



Environmental Assessment for
Recreation and Public Purpose Act
Lease of an 80-acre BLM Parcel for the
Expansion of Casa Grande Mountain
Park

DOI-BLM-AZ-G020-2010-037-EA



Prepared for

City of Casa Grande
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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

ARIZONA

TUCSON FIELD OFFICE

EA #: DOI-BLM-AZ-G020-2010-037-EA

Project Name: R&PP Lease of an 80-acre BLM Parcel for the Casa Grande Mountain Park

BLM Contact Person: Linda L. Dunlavey, Realty Specialist, Tucson Field Office, 520.258.7260

Legal Description and Map Name: Public lands addressed in this Environmental Assessment are Bureau of Land Management-administered lands south of the City of Casa Grande in Pinal County, Arizona. The location is within the northern half of the northwest quarter of Section 26, Range 6 East, Township 7 South, Gila and Salt River Baseline and Meridian, Pinal County, Arizona (Figure 1-1).

1.0 Purpose and Need

1.1 Introduction

In December of 2005, the Bureau of Land Management (BLM) received an application under the Recreation and Public Purposes Act of 1926 (R&PP) as amended (43 United States Code [USC] 869 et seq.) for the City of Casa Grande (City) to lease approximately 80 acres of public land in Pinal County, Arizona, for expansion of the Casa Grande Mountain Park. The R&PP Act authorizes the sale or lease of public lands for recreational or public purposes to state and local governments and to qualified nonprofit organizations. This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the lease of the above mentioned 80 acres of BLM-administered lands.

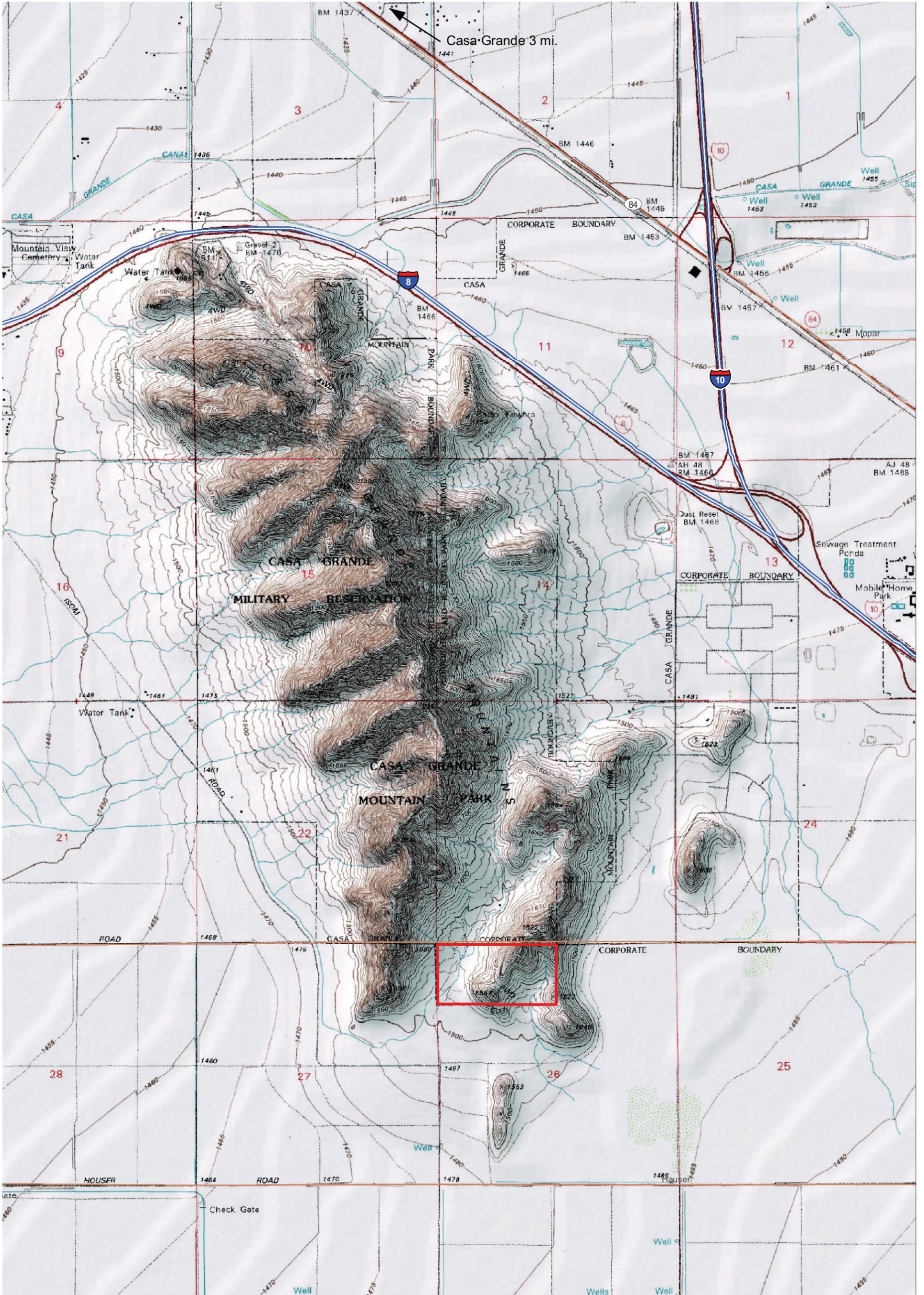
The study area is located within the northern half of the northwest quarter of Section 26, Township 7 South, Range 6 East, Gila and Salt River Meridian, Pinal County, Arizona (Figure 1-1). The study area is located at the southern end of Casa Grande Mountain, southeast of the City of Casa Grande, Arizona within the USGS Quad/Casa Grande 7.5 topographic map.

1.2 Purpose and Need for the Proposed Action

Casa Grande Mountain Park has attracted hikers, bikers, equestrian users, as well as off-highway vehicle (OHV) users who enjoy the recreational opportunities provided by the park. Members of the Casa Grande community have expressed their desire to protect the park and surrounding area by expanding the area available for passive, non-motorized recreation.

The BLM proposes to grant an R&PP lease of an 80-acre parcel of BLM-administered lands allowing the City to secure public access and to extend the Casa Grande Mountain Park from the south with the option to obtain a patent to the subject lands. The BLM parcel would also be used to provide additional recreational trails and would be considered for the potential future development of trails for Casa Grande Mountain Park. The City of Casa Grande has developed a 5-year construction and funding plan for the future development of the parcel (City and McGann and Associates 2010; Plan of Development [POD] incorporated by reference).

The purpose of this EA is for the BLM to evaluate and consider whether granting an R&PP lease of the 80-acre parcel to the City of Casa Grande—the Proposed Action—can be completed in an environmentally sound manner and whether the Proposed Action is consistent with BLM policies. Consistent with the National Environmental Policy Act, this EA has been prepared to provide sufficient evidence and analysis for: 1)



 BLM 80 Acre Parcel

FIGURE 1-1

determining whether to prepare a more detailed environmental impact statement or 2) making a finding of no significant impact.

1.3 Conformance to Laws, Federal Regulations, and Resource Management Plans

The Proposed Action has been reviewed to determine if it conforms with the terms and conditions of the Phoenix Resource Management Plan (RMP), approved in 1989, as required by 43 Code of Federal Regulations (CFR) 1610.5, BLM MS 1617.3. The lease of the property is in conformance with the Land Use Authorizations of the BLM Phoenix RMP. The Proposed Action would be in the public interest. The Proposed Action complies with Title, 2, Section 211 of the Federal Land Policy and Management Act (FLPMA) of 1976 for multiple use and sustained yield, and to federal regulations 43 CFR 2912 and 2740 for the disposal of public lands for leasing and patenting under the R&PP, as amended and policies.

1.4 Relationship to Statutes, Regulations or Other Plans or Policies

The BLM decision only authorizes use of BLM land. Use of non-BLM land (National Forest, State Trust land, private land) is subject to the agency or private landowners' permission.

Public lands in the area are not currently subject to U.S. Fish and Wildlife Service (USFWS)-recommended survey protocol for species listed under the Endangered Species Act (ESA). The action area is subject to inventory protocols for archaeological resources in accordance with the National Historic Preservation Act. All work related to the Proposed Action would be consistent with federal, state, and local laws; regulations; and plans including the Arizona Department of Agriculture (ADA)-administered Arizona Native Plant Law. The proposal does not preclude achievement of any expected or mandated standards.

Under the Migratory Bird Treaty Act (MBTA) of 1918 and subsequent amendments (16 USC 703-711), it is unlawful to take, kill, or possess migratory birds. Executive Order 13186, issued January 11, 2001, further defines the responsibilities of federal agencies to protect migratory birds; a list of those protected birds can be found in 50 CFR 10.13. The MBTA provides federal protection to all migratory birds including their nests and eggs. In order to relocate or alter any MBTA-protected nests, it is necessary to obtain a permit from the USFWS.

The following plans designed to guide land use in the region and study area were reviewed: *Pinal County Open Space Trails Master Plan*, *Casa Grande Trail System Master Plan*, *Casa Grande Mountain Park Trail System Master Plan*, *Pinal County Comprehensive Plan*, and *City of Casa Grande General Plan 2010*.

The City's 2010 General Plan identifies Casa Grande Mountain Park as a Park/Open Space area (City 2001). This designation denotes areas that are to be precluded from development except for public recreational facilities or nature preserves. The *General Plan* strives to create a linked open-space system through preservation of washes, public utility easements, and major corridors that link to the regional park and trail system (City 2001).

1.6 Scoping, Public Involvement, and Issues

The BLM Tucson Field Office published a Notice of Realty Action for the 80-acre parcel on March 27, 2007 in the *Federal Register* and on June 6, 2007 in the *Tucson Citizen* and *Arizona Daily Star*.

Prior to the Notice of Realty Action, the City Community Services Department conducted a public workshop in January 2005 concerning the Casa Grande Mountain Park, followed in March by an open house for the *Casa Grande Mountain Park Trail System Master Plan*. Public participants were surveyed during this open house, and comments were received from 25 participants.

In June 2005, the City Community Services Department conducted a Community Attitude and Interest Survey of local citizens to determine issues, concerns, and preferences related to community development. Survey forms were mailed to a random sample of 3,002 households within the City. The survey was designed and structured to establish priorities for the future development of park, recreation, and library facilities; programs; and services within the community. A total of 640 surveys were returned. Based on survey results, the top six facilities identified by the community as needed were:

- Libraries (78 percent)
- Walking and biking trails (60 percent)
- Picnic areas and shelters (60 percent)
- A large community park (59 percent)
- Small neighborhood parks (57 percent)

The results of the Community Attitude and Interest Survey indicated that walking and biking trails were the outdoor recreational facilities that respondents most wanted to see constructed in the community. Additionally, walking and biking trails were the facilities that the survey respondents were most willing to fund (McGann and Associates 2008).

In the fall of 2005, the City advertised information and meeting notices regarding the City's Trails Master Plan (which included potential trails within Casa Grande Mountain Park). Public meetings and open houses were held in October 2006 and May 2007 for the *Regional Trails System Master Plan*. Comments received from the public indicated support for the *Trails Master Plan* (City and McGann and Associates 2010). The City Council held regular meetings related to trails and the Casa Grande Mountain Park. These are outlined below:

- June 2006: *Regional Trails System Master Plan* professional services resolution
- October 2006: Public hearing on the *Community Services Department Master Plan*
- November 2006: Public hearing on the *Community Services Department Master Plan*
- June 2007: Public hearing on the *Major Amendment to the City General Plan 2010, Open Space and Recreation Element*
- July 2007: Study session on the *Regional Trails Master Plan*
- October 2007: Resolution on professional services to provide a Class III Cultural Resources Survey of the Casa Grande Mountain Park
- January 2008: Presentation and discussion on the *Regional Trails Master Plan*
- February 2008: Public hearing on the *Regional Trails Master Plan*
- May 2008: Council approval of the *Regional Trails Master Plan*
- July 2008: Public hearing on the *Casa Grande Mountain Park Trails Plan*

At these public meetings and focus group meetings, the community stated that the City should formalize a plan for Casa Grande Mountain Park to develop low-impact passive trails for the community.

Six private property owners located adjacent to the 80-acre BLM-administered parcel were contacted regarding the proposed R&PP lease. Additional information related to the contact and property owner response can be found in the POD (City and McGann and Associates 2010).

2.0 The Proposed Action and Alternatives

2.1 Alternative Considered but Eliminated

The BLM initially considered granting a R&PP lease to the City that would allow the expansion of Casa Grande Mountain Park for development of a parking lot with visitor facilities, necessary utilities, trailheads, and trails that would be shared between hiking, mountain biking, and equestrian use. This alternative was eliminated from consideration when a parcel of private land on the east side of Casa Grande Mountain Park was donated to the City, making it available for development (City and McGann and Associates 2010) and eliminating the need for development on the 80-acre BLM-administered parcel.

2.2 Proposed Action

The BLM proposes to grant an R&PP lease of an 80-acre parcel of BLM-administered lands, allowing the City to secure public access and to extend the Casa Grande Mountain Park from the south. The BLM-administered parcel would be incorporated into Casa Grande Mountain Park and used to extend the existing loop trail system by using existing social trails. Development within the parcel would include the reconditioning of existing social trails, clean-up of illegal dumping sites, revegetation of existing disturbed areas, and installation of perimeter wildlife-friendly fencing to discourage illegal dumping and motorized vehicle use (City and McGann and Associates 2010).

2.3 No Action Alternative

Under the No Action Alternative, the R&PP-lease application submitted by the City for the 80-acre BLM-administered parcel would not be approved. Use of BLM-administered lands by the City for park and trail network expansion would not be authorized. Access to the southern portions of the Casa Grande Mountain Park would be eliminated from the park's *Master Plan* (City 2008a; Appendix A).

Goals set by the *Casa Grande Mountain Park Master Plan* would not apply to the BLM parcel. Proposed City-managed trails would terminate at BLM parcel boundaries.

The parcel would remain available for recreation and management would continue as it has in the past. Roads and trails currently existing within the parcel would likely continue to be used by hikers, mountain bikers, and OHV riders.

3.0 Affected Environment and Environmental Consequences

During preliminary scoping for this EA, the following elements were dismissed from further analysis because they do not occur in the study area nor will they be impacted by the proposed action: Area of Critical Environmental Concern, Floodplain, Wetlands/Riparian Zones, Wild and Scenic Rivers, Prime Farmland, Wilderness, National Energy Policy, geology, grazing, rangeland management, mineral resources, and paleontology.

3.1 Land Use

The 80-acre BLM-administered parcel is currently managed for multiple use and is currently used primarily for recreational purposes. The parcel is bounded on the north by City of Casa Grande owned property (City of Casa Grande Mountain Park) and on the west, south, and east by privately owned property (six private properties) (Figure 3.1). The Casa Grande Mountain Park will continue to be managed for recreational use.

Privately owned parcels to the east consist of abandoned agricultural fields that are planned for future residential development. Privately owned parcels immediately adjacent to the BLM parcel on the south and west are relatively undisturbed Sonoran desertscrub. Agricultural fields are located beyond these parcels to the south and west.

There is an existing right-of-way within the study area. Right-of-way AZA 1182 was issued to the Arizona Army National Guard in 1967 for an Aerial Camera Calibration Range. This right-of-way was assigned to the BLM in 1997. This aerial marker will remain in effect within the study area.

The western edge of the study area is bisected by a large seasonal drainage flowing south from the mountains. East of the drainage, a low ridge rises above the wash floodplain. The ridge-line is relatively narrow, falling away rapidly to the east into a small valley bordered on the eastern side by a second ridge-line. The crest of the second ridge marks the eastern boundary of the study area.

A portion of the Casa Grande Mountains, northwest of the BLM parcel, is withdrawn to and managed by the Arizona Army National Guard for military use. The military parcel consists of approximately 800 acres of primarily undeveloped land. At present, the primary use of the property is for dismounted infantry operations, which occur on an irregular basis.

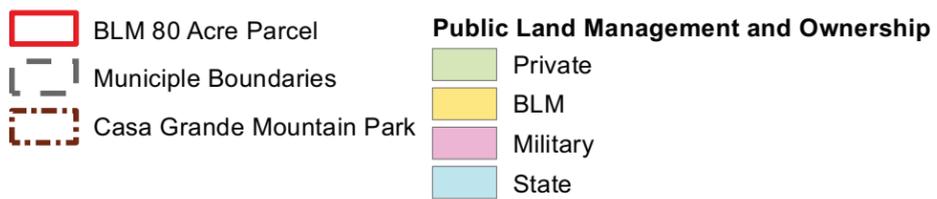
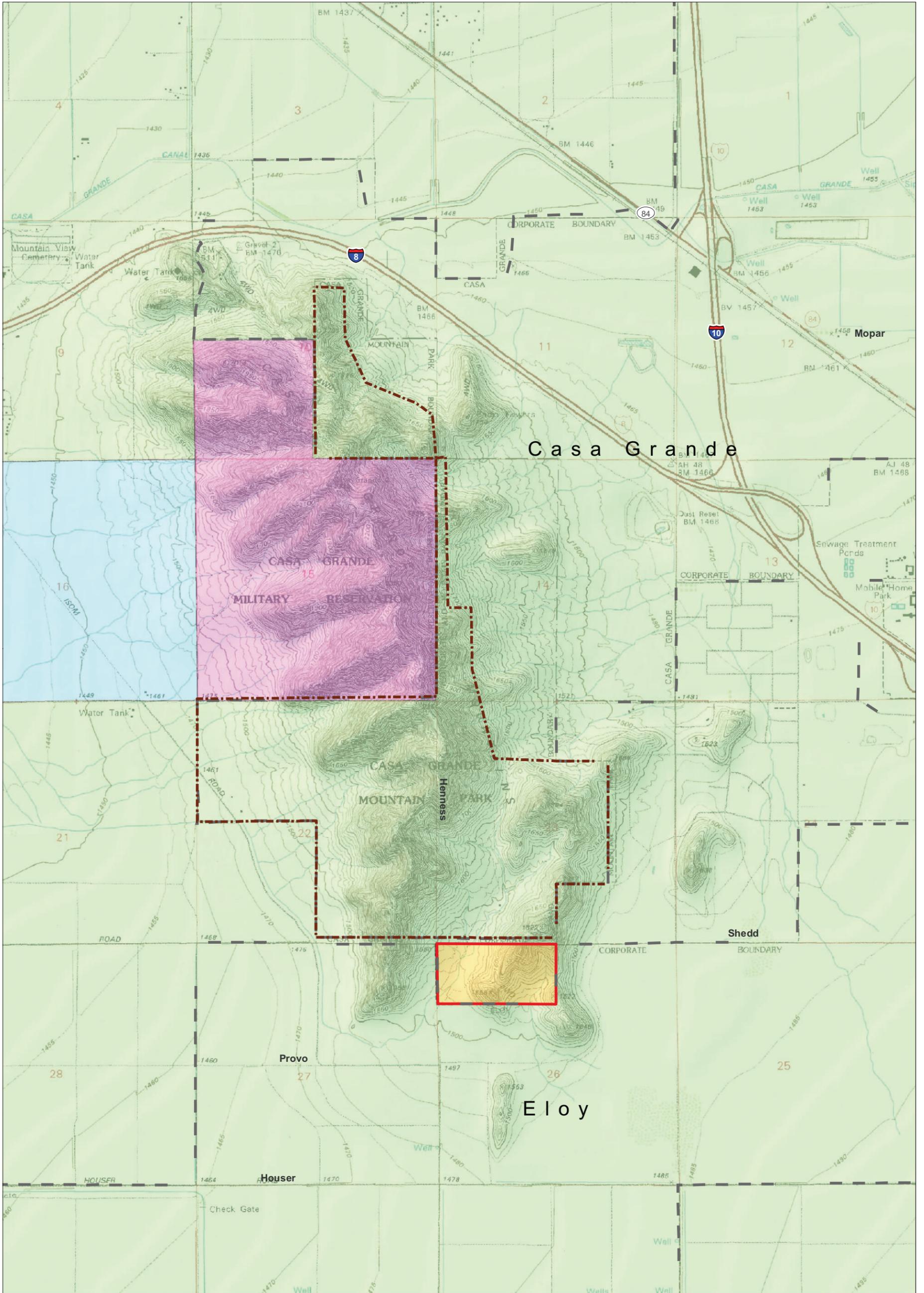


FIGURE 3-1

3.1.1 Impact of the Proposed Action

Under the Proposed Action, operations and maintenance that provide for improvements to the study area would be implemented, including restoration of disturbed areas, increased security and enforcement, closure of trails to motorized vehicle use, perimeter fencing, and removal of illegal (wildcat) trash dump sites. These improvements as well as the initiation of regular maintenance of the study area would result in beneficial impact. Beneficial impact would not likely extend beyond the study area boundaries.

Implementation of the Proposed Action would have no impact on land ownership surrounding the study area. Agriculture, recreation, and planned future residential areas would remain the same. Implementation of the Proposed Action would complement recreational use within the Casa Grande Mountain Park. Military training activities within lands managed by the Arizona Army National Guard would not change or be affected by the Proposed Action. The aerial marker right-of-way would not be disturbed or removed under the Proposed Action.

The Proposed Action would not be in conflict with land-use guidelines, plans, and regulations outlined in the *Draft Pinal County Comprehensive Plan* (Pinal County 2008) or *Casa Grande General Plan 2010* (City 2001), or area and regional plans. Overall, implementation of the Proposed Action would have little or no impact on land use within the City or Pinal County.

3.1.2 Impact of the No Action Alternative

Under the No Action Alternative, no changes to current land use of the study area would occur. Unpaved roads and trails would continue to be used by OHV and equestrian users, as well as hikers and mountain bike riders. Wildcat dumping would likely continue. Land ownership and use in the surrounding area would not be impacted by the No Action Alternative.

The No Action Alternative may be in conflict with area and regional trails plans. City and Pinal County plans for connection of trails within and to Casa Grande Mountain Park may be impacted by the inability to improve trails within the study area. This impact would be insignificant on a regional scale due to the relatively small size of the study area.

3.2 Utilities

No utilities are present within the study area. The nearest power lines are located approximately 0.25 mile to the south of the parcel, within agricultural fields. No other utility lines or underground utilities exist adjacent to the study area.

3.2.1 Impact of the Proposed Action

Under the Proposed Action, no utilities would be developed within the study area and no changes to current utility service adjacent to the study area would occur. The Proposed Action would have no impact on utility service within or surrounding the study area.

3.2.2 Impact of the No Action Alternative

Under the No Action Alternative, no changes to current utility service adjacent to the study area would occur. The No Action Alternative would have no impact on utility service within or surrounding the study area.

3.3 Access and Transportation

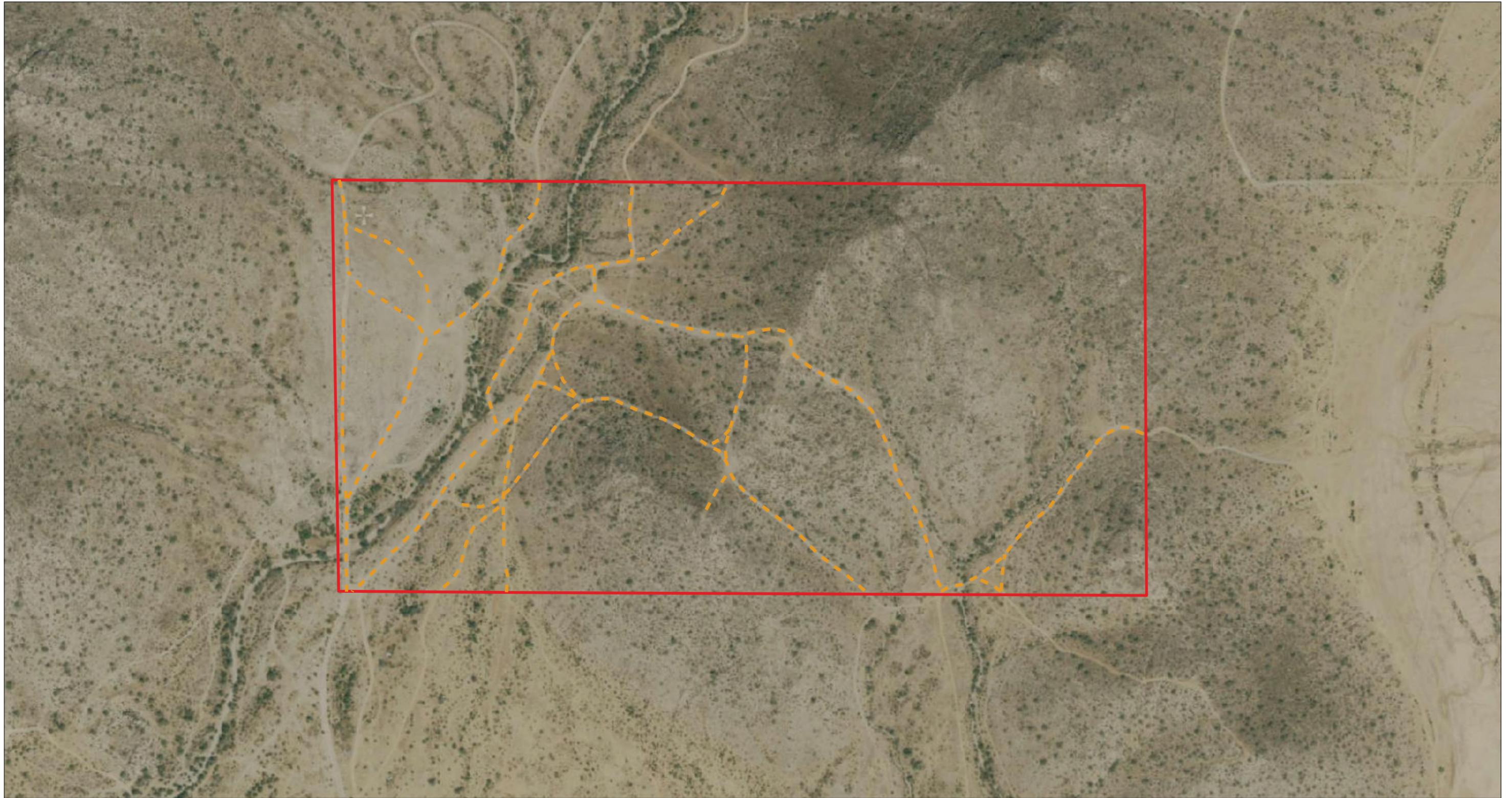
The study area is currently accessed primarily by rural roads. Roadways leading to the study area from the north are Isom Road, Provo Road to the west, and Henness Road to the south. Primary access to the parcel is from Henness Road. The City of Eloy is currently maintaining Henness Road between Santa Rosa Canal and Provo Road, Provo Road between Henness and Isom Road, and Isom Road between Provo and Shedd Road (this roadway is located west of the study area). Henness Road north of Provo Road is an unmaintained roadway used primarily for access to privately owned parcels.

No maintained roadways are located within the parcel. Several trails and unimproved roads (2.4 miles) are located within the study area (Figure 3-2).

3.3.1 Impact of the Proposed Action

Under the Proposed Action, the study area would be fenced, unpaved roads and trails within the study area would no longer be accessible by motorized vehicles. Henness Road would no longer be needed for access to the study area, reducing use of this roadway.

The Proposed Action would not result in safety hazards. Fence placement under the Proposed Action would not result in long-term or permanent restrictions of any lanes of primary or secondary arterials or intersections nor would it impact access to county- or city-maintained roadways. The Proposed Action would not result in any impact on local or regional transportation but would enhance the City of Casa Grande Mountain Park planned recreation use.



-  BLM 80 Acre Parcel
-  Trails and Unimproved Roads



FIGURE 3-2

3.3.2 Impact of the No Action Alternative

Under the No Action Alternative, no changes to current roads and trails within the study area would occur. All roads and trails would continue to be open to motorized vehicle use. Private and county roadways would continue to be used to reach the study area. The No Action Alternative would have no impact on transportation within or surrounding the study area.

3.4 Recreation

Recreational activities known to occur within the study area include hiking, mountain biking, horseback riding, target shooting, and OHV use. The use of OHVs is likely frequent in the study area and was documented during the site visit. Several sites within the study area show evidence of target shooting activities.

3.4.1 Impact of the Proposed Action

Under the Proposed Alternative, recreational use (primarily in the form of hiking) within and surrounding the study area may increase. Fencing of the 80-acre parcel under this alternative would increase security and the City would occasionally patrol the area, which would minimize unauthorized trash dumping and motorized vehicle entrance, resulting in a beneficial impact to the landscape, which would enhance the City of Casa Grande Mountain Parks' planned recreational use. Rules and regulations of the park would be posted at all park entrances.

Impacts may occur to visitors that frequently use the study area for motorized vehicle recreation due to the loss of access. Overall, impact to recreation would be minimal on a regional scale, and changes to motorized use of the study area would have minimal impact on local recreational users. Outreach to guide OHV users to other places to ride will occur.

3.4.2 Impact of the No Action Alternative

Under the No Action Alternative, existing roads and trails would likely continue to be used as they have in the past, including motorized use. Proposed City-managed trails would not be improved within the study area, terminating at study area boundaries to the north. The No Action Alternative would have minimal impact on recreation on a regional scale.

3.5 Visual Resources

3.5.1 BLM Visual Resource Management Overview

The FLPMA requires BLM to protect the quality of scenic values on public lands (43 USC 1701). To achieve this requirement, BLM has developed and uses an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality—the *Visual Resource Management (VRM) System*. This standard protocol is used for the inventory and analysis of visual resource values. The VRM system functions in two ways: first, in the inventory of visual resources and second, in their management (BLM 1984).

A visual resource inventory for the 80-acre BLM-administered parcel was not found within the 1989 *Phoenix Resource Management Plan*, which provides management direction for the region.

3.5.2 Visual Resources of the Study Area

The 80-acre BLM-administered study area is located at the southern end of Casa Grande Mountain Park, southeast of the city of Casa Grande, Arizona. The park is a moderate-sized, isolated mountain range located south of Interstate 8 and west of Interstate 10. Land within the study area contains typical Sonoran Desert vegetation including saguaro cacti, is a visual contrast to the surrounding floodplain and agricultural landscape, and provides opportunities for recreational use. Unpaved roads and trails exist within the study area and seem to be used on a regular basis. Portions of the park north and northwest of the study area are currently used for recreational purposes, including hiking trails, OHV, equestrian use, and target shooting.

A *Scenic Quality Field Inventory Form* and a *Visual Resource Classification Matrix* (Appendix A) were completed for the study area (RECON 2009) and reviewed by Arizona BLM staff. The overall scenic quality of the study area was determined to be Class B, and the management class was determined to be Level II. Scenic Quality B is due to the rolling hills rising from the adjacent relatively level floodplain lands. Management Class II is appropriate due to the sensitivity, high visibility by residents and recreationists, proximity to Picacho Peak State Park, and relatively undisturbed character. Class III would also be appropriate for certain areas at lower elevations that are adjacent to roads, agricultural fields, and other areas with moderate levels of disturbance.

3.5.2.1 Impact of the Proposed Action

Under the Proposed Action, the study area would be fenced, and unpaved roads and trails within the study area would no longer be accessible by motorized vehicles reducing

the visual impact of OHV vehicles and use. The Proposed Action includes restoration of disturbed areas (including roads and unauthorized trails) to blend with the surrounding landscape, elimination of motorized use along trails, and use of natural surfaces on trails which would follow existing landscape contours. Fences at the south and east boundaries would be placed to avoid impact to natural and cultural resources within the study area and to blend with the surrounding landscape. The Proposed Action would likely result in beneficial impact to visual quality in the form of revegetation of disturbed areas, removal of motorized use, and protection of natural and cultural resources by fencing of boundaries.

The Proposed Action would not result in substantial degradation of the existing viewshed or alteration of the character of the viewshed. The visual resources impact from implementation of the Proposed Action would be minimal overall.

3.5.2.2 Impact of the No Action Alternative

Under the No Action Alternative, no fencing, trail reconditioning, or closure of the site to OHV use would occur. Recreation use and activities would remain relatively the same as present. The No Action Alternative would not result in substantial degradation of the existing viewshed or alteration of the character of the viewshed, and impact to visual resources within the study area or surrounding landscape would remain minimal overall.

3.6 Air Quality

The Arizona Department of Environmental Quality (ADEQ) and the Environmental Protection Agency, subject to the *Arizona State Implementation Plan*, are responsible for regulating activities affecting air quality in the study area. Under the *State Implementation Plan*, federal land lies within an attainment area for all seven criteria pollutants (carbon monoxide, nitrogen oxides, volatile organic compounds, sulfur dioxide, ammonia, particulate matter less than 2.5 microns [PM_{2.5}], and particulate matter less than 10 microns [PM₁₀]; ADEQ 2008). Sources for PM₁₀ include fugitive dust, agricultural burning, and emissions. The 80-acre BLM-administered parcel is located within the Pinal County attainment area for all criteria pollutants, including PM₁₀.

3.6.1 Impact of the Proposed Action

Minor temporary impact to air quality from the Proposed Action during construction of the fence may result from vehicle and construction equipment emissions and fugitive dust. These emissions would likely be slight and would dissipate quickly following fence placement activities. All vehicles and equipment would be properly maintained to minimize exhaust emissions. Under the Proposed Action, beneficial impact to air quality in the form of reduced PM₁₀ emission would likely occur from the closure of the study

area to motorized use and reduction in recreational target shooting (likely to occur when the area is fenced).

3.6.2 Impact of the No Action Alternative

Under the No Action Alternative, motorized use of the study area would continue. This would result in vehicle emissions and fugitive dust. Overall, impact to regional air quality from the No Action Alternative would remain minimal.

3.7 Water Quality, Surface or Ground

The study area is located within the Santa Cruz River watershed (University of Arizona 2010). The study area is located approximately 1 mile west of the Santa Cruz River, which is ephemeral along its northern reach.

The study area is located within the Pinal Active Management Area (AMA) (Arizona Department of Water Resources 2010). The AMA designation is given to groundwater basins in the state of Arizona where irrigation uses threaten to exceed limited available water supplies. The *Pinal AMA Management Plan* is required to restrict irrigated acreage and specify water conservation measures.

Groundwater recharge in the vicinity of the study area occurs predominantly from the infiltration of surface waters through the permeable sediments of the drainages within the Casa Grande Mountains. Regional groundwater recharge occurs predominantly along the alluvium/bedrock interface of the Casa Grande, Sacaton, and Picacho mountains. The general direction of local groundwater flow is towards the south-southwest and regional groundwater flow is generally towards the west-northwest. The depth to groundwater in the vicinity of the study area is approximately 220 feet (Aplomado Environmental 2009).

A moderate-sized wash is located along the western portion of the study area, with the drainage directed southwestward from the southwestern portion of Casa Grande Mountain. Two small washes located in the east-central portion of the study area drain from the southern portion of Casa Grande Mountain southward, then meet near the southern boundary of the study area, forming one drainage. There are no surface waters located within the study area.

3.7.1 Impact of the Proposed Action

Activities related to the Proposed Action (fence placement, trail reconditioning, revegetation of disturbed areas, and clean-up of wildcat dumping and hazardous materials) would not result in adverse impact to surface water or groundwater resources.

No surface waters are found within the study area. Perimeter fencing placed along the western and southern boundaries of the study area would not disturb or impact washes or groundwater resources. Trail reconditioning would occur within existing social trails to meet new trail construction standards. Wherever trails cross a wash/drainage, construction standards would be used to minimize impact and reduce erosion potential (wash crossing details are found in the POD, City and McGann and Associates 2010). Revegetation of existing disturbed portions of the study area would result in beneficial impact to groundwater by reducing erosion potential. The removal and clean-up of wildcat dump sites and potential hazardous materials under the Proposed Action would also result in beneficial impact by removing potential sources of groundwater contaminants. Overall, the Proposed Action would result in minimal impact (primarily beneficial) to surface or ground water quality in the study area.

3.7.2 Impact of the No Action Alternative

Under the No Action Alternative, the study area would not be fenced, but remain open to motorized use. Existing social trails would not be reconditioned, disturbed areas would not be revegetated, and wildcat dump sites as well as potential hazardous materials would not be removed/cleaned. The No Action Alternative may result in increased erosion potential and contamination of groundwater from wildcat dump sites and hazardous materials spills. However; their impact is likely minimal overall within the study area and regional context.

3.8 Soils

A soil survey of western Pinal County characterizes the types of soils that occur within the study area (Natural Resource Conservation Survey 2008). The study area consists of the following soils:

- Vaiva–Rock outcrop complex, 15- to 50-percent slopes 44 percent
- Pinamt–Momoli complex, 1- to 8-percent slopes 42 percent
- Dumps–Pits association 9 percent
- Momoli–Carrizo complex, 1- to 8-percent slopes 3 percent
- Denure sandy loam, 1- to 3-percent slopes 1 percent
- Casa Grande fine sandy loam 1 percent

The study area ranges in elevation from 1,500 feet in the drainage in the western portion to 1,760 feet at the top of the highest hill in the central portion. The primary soil found

within the study area (44 percent), Vaiva–Rock outcrop complex, is found on the hillsides of the southeastern corner and north–central portions of the study area (Figure 3-3, unit symbol 47). The secondary soil type found in the study area (42 percent), Pinamt–Momoli complex, is found in the eastern and central portions of the study area (see Figure 3-3, unit symbol 37) (Natural Resource Conservation Survey 1991). The remaining soils are found within the western portion of the study area (see Figure 3-3).

3.8.1 Impact of the Proposed Action

Under the Proposed Action, development of the fence along the southern and eastern boundaries (less than 1 acre of disturbance overall) of the study area would not likely increase storm runoff or cause increased erosion and associated sedimentation. Fencing of the study area under the Proposed Action would minimize OHV use, which would likely result in a reduction in loss of topsoil and be beneficial impact to soil resources. Revegetation of disturbed areas would also result in beneficial impact to soils by minimizing erosion and sedimentation in previously disturbed areas.

The Proposed Action is not likely to result in an appreciable loss of topsoil that would endanger human health and safety or ecological conditions. In addition, the Proposed Action would have no impact to the function of existing drainage facilities and watercourses. Implementation of the Proposed Action would likely result in minimal, if any, impact to soils.

3.8.2 Impact of the No Action Alternative

Under the No Action Alternative, the study area would not be fenced, and disturbed areas would not be revegetated. Existing roads and trails would likely continue to have motorized use. Soil erosion and sedimentation would not likely continue or possibly increase. However; the No Action Alternative would likely result in less than significant impact to soil resources overall.

Figure 3-3
Soils of the Study Area.
Pinal County, Arizona, Western Part

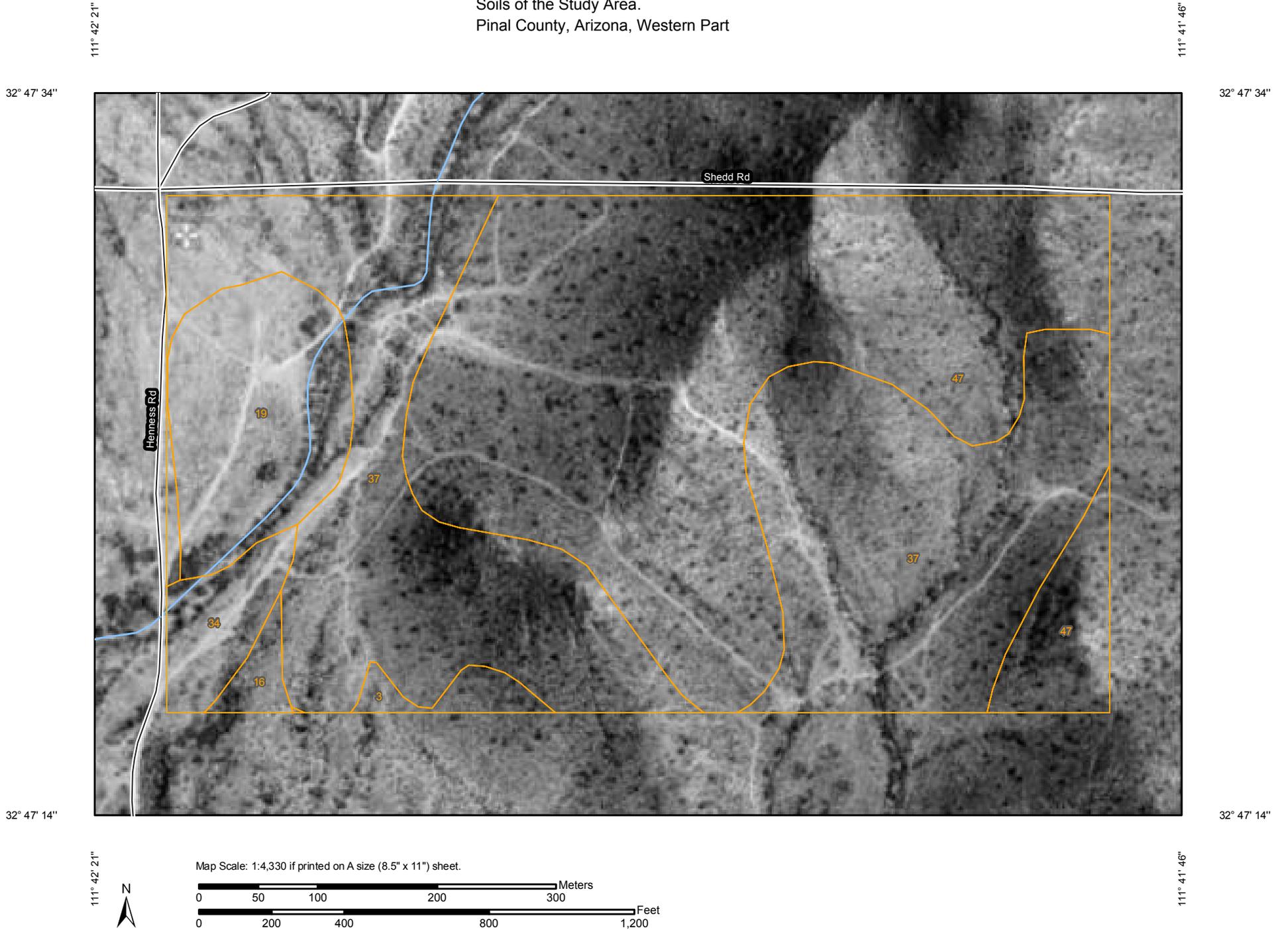


Figure 3-3
Soils of the Study Area.
Pinal County, Arizona, Western Part

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot

 Very Stony Spot

 Wet Spot

 Other

Special Line Features

-  Gully
-  Short Steep Slope
-  Other

Political Features

 Cities

Water Features

-  Oceans
-  Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:4,330 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pinal County, Arizona, Western Part
Survey Area Data: Version 7, Sep 4, 2008

Date(s) aerial images were photographed: 1996

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

| Pinal County, Arizona, Western Part (AZ659) | | | |
|---|---|--------------|----------------|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| 3 | Casa Grande fine sandy loam | 1.0 | 1.1% |
| 16 | Denure sandy loam, 1 to 3 percent slopes | 0.8 | 0.9% |
| 19 | Dumps-Pits association | 7.6 | 8.9% |
| 34 | Momoli-Carrizo complex, 1 to 8 percent slopes | 2.4 | 2.8% |
| 37 | Pinamt-Momoli complex, 1 to 8 percent slopes | 35.6 | 42.0% |
| 47 | Vaiva-Rock outcrop complex, 15 to 50 percent slopes | 37.6 | 44.3% |
| Totals for Area of Interest | | 84.8 | 100.0% |

3.9 Biological Resources

Biological resources of the study area are detailed in the Biological Evaluation Report for the study area (Appendix B; RECON 2010). A summary of the findings is provided below.

3.9.1 Vegetation

The study area is within the Lower Colorado River Valley subdivision of the Sonoran desertscrub biome (Brown 1994). Vegetation varies from the creosotebush–bursage series in the lower foothill areas to the paloverde–cacti–mixed scrub series on hillsides and ridges (Brown 1994).

The ADA has the responsibility of protecting Arizona’s native plants and enforces the Arizona Native Plant Law (ANPL). Plants cannot be removed from any lands, whether they are owned by a private individual or managed by a government agency, without permission and a permit from the ADA. Lessees of state or federal land must obtain specific authorization from the landlord agency to remove protected native plants (ADA 2008).

Several native plants protected by the ANPL occur within the study area. Most desert plants fall into one of five groups specially protected from theft, vandalism, or unnecessary destruction by the ANPL. This list includes all of the cacti, ocotillo, most of the trees (ironwood [*Olneya tesota*], paloverde [*Cercidium*], and mesquite [*Prosopis*]), and many of the smaller plants. The five categories of protected plants are:

1. highly safeguarded (essentially endangered species)
2. salvage-restricted (cacti and ocotillo)
3. export-restricted
4. salvage-assessed (common desert trees)
5. harvest-restricted (yucca and others)

The ADA also maintains a list of regulated and restricted noxious weeds. A listed noxious weed, buffelgrass (*Pennisetum ciliare*), was observed south of the study area. This weed is listed as regulated and, if found, may be controlled or quarantined to prevent further infestation or contamination. The ADA should be contacted prior to any construction or development activities to determine if any measures are required to minimize the spread of listed noxious weeds (ADA 2008).

3.9.1.1 Impact of the Proposed Action

Under the Proposed Action, any plants protected under the ANPL would be avoided during placement of the perimeter fence. Reconditioning, maintenance, and closure of trails would occur within existing social trails and disturbed areas, no ANPL species would be disturbed during these activities. The Proposed Action would have no impact on ANPL-protected plant species.

The Proposed Action would not result in significant long-term destruction or loss of vegetation resources. The Proposed Action would not result in significant impact to vegetation resources.

The City of Casa Grande Maintenance Plan for the park includes maintenance of noxious weeds (City and McGann and Associates 2010). The maintenance plan as outlined in the POD would have specific measures to control and restore areas with buffelgrass within the park, including the 80-acre BLM-administered parcel. The Proposed Action would have a beneficial impact on the control of noxious weeds.

3.9.1.2 Impact of the No Action Alternative

Under the No Action Alternative, existing roads and trails would likely continue to have motorized use, potentially impacting ANPL-protected plant species adjacent to high-use areas. Vegetation may be disturbed or destroyed from unauthorized activities and OHV use within the parcel, but it is difficult to determine if impact would occur. The No Action Alternative would not likely result in significant and long-term destruction or loss of vegetation resources. Under the No Action Alternative, invasive species may increase within the study area; however, it is not likely that the increase would be significant relative to the overall Casa Grande Mountain Park and surrounding area. Overall, impact that may occur under the No Action Alternative would be minimal on a regional scale.

3.9.2 Special Status Species

3.9.2.1 Federally Listed Species

A Biological Evaluation of the 80-acre parcel was conducted (Appendix B), and a summary of the findings are presented in this section. During the site visit, no federally listed species were observed.

Under the MBTA of 1918 and subsequent amendments (16 USC 703-711), it is unlawful to take, kill, or possess migratory birds. Executive Order 13186, issued January 11, 2001, further defines the responsibilities of federal agencies to protect migratory birds; a list of those protected birds can be found in 50 CFR 10.13. The MBTA provides federal

protection to all migratory birds including their nests and eggs. In order to relocate or alter any MBTA-protected nests, it is necessary to obtain a permit from the USFWS.

Based on the habitat conditions observed within the study area and technical assistance guidance from the USFWS (Appendix C), it was concluded that potential foraging habitat for one federally listed species—the lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*)—may occur in or adjacent to the study area. Table 1 of Appendix B presents habitat and distribution requirements for the remaining species and reasons for exclusion from further analysis.

Lesser long-nosed bat. In Arizona, lesser long-nosed bats are found in desert grassland and shrubland up to oak transition habitats. They roost in caves, mines, tunnels, and occasionally in old buildings. This species typically forages in areas of saguaro (*Cereus giganteus*), ocotillo (*Fouquieria splendens*), paloverde, prickly pear (*Opuntia*), and organ pipe cactus (*Stenocereus thurberi*). Later in the summer they forage among agave. The lesser long-nosed bat is found at lower elevations, below about 3,500 feet, from April to at least September or October (Arizona Game and Fish Department [AZGFD] 2003a).

The lesser long-nosed bat was listed by the USFWS as endangered without critical habitat in 1988 (USFWS 2001). Threats to this bat species include exclusion and disturbance, which result in the reduction of numbers of maternity colonies and decline in size of remaining maternity colonies in Arizona and Sonora. This species is easily disturbed at roost sites (AZGFD 2003a).

The study area contains potential foraging habitat for the lesser long-nosed bat, specifically, saguaro cacti. Based on AZGFD distribution maps for this species, lesser long-nosed bats are known to occur within 21 miles of the study area. Generally, lesser long-nosed bats forage as close to their roost sites as possible. This strategy is energetically efficient and emphasizes the importance of maintaining food sources in proximity to roost sites (USFWS 2007). However, foraging studies have also shown that lesser long-nosed bats will fly long distances to forage even when forage resources are available closer to roost sites (USFWS 2007). No known roost sites are located in or immediately surrounding the study area.

A. Impact of the Proposed Action

Under the Proposed Action, operations and maintenance that provide for improvements to the study area would be implemented including restoration of disturbed areas, increased security and enforcement, closure of trails to motorized vehicle use, perimeter fencing, and removal of illegal (wildcat) trash dump sites. These proposed actions would not likely result in direct impact to the lesser long-nosed bat.

The study area contains saguaros, which are an important forage species for the lesser long-nosed bat. The USFWS recommends the on-site preservation of all saguaros within the study area. Under the Proposed Action, existing social trails would be used and reconditioned, no vegetation disturbance would occur, and no saguaros would be removed. Fence placement would avoid saguaros and minimize disturbance to native vegetation.

Habitat connectivity between/among foraging areas and roost sites is important for the conservation of lesser long-nosed bats. Washes are important connectivity and movement corridors for this species. Under the Proposed Action, every effort would be made to maintain the maximum coverage of wash habitat within the study area to provide connectivity for the lesser long-nosed bat. The Proposed Action would not result in a substantial loss of a critical, yet limited, ecological constituent of significant importance to the lesser long-nosed bat. The Proposed Action is not likely to adversely affect the lesser long-nosed bat.

B. Impact of the No Action Alternative

Under the No Action Alternative, continued OHV use of the study area—along with wildcat dumping and recreational target shooting—would likely result in further disturbance of vegetation communities. However, the No Action Alternative would not result in a substantial loss of a critical, yet limited, ecological constituent of significant importance to the lesser long-nosed bat.

3.9.2.2 BLM Sensitive Species

BLM sensitive species designation is normally used for species that occur on BLM-administered lands for which BLM has the capability to significantly affect the conservation status of the species through management.

Guidance for management related to BLM sensitive species is found in Manual 6840. Criteria for BLM sensitive species include the following:

1. Possibility to become endangered in or extirpated from a state, or within a significant portion of its distribution in the foreseeable future
2. Under status review by the USFWS and/or National Marine Fisheries Service
3. Undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution
4. Undergoing significant or predicted downward trends in population or density such that federally listed, proposed, candidate, or state listed status may become necessary

5. Typically small and widely dispersed populations
6. Inhabiting ecological refugia, or specialized or unique habitats
7. State-listed but may be better conserved through application of BLM sensitive species status. Such species should be managed to the level of protection required by state laws or under BLM policy for candidate species, whichever would provide better opportunity for its conservation.

The BLM list for sensitive species for Arizona was reviewed for species that occur within Pinal County (Table 2). In addition, the AZGFD On-line Environmental Review Tool reviewed for Arizona-listed wildlife species of concern (WSC) known to occur within 3 miles of the study area (Appendix B).

Based on the habitat conditions observed within the study area, it was concluded that eight BLM sensitive species (including two WSCs; Sonoran desert tortoise [*Gopherus agassizii*] and cactus ferruginous pygmy-owl [*Glaucidium brasilianum cactorum*]) may occur in or adjacent to the study area. These species are discussed below.

The BLM list for sensitive species for Arizona was reviewed for species that occur within Pinal County (Appendix B, Table 2). Species habitat requirements were reviewed to determine which species may occur within or adjacent to the 80-acre parcel. Based on the habitat conditions observed within the study area, it was concluded that potential habitat may occur within the study area for the following BLM sensitive species: Tumamoc globeberry (*Tumamoca macdougalii*), chuckwalla (*Sauromalus obesus*), Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*), burrowing owl (*Athene cunicularia*), cave myotis (*Myotis velifer*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*).

Tumamoc globeberry is a perennial vine that typically occurs in xeric situations, in the shade of a variety of nurse plants along gullies and sandy washes of hills and valleys in Sonoran desertscrub and Sinaloan thornscrub communities. Threats to this species include urbanization, farming, grazing, recreation, habitat conversion, off-road vehicle use, and pesticides (AZGFD 2004).

Chuckwalla is a large dark-bodied lizard found predominantly near cliffs, boulders, or rocky slopes where they use rocks as basking sites and rock crevices for shelter. Within Arizona, this lizard species can be found at elevations ranging from 1,040 to 2,410 feet within creosote bush vegetation communities. Populations of this species have been decreasing due to the pet trade demand of them (AZGFD 2005).

Tucson shovel-nosed snake can be found in arid deserts with sandy washes, dunes, and rocky hillsides from elevations ranging from sea level to 4,700 feet.

Threats to this species are not well known, but potential barriers to migration and movement include highways, major roads, and streams (AZGFD 2002a).

Burrowing owl can be found in open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands, most often associated with burrowing mammals. Threats to this species include poisoning of squirrels and prairie dogs to control populations, habitat alternation, fragmentation, and loss of edge habitat (AZGFD 2001a).

Sonoran desert tortoise. The Sonoran population of the desert tortoise occurs primarily on rocky slopes and bajadas of Mojave and Sonoran desertscrub. Sonoran desert tortoise is most often found in paloverde–mixed cacti vegetation associations. Caliche caves in incised, cut banks of washes are also used for shelter sites, especially in the Lower Colorado River Valley vegetation subdivision (AZGFD 2001b).

In 1988, the BLM issued a habitat management plan for conservation of the desert tortoise on public lands throughout its range in the United States. The plan includes three goal oriented categories as follows:

- Category I: Maintain stable, viable populations and protect existing tortoise habitat values; increase populations, where possible.
- Category II: Maintain stable, viable populations and halt further declines in tortoise habitat values.
- Category III: Limit tortoise habitat and population declines to the extent possible by mitigating impacts.

Cactus ferruginous pygmy-owls inhabit fairly dense thickets or woodland areas of the Sonoran Desert. For nesting, this owl species requires saguaros or trees that are large enough to contain nesting cavities (typically created by woodpeckers). Multi-layered ground cover, mid-story, and canopy cover are important to provide habitat for the pygmy-owl's prey.

Cave myotis and pocketed free-tailed bat. Cave myotis bats are typically found in desert-crub vegetation of creosote, brittlebush, paloverde, and mixed cacti. Pocketed free-tailed bats may also be found in desertscrub vegetation. These bat species may roost in caves, tunnels, and mineshafts, as well as under bridges and sometimes in buildings within a few miles of water. Threats include disturbance of maternity roosts, habitat loss caused by excessive development, recreational caving, mine closures, roost destruction, and loss of foraging habitat in riparian zones (AZGFD 2002b for cave myotis; AZGFD 2003b for pocketed free-tailed bat).

A. Impact from the Proposed Action

Potential habitat for these BLM sensitive species is found within the study area and vicinity. Proposed perimeter fencing and trail improvements within the study area would not likely disturb these species, their habitat, or foraging areas. Proposed trails would be developed within existing social trails, with no new disturbance proposed. Perimeter fencing would result in beneficial effects by closing the study area to motorized use, a threat to all of these species. Trails would be developed within existing social trails, with no new disturbance proposed. Operations and maintenance under the Proposed Action that provide for improvements to the study area—also resulting in beneficial impact to special status species—would include restoration of disturbed areas with native vegetation, increased security and enforcement, closure of trails to motorized vehicle use, perimeter fencing, and removal of illegal (wildcat) trash dump sites by increasing potential cover, nesting, and foraging habitat, and removing potential threats (motor vehicles and toxic waste).

For the Tucson shovel-nosed snake, the USFWS has requested surveys to be conducted, if possible, to determine if the Tucson shovel-nosed snake occupies the study area (Appendix C). Because occupancy of the Tucson shovel-nosed snake is difficult to determine, USFWS recommends that any construction would occur in areas of existing disturbance to reduce impact to soil conditions that are favorable to this species and reduce the potential for direct mortality (Appendix C).

The study area contains potential habitat for the cactus ferruginous pygmy-owl; however, no pygmy-owls have been recorded within 3 miles of the study area (AZGFD 2010). Many of the same habitat features important for the lesser long-nosed bat are also important for the pygmy-owl. Protection of saguaros within the study area would protect potential nest sites, and conservation of wash habitat would maintain foraging and movement corridors for pygmy-owls. If any construction activities would occur during the pygmy-owl breeding season (February 1 through June 30), the USFWS recommends surveys to document presence or absence of pygmy-owls (Appendix C).

For the Sonoran desert tortoise, the study area is likely considered Category I or II habitat. The AZGFD Heritage Data Management System (HDMS; AZGFD 2010)-listed desert tortoise is known to occur within 3 miles of the study area. Mitigation measures as outlined in the *Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat* (Appendix D; Arizona Interagency Desert Tortoise Team [AIDTT] 2008) relevant to the Proposed Action would be implemented during fence development and site restoration activities. These measures would reduce potential impact to this species, if it is found to be present in the study area, to a less than significant level.

B. Impact of the No Action Alternative

Under the No Action Alternative, existing roads and trails would likely continue to have motorized use, potentially impacting BLM sensitive species adjacent to high-use areas. Overall, impact to BLM sensitive species that may occur under the No Action Alternative would likely be minimal on a regional scale.

3.10 Cultural Resources

3.10.1 Cultural Background

A cultural history for the study area was developed by Desert Archaeology, Inc. The pre-historic summary of the study area is provided in the cultural report and is not repeated in this EA. A summary of the history of the area is provided; this history supplies a simplified outline of events and processes that may have influenced human occupation of the project area (Desert Archaeology, Inc. 2009).

Historic Era (A.D. 1690–1950). Although the Historic Period begins with Hispanic occupation of southern Arizona, there was no large movement of Euro–American settlers into the Casa Grande area until the mid-nineteenth century. The city was named for the Casa Grande ruins some 15 miles to the east. Casa Grande was founded in 1879, when it became the terminus of the Southern Pacific railroad. In 1880 the railroad was extended south and eastward to Tucson. Since that time, the local economy has been largely agricultural, with irrigated farms fed by wells in the valleys and ranching being pursued on surrounding slopes. The area is beginning to experience urban development, as residential developments slowly replace agricultural fields and native desert rangeland (Desert Archaeology Inc. 2009).

3.10.2 Cultural Resources Survey

A records check was conducted for the 80-acre BLM-administered parcel. It was found that no previous cultural surveys or sites were recorded within 1 mile of the study area. General Land Office records were examined for evidence of historical use of the area. Maps dated to 1890 and 1930 did not show any historical features within the study area.

Archaeological field surveys of the study area revealed three archaeological sites, AZ AA:2:291 (Arizona State Museum [ASM]), AZ AA:2:292 (ASM), and AA:2:308. Site AA:2:291 is interpreted as a wildcat dumping episode lacking documentable association with specific people or historical events and is not considered to meet eligibility requirements for inclusion to the National Register of Historic Places. No further work was recommended for AA:2:291 (Desert Archaeology, Inc. 2009).

Site AA:2:292 and AA:2:308 are considered to meet eligibility requirements for inclusion on the National Register based on the potential of the sites to provide significant information about prehistoric landscape and resource use. Site AA:2:292 is a lithic procurement site located on the southern slope of a volcanic outcrop. An existing hiking trail crosses Site AA:2:292. Site AA:2:308 consists of a small low-density lithic scatter that appears to have served as a lithic procurement site (Desert Archaeology, Inc. 2009). An existing unimproved road bisects the site. No modifications should be made to the existing trail crossing Site AA:2:292 or to the road bisecting Site AA:2:308. Additional archaeological field work would be required at sites AA:2:292 and AA:2:308 in areas where construction would occur if these sites cannot be avoided. In addition, an archaeological data recovery plan would be required prior to development at the sites.

3.10.2.1 Impact of the Proposed Action

Under the Proposed Action, Sites AA:2:292 and AA:2:308 would be avoided during fence-placement and trail-restoration activities. In addition, no modifications would be made to the existing trail or road through the sites to avoid impact.

The Proposed Action would not diminish the integrity of either Site AA:2:292 or Site AA:2:308's location, design, setting, material, workmanship, feeling, or association. The Proposed Action would not lead to adverse impact to cultural resources within the study area, including Sites AA:2:292 and AA:2:308.

3.10.2.2 Impact of the No Action Alternative

Under the No Action Alternative, no perimeter fencing would be developed and trails would not be restored. Existing roads and trails would likely continue to be used, including OHV use. The existing trail and road crossing Sites AA:2:292 and AA:2:308 would likely remain in their current state under this alternative. The No Action Alternative would not likely diminish the integrity of the location, design, setting, material, workmanship, feeling, or association of either Site AA:2:292 or Site AA:2:308. The No Action Alternative would not lead to adverse impact to cultural resources within the study area, including Sites AA:2:292 and AA:2:308.

3.11 Native American Religious Concerns

The BLM Tucson Field Office will consult with the Four Southern Tribes related to the Proposed Action. Any comments related to Native American Religious Concerns will be addressed by BLM.

3.12 Wastes, Hazardous or Solid

Aplomado Environmental performed a *Phase I Environmental Site Assessment* for the 80-acre BLM parcel. The site reconnaissance of the study area found the following: wildcat dumping of household trash, landscape debris, construction debris, and automobile tires in the southwestern portion; wildcat dumping of automobile tires in the southeastern portion; surface staining, atypical odors, and stressed and dying vegetation in connection with petroleum products and a crystalline substance released from discarded 5-gallon buckets and a 10-gallon container in the central–western portion; surface staining and a black, tar-like substance released from a discarded partial 5-gallon drum in the central–western portion; and evidence of target shooting in the cleared area in the western portion. The assessment and records search did not reveal evidence of recognized environmental conditions in connection with the study area except for the above-mentioned findings (Aplomado Environmental 2009). BLM hazardous materials specialists visited the parcel for further evaluation as well.

3.12.1 Impact of the Proposed Action

Activities related to the Proposed Action (fence placement and trail restoration) would not result in release of hazardous waste. Under this alternative, the City of Casa Grande would request permission from BLM for the disposal of dumped materials, remediation and disposal of substances and impacted soils, and assessment of surface soils for lead contamination. The City of Casa Grande would notify BLM prior to disposal of hazardous materials and comply with all BLM and federal stipulations related to the clean-up and disposal of these materials. Based on these measures, the Proposed Action would result in beneficial impact to the environment from the removal of hazardous materials. In a regional context, impact from the Proposed Action would likely be less than significant.

3.12.2 Impact of the No Action Alternative

Under the No Action Alternative, the study area would not be fenced, remaining open to motorized use. Wildcat dumping and hazardous waste disposal would likely continue. Existing dump sites and hazardous materials would not likely be removed under the No Action Alternative.

3.13 Public Health and Safety

The Casa Grande Regional Medical Center has the capacity for 240 beds. Medical professionals in Casa Grande include: 41 physicians (11 consulting physicians), 4 orthodontists, 12 chiropractors, 4 obstetricians, 9 optometrists, and 17 dentists. Also, 32

additional physicians (specialists) are available through the Associated and Allied Health Professions (City 2008b).

Police protection is provided by the City's 79 sworn-officer positions in the police department and the Pinal County Sheriff's Department. The Casa Grande Fire Department has 34 full-time and 18 paid-call members. The department provides 24-hour service and protection to over 38,000 residents within the City limits. Services include advanced life support paramedics, fire prevention and suppression, hazardous materials mitigation, and technical rescue (City 2008b).

3.13.1 Impact of the Proposed Action

Development of the boundary fence within the study area would include goals to increase security and enforcement of existing laws and regulations within Casa Grande Mountain Park. In addition, rules and regulations would be posted at park entrances, patrols of the park would be increased, and a volunteer citizens' patrol would be sought. Motorized vehicles would be prohibited on all trails. The park and all trails would be closed from sunset to sunrise.

Based on the measures outlined above, the Proposed Action would not likely lead to an increased demand for police, fire, or medical services. The Proposed Action would not result in significant impact to public health and safety.

3.13.2 Impact of the No Action Alternative

Under the No Action Alternative, no perimeter fencing would be developed and existing trails would not be reconditioned. Demand for services would remain relatively the same. The No Action Alternative would not result in significant impact to public health and safety.

3.14 Social and Economic Conditions

The City was founded in 1879 during the Arizona mining boom. Located mid-way between Phoenix and Tucson, the City has grown to be the largest community in western Pinal County since its incorporation in 1915.

As of the 2000 census, there were 25,224 people; 8,920 households; and 6,547 families residing in the City (U.S. Census Bureau 2008). The population density was 523.7 people per square mile, and there were 11,041 housing units at an average density of 229.2/square mile (U.S. Census Bureau 2008). The Arizona Department of Economic Security reported that the population of Casa Grande had increased in 2007 to 42,422 people (Arizona Department of Commerce 2008).

In 2000, there were 8,920 households out of which 37 percent had children under the age of 18 living with them; 52 percent were married couples living together; 15 percent had a female householder with no husband present; and 27 percent were non-families. Approximately 22 percent of all households were made up of individuals, and 9 percent had someone living alone who was 65 years of age or older. The average household size was 2.80 persons, and the average family size was 3.24 persons (U.S. Census Bureau 2008).

The age of the City's population was somewhat diverse, with 31 percent under the age of 18, 9 percent from 18 to 24 years of age, 26 percent from 25 to 44 years of age, 20 percent from 45 to 64 years, and 14 percent who were 65 years of age or older. The median age was 32 years of age (U.S. Census Bureau 2008).

In 2000, the median income for a household in the City was \$36,212, and the median income for a family was \$40,827. The per capita income for the City was \$15,917. About 16 percent of the population was below the poverty line, with 21 percent under age 18 and 12 percent of age 65 or over (U.S. Census Bureau 2008).

The economy of Casa Grande was historically based on rural, agricultural industries such as cotton and dairy farms. Over time, the City has become home to many Phoenix or Tucson urbanites who own houses in Casa Grande. Most residents either commute north to work in the Phoenix metropolitan area or to south to work in Tucson. This trend has contributed to growth in the service industry of Casa Grande. Many new businesses such as restaurants, gas stations, and retail outlets are opening throughout the City to keep up with demand from the growing population (City 2008).

3.14.1 Impact of the Proposed Action

The development of perimeter fencing and conditioning of trails within the study area is not anticipated to contribute to increased local or regional populations or change housing or economic conditions in the City or surrounding area. The Proposed Action would not result in significant impact to social and economic conditions locally or regionally.

3.14.2 Impact of the No Action Alternative

The No Action Alternative would continue to have no impact on the local population, housing, or economic conditions.

3.15 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 CFR 7629, 16 February 1994) directs

federal agencies to “make . . . achieving environmental justice part of its mission” and identify and address “disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.” To address this issue, this section identifies minority and low-income populations within the study area that may be affected by implementation of the Proposed Action. Demographic information on ethnicity, race, and economic status is provided in this section as the baseline against which potential effects can be identified and analyzed.

3.15.1 Low-Income and Minority Populations

Low-income populations are defined by environmental justice guidance using the statistical poverty thresholds of the U.S. Census Bureau. In 1999, the poverty-weighted average threshold for a family of four was \$17,029 and \$8,501 for an unrelated individual (U.S. Census Bureau 2003). In 1999, the national poverty level was 12.4 percent for individuals and 9.2 percent for families. In order to be classified as “meaningfully greater,” local poverty rates must exceed the national rate by 10 percent; this threshold is 22.4 percent. The City’s 2000 census poverty rate for individuals was 16 percent and for families 12 percent (U.S. Census 2008). Overall, the poverty rates for individuals and families within the City were higher than the national average but below the “meaningfully greater” threshold for the nation.

Minorities consist of persons of Hispanic or Latino origin of any race, Blacks or African Americans, American Indians or Alaskan Natives, Asians, and Native Hawaiian and other Pacific Islanders. The Council of Environmental Quality (CEQ) identifies these groups as minority populations when either:

- The minority population of the affected area exceeds 50 percent; or
- The minority population percentage in the affected area is meaningfully greater than the minority population percentage in the general population or appropriate unit of geographical analysis.

In order to be classified as “meaningfully greater,” a local population must exceed the state minority population by 10 percent; in the state of Arizona, this threshold is 36.2 percent.

In 2000, the racial makeup of the City was 65 percent White, 4 percent Black or African American, 5 percent Native American, 1 percent Asian, 42 percent from other races or from two or more races. Approximately 40 percent of the population was Hispanic or Latino (U.S. Census Bureau 2008). The population of minorities with the City was higher than the national average of 25 percent and higher than the “meaningfully greater” threshold of 36.2 percent for the state of Arizona.

3.15.1.1 Impact of the Proposed Action

The Proposed Action would have no adverse impact on low-income or minority populations. No disproportionate impact to these populations would occur under the Proposed Action.

3.15.1.2 Impact of the No Action Alternative

The No Action Alternative would continue to have no impact on low-income and minority populations.

3.15.2 Protection of Children

Executive Order Protection of Children from Environmental Health Risks (April 21, 1997) recognizes a growing body of scientific knowledge that demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: 1) children's bodily systems are not fully developed, 2) children eat, drink, and breathe more in proportion to their body weight, 3) their size and weight may diminish protection from standard safety features, and 4) their behavior patterns may make them more susceptible to accidents. Based on these factors, the President directed each federal agency to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The President also directed each federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

3.15.2.1 Impact of the Proposed Action

The Proposed Action would not result in disproportionate environmental health risks or safety risks to children.

3.15.2.2 Impact of the No Action Alternative

The No Action Alternative would not result in disproportionate health risks or safety risks to children.

3.16 Cumulative Impact

Cumulative impact, as defined by the Council on Environmental Quality (40 CFR 1508.7), is the impact on the environment that results from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. Cumulative impact is interdisciplinary, multi-jurisdictional, and usually does not

conform to political boundaries. Cumulative impact can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). If a project would have no impact on a resource, it cannot contribute to cumulative impact to that resource.

3.16.1 Projects Evaluated for Cumulative Analysis

To determine cumulative impact, all past, present, and future actions were evaluated within the same geographic extent (the area surrounding Casa Grande Mountain) as the Proposed Action study area. Existing environmental conditions in the vicinity of the study area reflect changes brought about by long-term human occupancy and use. Agriculture, military training, residential development, and recreation activities have occurred and are occurring in the general vicinity of the study area. Projects and activities presently occurring in the surrounding area include:

- The City of Casa Grande manages the majority of Casa Grande Mountain north of the study area as a park for hiking, biking, and equestrian use.
- Approximately 800 acres of land north of the BLM-administered parcel is managed by the Arizona Army National Guard primarily for dismounted infantry operation training.
- Approximately 640 acres of land northwest of the study area is managed by the Arizona State Land Department primarily as open space.
- Existing low- to medium-density residential development is present east and northeast of the study area. Some portions of this area have not yet been developed.
- Land use south of the study area consists primarily of privately owned relatively undisturbed Sonoran desertscrub or agricultural fields.
- Land east of the study area is privately owned and consists of relatively undisturbed Sonoran desertscrub.

Reasonably foreseeable future actions include:

- Continued use of the Arizona Army National Guard lands for training.
- Increased recreational activity within Casa Grande Mountain Park and development of trailheads and parking areas on the east side of the park.
- Continued agricultural activities south of the study area

- Increase in residential development east of Casa Grande Mountain (within the existing residential development area).

3.16.2 Cumulative Impact of the Proposed Action

Overall, there would be no significant direct or indirect effects to resources caused by the Proposed Action, or effects would be minor and mitigated by measures within the Proposed Action. Based on the impact analysis, no significant cumulative impact would be likely to occur to resources within the study area or its vicinity.

3.16.3 Cumulative Impact of the No Action Alternative

Overall, there would be no significant direct or indirect effects to resources caused by the No Action Alternative, or effects would be minor. Based on the impact analysis, no significant cumulative impact would be likely to occur to resources within the study area or its vicinity.

3.17 Description of Mitigation Measures

3.17.1 Proposed Action

Biological Resources

For the Tucson shovel-nosed snake, the USFWS has requested surveys to be conducted, if possible, to determine if the Tucson shovel-nosed snake occupies the study area. Because occupancy of the Tucson shovel-nosed snake is difficult to determine, USFWS recommends that any construction occur in areas of existing disturbance to reduce impact to soil conditions that are favorable to this species and reduce the potential for direct mortality.

For the Sonoran desert tortoise, the study area is likely considered Category I or II habitat. The AZGFD HDMS (AZGFD 2010) listed desert tortoise as known to occur within 3 miles of the study area. Mitigation measures as outlined in the *Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat* (Appendix D; AIDTT 2008) relevant to the Proposed Action would be implemented during fence development and site restoration activities. These measures would reduce potential impact to this species, if it is found to be present in the study area, to a less than significant level.

For the lesser long-nosed bat, the USFWS recommends that potential roosting habitat in the Casa Grande Mountains (caves, mines, large crevices, etc.) be identified within and adjacent to the parcel and that it be inspected for occupancy or signs of occupancy by

lesser long-nosed bats. USFWS recommends the preservation on-site of all saguaros within the project area. If saguaros are impacted by fence installation and cannot be transplanted on site, USFWS recommends saguaro replacement on-site at a ratio of 3:1. USFWS also recommends that every effort be made to maintain the maximum coverage of wash habitat within the project area to provide habitat connectivity for lesser long-nosed bats. These measures would reduce any potential impacts to this species, if it is found in the study area, to a less than significant level.

The study area contains potential habitat for the cactus ferruginous pygmy-owl; however, no pygmy-owls have been recorded within 3 miles of the study area (AZGFD 2010). Many of the same habitat features important for the lesser long-nosed bat are also important for the pygmy-owl. Protection of saguaros within the study area would protect potential nest sites, and conservation of wash habitat would maintain foraging and movement corridors for pygmy-owls. If any construction activities occur during the pygmy-owl breeding season (February 1 through June 30), the USFWS recommends surveys to document presence or absence of pygmy-owls.

Mitigation measures would also include the following:

1. All vehicles and construction equipment would be properly maintained to minimize exhaust emissions and would be properly muffled to minimize noise.
2. Any equipment or materials transported onto BLM-administered lands for maintenance or repair related to the proposed fence placement and trail-reconditioning activities on-site would be promptly removed upon completion of the project.
3. Fence-placement and trail-reconditioning activities would not entail impact to vegetation components of potential habitat for any ESA listed species.
4. Proposed perimeter fencing within the study area would be placed such as to avoid disturbance to BLM sensitive and ANPL protected species, including the Tumamoc globeberry. Proposed trails would be developed within existing social trails, with no new disturbance proposed.
5. An Arizona Native Plant Law, Native Plant Preservation Ordinance inventory will be conducted in any areas where native vegetation will be disturbed. A plant survey will be conducted to determine the location and number of plants that may be destroyed or removed. The BLM will be provided a copy of the survey and it will submit approval of the inventoried plants prior to disturbance or removal.
6. If saguaros need to be moved or replaced during fence installation, submittal of a survey or plan to BLM would be required prior to continuing work/fence installation.

7. A biological monitor should be present to ensure no special status species are affected during development/installation of the perimeter fencing.
8. Desert tortoise surveys will be conducted prior to ground-disturbance activities. BLM will be provided with and consulted regarding desert tortoise surveys and mitigation measures proposed.
9. If any activities occur during the pygmy-owl breeding season (February 1 through June 30), USFWS recommends surveys to document presence or absence of pygmy-owls.
10. Any vehicles that are brought in from outside of the area would be power-washed, including the undercarriage, to prevent introduction and spread of noxious weeds and/or invasive species.

Cultural Resources

As required by the Native American Graves Protection and Repatriation Act regulations at 43 CFR 10.4(g), "If in connection with the project operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the ROW holder shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The ROW holder shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume."

1. If archaeological sites identified in the cultural survey cannot be avoided during construction of fence and rehabilitation of unused trails a Data Recovery Plan will be required prior to additional work.
2. Thirty days prior to construction of fence and rehabilitation of unused trails BLM will be notified in order to arrange having an archeologist on site.
3. Disturbed areas not needed for trails would be restored to blend with the surrounding landscape (details of revegetation/restoration are found in the POD; City and McGann and Associates 2010).
4. The 80-acre parcel would have increased security and enforcement of existing laws and regulations of the Casa Grande Mountain Park. Rules and regulations would be posted at park entrances, patrols would be increased, and the City would explore establishing a volunteer citizens' patrol.
5. Motorized vehicles would be prohibited on all trails.

6. To minimize unauthorized trash dumping and motorized use, the park and all trails would be closed from sunset to sunrise.
7. Operations and maintenance within the park would include perimeter fencing to discourage illegal trash dumping. Any trash dump sites found within the park would be removed immediately after being reported or observed by park officials.
8. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder or any person working on the holder's behalf, on public or public or federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine the appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of the evaluation, and any decision regarding the proper mitigation measures will be made by the authorized officer after consulting with the holder.

3.17.2 No Action

No mitigation measures were outlined for the No Action Alternative.

4.0 Preparers

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5.0 Persons and Agencies Consulted

The *Casa Grande Mountain Park Master Plan*, which includes Casa Grande Mountain Park, was collaboratively produced by the City of Casa Grande, a Trail-users Advisory Group, consultations with adjacent landowners, and the National Park Service's Rivers, Trails and Conservation Assistance Program. The planning process included three public workshops, a presentation to the City Council, and numerous meetings (see Section 1.5).

During the course of the project, meetings were conducted with various agencies and organizations. Included were meetings with the Arizona Department of Transportation. These meetings were used to identify the issues, conflicts, and opportunities associated with trail development along and across Interstate 10 and Interstate 8, which run through the study area.

Meetings were also conducted with the San Carlos Irrigation and Drainage District to discuss the development of trails along irrigation canals and irrigation pipelines in the study area. The district's input is reflected in the *Regional Trail System Master Plan*.

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RECON

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6.2 List of Acronyms Used in this EA

| | |
|-------------------|---|
| ADA | Arizona Department of Agriculture |
| ADEQ | Arizona Department of Environmental Quality |
| AIDTT | Arizona Interagency Desert Tortoise Team |
| AMA | Active Management Area |
| ANPL | Arizona Native Plant Law |
| ASM | Arizona State Museum |
| AZGFD | Arizona Game and Fish Department |
| BLM | Bureau of Land Management |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| City | City of Casa Grande |
| EA | Environmental Assessment |
| ESA | Endangered Species Act |
| FLPMA | Federal Land Policy and Management Act |
| MBTA | Migratory Bird Treaty Act |
| OHV | Off-highway vehicle |
| PM _{2.5} | Particulate matter less than 2.5 microns |
| PM ₁₀ | Particulate matter less than 10 microns |
| POD | Plan of Development |
| R&PP | Recreation and Public Purposes Act |
| RMP | Resource Management Plan |
| USC | United States Code |
| USFWS | United States Fish and Wildlife Service |
| VRM | Visual Resource Management |
| WSC | Wildlife Species of Concern |

APPENDICES

APPENDIX A

| | | |
|---|-----------------------------|------------------------------|
| United States Department of the Interior Bureau of Land Management Scenic Quality Field Inventory | Field Inventory: | August 2008 |
| | Evaluator: | RECON (Woods) |
| | District: | Gila District |
| | Field Office: | Tucson Field Office |
| | Resource Area: | |
| | Scenic Quality Rating Unit: | Casa Grande Mountains |

Landscape Character: (see representative photos on next page)

| | Landform/Water | Vegetation | Structures (General) |
|---------|--|--|---|
| Form | Complex of low, rounded relatively steep rocky hills are visually dominant in otherwise relatively flat landscape. Desert pavement | Low rounded shrubs and trees, cacti vertically prominent. Typical of Limy Fan and Granite Hills ecological sites; creosote, mesquite, paloverde, saguaro, cholla, and mixed cacti. | No structures. Numerous road and trail cuts; Adjacent non-BLM land to south has linear pattern agricultural fields. |
| Line | Angular slopes, jagged and rounded rock formations. Linear pattern of agricultural fields has a rectilinear grid, urban areas contrast with the topography. Rolling ridges and winding desert wash. | Rounded shrubs and linear to rounded trees and cacti vertically prominent. Noticeable edge between ecological sites. Noticeable xeroriparian strip along desert washes. | Straight to slightly serpentine unpaved roads and trails on the flats and footslopes. |
| Color | Hills are more mottled tans, golds, olive green, light green, gray, and orange. Adjacent undisturbed floodplain is also monochrome. Medium to dark surface colors. Subsoil color in disturbed areas show noticeable contrast with surface color. | Tan to brown grasses and shrubs, green shrubs, trees, and cacti. Adjacent undisturbed floodplain is monochrome tan. Agricultural fields are monochrome green or tan. | Light tan to light grey dirt roads and trails. |
| Texture | Fine to very coarse, depending on rock outcroppings. | Coarse, wash bottoms and disturbed areas have a fine texture. | No structures. High density of OHV roads and trails. Mostly smooth. |

Narrative / Representative landscape character:

Moderate to rugged terrain. Rock outcroppings and boulders are predominant on the ridges. Adjacent valley floor areas are relatively level, with sparser vegetation or agricultural fields. Vegetative matrix consists mostly of paloverde–cacti–mixed shrubs. Disturbance of landscape (agriculture, OHV trails, roads) affects the line, color, and texture of the landscape. Upper elevation portions of the study area provide scenic distant views of mountains (Ragged Top and Picacho Peak), which give the viewer a regional landscape perspective.

Scenic Quality Score & Classification:

| | High (4-5) | Medium (3) | Low (1-2) | Total / Rationale | Scenic Quality Classification <input type="checkbox"/> A (>18) <input checked="" type="checkbox"/> B (12-18) <input type="checkbox"/> C (<12) |
|-----------------------|------------|------------|-----------|---|---|
| Landform | | 3 | | Steep & rocky | |
| Vegetation | | 3 | | | |
| Water | | | 0 | | |
| Color | | 3 | | Seasonal variations | |
| Adjacent Scenery | | 3 | | Casa Grande Mts. | |
| Scarcity | | | 2 | | |
| Cultural Modification | | 0 | -2 | Relatively dense roads and trails on west 40 acres detracts from natural character. | |
| Totals: | | 12 | | 12 | |

Representative Photographs:



Relatively level valley floor with unpaved road between hills and ridges. Disturbed areas contrast with surrounding landscape.



Hill and wash area in western portion of parcel. Strong contrast between trees, shrubs, and background slopes.



Vegetation provides variation in form, color, and texture. Rocky terrain of hillsides contrasts with agricultural and disturbed areas. Scenic views of mountains provide viewer with regional landscape perspective.



Moderate to steep rocky hill slopes in central portion of parcel.

VISUAL RESOURCE INVENTORY CLASSIFICATION MATRIX

| | | Visual Sensitivity Levels | | | | | |
|-----------------------|----------|---------------------------|-----|------|--------|----|-----|
| | | High | | | Medium | | Low |
| Special Areas | | I | I | I | I | I | I |
| Scenic Quality | A | II | II | II | II | II | II |
| | B | II | III | III* | III | IV | IV |
| | | | | IV* | | | |
| | C | III | IV | IV | IV | IV | IV |
| | | f/m | b | s/s | f/m | b | s/s |
| Distance Zones | | | | | | | |

* If adjacent areas are Class III or lower, assign Class III; if higher, assign Class IV.

Scenic Quality: B
Sensitivity Level: High
Distance Zone: Foreground
Inventory Class: II

Class II Management Objective: To **retain** the existing character of the landscape. The level of change to the characteristic landscape should be low.

Discussion: Scenic Quality is B due to the rolling hills rising from the adjacent relatively level floodplain lands. The sensitivity level of this area is high due its recreational use, visual dominance, and relatively undisturbed character. BLM lands within this area are within foreground/midground views of recreationists and other viewers on adjacent roads (Interstate 10, Sunland Gin Road, Battaglia Drive, and Chuchu Road), jeep trails, and hiking trails. The subject BLM 80 acres are not visible from Interstate 8, but form part of the larger landscape (Casa Grande Mountain Park) that is visible from Interstate 8. Surface disturbances result in high color contrast and attract attention.

Considerations for assigning Management Class: Class II is appropriate due to the sensitivity, high visibility by residents and recreationists, proximity to Picacho Peak State Park, and relatively undisturbed character. Class III would also be appropriate for certain land areas at lower elevations that are adjacent to roads, agricultural fields, and other areas with moderate levels of disturbance and structures.

APPENDIX B



Biological Evaluation of an
80-acre Bureau of Land
Management Parcel Adjacent to
Casa Grande Mountain Park,
Casa Grande, Arizona



Prepared for
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RECON Number 4764e
September 2010


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1.0 Introduction

The City of Casa Grande has submitted a lease application to add approximately 80 acres of Bureau of Land Management (BLM)-administered land to its Casa Grande Mountain Park holdings through the federal Recreation and Public Purposes Act (R&PP) lease process. The R&PP Act authorizes the Secretary of the Interior to lease or convey public lands for recreational and public purposes under specified conditions. As a component of environmental studies needed to assess existing conditions within the parcel, a Biological Evaluation (BE) of the 80-acre parcel was conducted. The intent of this BE is to identify the vegetation communities and other natural resource features within the parcel and to determine the potential presence of federally listed threatened and endangered species, BLM sensitive species, and Arizona Game and Fish Department (AZGFD) wildlife of special concern.

2.0 Study Area

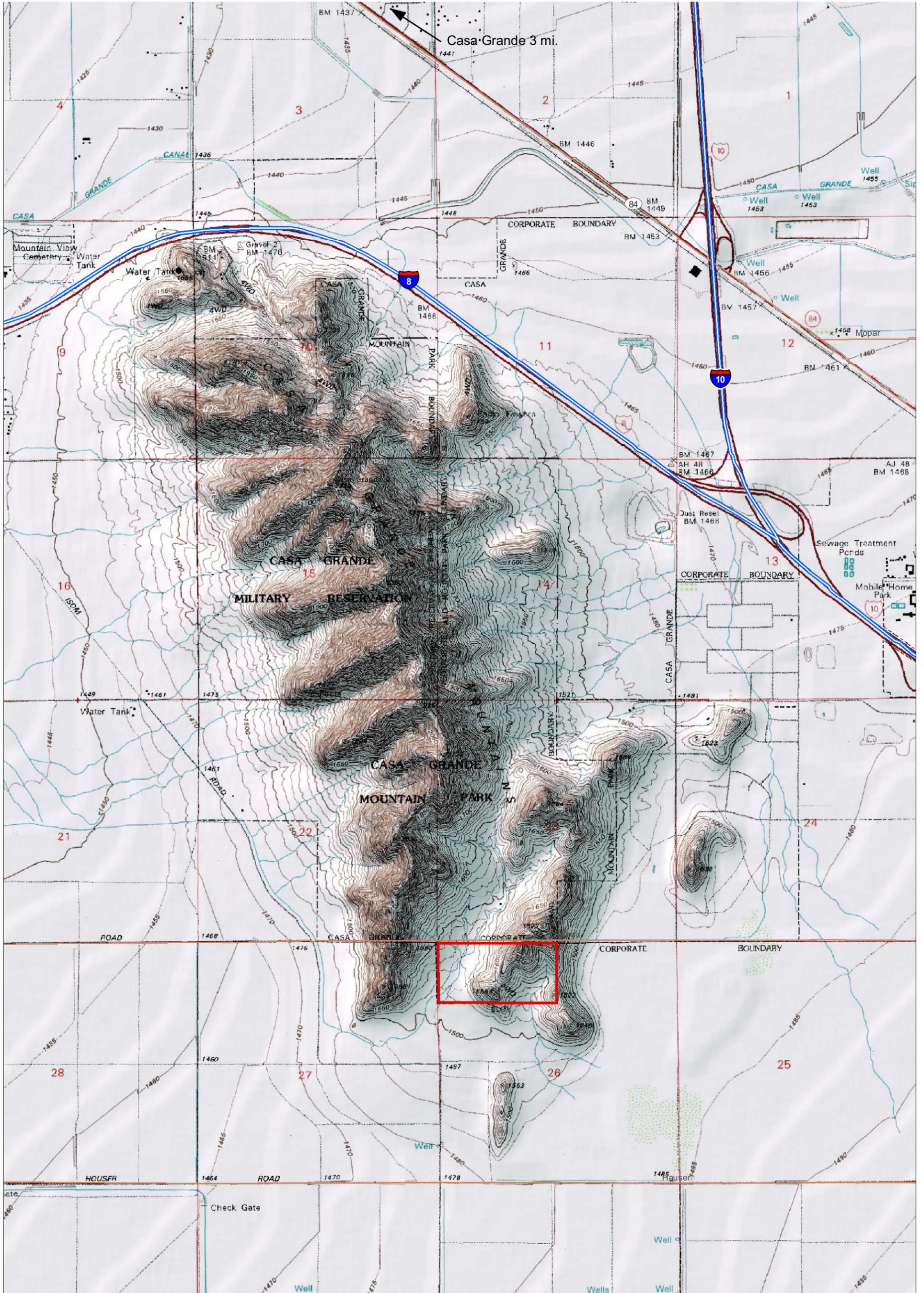
The study area consists of an 80-acre parcel located within the northern half of the northwestern quarter of Section 26, Township 7 South, Range 6 East, Gila and Salt River Meridian, Pinal County, Arizona (Figure 1). The parcel is located at the southern end of Casa Grande Mountain, east of the city of Casa Grande, Arizona.

3.0 Methods

Prior to visiting the study area, RECON Environmental, Inc., reviewed the U.S. Fish and Wildlife Service (USFWS) list of federally protected species in Pinal County, Arizona (USFWS 2008). A list of wildlife of concern known to occur within 3 miles of the study area was generated using the AZGFD On-line Environmental Tool (AZGFD 2008). A field reconnaissance and evaluation of the study area was conducted on 5 August 2008. Qualified biologists examined the study area and evaluated characteristics including vegetation, wildlife, topography, geologic features, land use, and soils. Photographs were taken to document vegetation communities and overall site conditions (Appendix BE-A).

4.0 Existing Conditions and Results

The Casa Grande Mountain study area is located approximately 5 miles south of the city of Casa Grande in southern Arizona (see Figure 1). The study area consists of 80 acres located at the southern foothills of the Casa Grande Mountains and comprises low



 BLM 80 Acre Parcel

FIGURE 1

peaks/ridgelines, foothill areas below the ridges, and washes flowing primarily from north to south.

Elevations of the study area range from about 1,550 to 1,750 feet above sea level. Topography of the study area varies from foothills to ridgelines, and hillsides vary from steep to moderately steep slopes. Lands surrounding the study area consist of a floodplain agricultural area to the south, and foothills and ridges to the west, north, and east. Beyond the ridges to the east is a large floodplain area. The study area is transected by several unpaved roads and trails (Figure 2).

4.1 Vegetation

The study area is within the Lower Colorado River Valley subdivision of the Sonoran Desertscrub biome (Brown 1994). Vegetation varies from the creosotebush–bursage series in the lower foothill areas to the paloverde–cacti-mixed scrub series on hillsides and ridges (Brown 1994). Creosote bush (*Larrea tridentate*), bursage (*Ambrosia* spp.), and paloverde trees (*Parkinsonia microphyllum*) are dominant in the lower elevations. Paloverde, cholla (*Opuntia* spp.), and saguaro cacti (*Carnegiea gigantea*) are dominant on hillsides and ridges. Washes contain a denser assemblage of vegetation, including paloverde, ironwood trees (*Olneya tesota*), acacia (*Acacia* spp.), creosote, mesquite trees (*Prosopis velutina*), blue paloverde (*Parkinsonia floridum*), burrobrush (*Hymenoclea* spp.), triangle-leaf bursage (*Ambrosia deltoidea*), wolfberry (*Lycium* spp.), saltbush (*Atriplex* spp.), ocotillo (*Fouquieria splendens*), hedgehog cactus (*Echinocereus* spp.), and pincushion cactus (*Mammillaria* spp.). An invasive grass species, buffelgrass (*Pennisetum ciliare*), was observed south of the study area along an unpaved roadway.

The Arizona Department of Agriculture (ADA) has the responsibility of protecting Arizona's native plants and enforces the Arizona Native Plant Law (ANPL). Plants cannot be removed from any lands, whether they are owned by a private individual or managed by a government agency, without permission and a permit from the ADA. Lessees of state or federal land must obtain specific authorization from the landlord agency to remove protected native plants (ADA 2008).

Most desert plants fall into one of five groups specially protected from theft, vandalism, or unnecessary destruction by the ANPL. This list includes all of the cacti, most of the exotic plants (such as ocotillo), most of the trees (ironwood, paloverde, and mesquite), and many of the smaller plants. The five categories of protected plants are:

1. highly safeguarded (essentially endangered species)
2. salvage-restricted (cacti and ocotillo)
3. export-restricted
4. salvage-assessed (common desert trees)
5. harvest-restricted (yucca and others)



 BLM 80 Acre Parcel

FIGURE 2

Several native plants protected by the ANPL occur within the study area. Prior to any activities that may destroy protected native plants, it is recommended that a survey of proposed development areas be conducted to determine the location and number of plants that may be destroyed or removed. The ADA should be contacted to submit any required forms and information (ADA 2008).

The ADA also maintains a list of regulated and restricted noxious weeds. A listed noxious weed, buffelgrass, was observed south of the study area. This weed is listed as regulated and, if found, may be controlled or quarantined to prevent further infestation or contamination. The ADA should be contacted prior to any construction or development activities to determine if any measures are required to minimize the spread of listed noxious weeds (ADA 2008).

4.2 Wildlife

Wildlife observed in the study area include a variety of birds: verdin (*Auriparus flaviceps*), black-tailed gnatcatcher (*Poliophtila melanura*), white-winged dove (*Zenaida asiatica*), cactus wren (*Campylorhynchus brunneicapillus*), rock wren (*Salpinctes obsoletus*), house sparrow (*Passer domesticus*), ladder-backed woodpecker (*Picoides scalaris*), and turkey vulture (*Cathartes aura*). Mammals observed (including signs of presence) are javelina (*Tayassu tajacu*), coyote (*Canis latrans*), round-tailed ground squirrel (*Spermophilus tereticaudus*), Harris' antelope squirrel (*Ammospermophilus harrisi*), packrat (*Simodon* spp.), desert cottontail rabbit (*Sylvilagus audubonii*), and black-tailed jack rabbit (*Lepus californicus*). Several small lizards were also observed; however, these lizards were not close enough to identify the species.

4.3 Special Status Species

4.3.1 Federally Listed Species

The USFWS maintains a list of wildlife and plant species protected under the Endangered Species Act (ESA) of 1973. The USFWS list of federally protected wildlife species for Pinal County was reviewed to determine if any listed species has the potential to occur in the study area (Table 1; USFWS 2010).

During the site visit, no federally listed wildlife species were observed. Based on the habitat conditions observed within the study area, it was concluded that potential foraging habitat for one federally listed wildlife species, the lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*), may occur in or adjacent to the study area.

Table 1 presents habitat and distribution requirements for federally listed species and reasons for exclusion from further analysis for those species not likely to occur in the study area.

TABLE 1
USFWS FEDERALLY LISTED SPECIES FOR PINAL COUNTY, ARIZONA

| Common Name | Scientific Name | Status | Habitat/Distribution | Reason for Exclusion |
|---------------------------|--|------------|--|---|
| Arizona hedgehog | <i>Echinocereus triglochidiatus</i> var. <i>arizonicus</i> | Endangered | Ecotone between interior chapparal and madrean evergreen woodland. Found on open slopes, in narrow cracks between boulders, and in understory of shrubs. | Study area is outside known range of species. |
| Bald eagle | <i>Haliaeetus leucocephalus</i> | Threatened | Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey | No reservoirs, rivers, or streams located in or near the study area. |
| Desert pupfish | <i>Cyprinodon macularius</i> | Endangered | Shallow springs, small streams, and marshes. Tolerates saline and warm water. | No springs, streams, or marshes in or near the study area. Outside known habitat. |
| Gila chub | <i>Gila intermedia</i> | Endangered | Pools, springs, cienegas, and streams. | No pools, springs, cienegas, or streams located in or near the study area. |
| Lesser long-nosed bat | <i>Leptonycteris curasoae yerbabuena</i> | Endangered | Desertscrub habitat with agave and columnar cacti present as food plants. | Potential foraging habitat within study area. |
| Loach minnow | <i>Tiaroga cobitis</i> | Threatened | Small to large perennial streams with swift shallow water over cobble and gravel. | No streams located in or near the study area. |
| Mexican spotted owl | <i>Strix occidentalis lucida</i> | Threatened | Nests in canyons and dense forests with multi-layered foliage structure. | No habitat present in or near the study area. |
| Nichol Turk's head cactus | <i>Echinocactus horizonthalonius</i> var. <i>nicholii</i> | Endangered | Sonoran desertscrub in 2,400 to 4,100 feet elevation. | Study area is outside the known range of this species. |

TABLE 1
USFWS FEDERALLY LISTED SPECIES FOR PINAL COUNTY, ARIZONA (CONT.)

| Common Name | Scientific Name | Status | Habitat/Distribution | Reason for Exclusion |
|--------------------------------|---|------------|---|--|
| Razorback sucker | <i>Xyrauchen texanus</i> | Endangered | Riverine and lacustrine areas, generally not in fast moving water, but may use backwaters. | No riverine or other water present in or near the study area. |
| Southwestern willow flycatcher | <i>Empidonax trailii extimus</i> | Endangered | Cottonwood/willow and tamarisk vegetation communities along rivers and streams. | No river or stream vegetation communities in or near the study area. |
| Spikedace | <i>Meda fulgida</i> | Threatened | Moderate to large perennial streams with gravel cobble substrates. | No streams in or near the study area. |
| Yuma clapper rail | <i>Rallus longirostris yumanensis</i> | Endangered | Fresh water and brackish marshes. | No fresh water or brackish marshes in or near the study area. |
| Acuna cactus | <i>Echinomastus erectocentrus</i> var. <i>acunensis</i> | Candidate | Well-drained knolls and gravel ridges in Sonoran desertscrub. | Study area is outside known range and elevations of this species. |
| Northern Mexican gartersnake | <i>Thamnophis eques megalops</i> | Candidate | Found in cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests. | No habitat present within the study area. |
| Roundtail chub | <i>Gila robusta</i> | Candidate | Cool to warm waters of rivers and streams, often occupy deepest pools and eddies of large streams. | No rivers or streams in the study area. |
| Yellow-billed cuckoo | <i>Coccyzus americanus</i> | Candidate | Large blocks of riparian woodlands consisting of cottonwood, willow, or tamarisk galleries. | No riparian woodlands in or near the study area. |

Source: USFWS 2008

Lesser Long-nosed Bat

The lesser long-nosed bat is a medium-sized bat found in southern Arizona from the Picacho Mountains southwesterly to the Agua Dulce Mountains and southeasterly to the Galiuro and Chiricahua mountains. This species' range also goes south into Mexico and beyond. Lesser long-nosed bats are typically present in Arizona from spring until fall and are absent during the winter months (AZGFD 2003a).

In Arizona, lesser long-nosed bats are found in desert grassland and shrubland up to oak transition habitats. They roost in caves, mines, tunnels, and occasionally in old buildings. This bat typically forages in areas of saguaro, ocotillo, paloverde, prickly pear (*Opuntia* spp.), and organ pipe cactus (*Stenocereus thurberi*). Later in the summer it forages among agave. The lesser long-nosed bat is typically found at lower elevations, below about 3,500 feet, from April to at least September or October. This bat is typically found in paloverde/saguaro, semidesert grassland, and oak woodland plant communities (AZGFD 2003a).

Lesser long-nosed bats feed on nectar and pollen from flowers of saguaro and organ pipe cacti in early summer and agave later in the summer and early fall. This bat may feed on ripe cactus fruits at the end of the flowering season as well (AZGFD 2003a).

The lesser long-nosed bat was listed by the USFWS as endangered without critical habitat in 1988 (USFWS 2001). Threats to this bat species include exclusion and disturbance, which result in the reduction of numbers of maternity colonies and decline in size of remaining maternity colonies in Arizona and Sonora, Mexico. Additionally, the lesser long-nosed bat is thought to be negatively affected by large reductions in acreage of native agaves over large areas of northern Mexico due to excessive harvesting for local manufacture of mescal and tequila. This species is easily disturbed at roost sites (AZGFD 2003a).

The study area contains potential foraging habitat for the lesser long-nosed bat, specifically, saguaro cacti. Based on AZGFD distribution maps for this species, lesser long-nosed bats are not known to occur within at least 20 miles of the study area. Generally, lesser long-nosed bats forage as close to their roost sites as possible. This strategy is energetically efficient and emphasizes the importance of maintaining food sources in proximity to roost sites (USFWS 2007). However, foraging studies have also shown that lesser long-nosed bats will fly long distances, up to approximately 40 miles, to forage even when forage resources are available closer to roost sites (USFWS 2007).

The study area may be a foraging site for lesser long-nosed bats. The study area is located within 40 miles of a known maternity roost. However, saguaro density is low within the study area and no saguaros will be disturbed during proposed fence placement or trail improvements. No known roost sites are located within or immediately surrounding the study area.

4.3.2 BLM Sensitive Species

BLM sensitive species designation is normally used for species that occur on BLM-administered lands for which BLM has the capability to significantly affect the conservation status of the species through management.

Guidance for management related to BLM sensitive species is found in Manual 6840. Criteria for BLM sensitive species include the following:

1. Possibility to become endangered in or extirpated from a state, or within a significant portion of its distribution in the foreseeable future
2. Under status review by the USFWS and/or National Marine Fisheries Service
3. Undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution
4. Undergoing significant or predicted downward trends in population or density such that federally listed, proposed, candidate, or state listed status may become necessary
5. Typically small and widely dispersed populations
6. Inhabiting ecological refugia, specialized or unique habitats
7. State-listed but may be better conserved through application of BLM sensitive species status. Such species should be managed to the level of protection required by state laws or under BLM policy for candidate species, whichever would provide better opportunity for its conservation.

The BLM list for sensitive species for Arizona was reviewed for species that occur within Pinal County (Table 2). In addition, the AZGFD On-line Environmental Review Tool was consulted for Arizona listed wildlife species of concern (WSC) known to occur within 3 miles of the study area (Appendix BE-B).

Based on the habitat conditions observed within the study area, it was concluded that eight BLM sensitive species (including two WSCs) may occur in or adjacent to the study area. These species are discussed below.

Based on the habitat conditions observed within the study area, it was concluded that potential habitat may occur within the study area for the following BLM sensitive species: Tumamoc globeberry, chuckwalla, Sonoran desert tortoise, Tucson shovel-nosed snake, cactus ferruginous pygmy-owl, burrowing owl, cave myotis, and pocketed free-tailed bat.

Table 2 presents habitat and distribution requirements for Arizona BLM sensitive species (including species listed as Wildlife of Concern by the state of Arizona) and reasons for exclusion from further analysis for those species not likely to occur in the study area.

TABLE 2
BLM SENSITIVE SPECIES FOR PINAL COUNTY, ARIZONA

| Common Name | Scientific Name | Status | Habitat/Distribution | Potentially Present or Reason for Exclusion |
|------------------------|--|--|--|--|
| Plants | | | | |
| Pima Indian mallow | <i>Abutilon parishii</i> | BLM Sensitive | Lower Sonoran desertscrub, transition zone of Upper Sonoran grassland communities, and Sonoran deciduous forest to Arizona Upland desertscrub. Found within canyons, rocky hillsides, and cliff bases. | Study area is outside species' known range within the Mineral Hills, Superstition, Picacho, Tortolito, and Dripping Springs mountains of Pinal County. |
| Tumamoc globeberry | <i>Tumamoca macdougallii</i> | BLM Sensitive; Arizona Native Plant Law - Salvage Restricted | Occurs in xeric situations, in the shade of a variety of nurse plants along gullies and sand washes of hills and valleys of Sonoran desertscrub and Sinaloan thornscrub communities. | Potential habitat within the study area. |
| Wildlife | | | | |
| Giant spotted whiptail | <i>Aspidoscellis burti stictogrammus</i> | BLM Sensitive | Inhabits mountain canyons, arroyos, and mesas in arid and semi-arid regions, entering lowland desert along stream courses. | The study area is outside the known range of this species (vicinity of Oracle in Pinal County). |
| Chuckwalla | <i>Sauromalus obesus</i> | BLM Sensitive | Predominantly found near cliffs, boulders or rocky slopes, which are used for basking sites, and boulder crevices for shelter. Can be found in rocky desert, lava flows, hillsides, and outcrops. Creosote bush occurs throughout most of range. | Potential habitat within study area. |

TABLE 2
BLM SENSITIVE SPECIES FOR PINAL COUNTY, ARIZONA (CONT.)

| Common Name | Scientific Name | Status | Habitat/Distribution | Potentially Present or Reason for Exclusion |
|------------------------------|--|--|---|--|
| Wildlife (cont.) | | | | |
| Sonoran Desert tortoise | <i>Gopherus agassizii</i> | BLM Sensitive, Arizona WSC | Sonoran desert tortoise occurs primarily on rocky slopes and bajadas of Mojave and Sonoran desertscrub. Most often found in paloverde–mixed cacti vegetation associations. | Potential habitat within study area. Known to occur within 3 miles (AZGFD 2010). |
| Tucson shovel-nosed snake | <i>Chionactis occipitalis klauberi</i> | BLM Sensitive | Can be found in arid deserts with sandy washes, dunes, and rocky hillsides. Prefer areas with scattered mesquite-creosote bush. | Potential habitat within study area. |
| Western narrow-mouthed toad | <i>Gastrophryne olivacea</i> | BLM Sensitive; Arizona WSC | Found from mesquite semi-desert grassland to oak woodland, in the vicinity of streams, springs, and rain pools. More terrestrial than aquatic, but found near water. | No streams, springs or pools found within the study area. This toad is not likely found within the study area. |
| Cactus ferruginous putmy-owl | <i>Glaucidium brasilium cactorum</i> | BLM Sensitive, Arizona Wildlife of Special Concern | Pygmy-owls inhabit fairly dense thickets or woodland areas of the Sonoran Desert. They require saguaros or trees that are large enough for nesting cavities. Multi-layered ground cover, mid-story, and canopy cover are important to provide habitat for the pygmy-owl's prey. | Potential habitat within study area. |
| Burrowing owl | <i>Athene cunicularia hypugea</i> | BLM Sensitive | Variable in open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands, often associated with burrowing mammals. Sometimes in open areas such as vacant lots near human habitation, golf courses, or airports. | Potential habitat near study area, potential foraging habitat within study area. |
| Small-footed myotis | <i>Myotis ciliolabrum</i> | BLM Sensitive | Known from deserts, chaparral, riparian areas, and oak-juniper forests. Uses caves and old mines, crevices, cracks, holes, snags, hollow trees, under rocks, and in buildings. | Potential foraging habitat within study area, but this species is not known to occur in this portion of Pinal County (AZGFD 2010). |

**TABLE 2
BLM SENSITIVE SPECIES FOR PINAL COUNTY, ARIZONA**

| Common Name | Scientific Name | Status | Habitat/Distribution | Potentially Present or Reason for Exclusion |
|--------------------------|---------------------------------|---------------|---|--|
| Wildlife (cont.) | | | | |
| Fringed myotis | <i>Myotis thysanodes</i> | BLM Sensitive | Occur primarily in middle elevation habitats ranging from deserts, grasslands, and woodlands. Most frequently in oak-pinyon woodlands and other open, coniferous forests. All desert and steppe areas within the range are within an hour flight from forested or riparian areas. | This species is not known to occur in this portion of Pinal County. |
| Cave myotis | <i>Myotis velifer</i> | BLM Sensitive | Desertscrub of creosote, brittlebush, paloverde, and cacti. Roost in caves, tunnels, and mineshafts and under bridges and buildings (near water). | Potential foraging habitat within study area, no roosting habitat present. |
| Pocketed free-tailed bat | <i>Nyctinomops femorosaccus</i> | BLM Sensitive | Arid lower elevations usually around high cliffs and rugged rock outcrops. Roosts in rock crevices during the day, may also use human- built structures. | Potential foraging habitat within study area, no roosting habitat present. |

Source: AZGFD 2010
 AZGFD – Arizona Game and Fish Department
 BLM – Bureau of Land Management
 WSC – Wildlife of Special Concern

A. Tumamoc globeberry

The Tumamoc globeberry is a perennial vine that typically occurs in xeric situations, in the shade of a variety of nurse plants along gullies and sandy washes of hills and valleys in Sonoran desertscrub and Sinaloan thornscrub communities. This species is found primarily below 3,000 feet (above sea level) along various exposure aspects, but these plants can be found in shrub shaded situations. Threats to this species include urbanization, farming, grazing, recreation, habitat conversion, off-road vehicle use, and pesticides (AZGFD 2004).

Potential habitat for this species is found within the study area and vicinity. Proposed perimeter fencing within the study area would be placed such as to avoid disturbance to BLM sensitive and ANPL protected species. Proposed trails would be developed within existing social trails, with no new disturbance proposed. Perimeter fencing would result in beneficial effects by closing the study area to motorized use, a primary threat to this plant species.

B. Chuckwalla

The chuckwalla is a large dark-bodied lizard found predominantly near cliffs, boulders, or rocky slopes where they use rocks as basking sites and rock crevices for shelter. Within Arizona, this lizard species can be found at elevations ranging from 1,040 to 2,410 feet within creosote bush vegetation communities. Populations of this species have been decreasing due to the pet trade demand for it (AZGFD 2005).

Potential habitat for this species is found within the study area and vicinity, primarily within the hillsides and rocky slopes. Proposed perimeter fencing within the study area would be placed such as to avoid disturbance to this species. Proposed trails would be developed within existing social trails, with no new disturbance proposed. Perimeter fencing would result in beneficial effects by closing the study area to motorized use, limiting the potential for removal of this species for sale to the pet trade.

C. Sonoran desert tortoise

The distribution of the desert tortoise ranges from northern Sinaloa, Mexico, north to Nevada and southwestern Utah and from south-central California east to southeastern Arizona. The desert tortoise is divided into two populations for purposes of the ESA: the threatened Mojave population occurs north and west of the Colorado River, and the unlisted Sonoran population occurs south and east of the Colorado River (AZGFD 2001a).

The Sonoran population of the desert tortoise occurs primarily on rocky slopes and bajadas of Mojave and Sonoran desertscrub. Sonoran desert tortoise is most often

found in paloverde–mixed cacti vegetation associations. Caliche caves in incised, cut banks of washes are also used for shelter sites, especially in the Lower Colorado River Valley vegetation subdivision. Shelter sites are rarely found in shallow soils. The Sonoran desert tortoise occurs at elevations ranging from 510 feet in the Mojave desert scrub to about 5,300 feet in semidesert grassland and interior chaparral. The forage includes annuals, grasses, herbaceous perennials, trees and shrubs, subshrubs/woody vines, and succulents (AZGFD 2001a).

The Sonoran desert tortoise is listed by the State of Arizona as a WSC. Desert tortoise may not be collected from the wild in Arizona (Arizona Game and Fish Commission Order 43), and a State Conservation Agreement has been developed by the Arizona Interagency Desert Tortoise Team (AIDTT) to maintain viable populations and preserve habitat of the Sonoran desert tortoise throughout its range in Arizona. The AIDTT has also developed mitigation measures for projects occurring in desert tortoise habitat as well as guidelines to be used for surveying and handling desert tortoise (AIDTT 2008).

The BLM conservation objective for the Sonoran desert tortoise is to provide habitat capable of maintaining stable or increasing trends in abundance of desert tortoise in all management areas within the Sonoran region. A range-wide management plan and a strategy specific to BLM-administered lands in Arizona were developed to implement conservation objectives. The BLM range-wide plan groups desert tortoise habitat into three categories according to the following four criteria: importance of the habitat to maintaining viable populations; resolvability of conflicts; desert tortoise density; and population status (stable, increasing, or decreasing). BLM's goal is to maintain viable desert tortoise populations in Category I and II habitats and to limit population declines to the extent possible in Category III habitats.

Based on habitat features, the study area is likely considered Category I or II desert tortoise habitat. The AZGFD HDMS (2010) listed desert tortoise as known to occur within 3 miles of the study area. Mitigation measures as outlined in the Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat (AIDTT 2008) relevant to the Proposed Action will be implemented during fence development and site restoration activities.

D. Tucson shovel-nosed snake

The Tucson shovel-nosed snake can be found in arid deserts with sandy washes, dunes, and rocky hillsides from elevations ranging from sea level to 4,700 feet. This snake species prefers areas with scattered mesquite-creosote bush vegetation. Threats to this species are not well known, but potential barriers to migration and movement include highways, major roads, and streams (AZGFD 2002a).

Potential habitat for this species is found within the study area and vicinity, primarily within the rocky hillsides. Proposed perimeter fencing within the study area would be

placed as to avoid disturbance to this species. Proposed trails would be developed within existing social trails, with no new disturbance proposed.

E. Cactus ferruginous pygmy-owl

The cactus ferruginous pygmy-owl is the northernmost occurring of several subspecies of the ferruginous pygmy-owl (Cartron et al. 2000a). The subspecies ranges from lowland central Arizona south through western Mexico to the states of Colima and Michoacan and from southern Texas south through the Mexican states of Tamaulipas and Nuevo Leon (USFWS 2002).

The current distribution of pygmy-owls within Arizona is poorly understood. Historically, pygmy-owls occupied areas of south-central Arizona from New River (about 35 miles north of Phoenix) south to the U.S./Mexico border, west to southern Yuma County, and east to the San Pedro River and the confluence of the Gila and San Francisco rivers (approximately 100 miles northeast of Tucson; USFWS 2003; Cartron et al. 2000a). Currently, the Arizona population appears to have a patchy distribution, with most pygmy-owls located in one of four general areas: northwest Tucson and southern Pinal County, Organ Pipe Cactus National Monument, the Tohono O'odham Nation, and Altar Valley (Richardson et al. 2000). The species may be extirpated from portions of its historic range, including the lower and middle Gila River, the Santa Cruz River near Tucson, the Rillito Creek, and the Salt River near Phoenix (Cartron et al. 2000b).

Pygmy-owls inhabit fairly dense thickets or woodland areas of the Sonoran Desert. They require saguaros or trees that are large enough for nesting cavities. Multi-layered ground cover, mid-story, and canopy cover are important to provide habitat for the pygmy-owl's prey.

The pygmy-owl was listed as an endangered species in 1997. Following a series of lawsuits, the USFWS removed the pygmy-owl from the endangered species list in 2006. In 2007, the USFWS was petitioned to list the species again based on additional genetic, taxonomic, and threat information. In May 2008, the USFWS issued a 90-day finding in response to the petition and found that the pygmy-owl might warrant federal protection under the ESA and initiated a 12-month status review (Federal Register [FR] 73:31418-31424). The pygmy-owl still remains protected by the Migratory Bird Treaty Act and Arizona Revised Statue Title 17 (listed as a WSC in Arizona). Low population numbers, long-term drought, loss and modification of habitat, disease, and predation are thought to be the primary threats to pygmy-owls (FR 73:31418-31424).

Potential habitat for this species is found within the study area and vicinity, primarily within areas containing saguaro cacti. Proposed perimeter fencing within the study area would be placed such as to avoid disturbance to potential habitat for this species. Proposed trails would be developed within existing social trails, with no new disturbance

proposed. Proposed fencing and trail improvements would not result in pygmy-owl habitat alternation, fragmentation, or loss of potential foraging habitat.

F. Burrowing Owl

Burrowing owls can be found in open, well-drained grasslands, steppes, deserts, prairies, and agricultural lands, most often associated with burrowing mammals. Within Arizona, the burrowing owl is typically found at elevations ranging from 650 to 6,140 feet. Threats to this species include poisoning of squirrels and prairie dogs to control their populations, habitat alternation, fragmentation, and loss of edge habitat (AZGFD 2001b).

Potential habitat for this species is found within the study area and vicinity, primarily within lower elevation open areas. Proposed perimeter fencing within the study area would be placed such as to avoid disturbance to this species. Proposed trails would be developed within existing social trails, with no new disturbance proposed. Proposed fencing and trail improvements would not result in burrowing owl habitat alternation, fragmentation, or loss of potential edge habitat.

G. Cave Myotis and Pocketed Free-tailed Bat

Cave myotis bats are typically found in desertscrub vegetation of creosote, brittlebush, paloverde, and mixed cacti. Pocketed free-tailed bats may also be found in desertscrub vegetation. These bat species may roost in caves, tunnels, and mineshafts, as well as under bridges and sometimes in buildings within a few miles of water. These bats are mostly found at elevations ranging from 190 to 7,520 feet (cave myotis are found lower, up to elevation of 5,000 feet). Threats include disturbance of maternity roosts, habitat loss caused by excessive development, recreational caving, mine closures, roost destruction, and loss of foraging habitat in riparian zones (AZGFD 2002b for cave myotis; AZGFD 2003b for pocketed free-tailed bat).

Potential foraging habitat for these species is found within the study area and vicinity, primarily within native vegetation at lower elevations. Proposed perimeter fencing and trail improvements within the study area would not disturb these species or foraging habitat. Proposed fencing and trail improvements would not result in any threats to these bat species.

5.0 Conclusions

Several native plants protected by the ANPL occur within the study area. It is recommended that, as part of any development plans, the study area be surveyed for protected native plants and the ADA contacted to submit any required forms or

information. In addition, the ADA should be contacted to determine whether any measures are required to minimize the spread of listed noxious weeds.

Following a review of the USFWS list of federally protected species for Pinal County, review of the BLM Sensitive Species list for Arizona, review of the AZGFD Heritage Data Management System On-line Environmental Review Tool, and a site visit to the study area, it was determined that the following species may occur or may have potential foraging habitat within the study area: the federally listed lesser long-nosed bat; BLM Sensitive Tumamoc globeberry, chuckwalla, Tucson shovel-nosed snake, burrowing owl, cave myotis, and pocketed free-tailed bat; and the state-listed WSC cactus ferruginous pygmy-owl and Sonoran desert tortoise. During the site visit, none of these special status species were observed; however, habitat features required by these species were observed within the study area. Prior to any development (e.g., perimeter fencing) or activities that remove vegetation from the study area, mitigation measures would be included in development plans, and surveys for pygmy-owls and desert tortoise are recommended. In addition, a biological monitor should be present to ensure no special status species are affected during development of the perimeter fencing (for desert tortoise, guidelines for monitoring presented in AIDTT 2008 should be followed).

There is a potential for lesser long-nosed bats to forage in the study area. The study area contains saguaros, which are an important forage species for the lesser long-nosed bat. The USFWS recommends the on-site preservation of all saguaros within the study area. If saguaros must be impacted by construction and cannot be transplanted on site, USFWS recommends their replacement on site at a ratio of 3:1. Habitat connectivity between/among foraging areas and roost sites is important for the conservation of lesser long-nosed bats. Washes are important connectivity and movement corridors for this species. The USFWS recommends that every effort be made to maintain the maximum coverage of wash habitat within the study area to provide connectivity for the lesser long-nosed bat.

6.0 References Cited

Arizona Department of Agriculture (ADA)

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BE APPENDICES

APPENDIX BE-A



Photo1: Typical habitat and vegetation, southwestern portion of study area.



Photo 2: Ironwood tree and creosote, southwestern portion of study area.



Photo 3: Typical vegetation in central/foothills valley of the study area (primarily creosote).



Photo 4: Higher density vegetation within a wash in the central portion of the study area.



Photo 5: Saguaro and surrounding vegetation in central foothills of the study area.



Photo 6: Vegetation within the eastern portion of the study area.



Photo 7: View of eastern portion of study area from central ridgeline.



Photo 8: View of southeastern portion of study area from central ridgeline.

APPENDIX BE-B

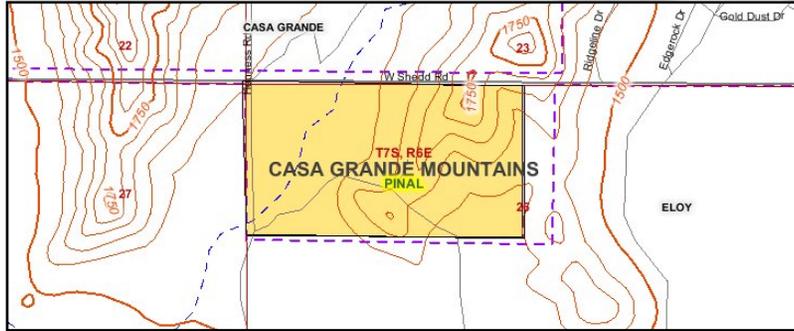
Arizona's On-line Environmental Review Tool

Search ID: 20080812006738

Project Name: Casa Grande Mountain Park

Date: 8/12/2008 1:50:58 PM

Project Location



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

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

| Name | Common Name | ESA | USFS | BLM | State |
|---|----------------------------------|-----|------|-----|-------|
| Gastrophryne olivacea | Great Plains Narrow-mouthed Toad | | | | WSC |
| Gopherus agassizii (Sonoran Population) | Sonoran Desert Tortoise | SC | | | WSC |
| Tohono O'odham Nation | Tohono O'odham Nation | | | | |

Project Name: Casa Grande Mountain Park

Submitted By: Susy Morales

On behalf of: CITY

Project Search ID: 20080812006738

Date: 8/12/2008 1:50:54 PM

Project Category: Recreation Areas, Trails and trail heads (parking, day-use, picnic areas, etc.), Construction of new facilities

Project Coordinates (UTM Zone 12-NAD 83): 434275.678, 3628272.543 meter

Project Area: 68.621 acres

Project Perimeter: 2207.595 meter

County: PINAL

USGS 7.5 Minute Quadrangle ID: 1532

Quadrangle Name: CASA GRANDE MOUNTAINS

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.

Arizona's On-line Environmental Review Tool

Search ID: 20080812006738

Project Name: Casa Grande Mountain Park

Date: 8/12/2008 1:50:58 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

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: Recreation Areas, Trails and trail heads (parking, day-use, picnic areas, etc.), Construction of new facilities

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://www.pr.state.az.us/partnerships/shpo/shpo.html#anchor561695>

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/h_f/hunting_rules.shtml.

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

Minimize impacts to wildlife and wildlife habitat by staying on designated roads and trails, and by minimizing use during spring and summer breeding periods. Additional information concerning OHV use is located at:
http://www.azgfd.gov/outdoor_recreation/habitat_ohv_areas.shtml

Arizona's On-line Environmental Review Tool

Search ID: 20080812006738

Project Name: Casa Grande Mountain Park

Date: 8/12/2008 1:50:58 PM

Project Location and/or Species recommendations:

Tribal Lands are within the vicinity of your project area (refer to page 1 of the receipt) and may require further coordination. Please contact:

Tohono O'odham Nation

P.O. Box 837
Sells, AZ 85634
Phone: 520-383-2028
Fax: 520-383-3379

HDMS records indicate that Sonoran desert tortoise have been documented within the vicinity of your project area (refer to the species list on page 1 of the receipt). Please review the Tortoise Handling Guidelines found on the Environmental Review Home Page.

<http://www.azgfd.gov/hgis/guidelines.azpx>

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the

Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.

5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.

6. Further coordination requires the submittal of this initialed and signed Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).

7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

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

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

Arizona's On-line Environmental Review Tool

Search ID: 20080812006738

Project Name: Casa Grande Mountain Park

Date: 8/12/2008 1:50:58 PM

will not use this website for any other purpose.

2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act .

3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.

4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.

5. A signed and initialed copy of the Environmental Review Receipt indicates that the entire receipt has been read by the signer of the Environmental Review Receipt.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

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

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6)

months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

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

Signature: _____

Date: _____

Proposed Date of Implementation: _____

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization: _____

Contact Name: _____

Address: _____

Arizona's On-line Environmental Review Tool

Search ID: 20080812006738

Project Name: Casa Grande Mountain Park

Date: 8/12/2008 1:50:58 PM

City, State, Zip: _____

Phone: _____

E-mail: _____

Person Conducting Search (if not applicant)

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____



APPENDIX C



United States Department of the Interior



Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer to:
AESO/SE
22410-2009-TA-0022

October 27, 2008

Ms. Susana M. Morales
RECON
525 West Wetmore Road, Suite 111
Tucson, Arizona 85705-5904

Re: RECON Job #4764

Dear Ms. Morales:

Thank you for your September 29, 2008 request for technical assistance related to the City of Casa Grande's proposed lease of 80 acres of Bureau of Land Management land for addition to the Casa Grande Mountain Park. The lease parcel is located at the southern end of the Casa Grande Mountains, southeast of the City of Casa Grande, Pinal County, Arizona (T7S, R6E, Section 26). We have reviewed the information you provided and have the following comments regarding this action.

The project proposal falls within the range of the lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*; LLNB), a species listed as endangered under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544) (Act). The project also includes habitat for the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) (pygmy-owl), a species formerly listed as endangered under the Act. A final rule to remove the pygmy-owl from the Endangered Species list was published April 14, 2006 and became effective May 15, 2006. Therefore, the protective regulations of the Act no longer apply to the pygmy-owl. However, upon request, we continue to provide technical assistance related to the conservation of the pygmy-owl. Additionally, we have received a petition to again list the pygmy-owl as threatened or endangered. We have also received petitions to list the Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*) and the Sonoran desert tortoise (*Gopherus agassizii*) as threatened or endangered under the Act. We are currently processing these three petitions and provide comments related to this project for these three species in addition to the LLNB.

No known LLNB roosts occur in the Casa Grande Mountains. However, roosting habitat (caves, mines, crevices, etc.) is found within and adjacent to the project boundaries. While the Biological Evaluation indicates that no known roosts occur within 20 miles of the lease parcel, a known LLNB maternity roost occurs approximately 21 miles southwest of parcel, within the distance known to be traveled by foraging LLNBs. Telemetry studies in the Tucson area over

the past two years show that LLNBs regularly travel over 20 miles from roosts to forage. As this parcel is proposed for primarily passive recreational uses, we do not believe there will be any direct effects to roosting LLNBs. However, because there is potential roosting habitat in the Casa Grande Mountains, we recommend that potential roost locations be identified within and adjacent to the parcel (caves, mines, large crevices, etc.), and that they be inspected for occupancy or signs of occupancy by LLNBs.

There is the potential for LLNBs to forage in the Casa Grande Mountains. Saguaros (*Carnegiea gigantea*) are an important forage species for the LLNB. Although this parcel is proposed for primarily passive recreational uses, the development of trailheads, parking lots, or fencing could potentially impact saguaros. We recommend the preservation on site of all saguaros within the project area. If saguaros must be impacted by construction and cannot be transplanted on site, we recommend their replacement on site at a ratio of 3:1. Habitat connectivity among foraging areas and between roost sites and foraging areas is important for the conservation of LLNBs. LLNBs will often use xeroriparian habitat (washes) to move through the landscape. We recommend that every effort be made to maintain the maximum coverage of wash habitat within the project to provide habitat connectivity for LLNBs.

Many of the same habitat elements important to the LLNB are also important to the pygmy-owl. Protection of saguaros within the project will protect potential pygmy-owl nest sites. Conservation of wash habitat will maintain foraging and movement habitat for pygmy-owls. If construction of recreation facilities will occur during the pygmy-owl breeding season (February 1 – June 30), we recommend surveys to document presence or absence of pygmy-owls.

As acknowledged in the Biological Evaluation, the proposed lease parcel contains habitat for the Sonoran desert tortoise. We believe that the measures outlined on p. 10 of the Biological Evaluation are adequate to address issues related to the desert tortoise.

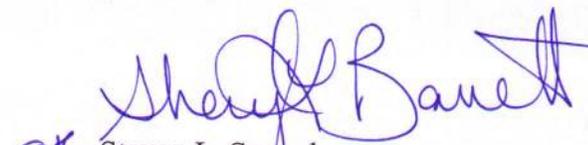
The lease parcel falls within the core of the range of the Tucson shovel-nosed snake. If possible, surveys should be conducted to determine if the Tucson shovel-nosed snake occupies the lease parcel. Because occupancy of Tucson shovel-nosed snakes is difficult to determine, we also recommend that facilities be constructed in areas of existing disturbance to reduce impacts to soil conditions that are favorable to the shovel-nosed snake, and reduce the potential for direct mortality.

In general, we are supportive of the proposed lease. Protective measures associated with the mountain park will be implemented that will contribute to the conservation of important Sonoran desert habitat and wildlife species. We support the use of the parcel for passive recreation, but recommend facilities be limited and located in areas where impacts to the habitat and species will be reduced. In general, development of this parcel should occur in a manner that preserves and enhances the native vegetation on the site. We are supportive of proposed restoration actions within the parcel.

This letter is not intended to express any requirement of, or conditions necessary for compliance with, the Endangered Species Act. Our comments are provided to you as technical assistance regarding how effects of the proposed lease on biological resources can be minimized, but they do not constitute legal requirements. As this proposed action has a Federal nexus (authorized, funded, or carried out by a Federal agency), the Bureau of Land Management will make a determination on the effects of the action on listed species and whether section 7 consultation, pursuant to the Act, is required.

If you have any questions regarding our comments, or need any additional information, please contact Scott Richardson at 520-670-6150 (x242) or Sherry Barrett (x223). Thank you for your consideration of endangered species.

Sincerely,


Steven L. Spangle
Field Supervisor

cc: Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Habitat Branch Chief, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ (Attn: Joan Scott)

APPENDIX D

RECOMMENDED STANDARD MITIGATION MEASURES FOR PROJECTS IN SONORAN DESERT TORTOISE HABITAT

*Arizona Interagency Desert Tortoise Team
June 2008*

The following mitigation process and measures are recommended by the Arizona Interagency Desert Tortoise Team (AIDTT) for proposed surface-disturbing projects located in the habitat of the Sonoran population of the desert tortoise, *Gopherus agassizii*.

Mitigation for projects in the habitat of the Mojave population, located north and west of the Colorado River, will be addressed by project proponents, land management agencies, Arizona Game and Fish Department, and the Fish and Wildlife Service through consultations between the Service and Federal agencies in accordance with section 7 of the Endangered Species Act and in the habitat conservation planning process for private actions. This document is a supplement to the **AIDTT Management Plan (AIDTT 1996)**.

Determining the Need for Mitigation

Project proponents, in coordination with local land managers, Arizona Game and Fish Department, and Fish and Wildlife Service, must determine whether desert tortoises are present or may occur in areas that would be disturbed by proposed projects. Presence can often be confirmed by contacting biologists with the Bureau of Land Management, Arizona Game and Fish Department, or other local biologists that have knowledge of specific areas or access to the Arizona Game and Fish Department Heritage Data Management System or other data bases that list locality data for desert tortoises. Tortoises can be expected to occur in desert mountains, rocky areas, washes cut through caliche, and bajadas in desert scrub vegetation communities. Tortoises are typically absent above 4,500 feet elevation. Mitigation will generally not be needed above 4,500 feet.

If tortoises have been found in the project area or nearby areas of similar habitat, the species can be presumed present and appropriate mitigation must be included in the proposed project. If presence is questionable, surveys by qualified biologists should be conducted. Often, casual surveys by qualified biologists that focus on microsites with the greatest potential for supporting tortoises can confirm the presence of the species. More intensive work is needed to suggest absence of tortoises. We recommend that these intensive surveys generally follow Fish and Wildlife Service survey protocol for the Mojave population (Fish and Wildlife Service 1992), except that areas with little or no potential for desert tortoises, such as dry lake beds and riparian areas need not be surveyed. Tortoise biologists conducting surveys should be familiar with the habitats and survey methods for Sonoran tortoises, which are in many ways different from those of the Mojave population. If the species is present in the project area (including the zone of influence - Fish and Wildlife Service 1992), mitigation should be included as a component of the project design.

Mitigation Plan

Mitigation should be tailored to the nature of the proposed action, its anticipated effects, and the density and expected response of desert tortoises to the action. The following mitigation actions are grouped to assist in selection of appropriate actions for specific projects. Nevertheless, each project is different and development of an appropriate mitigation plan will require the input of a desert tortoise biologist and authorizing agencies, such as the Arizona Game and Fish Department and, for actions on Federal lands, the Bureau of Land Management, Forest Service, Bureau of Reclamation, and Department of Defense. Approval of a mitigation plan will typically be by an authorizing or permitting/authorizing land management agency, but only Arizona Game and Fish Department can authorize handling or moving tortoises. Mitigation measures suggested herein are recommendations to be used in developing mitigation plans for specific projects. Required mitigation will be developed by permitting agencies and project proponents in accordance with land management plans, the Desert Tortoise Rangeland Plan (Spang et al. 1988), the National Environmental Policy Act (NEPA), and other applicable guidance and regulations. In general, more rigorous mitigation should be sought in areas supporting moderate to high density tortoise populations (>20 tortoises/mi²), in category 1 and 2 habitats (Spang et al. 1988), and in Sonoran Desert Management Areas (AIDTT 1996).

The first set of mitigation measures are presented as a generic mitigation outline. Within the outline, measures are listed in the general order and priority in which they should be applied to project proposals. This step-down process is in accordance with NEPA regulations and Fish and Wildlife Service mitigation policy. A second set of measures follow the outline and consist of project-specific mitigation recommendations. These and/or other measures developed during project planning should be added to the generic mitigation outline as appropriate. A good source of ideas for mitigation measures is the biological analysis for the proposed Eagle Mountain Landfill (Circle Mountain Biological Consultants 1996), in which the author summarizes mitigation measures used as terms and conditions in biological opinions for the Mojave population of the desert tortoise.

Some of the following recommended measures are defined fairly specifically; others provide more general guidance to be considered in the process of developing a project mitigation plan. As these measures are adapted for inclusion into a mitigation plan, replace "should" with "shall" to indicate that they are mandatory stipulations.

Generic Mitigation Plan For Projects in Desert Tortoise Habitat:

Priority 1: Avoid the Impacts

To the extent possible, project features should be located in previously disturbed areas or outside of desert tortoise habitat.

If impacts to desert tortoises or their habitat can not be avoided, then:

Priority 2: Minimize the Impacts

A. Scheduling Activities to Reduce Potential Adverse Effects:

To the extent possible, project activities should be scheduled when tortoises are inactive (typically November 1 to March 1).

B. Information and Education of Project Personnel:

A desert tortoise protection education program should be presented to all employees, inspectors, supervisors, contractors, and subcontractors who carry out proposed activities at the project site. The education program should include discussions of the following:

1. The legal and sensitive status of the tortoise;
2. a brief discussion of tortoise life history and ecology;
3. mitigation measures designed to reduce adverse effects to tortoises;
4. and protocols to follow if a tortoise is encountered, including appropriate contact points.

C. Designation of a Desert Tortoise Coordinator:

The project proponent should designate a desert tortoise coordinator (DTC) who should be responsible for overseeing compliance with the mitigation program, coordination with permitting agencies, land managers, and Arizona Game and Fish Department; and as a contact point for personnel that encounter desert tortoises. The DTC should be on site during project activities and should be familiar with and have a copy of the desert tortoise mitigation plan.

D. Removal of Harm to Desert Tortoises on Project Sites:

If a tortoise is found in a project area, activities should be modified to avoid injuring or harming it. If activities cannot be modified, tortoises in harm's way should be moved in accordance with Arizona Game and Fish Department's "Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects", revised October 23, 2007 (or the latest revision). Take, possession, or harassment of a desert tortoise is prohibited by State law, unless specifically authorized by Arizona Game and Fish Department.

E. Minimization of Project Footprint:

1. Vehicle use should be limited to existing or designated routes to the extent possible.

2. Areas of new construction or disturbance should be flagged or marked on the ground prior to construction. All construction workers should strictly limit their activities and vehicles to areas that have been marked. Construction personnel should be trained to recognize markers and understand the equipment movement restrictions involved.

F. Limitation of Habitat Disturbance within the Project Footprint:

1. Blading of new access or work areas should be minimized to the extent possible. Disturbance to shrubs should be avoided if possible. If shrubs cannot be avoided during equipment operation or vehicle use, wherever possible they should be crushed rather excavated or bladed and removed.

2. Project features that might trap or entangle desert tortoises, such as open trenches, pits, open pipes, etc should be covered or modified to prevent entrapment. [This may only be necessary during the tortoise active season and may be unnecessary if an on-site biologist is monitoring activities - see "Suggested Mitigation Measures for Projects Conducted During the Tortoise Activity Period... "below.]

G. Preventing Attraction of Predators or Enhancement of Predator Populations:

Construction sites should be maintained in a sanitary condition at all times. The project proponent should be responsible for controlling and limiting litter, trash, and garbage by immediately placing refuse in predator-proof, sealable receptacles. Trash and debris should be removed when construction is complete.

Priority 3: Rectify the Impacts

A. Removal of Hazards:

After completion of the project, trenches, pits, and other features in which tortoises could be entrapped or entangled, should be filled in, covered, or otherwise modified so they are no longer a hazard to desert tortoises.

B. Habitat Restoration:

After project completion, measures should be taken to facilitate restoration. Restoration techniques should be tailored to the characteristics of the site and the nature of project impacts identified in the mitigation plan as developed by project biologists, Arizona Game and Fish Department, and permitting State and Federal agencies. Techniques may include removal of equipment and debris, recontouring, replacing boulders that were moved during construction; and seeding, planting, transplanting of cacti and yuccas, etc. Only native plant species, preferably from a source on or near the project area, should be used in restoration.

Priority 4.- Reduce or Eliminate the Impacts over Time, and Provide Guidance and Information for Improving Future Mitigation Plans

Monitoring and Reporting Requirements:

The project proponent should submit a monitoring report to the Arizona Game and Fish Department and any permitting State or Federal agency within 90 days of project completion. For long-term or ongoing projects that may result in continuing impacts to tortoises and habitat, annual monitoring reports should be prepared. Monitoring reports should briefly document the effectiveness of the desert tortoise mitigation measures, actual acreage of desert tortoise habitat disturbed, the number of desert tortoises excavated from burrows, the number of desert tortoises moved from construction sites, and other applicable information on individual desert tortoise encounters. The report should make recommendations for modifying or refining the mitigation program to enhance desert tortoise protection and reduce needless hardship on the project proponents.

Priority 5: Compensate for Residual Impacts

In accordance with "Compensation for the Desert Tortoise" (Desert Tortoise Compensation Team 1991), signed by Desert Tortoise Management Oversight Group, authorizing agencies should require compensation for residual impacts to desert tortoise habitat.

The following mitigation measures are designed for specific project types or conditions. Most act to minimize project impacts (priority 2 measures).

For Projects Involving Hazardous Materials:

Oil, fuel, pesticides, and other hazardous material spills should be cleaned up and properly disposed of as soon as they occur in accordance with applicable State and Federal regulations. All hazardous material spills must be reported promptly to the appropriate surface management agencies and hazardous materials management authorities.

For Projects Conducted During the Tortoise Activity Period (typically March 1 to November 1)

1. Construction and operation activities should be monitored by a qualified desert tortoise biologist. The biologist should be present during all activities in which encounters with tortoises may occur. The biologist should watch for tortoises wandering into construction areas, check under vehicles, check at least three times per day any excavations that might

trap tortoises, and conduct other activities necessary to ensure that death and injury of tortoises is minimized. This measure may only be warranted in areas of moderate to high tortoise density, category 1 or 2 habitat, or in Sonoran Desert Management Areas.

2. Unleashed dogs should be prohibited in project areas.

3. Temporary fencing, such as chicken wire, snow fencing, chain link, and other suitable materials should be used in designated areas to reduce encounters with tortoises on short-term projects, such as construction of power lines, burial of fiber optic cables, etc, where encounters with tortoises are likely.

For Long-term or Permanent Projects in Which Continued Encounters with Desert Tortoises Are Expected:

Construction of schools, factories, power plants, office buildings, and other permanent or long-term projects in moderate to high density desert tortoise habitat should be enclosed with desert tortoise barrier fencing to prevent tortoises from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing should consist of wire mesh with a maximum mesh size of 1-inch (horizontal) by 2-inch (vertical) fastened securely to posts. The wire mesh should extend at least 18 inches above the ground and preferably 12 inches below the surface of the ground. Where burial is not possible, the lower 12 inches should be folded outward, away from the enclosed site, and fastened to the ground so as to prevent tortoise entry. Any gates or gaps in the fence should be constructed and operated to prevent desert tortoise entry (such as installing "tortoise guards" similar to cattle guards, and/or keeping gates closed). Specific measures for tortoise-proofing gates and gaps should be addressed project by project. Fencing is a relatively expensive mitigation measure and may only be appropriate in areas of moderate to high tortoise density, category I or 2 habitats, or Sonoran Desert Management Areas.

For Projects in Which Encounters Between Vehicles and Tortoises are Likely:

In desert tortoise habitat project-related vehicles should not exceed 25 miles per hour on unpaved roads.

For Road and Railroad Construction or Improvements in Desert Tortoise Habitat:

1. New paved roads and highways or major modifications of existing roads through desert tortoise habitat should be fenced with desert tortoise barrier fencing (described above). Culverts, to allow safe passage of tortoises, should be constructed approximately every mile of new paved roads and railroads (culverts can also serve the more typical purpose of conducting water under roads and railroads). The culvert diameter needed to encourage tortoise use is correlated with culvert length, but generally short culverts of large diameter are most likely to be used. Culvert design should be coordinated with

Arizona Game and Fish Department and authorizing State and Federal agencies. The floor of the culvert should be covered with dirt and maintenance should be performed as necessary to maintain an open corridor for tortoise movement. Fencing and culverts may only be warranted in areas of moderate to high tortoise densities, category 1 or 2 habitats, or in Sonoran Desert Management Areas.

2. Use of roads constructed for specific non-public purposes, such as access routes to microwave towers, should be limited to administrative use only.

3. Temporary access routes created during project construction should be modified as necessary to prevent further use. Closure of access routes could be achieved by ripping, barricading, posting the route as closed, and/or seeding and planting with native plants.

References Cited

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- Fish and Wildlife Service. 1992. Procedures for endangered species act compliance for the Mojave population of the desert tortoise. Fish and Wildlife Service, Region 1 -Portland, Region 2 - Albuquerque, and Region 6 - Salt Lake City.
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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.