanent water sources suitable for this species in the project area.	No effect.

Table 1. Federally Listed Species Potentially Occurring in Maricopa County, Arizona (Continued)

Range or habitat information is from HDMS (2013); USFWS Arizona Ecological Services Field Office (USFWS 2013); *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.); and Corman and Wise-Gervais (2005).

Common Name (Species Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Effect
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	USFWS PT	Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection. The highest concentrations in Arizona are along the Agua Fria, San Pedro, upper Santa Cruz, and Verde River drainages and Cienega and Sonoita Creeks.	Unlikely to occur. Although there are cottonwoods present within the project area, these trees were planted as patio cover for the Greasewood Flats restaurant. There is no naturally occurring riparian woodland vegetation or perennial water sources within the project area.	No impact.
Yuma clapper rail (<i>Rallus longirostris yumanensis</i>)	USFWS E	In Arizona, found at elevations below 4,500 feet amsl in freshwater marshes, which are often dominated by cattails (<i>Typha</i> spp.), bulrushes (<i>Isolepis</i> spp.), and sedges (<i>Carex</i> spp.). The range includes the Colorado River from Lake Mead to Mexico; the Gila and Salt Rivers upstream to the area of the Verde confluence; Picacho Reservoir; and the Tonto Creek arm of Roosevelt Lake. This species may be expanding into other suitable marsh habitats in western and central Arizona.	Unlikely to occur. There are no freshwater marshes in the project area.	No effect.

*** USFWS Status Definitions**

C = Candidate. Candidate species are those for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

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

PE = Proposed Endangered. Proposed endangered species are those that are not currently federally protected under the ESA but are eligible to be listed as endangered under the ESA.

T = Threatened. Threatened species are those in imminent jeopardy of becoming endangered. The ESA prohibits the take of a species listed as threatened under Section 4d of the ESA. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

PT = Proposed Threatened. Proposed threatened species are those that are not currently federally protected under the ESA but are eligible to be listed as threatened under the ESA.

3.3.1 Sonoran Desert Tortoise (*Gopherus morafkai*)

HABITAT AND RANGE REQUIREMENTS

The Sonoran desert tortoise primarily occurs on rocky slopes and bajadas of Mojave and Sonoran desertscrub. In the Lower Colorado River Valley subdivision, caliche caves in cut banks of washes are also used for shelter sites. Shelter sites are rarely found in shallow soils. The Sonoran population occurs at elevations ranging from 510 feet to 5,300 feet amsl in Sonoran desertscrub, semidesert grassland, and interior chaparral communities. The Sonoran desert tortoise forage includes: annuals, grasses, herbaceous perennials, trees and shrubs, subshrubs/woody vines, and succulents (AGFD 2010).

HABITAT EVALUATION AND SUITABILITY

There is suitable habitat, including forage, for the Sonoran desert tortoise within the project area. Furthermore, this species is known to occur within 3 miles of the project area. Therefore, the Sonoran desert tortoise may occur within the project area. While no species-specific surveys were conducted for

this evaluation, no Sonoran desert tortoise or tortoise sign was observed within the project area during the limited field visit conducted for this evaluation.

DETERMINATION OF IMPACT

The Sonoran desert tortoise is listed by the USFWS as a candidate species; thus, this species does not receive statutory protection under the ESA. However, this species is protected under Arizona State law. Therefore, if a tortoise is encountered during construction activities, it cannot be harmed and must be moved; the guidelines for handling desert tortoises must be followed by qualified and permitted personnel (see Appendix C). If these guidelines are followed, the project may impact individuals through loss of habitat, but it is unlikely to lead to federal listing of the species or loss of population viability.

4.0 LIMITATIONS AND WARRANTY

Within the limitations of schedule, budget, and scope of work, SWCA warrants that this study was conducted in accordance with accepted environmental science practices, including the technical guidelines, evaluation criteria, and species' listing status in effect at the time this evaluation was performed, as outlined in the species evaluation.

The results and conclusions of this report represent the best professional judgment of SWCA scientists and are based on information provided by the project proponent and on information obtained from agencies and other sources during the course of the study. No other warranty, expressed or implied, is made. This report should be reviewed by the appropriate regulatory agencies prior to any detailed site-planning or construction activities.

5.0 LITERATURE CITED

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APPENDIX A

USFWS Species List

Maricopa County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Acuna cactus	<i>Echinomastus erectocentrus</i> var. <i>acunensis</i>	Endangered	Less than 12 inches tall; spine clusters borne on tubercles, each with a groove on the upper surface. 2-3 central spines and 12 radial spines. Radial spines are dirty white with maroon tips. Flowers pink to purple.	Maricopa, Pima, Pinal	1,198-3,773 ft	Well drained knolls and gravel ridges in Sonoran desertscrub.	Immature plants distinctly different from mature plants. Immatures are disc-shaped or spherical and have no central spines until they are about 1.5 inches. Critical habitat is being proposed for a total of 18,921 ac in Maricopa, Pima, and Pinal counties (78 FR 40673).
Arizona cliffrose	<i>Purshia subintegra</i>	Endangered	Evergreen shrub of the rose family (Rosaceae). Bark pale gray and shreddy. Young twigs covered with dense hairs. Leaves have 1-5 lobes and edges curl downward (revolute). Flowers: 5 petals, white or yellow <0.5 inches long.	Graham, Maricopa, Mohave, Yavapai	< 4,000 ft	White limestone soils derived from tertiary lakebed deposits.	Occurs across central Arizona; in the Burro Creek drainage, near Bylas, near Cottonwood in the Verde Valley, and at Horseshoe Lake.
California Least Tern	<i>Sterna antillarum browni</i>	Endangered	Smallest of the North American terns. Body length is 21-24 cm (8-9 inches) with a wingspan of 45-51 cm (18-20 inches). Has black crown and loreal stripe on head, snowy white forehead and underside, and gray upperparts. Outer two primaries black, yellow or orange bill with black tip, and orange legs. Males have a wider dark loreal stripe but sexes mostly distinguished by behavior.	Maricopa, Mohave, Pima	< 2,000 ft	Open, bare or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems.	Breeding occasionally documented in Arizona; migrants may occur more frequently. Feeds primarily on fish in shallow waters and secondarily on invertebrates. Nests in a simple scrape on sandy or gravelly soil.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Desert pupfish	<i>Cyprinodon macularius</i>	Endangered	Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.	Cochise, Graham, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Two subspecies are recognized: Desert Pupfish (<i>C.m. macularius</i>) and Quitobaquito Pupfish (<i>C.m. eremus</i>). Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California.
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Cochise, Gila, Graham, La Paz, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuense</i>	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yuma	1,600-7,500 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of pinnate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4,100-9,000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.
Razorback sucker	<i>Xyrauchen texanus</i>	Endangered	Large, up to 3 feet long and up to 6 lbs, high sharp-edged keel-like hump behind the head. Head flattened on top. Olive-brown above to yellowish below.	Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pinal, Yavapai, Yuma	< 6,000 ft	Riverine and lacustrine areas, generally not in fast moving water and may use backwaters.	Big River fish also found in Horseshoe reservoir (Maricopa County). Critical habitat includes the 100-year floodplain of the river through the Grand Canyon from confluence with Paria River to Hoover Dam; Hoover Dam to Davis Dam; Parker Dam to Imperial Dam. Also Gila River from Arizona/New Mexico border to Coolidge Dam; and Salt River from Hwy 60/SR77 Bridge to Roosevelt Dam; Verde River from FS boundary to Horseshoe Lake (59 FR 13374).

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Sonoran pronghorn	<i>Antilocapra americana sonoriensis</i>	Endangered	Upperparts tan; underparts, rump, and two bands across the neck are white. Male has two black cheek pouches. Hoofed with slightly curved black horns having a single prong. Smallest and palest of the pronghorn subspecies.	Maricopa, Pima, Yuma	2,000-4,000 ft	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations.	Typically, bajadas are used as fawning areas and sandy dune areas provide food seasonally. Cacti (jumping cholla) appears to make up substantial part of diet. This subspecies also occurs in Mexico.
Southwestern willow flycatcher	<i>Empidonax traillii eximius</i>	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 8,500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Riparian-obligate bird that migrates and nests from late April-Sept along river and streams. A revised critical habitat designation was finalized on January 3, 2013, for areas in Apache, Cochise, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pima, Pinal, Santa Cruz, and Yavapai counties (78 FR 344). Training seminar/permits (state and federal) necessary for those conducting call playback surveys.
Woundfin	<i>Plagopterus argentissimus</i>	Endangered	Small (4 inches) silver minnow with fairly large fins and a sharp dorsal fin spine.	Maricopa, Mohave	< 4,500 ft	Inhabits shallow, warm, turbid, fast-flowing water. Tolerates high salinity.	Native population only in Virgin River. Designated critical habitat includes the Virgin River and its 100-year floodplain (65 FR 4140). Experimental non-essential populations (50 FR 30188) designated in portions of the Verde, Gila, San Francisco, and Hassayampa rivers and Tonto Creek. Species also occurs in Washington County, UT and Clark County, NV.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Proposed threatened	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees.
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	Endangered	Water bird with long legs and short tail. Long, slender decurved bill. Mottled brown or gray on its rump. Flanks and undersides are dark gray with narrow vertical stripes producing a barring effect.	Gila, La Paz, Maricopa, Mohave, Pinal, Yuma	< 4,500 ft	Fresh water and brackish marshes.	Species is associated with dense emergent riparian vegetation. Requires wet substrate (mudflat, sandbar) with dense herbaceous or woody vegetation for nesting and foraging. Channelization and marsh destruction are primary sources of habitat loss.
Roundtail chub	<i>Gila robusta</i>	Candidate	Member of the minnow family Cyprinidae and characterized by streamlined body shape. Color usually olive gray with silvery sides and a white belly. Breeding males develop red or orange coloration on the lower half of the cheeks and on the bases of paired fins. Individuals may reach 49.0 cm (19.3 in) but usually average 25-30 cm (9.8 - 11.8 in).	Apache, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pinal, Yavapai	1,000-7,500 ft.	Cool to warm waters of rivers and streams, often occupy the deepest pools and eddies of large streams.	Historical range of roundtail chub included both the upper and lower Colorado River basins. A 2009 status review determined that the lower Colorado River basin roundtail chub population segment (Arizona and New Mexico) qualifies as a distinct vertebrate population segment (DPS). Populations in the Little Colorado, Bill Williams, and Gila River basins are considered candidate species.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Sonoran desert tortoise	<i>Gopherus morafkai</i>	Candidate	Large herbivorous reptile with domed shell and round stumpy hind legs. The carapace is a dull brown or grey color and the plastron is untinged, often pale yellow in coloration. Sonoran desert tortoises generally have a flatter carapace than tortoises in the Mohave population. Active in spring and during the monsoon; dormant in winter and mid-summer months.	Cochise, Gila, Graham, La Paz, Maricopa, Mohave, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 7,800 ft	Primarily rocky (often steep) hillsides and bajadas of Mohave and Sonoran desertscrub but may encroach into desert grassland, juniper woodland, interior chaparral habitats, and even pine communities. Washes and valley bottoms may be used in dispersal.	Desert tortoises that occur east and south of the Colorado River in Arizona are known as the Sonoran desert tortoise. Individuals are found throughout their historic range; but populations are becoming increasingly fragmented due to threats to their habitat in valley bottoms, which are used for dispersal and exchange of genetic material.
Sprague's pipit	<i>Arreuth spragueii</i>	Candidate	Small, sparrow-sized bird (10-15 cm in length), with buff and blackish streaking on the crown, nape, and underparts. Has a short bill with a blackish upper mandible, a buffy face with a large eye ring, white outer tail feathers and pale to yellowish legs.	Cochise, Maricopa, La Paz, Santa Cruz, Yuma	<5,000 ft	Strong preference to native grasslands with vegetation of intermediate height and lacking woody shrubs.	Rare in Arizona. Few individuals of this elusive species have been sighted during October through March. Native grass fields are rare in Arizona but cultivated, dry Bermuda grass, alfalfa fields mixed with patches of dry grass, or fallow fields appear to support the species during wintering. They will not use mowed or burned areas until the vegetation has had a chance to grow. There are no breeding records in Arizona.
Tucson shovel-nosed snake	<i>Chionactis occipitalis klauberi</i>	Candidate	Small snake (10-17 inches total length) in the family Colubridae, with a shovel-shaped snout and an inset lower jaw. Overall coloring mimics coral snakes, with pale yellow to cream-colored body, 21 or more black or brown saddle-like bands across the back, and orange-red saddle-like bands in between. The subspecies is distinguished from the other subspecies in that these secondary orange-red crossbands are suffused with dark pigment, making them appear brown or partly black, and the black and red crossbands do not encircle the entire body.	Maricopa, Pima, Pinal	785-1,662 ft	Sonoran Desertscrub; associated with soft, sandy soils having sparse gravel.	Found in creosote-mesquite floodplain environments, finds refuge under desert shrubs active during crepuscular (dawn and dusk) and daylight hours.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
American peregrine falcon	<i>Falco peregrinus anatum</i>	Delisted	A crow-sized falcon with slate blue-gray on the back and wings; and white on the underside; a black head with vertical "bandit's mask" pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	3,500-9,000 ft	Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments.	Species recovered with over 1,650 breeding birds in the US and Canada.
Arizona agave	<i>Agave arizonica</i>	Delisted	Member of the agave family. Has rosettes of bright green leaves, 17-24cm long and 2-4cm wide, broadest in the middle. Flowers are small, pale yellow, and jar shaped.	Gila, Maricopa, Yavapai	3,600-5,800 ft	Occurs on open slopes in chaparral or juniper grasslands. Prefers shallow, cobbled, and gravelly soils on steep slopes.	Arizona agave is a hybrid produced by a crossing of two other common agave species (<i>A. chrysantha</i> x <i>A. toumeyana</i> ssp. <i>toumeyana</i>).
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted	Large, adults have white head and tail. Height 28 to 38 inches; wingspan 66 to 96 inches. Juveniles and subadults are dark brown with varying degrees of white mottling on chest, wings, and head.	Apache, Coconino, Gila, Graham, La Paz, Maricopa, Mohave, Pinal, and Yavapai	Varies	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	Nationwide and throughout the State of Arizona, the bald eagle is currently not listed under the Endangered Species Act. On September 30, 2010, the U.S. District Court dissolved an injunction that led to the bald eagle in the Sonoran Desert Area of central Arizona being placed on the Endangered Species list in 2008. This determination is presently (January 2011) under judicial consideration. Bald eagles are protected under the Bald and Golden Eagle Protection Act (Eagle Act) and other Federal and state statutes. The word "disturb" under the Eagle Act was recently clarified, as well as the implementation of new regulations requiring permits to incidentally "take" eagles. Retrieve more information on management and life history at http://SWBEMC.org .

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
California brown pelican	<i>Pelecanus occidentalis californicus</i>	Delisted	Large, dark gray-brown water bird with webbed feet, pouch underneath its long bill, and wingspan of 7 ft. Adults have a white head and neck, brownish black breast, and silver gray upper parts.	Gila, La Paz, Maricopa, Mohave, Pinal, Yuma	Varies	Coastal land and islands; species found occasionally around Arizona's lakes and rivers.	Considered an uncommon transient in Arizona. Most observations recorded along the Colorado River and in the Gila Valley. Individuals known to wander up from Mexico in summer and fall. No breeding has been documented in Arizona. Delisted on November 17, 2009 (74 FR 59444).

APPENDIX B

AZHGIS Online Environmental Review Tool

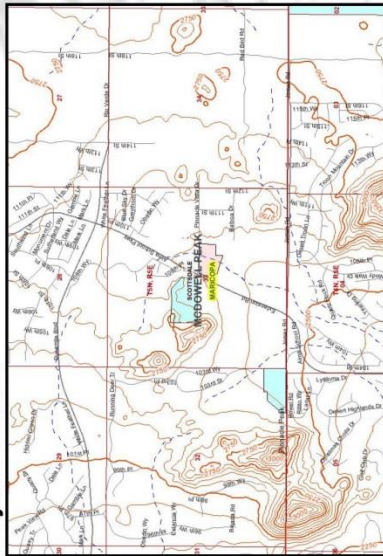
Arizona's On-line Environmental Review Tool

Search ID: 20131202021932

Project Name: Greasewood

Date: 12/2/2013 2:49:20 PM

Project Location



Project Name: Greasewood
Submitted By: Nichole Cervin
On behalf of: PRIVATE
Project Search ID: 20131202021932
Date: 12/2/2013 2:49:16 PM
Project Category: Development Within Municipalities (Urban Growth), Residential subdivision and associated infrastructure, New construction
Project Coordinates (UTM Zone 12-NAD 83): 421624.723, 3732889.759 meter
Project Area: 11.863 acres
Project Perimeter: 920.305 meter
County: MARICOPA
USGS 7.5 Minute Quadrangle ID: 1212
Quadrangle Name: MCDOWELL PEAK
Project locality is currently being scoped

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	FWS	USFS	BLM	State
Gopherus morafkai	Sonoran Desert Tortoise	C*	S		WSC

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Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: <http://arizonaes.fws.gov/>.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

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management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Development Within Municipalities (Urban Growth), Residential subdivision and associated infrastructure, New construction

Project Type Recommendations:

All degraded and disturbed lands should be restored to their natural state. Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

Based on the project type entered; coordination with Arizona Department of Environmental Quality may be required (<http://www.azdeq.gov/>).

Based on the project type entered; coordination with Arizona Department of Water Resources may be required (<http://www.water.az.gov/adwri/>)

Based on the project type entered; coordination with County Flood

Control districts may be required.

Based on the project type entered; coordination with State Historic Preservation Office may be required (<http://azstateparks.com/SHPO/index.html>)

Based on the project type entered; coordination with U.S. Army Corps of Engineers may be required (<http://www.spl.usace.army.mil/regulatory/phonedir.html>)

Communities can actively support the sustainability and mobility of wildlife by incorporating wildlife planning into their regional/comprehensive plans, their regional transportation plans, and their open space/conservation land system programs. An effective approach to wildlife planning begins with the identification of the wildlife resources in need of protection, an assessment of important habitat blocks and connective corridors, and the incorporation of these critical wildlife components into the community plans and programs. Community planners should identify open spaces and habitat blocks that can be maintained in their area, and the necessary connections between those blocks to be preserved or protected. Community planners should also work with State and local transportation planning entities, and planners from other communities, to foster coordination and cooperation in developing compatible development plans to ensure wildlife habitat connectivity. The Department's guidelines for incorporating wildlife considerations into community planning and developments can be found at <http://www.azgfd.gov/hgis/guidelines.aspx>.

Development plans should provide for open natural space for wildlife movement, while also minimizing the potential for wildlife-human interactions through design features. Please contact Project Evaluation Program for more information on living with urban wildlife.

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants,

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animals (exotic snails), and other organisms (e.g. microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g. livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before and after project activities to reduce the spread of invasive species. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants <http://www.azda.gov/PSD/quarantine5.htm>. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control: <http://www.usda.gov/wps/portal/usdahome>. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_fhunting_rules.shtml.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Hydrological considerations: design culverts to minimize impacts to

channel geometry, or design channel geometry (low flow, overbank, floodplains) and substrates to carry expected discharge using local drainages of appropriate size as templates. Aquatic wildlife considerations: reduce/minimize barriers to migration of amphibians or fish (e.g. eliminate falls). Terrestrial wildlife: washes and stream corridors often provide important corridors for movement. Overall culvert width, height, and length should be optimized for movement of the greatest number and diversity of species expected to utilize the passage. Culvert designs should consider moisture, light, and noise, while providing clear views at both ends to maximize utilization. For many species, fencing is an important design feature that can be utilized with culverts to funnel wildlife into these areas and minimize the potential for roadway collisions. Guidelines for culvert designs to facilitate wildlife passage can be found at <http://www.azgfd.gov/hgis/guidelines.aspx>.

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (including spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

Planning: consider impacts of lighting intensity on mammals and birds and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use.

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The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly.

The construction or maintenance of water developments should include: incorporation of aspects of the natural environment and the visual resources, maintaining the water for a variety of species, water surface area (e.g. bats require a greater area due to in-flight drinking), accessibility, year-round availability, minimizing potential for water quality problems, frequency of flushing, shading of natural features, regular clean-up of debris, escape ramps, minimizing obstacles, and minimizing accumulation of silt and mud.

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herpetofauna (snakes, lizards, tortoise) from entering ditches.

Project Location and/or Species recommendations:

Heritage Data Management System records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:

Ecological Services Office
US Fish and Wildlife Service
2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000
Phone Number: (623) 236-7600
Fax Number: (623) 236-7366

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Terms of Use

By using this site, you acknowledge that you have read and understand the terms of use. Department staff may revise these terms periodically. If you continue to use our website after we post changes to these terms, it will mean that you accept such changes. If at any time you do not wish to accept the Terms, you may choose not to use the website.

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.
5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using

this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Signature of this receipt indicates the signer has read and understands the information provided.

Signature: _____

Date: _____

Proposed Date of Implementation: _____

Arizona's On-line Environmental Review Tool

Search ID: 20131202021932

Project Name: Greasewood

Date: 12/2/2013 2:49:20 PM

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____