

# **Biological Evaluation of the Aquarius Cliffs Weather Station Project in Mohave County, Arizona**

Prepared for

**Mohave County**

Prepared by

**SWCA Environmental Consultants**

January 2011



# **BIOLOGICAL EVALUATION OF THE AQUARIUS CLIFFS WEATHER STATION PROJECT IN MOHAVE COUNTY, ARIZONA**

For submittal to

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## 1.0 INTRODUCTION

SWCA Environmental Consultants (SWCA) was selected by Mohave County to complete a biological evaluation (BE) for the Aquarius Cliffs Weather Station Project, which is located southeast of Kingman in Mohave County, Arizona (Figure 1). The project area is located on lands administered by the Bureau of Land Management (BLM) within the boundaries of the Kingman Field Office (KFO) in the northwest quarter of Section 21, Township 16½ North, Range 11 West. The purpose of this BE is to address the regulations of the Endangered Species Act (ESA) of 1973, as amended, and management regulations of the BLM.

The scope of work for this BE included:

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

### 1.1 Project Description

The proposed project includes the installation of a weather station at the Aquarius Cliffs site. This site was chosen to give early flood warning in a particular watershed area within the Detrital and Sacramento valleys, including Golden Valley and Bullhead City and at a specific location to allow emergency service personnel to barricade many roadways and warn homeowners should flood depths become a hazard to homes or vehicular traffic.

The weather station would consist of a 1-foot-diameter standpipe, which would stand about 10 feet tall and would be equipped with weather monitoring sensors such as a precipitation gage, a small solar panel (approximately 1–2 square feet), a radio transmitter, an approximately 6-foot-tall antenna mast (mounted 2 feet below the top of the standpipe), and an approximately 3-foot-long horizontal mounted antenna for directional transmission or vertically mounted for omni-directional transmission. The project area for the proposed site would be 10 by 10 feet (0.002 acre). The proposed term would be through December 31, 2040. The project area will be accessed from existing roads and will not require any grading or improvements.

## 2.0 METHODS

An SWCA biologist conducted a field reconnaissance of the project area on December 3, 2010 (Figures 1 and 2). A U.S. Geological Survey (USGS) 7.5-minute topographic map (Cedar Basin) and project location information provided by the client was 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. A 500 × 500-foot buffer area around the center point of the proposed site was surveyed. Vegetation was classified to the community level according to the map “Biotic Communities of the Southwest” (Brown 1994).

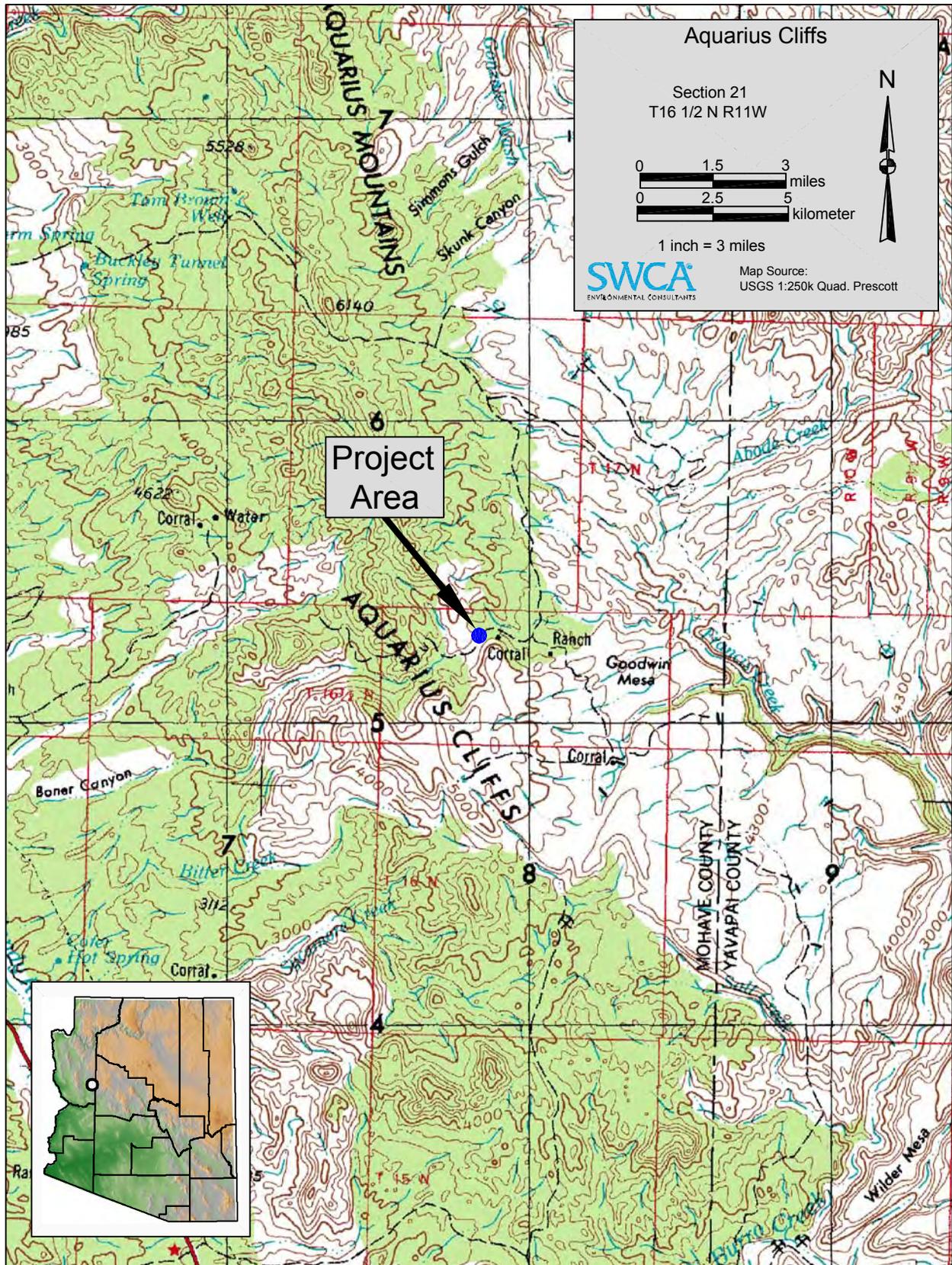
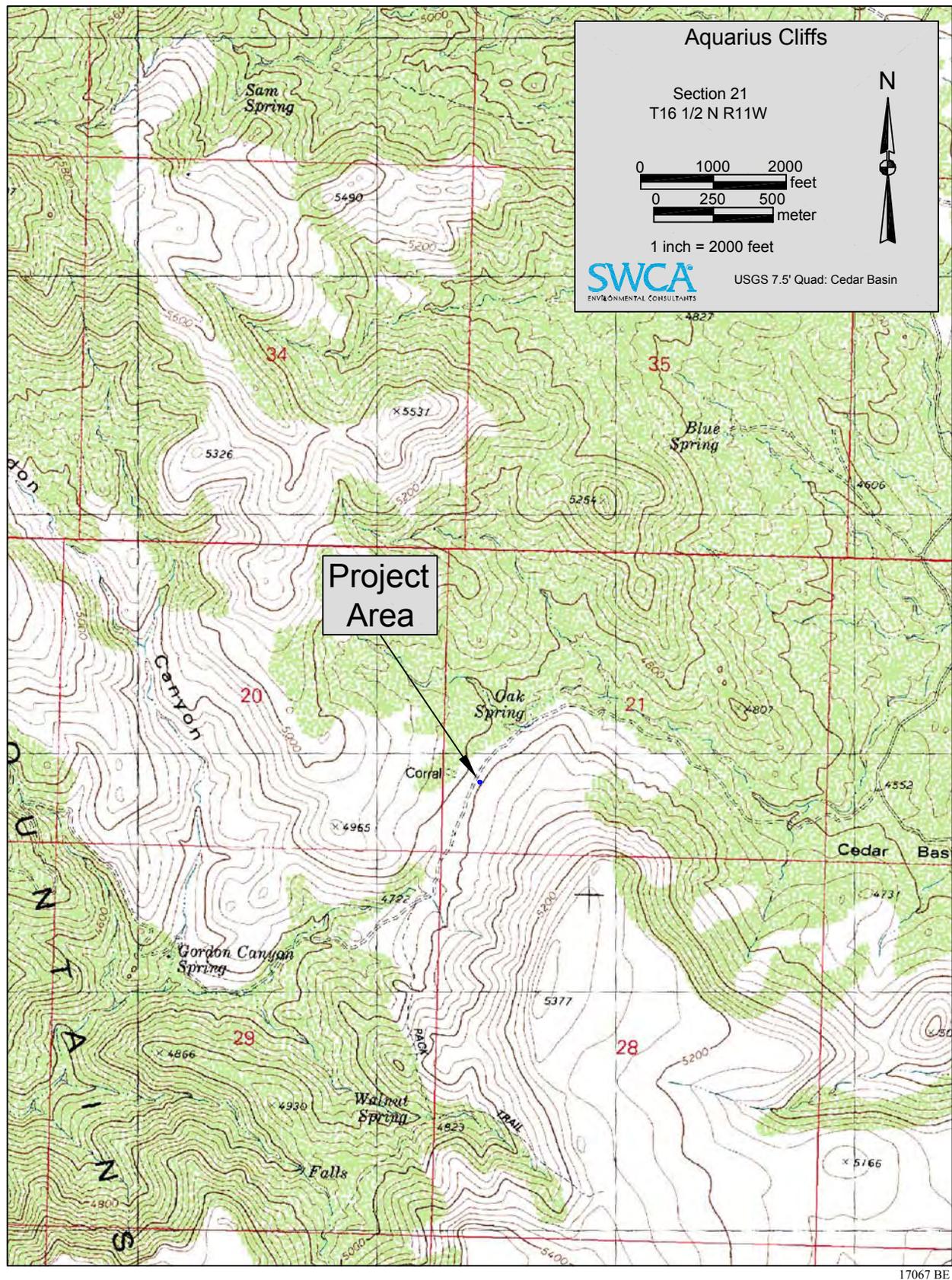


Figure 1. General location of the project area.



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**Figure 2.** Detail of Cedar Basin, AZ 7.5-minute USGS Quadrangle depicting the location of project area.

## 2.1 Species Identification

The USFWS maintains a list of protected species known to occur in each Arizona county. These species are currently listed or are proposed for listing as endangered or threatened under the ESA (16 United States Code [USC] 1531 et seq.). 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 (MBTA) (16 USC 703–712).

Only species listed by the USFWS are afforded protection under the ESA. The federally listed species evaluated in this BE were based on 1) the list of endangered, threatened, candidate, and conservation agreement species for Mohave County, available from the USFWS website (USFWS 2010), and 2) the BLM sensitive species list for the KFO (BLM 2006). Although American peregrine falcon (*Falco peregrinus anatum*) and California brown pelican (*Pelecanus occidentalis californicus*) are on the USFWS list for Mohave County, both species have been delisted and are not addressed in this BE since they no longer receive any statutory protections under the ESA. The USFWS species list is provided in Appendix A, and the BLM sensitive species list is provided in Appendix B. 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 2010). The search results are included in Appendix C.

The potential for occurrence in the project area 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.<sup>1</sup> 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.

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<sup>1</sup> SWCA agrees 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.

- *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 project is likely to adversely affect 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.
- *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 2) project activities would not result in disturbance to areas or habitat elements known to be used by the species.
- *No effect*—the project will have no effect 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.

Management of BLM sensitive species is guided by BLM Manual 6840. 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 USFWS recommendations. Instead, the impact determinations for any species 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 in the southern extent of the Aquarius Mountains on the eastern edge of the Aquarius Cliffs at 4,800 feet above mean sea level (amsl). Oak Spring is less than 500 feet to the north of the project area. Several unnamed drainages in the vicinity of the project area flow southwest, eventually emptying into the Big Sandy River 11 miles to the southwest.

No saguaros (*Carnegiea gigantea*), aquatic habitats (including stock ponds), broadleaf deciduous riparian vegetation communities (i.e., communities containing willow [*Salix* sp.], cottonwood [*Populus* sp.], or ash [*Fraxinus* sp.], etc.), or potential bat roost sites (e.g., natural caves or mine features) occur in the project area.

## 3.2 Vegetation

The project area is located in the Interior Chaparral biotic community. Dominant vegetation includes barberry (*Berberis fremontii*) and skunkbush (*Rhus trilobata*). Other species include Utah juniper (*Juniperus osteosperma*), jojoba (*Simmondsia chinensis*), broom snakeweed (*Gutierrezia sarothrae*), goldenbush (*Ericameria* sp.), whipple cholla (*Cylindropuntia whipplei*), and prickly pear (*Opuntia* sp.). No noxious weeds listed by the Arizona Department of Agriculture (ADA) were observed in any of the project area.

Protected native plants classified under the Arizona Native Plant Law (ANPL) (Arizona Revised Statute 3-904) by the ADA are present in the project area. This law states that protected plants cannot be removed from any lands, including private lands, without permission and a permit from the ADA. Highly Safeguarded native plants are those species for which removal is not allowed except with an ADA scientific permit. No species in this category were observed in the project area. Salvage Restricted native plants are those plants for which a salvage permit is required. Two species in this category were observed in the project area: whipple cholla and prickly pear. Two other ANPL categories include Salvage Assessed and Harvest Restricted; however, no species in either of these categories were observed in the project area.

## 3.3 Species Evaluation

None of the 23 species listed for Mohave County by the USFWS have the potential to occur in the project areas. The project areas are clearly beyond the known geographic or elevational range of these species and/or they do not contain vegetation or landscape features known to support these species. Habitat requirements, potential for occurrence, and possible effects on these 23 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 and there are no occurrence records for any species listed under the ESA within 2 miles of the project area (AZHGIS 2010). Ephemeral washes are adjacent to the project area. No tortoises or their sign were observed during field reconnaissance; however, tortoises could potentially travel through the project area vicinity either across the uplands or along the ephemeral washes adjacent to the project area. Should tortoises be encountered during project activities, guidelines for handling them have been developed by the AGFD (Appendix D).

Of the 23 sensitive species listed for the KFO by the BLM, big free-tailed bat (*Nyctinomops macrotis*), California flannelbush (*Fremontodendron californica*), cave myotis (*Myotis velifer*), desert rosy boa (*Charina trivirgata gracia*), pinto beardtongue (*Penstemon bicolor*), and western small-footed myotis (*Myotis ciliolabrum*) have the potential to occur in the project area. For the remaining species, the project area is clearly beyond the known geographic or elevational range of these species and/or it does not contain vegetation or landscape features known to support these species. Habitat requirements, potential for occurrence, and possible effects on these 23 species are summarized in Table 2.

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

Range or habitat information is from HDMS (2010), USFWS Arizona Ecological Services Field Office (USFWS 2010), *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
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 white Tertiary limestone deposits in the project area. The nearest known location of this species is 17 miles south-southeast of the project area in the Burro Creek drainage.	No effect.
Bald eagle ( <i>Haliaeetus leucocephalus</i> [desert population])	USFWS T	Nesting sites are usually isolated, located high in trees or on cliffs that are close to water. A small resident population of approximately 40 pairs nests along the Salt, Verde, Gila, Bill Williams, Agua Fria, San Pedro, and San Francisco rivers and along Tonto and Canyon creeks. At least 200 to 300 winter each year throughout Arizona, with the greatest numbers found along the Mogollon Rim east through the White Mountains.	Unlikely to occur. There are no potential nesting sites or water sources in or adjacent to the project area.	No effect.
Bonytail chub ( <i>Gila elegans</i> )	USFWS E	Found at elevations below 4,000 feet amsl in slower-water stream habitats, such as eddies, pools, side channels, and coves. The last natural population is found in Lake Mohave. Hatchery-produced and cove-reared bonytails have been introduced into Lakes Havasu and Mohave in La Paz and Mohave counties.	Unlikely to occur. There are no aquatic areas in or adjacent to the project area.	No effect.
California condor ( <i>Gymnogyps californianus</i> )	USFWS E	Nesting sites are in caves, crevices, and potholes in isolated regions of the Southwest. The USFWS began reintroducing an experimental, nonessential population of California condors into northern Arizona and southern Utah in 1996. On November 5, 2003, a pair successfully fledged one nestling from a cave at Grand Canyon, becoming the first California condor to be successfully hatched and reared in the wild since 1984.	Unlikely to occur. There are no potential nesting sites in or adjacent to the project area. The project area is also outside the Non-essential Experimental Population Area (10J area) as designated by the USFWS.	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 open sandy areas or exposed flats next to aquatic areas in or adjacent to the project area.	No effect.

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

Range or habitat information is from HDMS (2010), USFWS Arizona Ecological Services Field Office (USFWS 2010), *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.), and Corman and Wise-Gervais (2005).

<b>Common Name (Species Name)</b>	<b>Status*</b>	<b>Range or Habitat Requirements</b>	<b>Potential for Occurrence in Project Area</b>	<b>Determination of Effect</b>
Desert tortoise, Mohave population ( <i>Gopherus agassizii</i> [ <i>Xerobates</i> ])	USFWS T	Found in a variety of habitats, including basins and bajadas, rocky slopes, and creosote bush, shadscale, blackbush, and Joshua tree plant associations of the Mojave Desertscrub vegetation community. Range in Arizona is north and west of the Colorado River, typically at elevations below 4,000 feet amsl.	Unlikely to occur. Although the project area is located on a bajada and contain creosote bush, the project area is located east of the Colorado River, i.e., outside the range of this species.	No effect.
Desert tortoise, Sonoran population ( <i>Gopherus agassizii</i> )	USFWS C	Found primarily on rocky (often steep) hillsides and bajadas in Mohave and Sonoran desertscrub. Range in Arizona is east and south of the Colorado River, typically at elevations below 7,800 feet amsl.	Unlikely to occur. Habitat and topography in the project area are not similar to those in areas in which this species is found.	No effect.
Fickeisen plains cactus ( <i>Pediocactus</i> <i>peeblesianus</i> var. <i>fickeiseniae</i> )	USFWS C	Occurs on gravelly limestone or gravelly loam in desertscrub at elevations between 4,300 and 5,450 feet amsl. Known only from the vicinity of Gray Mountain in Coconino County and north and west to the Arizona Strip in Coconino and Mohave counties. It may also occur near Joseph City in Navajo County.	Unlikely to occur. The project area is more than 100 miles from the nearest known location of this species.	No effect.
Gierisch mallow ( <i>Sphaeralcea</i> <i>gierischii</i> )	USFWS C	Found mainly on gypsiferous outcrops in desert shrub communities in Arizona and Utah. This perennial plant is found at elevations between 3,000 and 4,262 feet amsl in Arizona. In Arizona, there are seven population locations, near Black Rock Gulch, Black Knolls, and Pigeon.	Unlikely to occur. There are no gypsiferous outcrops in the project area.	No effect.
Holmgren (Paradox) milk vetch ( <i>Astragalus</i> <i>holmgreniorum</i> )	USFWS E	Found in Great Basin shrub communities at elevations between 2,700 and 2,800 feet amsl on well-drained, shallow, gravelly sandy loams, alluvial fans, and rock outcrops derived primarily from the Virgin limestone member of the Moenkopi Formation. In Arizona, occurs at the extreme northwest corner of the state near the Virgin River Gorge.	Unlikely to occur. Vegetation and soils in the project area are not similar to those in areas in which this species is found, and the project area is more than 150 miles south of the only known location of this species.	No effect.
Hualapai Mexican vole ( <i>Microtus mexicanus</i> <i>hualpaiensis</i> )	USFWS E	Found in woodland forest types (ponderosa pine, piñon-juniper, and pine-oak) containing grass-forb vegetation, typically near water, at elevations between 3,500 and 7,000 feet amsl. Range is considered to be restricted to the Hualapai Mountains and possibly Prospect Valley and the Music Mountains. However, research suggests that populations may occur in the Hualapai Nation, Aubrey Cliffs, Chino Wash, and the Santa Maria, Bradshaw, Round, and Sierra Prieta mountains.	Unlikely to occur. Vegetation in the project area is not similar to that in areas in which this species is found.	No effect.

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

Range or habitat information is from HDMS (2010), USFWS Arizona Ecological Services Field Office (USFWS 2010), *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.), and Corman and Wise-Gervais (2005).

<b>Common Name (Species Name)</b>	<b>Status*</b>	<b>Range or Habitat Requirements</b>	<b>Potential for Occurrence in Project Area</b>	<b>Determination of Effect</b>
Humpback chub ( <i>Gila cypha</i> )	USFWS E	Occurs at elevations generally below 4,000 feet amsl in a variety of riverine habitats, especially canyon areas with fast currents, deep pools, and boulder habitat. In Arizona, it occurs in the Grand and Marble canyon portions of the main stem Colorado and lower Little Colorado rivers.	Unlikely to occur. There are no aquatic areas in or adjacent to the project area.	No effect.
Jones cycladenia ( <i>Cycladenia humilis</i> var. <i>jonesii</i> )	USFWS T	Found on saline soils on the Chinle Formation in cool desertscrub and juniper communities at elevations between 4,400 and 6,000 feet amsl. In Arizona, found in Woodbury and Potter canyons.	Unlikely to occur. Soils in the project area are not similar to areas in which this species is found, the project area is below the elevational range of this species, and the project area is more than 150 miles southwest of the nearest known population.	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–Gambel oak. Nests in live trees on natural platforms (e.g., dwarf mistletoe brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Unlikely to occur. There are no montane forests or woodlands with steep, shady canyons in the project area.	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 aquatic areas in or adjacent to the project area.	No effect.
Relict leopard frog ( <i>Rana onca</i> )	USFWS C	Found in permanent streams, springs, and spring-fed wetlands at elevations below approximately 2,000 feet amsl. In Arizona, recent surveys have revealed extant populations at Sycamore Spring and at Surprise Canyon in the lower Grand Canyon. The population at Corral Spring became extinct in 1995, and the population at a wetland near Littlefield became extinct in 1998. The species was introduced to Sycamore Spring in 2003.	Unlikely to occur. There are no aquatic habitats in or adjacent to the project area.	No effect.

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

Range or habitat information is from HDMS (2010), USFWS Arizona Ecological Services Field Office (USFWS 2010), *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.), and Corman and Wise-Gervais (2005).

<b>Common Name (Species Name)</b>	<b>Status*</b>	<b>Range or Habitat Requirements</b>	<b>Potential for Occurrence in Project Area</b>	<b>Determination of Effect</b>
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. 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 aquatic areas in or adjacent to the project area.	No effect.
Siler pincushion cactus ( <i>Pediocactus sileri</i> )	USFWS T	Found in red or gray gypsiferous badlands derived from the Moenkopi Formation at elevations between 2,800 and 5,400 feet amsl. In Arizona, occurs at Fort Pierce, Lost Spring Mountain, and Yellowstone and Shinarump mesas.	Unlikely to occur. Soils in the project area are not similar to areas in which this species is found. The project area is also more than 150 miles southwest of the nearest known population 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, saltcedar, Russian olive, buttonbush, and arrowweed 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 in or adjacent to the project area.	No effect.
Virgin River chub ( <i>Gila seminuda</i> )	USFWS E	Found most commonly in deep, swift (not turbulent) waters with sand and gravel substrates and boulders or other cover at elevations below 4,500 feet amsl. Endemic to the Virgin River in the extreme northwestern part of Arizona.	Unlikely to occur. There are no aquatic areas in or adjacent to the project area.	No effect.
Virgin spinedace ( <i>Lepidomeda mollispinis mollispinis</i> )	USFWS CA	Found in cool, clean tributaries and inflow areas of smaller streams (not generally found in the main stem of larger streams) at elevations below 4,500 feet amsl. Range includes several tributaries of the Virgin River in Arizona and Utah, including Beaver Dam Wash, Santa Clara River, the North and East Forks of the Virgin River, and Ash, La Verkin, North, and Shunes creeks.	Unlikely to occur. There are no aquatic areas in or adjacent to the project area.	No effect.

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

Range or habitat information is from HDMS (2010), USFWS Arizona Ecological Services Field Office (USFWS 2010), *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
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 aquatic areas in or adjacent to the project area.	No effect.
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	USFWS C	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. There is no riparian woodland vegetation with dense understory foliage in or adjacent to the project area.	No effect.
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, bulrushes, and sedges. 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 aquatic areas in or adjacent to the project area.	No effect.

**\*USFWS Status Definitions**

C = Candidate. Candidate species are those for which the 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.

CA = Conservation Agreement. A conservation agreement is an agreement between the USFWS and other federal, state, or local agencies or private landowners to take certain steps to ensure the protection of the species.

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.

T = Threatened. Threatened species are those in imminent jeopardy of becoming endangered. The ESA specifically prohibits the take of a species listed as threatened. 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.

**Table 2. BLM Sensitive Species Potentially Occurring in the KFO Planning Area**

Unless otherwise noted, range or habitat information is from the following sources: HDMS (2010) and *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.).

<b>Common Name (Species Name)</b>	<b>BLM Status*</b>	<b>Range or Habitat Requirements</b>	<b>Potential for Occurrence in Project Area</b>	<b>Determination of Impact</b>
Allen's big-eared bat ( <i>Idionycteris phyllostis</i> )	S	Central highlands of Mexico, southern Colorado plateau and Mogollon Rim, Arizona, and New Mexico at elevations between 1,320 and 9,800 feet amsl. In Arizona, typically found in ponderosa pine, piñon-juniper, Mexican woodland, and broadleaf riparian areas. Roost sites include caves and mine shafts.	Unlikely to occur. The project area does not contain vegetation similar to areas where this bat is typically found and there are no potential roost sites in the project area.	No impact.
Aravaipa woodfern ( <i>Thelypteris puberula</i> var. <i>sonorensis</i> )	S	This species is typically found in moist soil under the shade of boulders in mesic canyons with elevations of 2,200 to 4,500 feet.	Unlikely to occur. There are no mesic canyons in the project area.	No impact.
Arizona myotis ( <i>Myotis lucifugus</i> <i>occultus</i> )	S	Found near water in ponderosa pine and oak-pine woodland habitat, and in desert areas with riparian vegetation or permanent water. Most commonly occurs at elevations between 6,000 and 9,200 feet amsl, but has been found at elevations between 150 and 1,000 feet amsl.	Unlikely to occur. The project area does not contain vegetation similar to areas where this bat is typically found and there are no potential roost sites in the project area.	No impact.
Aquarius milkvetch ( <i>Astragalus newberryi</i> var. <i>aquaria</i> )	S	Found on limey clay soils between 2,000 and 2,600 feet amsl. Only known to occur from the Six Mile Crossing at Burro Creek.	Unlikely to occur. The project area is not comprised of limey clay soils and is above the known elevation of this species. The only known occurrence of this species is 17 miles south-southeast of the project area at Six Mile Crossing in the Burro Creek drainage.	No impact.
Big free-tailed bat ( <i>Nyctinomops macrootis</i> )	S	Rugged, rocky country and riparian areas throughout most of Arizona at elevations between 1,810 and 8,475 feet amsl. Roosts in rock crevices.	May occur. Although there are no potential roost sites in the project area, habitat is similar to areas where this species occurs; thus, this species could potentially forage in the project area.	May impact individuals but is not likely to result in a trend toward federal listing or loss of viability.
California flannelbush ( <i>Fremontodendron californica</i> )	S	Found on dry, north slopes in canyons and well-drained rocky hillsides and ridges in chaparral and oak/pine woodland between 3,500 and 6,500 feet amsl.	May occur. Habitat is similar to areas where this species occurs. According to AZHGIS (2010), there are occurrence records for this species within 2 miles of the project area.	May impact individuals but is not likely to result in a trend toward federal listing or loss of viability.
Cave myotis ( <i>Myotis velifer</i> )	S	Desertscrub including creosote bush, brittlebush, palo verde and cacti with roosts in caves, tunnels, and mine shafts, and under bridges in the southern half of Arizona at elevations between 300 and 5,000 feet amsl.	May occur. Although there are no potential roost sites in the project area, habitat is similar to areas where this species occurs; thus, this species could potentially forage in the project area. According to AZHGIS (2010), there are occurrence records for this species within 2 miles of the project area.	May impact individuals but is not likely to result in a trend toward federal listing or loss of viability.
Common chuckwalla ( <i>Sauromalus ater</i> )	S	Creosote bush desert near lava flows, rocky hillsides, and rock outcrops in the southwestern United States and also in Mexico at elevations from sea level to 6,000 feet amsl.	Unlikely to occur. Vegetation in the project area is not similar to that in areas in which this species is found.	No impact.

**Table 2. BLM Sensitive Species Potentially Occurring in the KFO Planning Area (continued)**

Unless otherwise noted, range or habitat information is from the following sources: HDMS (2010) and *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.).

<b>Common Name (Species Name)</b>	<b>BLM Status*</b>	<b>Range or Habitat Requirements</b>	<b>Potential for Occurrence in Project Area</b>	<b>Determination of Impact</b>
Desert rosy boa ( <i>Charina trivirgata gracia</i> )	S	Found in western Arizona in rocky areas in desert ranges, especially in canyons with permanent or intermittent streams from sea level to 5,640 feet amsl.	May occur. The vegetation and terrain is similar to areas where this species is found.	May impact individuals, but is not likely to result in a trend toward federal listing or loss of viability.
Desert sucker ( <i>Catostomus clarki</i> )	S	This fish is found in rapids and flowing pools of streams and rivers.	Unlikely to occur. There are no aquatic areas in the project area.	No impact.
Fringed myotis ( <i>Myotis thysanodes</i> )	S	Desert and steppe areas in close vicinity of woodlands; roost sites located in caves, mine tunnels, and buildings in western North America at elevations between 4,000 and 8,280 feet amsl.	Unlikely to occur. The project area is not in the vicinity of woodlands, which is where this bat is typically found. There are no potential roost sites in the project area.	No impact.
Hydrobiid Spring snails ( <i>Pyrgulopsis</i> spp.)	S	All species of this genus inhabit rivers, cienegas, and other aquatic locations.	Unlikely to occur. There are no aquatic areas in the project area.	No impact.
Long-eared myotis ( <i>Myotis evotis</i> )	S	In Arizona, inhabits ponderosa pine or spruce-fir forests containing juniper, spruce-fir, and some pine. Roosts in rock outcroppings, tree cavities, under peeling bark, in stumps, caves, mines, sink holes, lava tubes, or in abandoned buildings.	Unlikely to occur. Vegetation in the project area is not similar to that preferred by this species and there are no potential roost sites in the project area.	No impact.
Longfin dace ( <i>Agosia chrysogaster</i> )	S	This fish inhabits a wide range of habitats, from intermittent hot low-desert streams to clear and cool brooks at higher elevations.	Unlikely to occur. There are no aquatic areas in the project area.	No impact.
Long-legged myotis ( <i>Myotis volans</i> )	S	Although primarily a coniferous forest bat, it may also be found in riparian and desert habitats at 2,200 to 8,880 feet amsl. Found mainly in forested mountains in Apache, Cochise, Coconino, Gila, Mohave, and Yavapai counties.	Unlikely to occur. Vegetation in the project area is not similar to that preferred by this species and there are no potential roost sites in the project area.	No impact.
Parish phacelia ( <i>Phacelia parishii</i> )	S	Occurs on the edge of barren playas surrounded by semi-desert grassland and Mohave Desert and on gypsum beds in lacustrine deposits of the Sonoran Desert at elevations between 2,300 and 2,800 feet amsl. Only found in the Hualapai Valley and at Six Mile Crossing on Burro Creek.	Unlikely to occur. There are no barren playas in the project area and the project area is above the known elevational range of this species. The nearest known location of this species is 17 miles south-southeast of the project area in the Burro Creek drainage.	No impact.
Pinto beardtongue ( <i>Penstemon bicolor</i> )	S	Found in gravel washes and disturbed roadsides, to outwash fans and plains between 1,970 and 5,480 feet amsl. Found only in the Black Mountains and near Wilson Ridge.	May occur. There are gravel washes and roads in the vicinity of the project area.	May impact individuals, but is not likely to result in a trend toward federal listing or loss of viability.
Sonora sucker ( <i>Catostomus insignis</i> )	S	Found in a variety of habitats from warm water rivers to trout streams between 1,210 and 8,730 feet amsl. Prefers gravelly or rocky pools, or relatively deep, quiet waters.	Unlikely to occur. There are no aquatic areas in the project area.	No impact.

**Table 2. BLM Sensitive Species Potentially Occurring in the KFO Planning Area (continued)**

Unless otherwise noted, range or habitat information is from the following sources: HDMS (2010) and *Arizona Rare Plant Field Guide* (Arizona Rare Plant Committee n.d.).

Common Name (Species Name)	BLM Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area	Determination of Impact
Speckled dace ( <i>Rhinichthys osculus</i> )	S	Found on the bottom of rocky riffles, runs, and pools of headwaters, creeks, and small to medium rivers. Occurs in the Bill Williams and Gila River drainages and the Colorado River, except in the warmer, slower moving portions of the Colorado River.	Unlikely to occur. There are no aquatic areas in the project area.	No impact.
Three hearts ( <i>Tricardia watsoni</i> )	S	Typically occurs on dry, rocky canyons and gravelly slopes, and sandy loam flats within Joshua tree woodland and creosote bush scrub between 1,400 and 4,600 feet elevation. Only occurs in Black Rock and Wolfhole mountains.	Unlikely to occur. There are no dry, rocky canyons, gravelly slopes, or Joshua tree woodland in the project area and the nearest known occurrence of this species is more than 100 miles north of the project area.	No impact.
Western burrowing owl ( <i>Athene cunicularia hypugea</i> )	S	Found in open grasslands, pastures, coastal dunes, desertscrub, edges of agricultural fields, and other human areas where there is sufficient friable soil for a nesting burrow in western North and Central America.	Unlikely to occur. Habitat in the project area is not similar to that preferred by this species and no burrows were observed in the project area.	No impact.
Western small-footed myotis ( <i>Myotis ciliolabrum</i> )	S	Found in oak-juniper woodlands, desertscrub, chaparral, and riparian areas in Arizona at elevations between 2,120 and 8,670 feet amsl. Roost sites vary and include mine shafts, caves, crevices, and cracks, and under rocks, buildings, etc.	May occur. Although there are no potential roost sites in the project area, vegetation is similar to areas where this species occurs; thus, this species could potentially forage in the project area.	May impact individuals but is not likely to result in a trend toward federal listing or loss of viability.
White-margined penstemon ( <i>Penstemon albomarginatus</i> )	S	Occurs in sandy loam uplands and sandy washes in broad alluvial plains in Joshua tree/mixed shrub woodlands between 1,900 and 3,100 feet amsl. Only found in the Dutch Flat and Sacramento Valley areas.	Unlikely to occur. There are no sandy loam uplands or Joshua tree/mixed shrub woodlands in the project area and the project area is above the known elevational range of this species.	No impact.

\*BLM Status Definition:

**S = Sensitive.** A species proven to be imperiled in at least part of its range and documented or considered likely to occur on BLM lands.

## 4.0 MIGRATORY BIRD TREATY ACT

The MBTA provides federal protection to all migratory birds, including feathers, nests, and eggs. In order to relocate or alter any MBTA-protected nests, it will be necessary to obtain a permit from the USFWS to maintain compliance with the MBTA. However, Section 1 of the Interim Empty Nest Policy of the USFWS, Region 2, states that if the nest is completely inactive at the time of destruction or movement, a permit is not required in order to comply with the MBTA. No migratory bird nests were observed at any project areas during the field reconnaissance. If an active nest is observed before or during construction, measures should be taken to protect the nest from destruction and to avoid a violation of the MBTA.

## 5.0 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.

## 6.0 LITERATURE CITED

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## **APPENDIX A**

### **USFWS Species List**



# Mohave County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
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 in central Arizona at Horseshoe Lake, in the Burro Creek drainage, and near Cottonwood in the Verde Valley.
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Large, adults have white head and tail. Height 28-38 inches; wingspan 66-96 inches. Dark with varying degrees of mottled brown plumage. Feet bare of feathers.	Gila, Graham, La Paz, Maricopa, Mohave, Pinal, Yavapai, Yuma	Varies	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	Some birds are nesting residents while a larger number winters along rivers and reservoirs. Once endangered (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) because of reproductive failures from pesticide poisoning and loss of habitat, this species was downlisted to threatened on August 11, 1995, and delisted August 8, 2007. Threatened status reinstated for Desert nesting bald eagles.
Bonytail chub	<i>Gila elegans</i>	Endangered	Large (12-14 up to 24 inches) minnow characterized by small head, large fins, slightly humped back and long thin caudal peduncle	La Paz, Mohave	< 4,000 ft	Warm, swift, turbid mainstem rivers of the Colorado River basin, reservoirs in lower basin	Endemic to Colorado River Basin. Rarest of Colorado River fish. Population augmentation is ongoing in Lake Mohave and Lake Havasu. Critical habitat includes the Colorado River from Hoover Dam to Davis Dam and another section of the Colorado River from the northern boundary of Havasu National Wildlife Refuge to Parker Dam including Lake Havasu in Mohave County, Arizona. Additional critical habitat is located in Colorado, Utah, Nevada, and California.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
California condor	<i>Gymnogyps californianus</i>	Endangered	Very large vulture (47 in. wingspan to 9 1/2 ft. weight to 22 lbs); adult plumage blackish, immature more brownish; adult wing linings white; immature mottled, head and upper parts of neck bare; yellow-orange in adults; grayish in mature.	Apache, Coconino, Mohave, Navajo, Yavapai	Varies	High desert canyons and plateaus.	Recovery program has reintroduced condors to Northern Arizona, with the first release (6 birds) in December 1996. The release site is located at the Vermillion Cliffs (Coconino County), with an experimental/nonessential area designated for most of Northern Arizona and Southern Utah. The area in Arizona is within a polygon formed by Hwy 191, Interstate 40, and Hwy 93, and extends north of the Arizona-Utah and Nevada borders. Breeding is documented in Arizona.
California Least Tern	<i>Sterna antillarum browni</i>	Endangered	Smallest of the North American Terns. Body length is 21 to 24 cm (8 to 9 inches) with a wingspan of 45 to 51cm (18 to 20 inches). Has black crown and lore 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 lore 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.
Desert tortoise, Mohave population	<i>Gopherus agassizii (Xerobates)</i>	Threatened	Large herbivorous reptile with domed shell and round stumpy hind legs. Most active during the spring when plants are most abundant. Some activity in late summer following monsoons. Remainder of year spent in burrows.	Mohave	< 4,000 ft	Mohave desert scrub (north and west of the Colorado River) in basins and bajadas but also found on rocky slopes.	Habitat ranges from flatlands to rocky slopes and Bajadas. Species still found throughout range, but populations are fragmented and declining.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Holmgren (Paradox) milk vetch	<i>Astragalus holmgreniorum</i>	Endangered	Stemless herbaceous (non-woody) perennial that produces leaves and small purple flowers in the spring, both of which die back to its root after the flowering season. Compound leaves, blue-green below and yellowish-green above, arise directly from the root crown.	Mohave	2,700-2,800 ft	Just under limestone ridges and along draws in gravelly clay hills.	Critical habitat occurs in Mohave County, Arizona and Washington County, Utah (71 FR 77971-78012, December 27, 2006). Two additional populations known near St. George, Utah. Species also known as Paradox Milk-Vetch.
Hualapai Mexican vole	<i>Microtus mexicanus hualpaiensis</i>	Endangered	Small, cinnamon-brown and mouse-sized; has short tail and long fur that nearly covers its small round ears.	Mohave	3,500-7,000	Moist grass/sedge habitats along permanent or semi-permanent waters (springs or seeps).	Also found in piñon-juniper and pine oak associations with a variety of shrubs and grasses. Species confirmed only in the Hualapai Mountain Range and possible in the Prospect Valley and Music Mountains. Ongoing research suggests that populations may occur in the Hualapai Nation, Aubrey Cliffs, Chino Wash, Santa Maria Mountains, Bradshaw Mountains, Round Mountain, and Sierra Prieta Mountains. The taxon may ultimately be renamed.
Humpback chub	<i>Gila cypha</i>	Endangered	Large (18 inches) minnow with flattened head, long fleshy snout, large fins, and a very large hump between the head and the dorsal fin.	Coconino, Mohave	< 4,000 ft	Large, warm turbid rivers especially canyon areas with deep fast water.	Species found in the Upper Colorado River basin in Utah and Colorado, and in the Little Colorado and Colorado Rivers in Marble and Grand Canyons, Arizona. Critical habitat designated in Colorado, Utah, and Arizona.
Jones cycladenia	<i>Cycladenia humilis</i> var. <i>jonesii</i>	Threatened	A long lived perennial herb in the dogbane family (Apocynaceae) with pinkish-rose flowers. Plants reach 4-6 inches tall and have orbicular, wide-oval or elliptical leaves. Plants overwinter as subterranean rhizomes (roots).	Mohave	4,390-6,000 ft	Mixed desert scrub, juniper, or wild buckwheat-mormon tea.	It is found on gypsiferous, saline soils of the Cutler, Summerville, and Chinle formations.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Mexican spotted owl	<i>Sinox 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/SF77 Bridge to Roosevelt Dam; Verde River from FS boundary to Horseshoe Lake.
Siler pincushion cactus	<i>Pediocactus sileri</i>	Threatened	Small solitary or clustered cactus globose shaped about 5 inches tall and 3-4 inches in diameter. Flowers: yellow with maroon veins.	Coconino, Mohave	2,800-5,400 ft	Desertscrub transitional areas of Navajo sagebrush and Mohave Deserts.	Grows on gypsiferous clay and sandy soils of Moenkopi formation.
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.	Migratory riparian-obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian corridors. Difficult to distinguish from other members of the <i>Empidonax</i> complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was finalized on October 19, 2005 (50 CFR 60886). In Arizona there are critical habitat segments in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Virgin River chub	<i>Gila seminuda</i>	Endangered	Slender, silvery minnow (8-18 inches) with small embedded scales giving a smooth appearance to the body.	Mohave	< 4,500 ft	Deep swift waters but not turbulent, occurs over sand and gravel substrates in water less than 86 degrees F. Tolerant of high salinity and turbidity.	Critical habitat designated in the 100-year floodplain of the Virgin River. Presently found in the Moapa River and mainstem Virgin River. Species also occurs in Washington County, UT and Clark County, NV.
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. Experimental non-essential populations (50 FF 30193; 07-24-1985) 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.
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.
Desert tortoise, Sonoran population	<i>Gopherus agassizii</i>	Candidate	Large herbivorous reptile with domed shell and round slumpy hind legs. The carapace is a dull brown or gray 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 desert scrub 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 referred to as the Sonoran population. 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.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Fickelsen plains cactus	<i>Pediocactus peeblesianus</i> var. <i>fickelseniae</i>	Candidate	Very small (3 inches tall and 1.5 inches in diameter), unbranched cactus that retreats into gravelly soils after flowering and fruiting. Tubercles form a spiral pattern around plant. Central spine 3/8 inch long flowers cream/yellow.	Cocónino, Mohave	4,000-5,000 ft	Shallow soils derived from exposed layers of Kalbab limestone. Found on canyon margins, well-drained hills in Navajean Desert, or Great Plains grassland.	Widely scattered small populations occur in the vicinity of Gray Mountain, north and west to the Arizona Strip. May also occur near Joseph City in Navajo County.
Giersch mallow	<i>Sphaeralcea gierschii</i>	Candidate	Perennial plant, up to 3.5 ft tall, with reddish stems and orange flowers.	Mohave	< 5,000 ft	Found only on gypsum outcrops associated with Harrisburg member of Kalbab Formation.	Plant has limited distribution in northern Mohave County and in adjacent Washington County (UT). Known populations restricted to less than 60 acres total.
Relict leopard frog	<i>Lithobates (Rana) onca</i>	Candidate	Medium-sized brownish grey frog in the family Ranidae.	Mohave	< 1,968 ft	Permanent streams, springs, and spring-fed wetlands with open shorelines and available pools.	Considered extinct in the wild in 1950 but rediscovered in 1991. A few scattered individuals observed at Willow Beach fish hatchery in Arizona. Small, isolated populations may also occur in Lake Mead NRA and in springs below Hoover Dam in Nevada.
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, Cocónino, 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
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	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.
Virgin spinedace	<i>Lepidomeda mollispinis mollispinis</i>	Conservation Agreement	Small fish (2 to 5 inches in length), broad and flattened silvery body with brassy sheen, rounded head and belly, large terminal mouth with two large spines at front of dorsal fin, sooty speckles on dorsal half and dark blotches on sides.	Mohave	< 4,500 ft	Found in small streams, prefer cool, clear tributaries and inflow areas at large streams.	Found in several tributaries of the Virgin River. Species also occurs in Washington County, UT and Clark County, NV. A Conservation Agreement between the Service, Utah Division of Wildlife Resources, Washington County Water Conservancy District, and others finalized in 1995.
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 trailing 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.

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 December 17, 2009.

**APPENDIX B**  
**BLM Species List**





## United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Arizona State Office  
One North Central Avenue  
Phoenix, AZ 85004  
www.az.blm.gov



In Reply Refer To:  
6840 (932) P

November 4, 2005

EMS TRANSMISSION: 11/04/05  
Instruction Memorandum No. AZ-2006-002  
Expires: 09/30/2006

To: All Field Offices

From: State Director

Subject: Updated BLM Sensitive Species List for Arizona

DD: 09/30/2007

**Purpose:** The purpose of this Instruction Memorandum is to identify the sensitive plant and animal species on Bureau of Land Management (BLM)-administered lands in Arizona in compliance with Manual Section 6840.

**Background:** Attached is the updated Arizona BLM Sensitive Species List. Changes from the 2000 list include deletions of several species of plants peripheral to the State and addition of some endemics. The plant changes resulted from coordination among agencies, academia, and nongovernmental organizations. Animal deletions primarily had to do with eliminating some duplicates that are now on the Wildlife of Special Concern in Arizona (WSC) list maintained by Arizona Game and Fish Department, and deleting some peripheral species that do not breed in Arizona and have plenty of available wintering habitats in Arizona. Additional coordination with Arizona BLM biologists and botanists was elicited in the development of the updated list between February 22, 2005, and June 10, 2005, and additional information and input came from a sensitive species committee led by the U.S. Forest Service Regional Office in Albuquerque.

The Tucson shovel nosed snake and flannel mouth sucker are added because they meet the criteria, appear on no other lists, and are receiving increased scrutiny and concern for their status among the conservation public and academia. Relatively few animals are included on our sensitive list because the WSC list is rather expansive.

Guidance for management related to BLM sensitive species is found in Manual Section 6840. Criteria for BLM Sensitive Species (Manual Section 6840) include those that are:

1. Under status review by the U.S. Fish and Wildlife Service/National Marine Fisheries Service; or
2. Whose numbers are declining so rapidly that Federal listing may become necessary; or

3. With typically small and widely dispersed populations; or
4. Those inhabiting ecological refugia or other specialized or unique habitats.

Some bats with roost site protection problems were not included on the list. All roost sites are considered very sensitive and require special habitat management or special consideration by Field Offices, regardless of the species that occupy them.

Some raptors that have fairly specific nesting requirements were not included. Raptors, particularly nesting raptors, require special habitat management or special consideration by Field Offices, on their own merits, because of their characteristic low population sizes and widely dispersed distributions.

To relieve possible confusion, some clarification of the several types of species status is included. BLM Sensitive species, State-listed species (by a State agency, in this case, Arizona Game and Fish Department's *Wildlife of Special Concern in Arizona*), Federal Candidate species, and Federally-listed threatened or endangered species are **all** *Special Status Species* covered by Manual Section 6840. By policy, the BLM has certain responsibilities for all Special Status Species. BLM Sensitive species are not covered by any other "safety net" of status designation. Therefore, the Arizona BLM Sensitive Species List does not include species that are already Federally-listed or State-listed.

**Policy/Action:** The Arizona BLM Sensitive Species List is dynamic, as this update shows. Changes in species taxonomy, information on species distribution, abundance, or new knowledge on security or threats can come any time, and knowledgeable people in Field Offices will periodically be asked for input on updates. Additionally, if information shows that a species needs to be included or removed, the appropriate Field Manager may make a nomination for an addition or deletion with sufficient justification concerning the above listed criteria. Under this scenario, if such a species occurs in more than one Field Office, consensus will be sought from the other Field Offices before action is taken.

**Timeframe:** This list is in effect until updated.

**Manual/Handbook Sections Affected:** Manual Section 6840 is affected.

**Contact:** If you have any questions, please contact Ted Cordery at (602) 417-9242 or, for plants, contact John Anderson at (623) 580-5520.

Signed by: Carl Rountree  
Associate State Director  
FOR Elaine Y. Zielinski  
Attachment

Authenticated by: Dana Jones  
Staff Assistant

1 - Sensitive Species List (4 pp)

cc: Mr. Duane Shroule, Director  
Arizona Game & Fish Department  
Attn: Habitat Branch  
2221 West Greenway Road  
Phoenix, Arizona 85023

State Director, California  
Attn: Ed Lorentzen

State Director, New Mexico  
Attn: Paul Sawyer

Arizona BLM Sensitive Species List (October, 2005)									
Key: V=Verified Occurrence									
X=Probable/Possible Occurrence									
Plants									
	AZ-100	AZ-200	AZ-310	AZ-410	AZ-320	AZ-420	AZ-330		
	Arizona Strip	Phoenix	Kingman	Safford	Yuma	Tucson	Lake Havasu		
Aquatic milkvetch ( <i>Astragalus newberryi</i> var. <i>aquaticus</i> )			V						
Aravaipa woodfern ( <i>Thelypteris puberula</i> var. <i>sonorenensis</i> )			V						
Aravaipa sagler ( <i>Salvia armissae</i> )			V						
Arizona Sonoran rosewood ( <i>Vauquelinia californica</i> ssp. <i>sonorenensis</i> )		V				V			
Bairdian stonecrop ( <i>Glaucopetalum bairdianii</i> )	V								
Black Rock daisy ( <i>Lownsonia smithii</i> )					V				
Blue sand lily ( <i>Triteleia sp.</i> )									
California flannelbush ( <i>Fremontodendron californica</i> )		V	V						
Chisos Mountains coralroot ( <i>Hexaletris nevadita</i> )						X			
Cliff milkvetch ( <i>Astragalus creminophylax</i> var. <i>thymelaeifolius</i> )	V			V					
Clifton rock daisy ( <i>Ferula ambrosiifolia</i> )									
Dalhousie spurnwort ( <i>Asplenium</i> (Ceterach) <i>dalhousiae</i> )									
Diamond Butte milkvetch ( <i>Astragalus foanus</i> var. <i>scridulatus</i> )	V								
Fish Creek heabane ( <i>Eriogon plicaticus</i> )				X					
Gentry indigo bush ( <i>Dalea lentaculoides</i> )						X			
Giant sedge ( <i>Carex spissa</i> var. <i>ultra</i> )		V		V		V			
Grand Canyon rose ( <i>Rosa stellerata</i> var. <i>abyssi</i> )	V								
Huechua golden aster ( <i>Heterotheca ruiteri</i> )						V			
Huechua milkvetch ( <i>Astragalus hypoxylus</i> )									
Kalbarb penonitichion cactus ( <i>Hodocactus paradiisae</i> )	V					X			
Kearney sumac ( <i>Rhus kearneyi</i> ssp. <i>kearneyi</i> )					V				
Koba Mt. barberry ( <i>Berberis harrisoniana</i> )		X			X				X
Marble Canyon Milkvetch ( <i>Astragalus creminophylax</i> var. <i>heavronii</i> )	V								
Mt. Trumbull beardtongue ( <i>Fernstemon distans</i> )	V								
Murphy agave ( <i>Agave murphyi</i> )		V							
Paris Plateau fishhook cactus ( <i>Sclerocactus sileri</i> )	V								

Arizona BLM Sensitive Species List (October, 2005)	AZ-100	AZ-200	AZ-310	AZ-410	AZ-320	AZ-420	AZ-330
Key: V=Verified Occurrence X=Probable/Possible Occurrence	Arizona Strip	Phoenix	Kingman	Safford	Yuma	Tucson	Lake Havasu
Parish plantain ( <i>Phacelia parishii</i> )			V		X		X
Parish wild onion ( <i>Allium parishii</i> )							
Pink indian mallow ( <i>Abutilon parishii</i> )			V			V	
Pinto beardtongue ( <i>Penstemon bicolor</i> )			V				
Purple-spike coralroot ( <i>Hexaletris wainwrightii</i> )				V			
Round-leaf broom ( <i>Erazuzia rotundata</i> )							
San Pedro River wild buckwheat ( <i>Eriogonum larreae</i> )					V		
Sand food ( <i>Pholisma sonora</i> )					V		
Scaly sand food ( <i>Pholisma avarana</i> )							V
Schoft wire-lettuce ( <i>Stephanomeria schobii</i> )		O			V		
September 11 stickleaf ( <i>Mentzelia memorabilis</i> )	V						
Sheep Range beardtongue ( <i>Penstemon pectolobus</i> )	V						
Silverleaf sunray ( <i>Encelipasis angophylla</i> )	V						
Sticky wild buckwheat ( <i>Eriogonum viscidulum</i> )	V						
Three hearts ( <i>Incardia watsonii</i> )	X		X				
Three-cornered milkvein ( <i>Astragalus geyeri</i> var. <i>triquetrus</i> )	V						
Tumamoc globeberry ( <i>Tumamoc macdougalii</i> )		V				V	
White-margined penstemon ( <i>Penstemon albomarginatus</i> )			V				
<b>Invertebrates</b>							
Arizona giant sand treader cricket ( <i>Darwinbaenates arizonensis</i> ) (Petrified Forest)				X			
Navajo-Jerusalem cricket ( <i>Sternopneustes navajo</i> ) (Petrified Forest)				X			
Santa Rita Mountains chlorochroan bug ( <i>Chlorochroa rifa</i> )						X	
Cheese-weed moth lacewing ( <i>Oligoneis clara</i> ) (larvae likely feed on creosote roots)					X		
Maricopa tiger beetle ( <i>Cicindela crispus maricopa</i> ) (central to east-		X		X			

Arizona BLM Sensitive Species List (October, 2005)	AZ-100	AZ-200	AZ-310	AZ-410	AZ-320	AZ-420	AZ-330
Key: V=Verified Occurrence X=Probable/Possible Occurrence	Arizona Strip	Phoenix	Kingman	Safford	Yuma	Tucson	Lake Havasu
central Arizona)							
Chiricahua water scavenger beetle ( <i>Cymbiodictya arizonica</i> ) (standing water)				X			
MacNeill's sooty wing skipper ( <i>Hesperopsis gracielae</i> ) (host plant is quailbush)	X	X			X	X	X
Cockrell's snail disc ( <i>Discus shermeki cockerelli</i> )							
Succineid snails (all species in family Succineidae) on public land	X						
Hydrobiid spring snails (all species in genus <i>Pyrgulopsis</i> ) on public land	V		V	V			
<b>Fish</b>							
Longfin dace ( <i>Agosia chrysoaster</i> )		V	V	V		V	V
Flannelmouth sucker ( <i>Catostomus latipinnis</i> )	V	V		V	V	V	V
Desert sucker* ( <i>Catostomus [Peristosteus] clarki</i> )	V	V	V	V		V	
Sonora sucker ( <i>Catostomus insignis</i> )		V	V	V		X	
Speckled dace ( <i>Rhinichthys osculus</i> )	V	V	V	V		V	
<b>Reptiles &amp; Amphibians</b>							
Giant spotted whiptail ( <i>Aspidoceles burti stilogrammus</i> )				X		V	
Chukwalla ( <i>Saurontalus obesus</i> )	V	V	V	V	V	V	V
Rosy boa ( <i>Charina trivirgata</i> )		V	V	X	V	V	V
Tucson shovel-nosed snake ( <i>Chionactis occipitalis klauberi</i> )		V				V	
Texas horned lizard ( <i>Phrynosoma cornutum</i> )				X		V	
Banded Gila monster (only pops NW of Colorado River) ( <i>Helioderma suspectum cinctum</i> )	V			X	X	V	X
Northern sagebrush lizard ( <i>Sceloporus graciosus graciosus</i> )	X			X			

Arizona BLM Sensitive Species List (October, 2005)	AZ-100	AZ-200	AZ-310	AZ-410	AZ-320	AZ-420	AZ-330
Key: V=Verified Occurrence X=Probable/Possible Occurrence	Arizona Strip	Phoenix	Kingman	Safford	Yuma	Tucson	Lake Havasu
<b>Birds</b>							
Western burrowing owl ( <i>Aluco curvicularia hypugae</i> )	V	V	V	V	V	V	V
Mountain Plover ( <i>Charadrius montanus</i> ) Breeding populations				V			
<b>Mammals</b>							
Linderoth's masliff bat ( <i>Eumops underwoodi</i> )						V	
Allen's (Mexican) big-eared bat ( <i>Atonycteris phyllotis</i> )	V	V	V	V	X	V	V
Small-footed myotis ( <i>Myotis ciliolabrum</i> )	V	V	V	V	V	V	V
Long-eared myotis ( <i>Myotis evotis</i> )	V		X				
Fringed myotis ( <i>Myotis thysanodes</i> )	V	V	V	V	V	V	V
Cave myotis ( <i>Myotis velifer</i> )		V	V	V	V	V	V
Long-legged myotis ( <i>Myotis volans</i> )	V	V	V	V	V	V	V
Big free-tailed bat ( <i>Nyctinomops macrotis</i> )	V	V	V	V	V	V	V
Pocketed free-tailed bat ( <i>Nyctinomops leucotis</i> )		X		X	X	V	
Arizona Myotis ( <i>Myotis lucifugus oregonus</i> )			X	X	V	X	V



## **APPENDIX C**

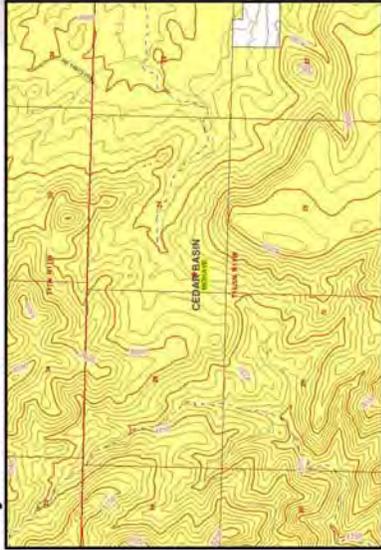
### **AZGIS Online Environmental Review Tool**



**Arizona's On-line Environmental Review Tool**

Search ID: 20101026013518  
Project Name: Aquarius Cliffs Mohave County weather station  
Date: 10/26/2010 12:35:50 PM

**Project Location**



**Project Name:** Aquarius Cliffs Mohave County weather station  
**Submitted By:** Mark Turner  
**On behalf of:** MOHAVE  
**Project Search ID:** 20101026013518  
**Date:** 10/26/2010 12:35:44 PM  
**Project Category:** Communication, Antenna and/or communication dish installation, New structure/cell tower  
**Project Coordinates (UTM Zone 12-NAD 83):** 278371.981, 3853076.759 meter  
**County:** MOHAVE  
**USGS 7.5 Minute Quadrangle ID:** 794  
**Quadrangle Name:** CEDAR BASIN  
**Project locality is not anticipated to change**

**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 2 miles of Project Vicinity:**

Name	Common Name	FWS	USFS	BLM	State
Bat Colony					
Buteo albonotialis	Zone-tailed Hawk		S		
Fremontodendron californicum	Flannel Bush			S	SR
Hualapai - Peacock Linkage Design	Wildlife Corridor				
Myotis velifer	Cave Myotis	SC			
Rana yavapaiensis	Lowland Leopard Frog	SC	S	S	WSC

Page 1 of 6 APPLICATION INITIALS: \_\_\_\_\_

Arizona's On-line Environmental Review Tool  
Search ID: 20101026013518  
Project Name: Aquarius Cliffs Mohave County weather station  
Date: 10/26/2010 12:35:50 PM

**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**

Arizona's On-line Environmental Review Tool  
Search ID: 20101026013518  
Project Name: Aquarius Cliffs Mohave County weather station  
Date: 10/26/2010 12:35:50 PM

*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: Communication, Antenna and/or communication dish installation, New structure/cell tower**

### **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 State Historic Preservation Office may be required  
(<http://azstateparks.com/SHPO/index.html>)

Based on the project type entered; coordination with U.S. Fish and Wildlife Service (Migratory Bird Treaty Act) may be required  
(<http://arizonaes.fws.gov/>)

Consider designs and tower modifications that reduce or eliminate impacts to migratory birds. Please refer to the U.S. Fish and Wildlife Service's page on cellular towers in Arizona

<http://www.fws.gov/arizonaaes/CellTower.htm>. On this page there are guidelines for tower siting, construction, operation, and decommissioning. Also see the Service's Interim Guidelines for Recommendations on Communications Tower Siting, Construction, Operation, and Decommissioning,  
<http://www.fws.gov/habitatconservation/communicationtowers.htm>.

During planning and construction, minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, 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/hunting\\_rules.shtml](http://www.azgfd.gov/hunting_rules.shtml).

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.

Arizona's On-line Environmental Review Tool

Search ID: 20101026013518

Project Name: Aquarius Cliffs Mohave County weather station

Date: 10/26/2010 12:35:50 PM

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.

**Project Location and/or Species recommendations:**

Heritage Data Management System records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:  
Arizona Department of Agriculture  
1688 W Adams  
Phoenix, AZ 85007  
Phone: 602-542-4373

project vicinity as well as other game and nongame wildlife.  
6. Further coordination requires the **submission 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**

**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

**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

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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: \_\_\_\_\_

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: \_\_\_\_\_

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E-mail: \_\_\_\_\_

Person Conducting Search (if not applicant)

Agency/organization: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_



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## **APPENDIX D**

### **Desert Tortoise Handling Guidelines**



GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES  
ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department  
Revised October 23, 2007

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

The Sonoran population of desert tortoises occurs south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position parallel to the ground at all times, and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 40° Celsius (105° Fahrenheit) unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to one-half mile, but no further than necessary from its original location. If a release site, or alternate burrow, is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), the Department should be contacted to place the tortoise into a Department-regulated desert tortoise adoption program. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, will also be placed in desert tortoise adoption programs. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting permit from the Department to facilitate temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- These guidelines do not apply to the Mojave population of desert tortoises (north and west of the Colorado River). Mojave desert tortoises are specifically protected under the Endangered Species Act, as administered by the U.S. Fish and Wildlife Service.
- These guidelines are subject to revision at the discretion of the Department. We recommend that the Department be contacted during the planning stages of any project that may affect desert tortoises.
- Take, possession, or harassment of wild desert tortoises is prohibited by state law. Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.