



**Baseline Biological and Focused Desert Tortoise
Survey of the JT 105 Project Site,
Joshua Tree, unincorporated San Bernardino County,
California**

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1.0 INTRODUCTION

This report presents the results of a general biological and focused Desert Tortoise (*Gopherus agassizii*) survey conducted by AMEC Earth and Environmental (AMEC) on the JT 105 project site located in the Town of Joshua Tree, unincorporated San Bernardino County, California (see Map 1). The project is specifically located in the southeast $\frac{1}{4}$ of Section 34, Township 1 North, Range 6 East as shown on the U.S.G.S. 7.5 minute *Joshua Tree North, California* and *Joshua Tree South, California* Quadrangles. The proposed project site occupies ~105-acres. The JT 105 project site is bordered by Alta Loma Road, residential development, and the "Friendly Hills Elementary School" to the south; residential development and Sunny Vista Road to the east; residential development, Sherwood Road, and undeveloped land to the west; and residential development, Sunburst Drive, and undeveloped land to the north. The JT 105 site is located at elevations ranging from ~3,020 feet above sea level on the northern edge of project, to ~3,200 feet above sea level on the southern edge of the site.

This survey effort consisted of a literature review, a site survey to perform a general inventory of plants and animals and a focused survey to ascertain presence/absence of Desert Tortoise, an assessment of potential habitat for sensitive biological resources, and to check for presence/absence of jurisdictional waters or wetlands.

2.0 METHODS

A literature review was conducted to identify sensitive biological resources known from the vicinity of the project site. This included consultation with the California Department of Fish and Game's (CDFG) California Natural Diversity Data Base (CNDDDB 2007) computerized data base, and a review of the California Native Plant Society's (CNPS) *Rare and Endangered Vascular Plants of California* (2001). Pertinent documents from the AMEC library and files were also consulted.

The project site was surveyed by AMEC biologists Nathan Moorhatch, Mimi Velten, and Michael Wilcox; as well as subconsultant Ted Rado, on April 11, 2007 (see Table A). The site was surveyed for presence/absence of Desert Tortoise by walking United States Fish and Wildlife Service protocol (USFWS 1992) 30 foot-wide transects over the entire site. Zone of Influence transects were performed northwest of the site, as this was the only area of undeveloped land surrounding the project (see Map 1). The surveyors also looked for sign of Burrowing Owls (*Athene cunicularia*) during the course of walking transects over the site. The assessment of the potential for occurrence of many of the sensitive biological resources known from the project vicinity was based on geographic range, habitat associations, and soil types.

Table A. Biological Surveys at the JT 105 Project Site

Date	Surveyors	Time	Weather	Temp.
April 11	Moorhatch, Velten, Wilcox, and Rado	0840-1510	Clear (0% clouds), 0-20 mph wind	64-81°F

All plant and vertebrate species observed were recorded in field notes. Unobserved wildlife species were identified through indirect sign (e.g. scat, tracks, nests, burrows, etc.). Bird species were identified through binoculars. Scientific nomenclature for this report is from the following standard reference sources: plant communities, Holland (1986); flora, Hickman (1993) and Munz (1974); reptiles and amphibians, Stebbins (2003); birds, American Ornithologist's Union (2005); and mammals, Grenfell (2000).



Figure 1. View of the southern portion of the site, some ground disturbance in foreground.

3.0 REGULATORY FRAMEWORK

3.1 Federal

Endangered Species Act (ESA) – The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA. ESA defines species as “endangered” or “threatened” and provides regulatory protection at the federal level.

- Section 9 of the ESA prohibits the “take” of listed (i.e., endangered or threatened) species. The ESA definition of take is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.” Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a)(1)(A) permits (authorized take permits) are issued for scientific purposes. Section 10(a)(1)(B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species.
- Section 7 (a)(2) requires federal agencies to evaluate the proposed project with respect to listed or proposed listed, species and their respective critical habitat (if applicable). Federal agencies must employ programs for the conservation of listed species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its “critical habitat.”

As defined by the ESA, “individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding.

Section 10(a) of the ESA authorizes the issuance of incidental take permits and establishes standards for the content of habitat conservation plans (see Section 3.3 below).

Migratory Bird Treaty Act (MBTA) – Treaties signed by the U.S., Great Britain, Mexico, Japan, and the countries of the former Soviet Union make it unlawful to pursue, capture, kill, and/or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. The Secretary of the Interior can issue permits for incidental take of migratory bird species. As with the ESA, the MBTA also allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species.

National Environmental Policy Act (NEPA) – If portions of a proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers). NEPA establishes certain criteria that must be adhered to for any project that is “financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to “determine whether the proposed action will significantly affect the quality of the human environment.”

Section 404 of the Clean Water Act – This section of the Clean Water Act, administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material

into "waters of the United States." The USACE has created a series of nationwide permits that authorize certain activities within waters of the U.S. provided that the proposed activity does not exceed the impact threshold for nationwide permits, takes steps to avoid impacts to wetlands where practicable, minimize potential impacts to wetlands, and provide compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued.

3.2 State

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA, however it is administered by the California Department of Fish and Game (CDFG). The CDFG is authorized to enter into "memoranda of understanding" with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the federal ESA, CESA applies the take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with CDFG to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

California Environmental Quality Act (CEQA) – The basic goal of CEQA is to maintain a high-quality environment now and in the future and the specific goals are for California's public agencies to:

- 1) identify the significant environmental effects of their actions; and, either
- 2) avoid those significant environmental effects, where feasible; or
- 3) mitigate those significant environmental effects, where feasible.

CEQA applies to "projects" proposed to be undertaken or requiring approval by state and local government agencies. Projects are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by CEQA. The most basic steps of the environmental review process are:

- 1) Determine if the activity is a "project" subject to CEQA;
- 2) Determine if the "project" is exempt from CEQA;
- 3) Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:

- a) Negative Declaration if it finds no "significant" impacts;
- b) Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
- c) Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the State CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the general public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to list ways in which the significant environmental effects may be minimized and indicate alternatives to the project.

The Native Plant Protection Act (NPPA) – The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for “rare and endangered” are different from those contained in CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under CESA. NPPA provides limitations on take as follows: “no person will import into this state, or take, possess, or sell within this state” any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by CDFG, pursuant to section 1903.5 that a rare or endangered plant is growing on their property, the landowner shall notify CDFG at least 10 days prior to the changing of land uses to allow CDFG to salvage the plants.

Natural Community Conservation Planning (NCCP) Program – The NCCP, which is managed by the CDFG, is intended to conserve multiple species and their associated habitats, while also providing for compatible use of private lands. Through local planning, the NCCP planning process is designed to provide protection for wildlife and natural habitats before the environment becomes so fragmented or degraded by development that species listing are required under CESA. Instead of conserving small, often isolated “islands” of habitat for just one listed species, agencies, local jurisdictions, and/or other interested parties have an opportunity through the NCCP to work cooperatively to develop plans that consider broad areas of land for conservation that would provide habitat for many species. Partners enroll in the programs and, by mutual consent, areas considered to have high conservation priorities or values are set aside and protected from development. Partners may also agree to study, monitor, and develop management plans for these high value “reserve” areas. The NCCP provides an avenue for fostering economic growth by allowing approved development in areas with lower conservation value. See further discussion in Section 3.3 below.

Sections 1600-1603 of the State Fish and Game Code – The California Fish and Game Code, pursuant to Sections 1600 through 1603, regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, CDFG jurisdiction is assessed in the field based on one, or a combination, of the following criteria (CDFG 2005b):

- (1) At minimum, intermittent and seasonal flow through a bed or channel with banks and that also supports fish or other aquatic life.
- (2) A watercourse having a surface or subsurface flow regime that supports or that has supported riparian vegetation.
- (3) Hydrogeomorphically distinct top-of-embankment to top-of-embankment limits.
- (4) Outer ground cover and canopy extents of, typically, riparian associated vegetation species that would be sustained by surface and/or subsurface waters of the watercourse.

The CDFG requires that public and private interests apply for a “Streambed Alteration Agreement” for any project that may impact a streambed or wetland. The CDFG has maintained a “no net loss” policy regarding impacts to streams and waterways and requires replacement of lost habitats on at least a 1:1 ratio. A mapped blue line “stream” and two smaller dry channels cross portions of the project site (see Map 1). These features qualify as “Waters of the State”.

Section 2081 of the State Fish and Game Code – Under Section 2081 of the California Fish and Game Code, the CDFG authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFG. The CDFG shall make this determination based on the best scientific information reasonably available and shall include consideration of the species’ capability to survive and reproduce.

Section 3505.5 of the State Fish and Game Code – This section makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, e.g.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey.

3.3 County

Title 8, Division 9 of the County of San Bernardino Development Code establishes the guidelines for Desert Native Plant Protection applied to specific desert native plants growing on private land within the unincorporated areas of San Bernardino County, and to desert native plants growing on public land owned by the County of San Bernardino or the State of California. The list of regulated desert native plants consists of the following groups:

- Smoke Trees (*Dalea spinosa*) with stems two (2) inches or greater in diameter or six (6) feet or greater in height
- All species of the genus *Prosopis* (Mesquites) with stems two (2) inches or greater in diameter or six (6) feet or greater in height

- All woody species of the family Liliaceae (century plants, nolinias, and yuccas)
- Creosote (*Larrea tridentata*) rings, ten (10) feet or greater in diameter
- All Joshua trees (*Yucca brevifolia*)
- All plants protected or regulated by the State Desert Native Plants Act (i.e. California Food and Agricultural Code 80001 et. seq.) shall be required to comply with the provisions of those statutes prior to the issuance of any County development permit or land use application approval. The County Agricultural Commissioner is the responsible agency for the issuance of any required wood tags, seals, or permits.

Any person who willfully removes, or harvests or transplants a living desert native plant shall first obtain approval from the County to do so in accordance with the procedures set forth in Sections 89.0115 or 89.0401 et. seq.

4.0 RESULTS

4.1 Vegetation

Appendix 1 includes the scientific and common names for plant species identified during the surveys. A total of 47 plant species were identified during the survey. This number does not reflect the total number of plant species likely to occur on the site. 2007 has been an extremely low rainfall year, which has resulted in a lack of germination for many annual plant species. Weather records for Joshua Tree show that the area has only received ~0.18 inches of rainfall in the past six months. The low number of annual plants recorded on the site is an indication of the drought conditions that much of Southern California is experiencing.

The dominant plant community present on the site is best characterized as sparse Joshua Tree "Woodland" intermixed with Mojave Mixed Woody Scrub (Holland 1986). This habitat is characterized by an overstory of Joshua Tree (*Yucca brevifolia*) with an understory of various shrubs and perennial herbs that are often typical components of other plant communities such as Mojave Mixed Woody Scrub and Mojave Mixed Steppe (Holland 1986). At higher elevations Joshua Tree Woodland intergrades with Blackbrush Scrub and Mojavean Juniper Woodland and Scrub (Holland 1986); and at lower elevations with Mojave Creosote Bush Scrub (Holland 1986). Plant species typical of Joshua Tree Woodland/Mojave Mixed Woody Scrub present on the JT 105 project site include: Joshua Tree, Cooper's Goldenbush (*Ericameria cooperi* var. *cooperi*), Anderson's Box Thorn (*Lycium andersonii*), Mojave Yucca (*Yucca schidigera*), Flat-topped California Buckwheat (*Eriogonum fasciculatum* var. *polifolium*), Blackbush (*Coleogyne ramosissima*), and Paper-bag Bush (*Salazaria mexicana*). On the northern (lower elevation) portions of the project site the habitat begins to grade into Mojave Creosote Bush Scrub. Species typical of this habitat observed on the site include: Creosote Bush (*Larrea tridentata*), Burrobush (*Ambrosia dumosa*), White Rhatany (*Krameria grayi*), Desert Senna (*Senna armata*), and Golden Cholla (*Opuntia echinocarpa*).

A mapped blue line stream crosses portions of the project site. This area is vegetated with a mixture of Mojave Creosote Bush Scrub and Mojave Desert Wash Scrub (Holland 1986) elements. Some plants representative of Mojave Desert Wash Scrub habitat observed in this area include: Desert Willow (*Chilopsis linearis* ssp. *arcuata*), Catclaw (*Acacia greggii*), Desert Tea (*Ephedra californica*), and Cheesebush (*Hymenoclea salsola*). Although this large dry wash area contains a sparse assemblage of Mojave Desert Wash Scrub elements, it does not have the conspicuous microphyllous tree species of Desert Dry Wash Woodland (Holland 1986).

The JT 105 site is surrounded on three sides by residential development, and has received a moderate to heavy amount of disturbance in the form of dirt road and trail construction, trash deposition (both windblown and actual dumping), partial clearing of certain areas with associated vegetation removal (see Appendix 2: Site Photographs), and domestic dog activity ("digging out" of small mammal burrows).

4.2 Wildlife

The list of animals detected on the JT 105 project site during the survey totals 28 species (2 reptiles, 20 birds, and 6 mammals). The inventory was limited by the short survey duration, the general drought conditions of the area, and by the nocturnal and fossorial habits of many animals.

Only two common reptiles were observed during the surveys: Side-blotched Lizard (*Uta stansburiana*) and Great Basin Whiptail (*Aspidoscelis tigris tigris*). The disturbed native habitats on the project site are potential habitat for the Desert tortoise (*Gopherus agassizii*), but no tortoise sign was observed during the survey on or adjacent to the site. A few other common reptiles likely inhabit or utilize the site, but were not observed.

Six mammals were observed or detected (through sign) at the time of the survey. These included common and widespread desert mammals such as Black-tailed Jackrabbit (*Lepus californicus*), White-tailed Antelope Ground Squirrel (*Ammospermophilus leucurus*), Desert Woodrat (*Neotoma lepida*), and Coyote (*Canis latrans*).

Birds observed during the survey include a mix of species common to undeveloped and developed areas of Yucca Valley and the Joshua Tree area. Some of the birds observed included: Mourning Dove (*Zenaida macroura*), Red-tailed Hawk (*Buteo jamaicensis*), Black-throated Sparrow (*Amphispiza bilineata*), Verdin (*Auriparus flaviceps*), American Kestrel (*Falco sparverius*), and Common Raven (*Corvus corax*). Additional bird species were observed on and adjacent to the project site, and are listed in Appendix 1.

4.3 Sensitive Elements

Plant or animal taxa may be considered "sensitive" due to declining populations, vulnerability to habitat change or loss, or because of restricted distributions. Certain sensitive species have been listed as Threatened or Endangered by the United States Fish and Wildlife Service (USFWS) or by the CDFG, and are protected by the federal and state Endangered Species Acts

and the California Native Plant Protection Act. Other species have been identified as sensitive by the USFWS, the CDFG, or by private conservation organizations, including the CNPS, but have not been formally listed as Threatened or Endangered. Such species can still be considered significant under the California Environmental Quality Act (CEQA).

The literature review, and AMEC biologists' knowledge of the project vicinity, indicated that as many as 11 sensitive biological resources potentially occur in the vicinity of the project site. For a summary of sensitive species known to occur or potentially occurring in the vicinity of the project site, see Tables 1 through 4.

Table 1. Sensitive Plants: JT 105 Project Site

Species	Protective Status	Habitat	Flowering Period	Occurrence Probability
<i>Arabis dispar</i> Pinyon rock cress	F: ND C: ND CNPS List: 2.3 State Rank: S2.3	Joshua Tree woodland, pinyon-juniper woodland, Mojavean desert scrub	March - June	Absent-Low (not detected during survey)
<i>Linanthus maculatus</i> Little San Bernardino Mtns. linanthus	F: ND C: ND CNPS List: 1B.2 State Rank: S1.2	Desert dunes, Sonoran desert scrub, Mojave desert scrub, Joshua tree woodland, ~640 – 6,800 feet elevation	March - May	Absent-Low (not detected during survey, historic 1937 CNDDDB record is from Section 34)
<i>Monardella robisonii</i> Robison's Monardella	F: ND C: ND CNPS List: 1B.3 State Rank: S2.3	Rocky desert slopes in pinyon-juniper and Joshua Tree woodlands	April - September	Absent (rocky slope microhabitat not present)
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	F: ND C: ND CNPS List: 1B.2 State Rank: S2.2	Chaparral and Mojave Desert scrub habitats with rocky or sandy substrates, between 1,310 and 6,230 feet elevation	March - June	Absent (known from fewer than 20 occurrences, not much known about life history)

Table 2. Sensitive Reptiles: JT 105 Project Site

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
Desert tortoise (<i>Gopherus agassizii</i>)	F: THR C: THR State rank: S2	A variety of desert habitats, creosote bush scrub, wash scrub	Absent (no tortoises or sign detected on or adjacent to site)

Table 3. Sensitive Birds: JT 105 Project Site

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
Burrowing Owl (<i>Athene cunicularia</i>)	F: ND C: CSC State rank: S2	Inhabits a variety of open habitats (including edges of ag. fields), often occupies unused ground squirrel burrows	Absent (Habitat marginal to unsuitable [very disturbed] very few burrows suitable for owl occupation observed)
Prairie Falcon (<i>Falco mexicanus</i>)	F: ND C: CSC (nesting) State rank: S3	Dry, open terrain, nests on cliffs	Absent: nesting Moderate: foraging
Le Conte's Thrasher (<i>Toxostoma lecontei</i>)	F: BCC C: CSC State rank: S3	Resident of open desert wash, scrub, alkali scrub, succulent scrub habitats, nests in dense spiny shrubs and cacti in washes	Absent-Low (CNDDDB record from >5.5 mi. NE of site, most of site is too close to residential development)
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	F: BCC C: CSC (nesting) State rank: S4 MSHCP: No	Open terrain, grasslands, scrub habitats	Moderate-High

Table 4. Sensitive Mammals: JT 105 Project Site

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
Pallid San Diego pocket mouse (<i>Chaetodipus fallax pallidus</i>)	F: ND C: CSC State rank: S3	Desert border areas, desert wash, scrub, succulent scrub, sandy herbaceous areas with rocks or coarse gravel	Absent - Low (habitat quality marginal, CNDDDB record > 7 mi. SE of site)
Nelson's bighorn sheep (<i>Ovis canadensis nelsoni</i>)	F: ND C: ND State rank: S3	Deep canyons and rocky slopes of the desert mountains with available water and forage	Absent (site is mostly surrounded by development)

Definitions of status designations and occurrence probabilities.

Federal designations: (federal Endangered Species Act, US Fish and Wildlife Service):

- END: Federally listed, Endangered.
- THR: Federally listed, Threatened.
- BCC: Birds of Conservation Concern
 - C: Candidate for Federal listing
 - ND: Not designated.

State designations: (California Endangered Species Act, California Dept. of Fish and Game)

- END: State listed, Endangered.
- THR: State listed, Threatened.
- RARE: State listed as Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
- CSC: California Special Concern Species.
- ND: Not designated.

California Native Plant Society (CNPS) designations: (Non-regulatory, compilation by a non-profit organization which tracks rare plants)

CNPS Designations Note: According to the CNPS (http://www.cnps.org/programs/Rare_Plant/inventory/names.htm), ALL plants on Lists 1A, 1B, and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. Certain plants on Lists 3 and 4 do as well.

The CDFG (http://www.dfg.ca.gov/hcpb/species/t_e_spp/nat_plnt_consv.shtml) states that plants on Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and recommends they be addressed in CEQA projects (CEQA Guidelines Section 15380). However, a plant need not be in the Inventory to be considered a rare, threatened, or endangered species under CEQA. In addition, CDFG recommends, and local governments may require, protection of plants which are regionally significant, such as locally rare species, disjunct populations of more common plants, or plants on the CNPS Lists 3 and 4.

- List 1A:** Plants presumed extinct in California .
- List 1B:** Plants rare and endangered in California and throughout their range.
- List 2:** Plants rare, threatened or endangered in California but more common elsewhere.
- List 3:** Plants for which more information is needed.
- List 4:** Plants of limited distribution; a "watch list."
- CA Endemic:** Taxa that occur only in California

CNPS Threat Code:

- .1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 – Fairly endangered in California (20-80% occurrences threatened)
- .3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Note: All List 1A (presumed extinct in California) and some List 3 (need more information- a review list) plants lacking any threat information receive no threat code extension. Also, these Threat Code guidelines represent a starting point in the assessment of threat level. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are also considered in setting the Threat Code.

Definitions of occurrence probability:

- Occurs:** Observed on the site by AMEC personnel, or recorded on-site by other qualified biologists.
- High:** Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.
- Moderate:** Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
- Low:** Site is within the known range of the species but habitat on the site is rarely used by the species.
- Absent:** A focused study failed to detect the species, or, no suitable habitat is present.

CDFG CNDDB rankings: Animals

S1 = Extremely endangered: <6 viable occurrences or <1,000 individuals, or < 2,000 acres of occupied habitat

S2 = Endangered: about 6-20 viable occurrences or 1,000 - 3,000 individuals, or 2,000 to 10,000 acres of occupied habitat

S3 = Restricted range, rare: about 21-100 viable occurrences, or 3,000 – 10,000 individuals, or 10,000 – 50,000 acres of occupied habitat

S4 = Apparently secure; some factors exist to cause some concern such as narrow habitat or continuing threats

S5 = Demonstrably secure; commonly found throughout its historic range

SH = all sites are historical, this species may be extinct, further field work is needed

CDFG CNDDB rankings: Plants and Vegetation Communities

S1 = Less than 6 viable viable occurrences OR less than 1,000 individuals OR less than 2,000 acres

S1.1 = very threatened

S1.2 = threatened

S1.3 = no current threats known

S2 = 6-20 viable occurrences OR 1,000-3,000 individuals OR 2,000-10,000 acres

S2.1 = very threatened

S2.2 = threatened

S2.3 = no current threats known

S3 = 21-80 viable occurrences or 3,000-10,000 individuals OR 10,000-50,000 acres

S3.1 = very threatened

S3.2 = threatened

S3.3 = no current threats known

S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.

S5 = Demonstrably secure to ineradicable in California.

Western Bat Working Group (WBWG) designations:

The Western Bat Working Group is comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. Its goals are (1) to facilitate communication among interested parties and reduce risks of species decline or extinction; (2) to provide a mechanism by which current information on bat ecology, distribution and research techniques can be readily accessed; and (3) to develop a forum to discuss conservation strategies, provide technical assistance and encourage education programs.

H: High: Species which are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats.

M: Medium: Species which warrant a medium level of concern and need closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

L: Low: Species for which most of the existing data support stable populations, and for which the potential for major changes in status in the near future is considered unlikely. There may be localized concerns, but the overall status of the species is believed to be secure. Conservation actions would still apply for these bats, but limited resources are best used on High and Medium status species.

P: Periphery: This designation indicates a species on the edge of its range, for which no other designation has been determined.

Due to the disturbed nature of the project site, proximity to residential development and associated infrastructure, and intrusion by domestic dogs and cats on the site, the majority of the sensitive species listed in the tables above do not have potential to occur on the JT 105 project site, or at best have a very low potential of utilizing the site.

Of the four sensitive plant species listed in Table 1, only Pinyon Rock Cress (*Arabis dispar*) and Little San Bernardino Mountains Linanthus (*Linanthus maculatus*) have any probability (albeit low) of occurring on the project site. Neither of these plants or any other sensitive plant species were observed on the site during the survey. There is an historic CNDDB record (1937) of the Linanthus from the same Section that the JT 105 site is located in, but this species was not observed during the survey. During drought years, many desert annuals due not germinate, and Little San Bernardino Mountains Linanthus are often undetectable.

Table 2 lists one reptile species known from the vicinity of the project site. The Desert Tortoise is a federal and state listed threatened species. Although a focused survey utilizing 30 foot-wide transects was performed over the entire JT 105 project site, no tortoises or their sign (scat, burrows, pellets, carcasses, etc.) were detected. Zone of Influence transects were performed on undeveloped lands northwest of the project at intervals of 100, 300, 600, 1200, and 2400 feet from the project boundary, also with negative results. Desert Tortoises do not appear to occur on or immediately adjacent to the site.

Table 3 lists four species of sensitive birds that have varying probabilities of occurrence on the site. Of the four birds discussed in Table 3, only the Loggerhead Shrike (*Lanius ludovicianus*) and Prairie Falcon have a moderate to high probability of utilizing the site (for foraging). The Loggerhead Shrike is considered a “Species of Special Concern” (CSC) as a nesting species by the CDFG, and a “Bird of Conservation Concern” (BCC) by the USFWS. Although Prairie Falcons (*Falco mexicanus*) have a moderate probability of foraging over the project, the site does not provide nesting habitat for Prairie falcon (the falcon nests on cliffs). Nesting Prairie Falcons are considered a CSC by the CDFG, and are designated as a BCC by the USFWS. Burrowing Owls (*Athene cunicularia*) are considered a CSC, and have a state ranking of S2 (Endangered in the CDFG state ranking system). During the site survey, Burrowing Owls, their sign, and burrows capable of housing Burrowing Owls were searched for on the property. No Burrowing Owls or their sign were observed on the site, and only two marginally suitable burrows that could potentially support an owl were located (see Map 2). The site has a very low potential to support Le Conte’s Thrasher (*Toxostoma lecontei*), and this species was not observed on or adjacent to the site during the survey. This species is also considered a CSC by the CDFG and a BCC by the USFWS.

No sensitive mammal species were observed on the site during the survey. Of the two sensitive mammals listed in Table 4, there is a low probability that Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*) could utilize the site. This pocket mouse is considered a CSC by the CDFG; and has a state ranking of S3 (a restricted range or rare species under the state ranking system). The JT 105 project site is located too close to residential development, and does not have suitable habitat for Nelson’s Bighorn Sheep (*Ovis canadensis nelsoni*).

5.0 DISCUSSION

5.1 Potential Impacts of the Proposed Project

Implementation of the JT 105 project will result in permanent impacts to biological resources on the site. However, the majority of the site has been moderately to heavily disturbed, and some areas have been cleared (see Appendix 2: Site Photographs). Much of the “biological value” of the site has already been lost.

Implementation of the project may have a low potential to affect Le Conte’s Thrashers, Loggerhead Shrikes, and Prairie Falcons, as well as common bird species that may nest on the site (several Cactus Wren [*Campylorhynchus brunneicapillus*] nests were observed in cacti on various locations on the site). Suitable habitat for Burrowing Owls is also present on the project

site, although no sign of owls and only two burrows capable of hosting owls were observed on the site. The project also has the potential to affect the mapped blue line stream and other associated "State Waters" that cross portions of the JT 105 site.

5.2 Suggested General Mitigation Measures

Mitigation measures recommend methods to avoid negative impacts to significant biological resources. Such measures are designed to protect sensitive plant and wildlife species and their habitats. The following mitigation measures are suggested for the JT 105 project site, and consist of measures often required of other commercial developers in the California deserts.

1.) The Federal Migratory Bird Treaty Act recommendations:

To comply with the Federal Migratory Bird Treaty Act, any vegetation or tree removal, or grading occurring between February 1 to August 15 shall require a qualified biologist to conduct at least one nesting bird survey, and more if deemed necessary by the consulting biologist, ending no less than 3 days prior to grading. All trees and suitable nesting habitat on the project site, whether or not they will be removed, shall be surveyed for nesting birds. If there are no nests present, this condition will be cleared.

Conducting construction activities outside the breeding season (August 16 through January 31) can avoid having to implement these measures, although even non-occupied raptor nests are protected under *Section 3505.5 of the State Fish and Game Code* and permission must be granted by CDFG to remove them.

2.) The Burrowing Owl (*Athene cunicularia*) is a CDFG CSC, and is also protected by CDFG state code that grants protection to raptors. A habitat assessment and "burrow survey" were performed for Burrowing Owls on the site, but no owls or their sign were detected. The project site contains suitable habitat for this species. To avoid potential impacts to any Burrowing Owls that may move onto the site in the future; a qualified biologist should conduct a preconstruction presence/absence survey for Burrowing Owls prior to commencement of project startup. If an occupied burrow is found in an area that is near potential ground disturbance, and development activities are to take place during the breeding season (defined as February 1 through August 31), then no disturbance should occur within 250 feet of the occupied burrow (or within 160 feet during the nonbreeding period). Avoidance also requires that a minimum of 6.5 acres of foraging habitat be permanently preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird. The configuration of the protected habitat should be approved by CDFG (CDFG 1995). Upon consultation with CDFG, approval may also be granted for passive relocation of burrowing owls outside the breeding season through installation of one-way doors.

3.) Landscaping of the developed areas of the project should utilize native plants when feasible. The use of native plants has many advantages over using typical nonnative species. Native plants are adapted to local climatic conditions and would require far

less irrigation than species not adapted to the arid climate. Native plants are less likely to harbor or facilitate the spread of introduced plant pests and parasites. The use of native vegetation will help encourage wildlife species (mainly birds and insects) to utilize the area, and will help offset the loss of native vegetation that was cleared for development. Implementing this measure will also comply with *Ordinance No. 140 – Desert Native Plant Protection* as discussed in Section 3.3 of this report. A removal permit shall be required for the removal of any native tree or plant as regulated in Section 89.0107. Disturbing, moving (transplanting or otherwise), removal or destruction of an existing Regulated Desert Native Plant shall be subject to the provision of the ordinance outlined in Section 3.3.

- 4.) As stated previously, a mapped blue line stream occurs on portions of the JT 105 project site. Additional dry channels also occur on the site (see Map 1). If any of these stream courses qualify as federal jurisdictional waters any alteration of these courses due to project activities would require consultation with the U.S. Army Corps of Engineers. Additionally, these stream courses are highly likely to qualify as “Waters of the State”, and would also require a Streambed Alteration Agreement from CDFG prior to any modification.

6.0 LITERATURE CITED AND REFERENCES

- Abrams, L. 1923, 1944, 1941. Illustrated Flora of the Pacific States, vol. I-III. Stanford Univ. Press, Stanford, Calif.
- Abrams, L. and R.S. Ferris. 1960. Illustrated Flora of the Pacific States, vol. IV. Stanford Univ. Press, Stanford, Calif.
- Bowers, N., Bowers R., and Kaufman, K. 2004. Mammals of North America. Houghton Mifflin Company. New York
- Bureau of Land Management. 1992. California Statewide Desert Tortoise Management Policy.
- California Bird Records Committee. 2005. California Bird List of the Western Field Ornithologists' California Bird Records Committee.
- California Burrowing Owl Consortium. 1997. Burrowing Owl Survey Protocol and Mitigation Guidelines. Journal of Raptor Research Report, The Raptor Research Foundation, Inc.
- California Department of Fish and Game. Rowlands, P.G. (No Date). California Wildlife Habitat Relationships System, California Interagency Wildlife Task Group. Alkali Desert Scrub. CDFG, Sacramento, CA.
- California Department of Fish and Game. 1995. Staff report on Burrowing Owl mitigation. CDFG, Sacramento, CA.
- California Department of Fish and Game. 2007. *Joshua Tree North* and *Joshua Tree South*, California Quadrangles, California Natural Diversity Data Base reports.
- California Native Plant Society. 2001. Inventory of Rare and Endangered Plant of California, Special Publication #1, Sixth Edition. 387 pgs.
- Grenfell, W.E. Jr., et al+. 2000. A Complete List of the Amphibians, Reptiles, Birds, and Mammals in California. Calif. Fish and Game.
- Hickman, J.C., ed. 1993. The Jepson Manual: Higher Plants of California. Univ. Calif. Press, Berkeley.
- Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Calif. Fish Game, Sacramento.
- Ingles, L.G. 1965. Mammals of the Pacific States. Stanford University Press, Stanford.
- Kaufman, K. 1996. Lives of North American Birds. Sponsored by the The Roger Tory Peterson Institute. Houghton Mifflin Company, New York.
- Munz, P.A. 1974. A Flora of Southern California. Univ. Calif. Press, Berkeley.

National Geographic Society. 2002. Field Guide to Birds of North America (Fourth Edition). National Geographic Society, Washington D.C.

Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin Company, Boston.

APPENDIX 1

PLANTS AND ANIMALS OBSERVED ON THE JT 105 RESERVOIR PROJECT SITE

Vascular Plants Observed on the JT 105 Project Site,
San Bernardino County, California

April 11, 2007

GNETAE

Ephedraceae

Ephedra californica
Ephedra nevadensis

ANGIOSPERMAE: DICOTYLEDONES

Asteraceae

Ambrosia acanthicarpa
Ambrosia dumosa
Ambrosia dumosa/Hymenoclea salsola (hybrid)
Bebbia juncea var. *aspera*
Encelia actoni
Encelia farinosa
Ericameria cooperi var. *cooperi*
Hymenoclea salsola
Stephanomeria exigua
Tetradymia stenolepis

Bignoniaceae

Chilopsis linearis ssp. *arcuata*

Boraginaceae

Amsinckia tessellata

Brassicaceae

**Sisymbrium irio*

Cactaceae

Echinocereus engelmannii
Opuntia basilaris
Opuntia echinocarpa
Opuntia ramosissima

Chenopodiaceae

**Salsola tragus*

Cucurbitaceae

Cucurbita palmata

Euphorbiaceae

Chamaesyce albomarginata
Stillingia linearifolia

Fabaceae

Acacia greggii
**Parkinsonia aculeata*
Prosopis glandulosa var. *torreyana*
Psoralethamnus arborescens var. *simplicifolius*
Senna armata

GNETAE

Ephedra Family

Desert tea
Nevada joint-fir

DICOT FLOWERING PLANTS

Sunflower Family

Annual bur-sage
Burrobush
Hybrid Burrobush/Cheesebush
Sweetbush
Acton's encelia
Brittlebush
Cooper's goldenbush
Cheesebush
Annual mitra
Mojave cottonthorn

Bigonia Family

Desert willow

Borage Family

Checker fiddleneck

Mustard Family

London rocket

Cactus Family

Hedgehog cactus
Beavertail cactus
Silver cholla
Pencil cholla

Goosefoot Family

Russian thistle

Gourd Family

Coyote gourd

Spurge Family

Rattlesnake weed
Narrow-leaved stillingia

Pea Family

Catclaw
Mexican palo verde
Honey mesquite
California indigo bush
Desert senna

Vascular Plants Observed on the JT 105 Project Site,
San Bernardino County, California

April 11, 2007

Krameriaceae

Krameria grayi

Krameria Family

White rhatany

Lamiaceae

Salazaria mexicana
Salvia columbariae

Mint Family

Paper-bag bush
Chia

Malvaceae

Sphaeralcea ambigua

Mallow Family

Desert mallow

Polemoniaceae

Eriastrum sp.

Phlox Family

Woolly star

Polygonaceae

Eriogonum fasciculatum var. *polifolium*
Eriogonum inflatum

Buckwheat Family

Flat-topped California buckwheat
Desert trumpet

Rosaceae

Coleogyne ramosissima

Rose Family

Blackbush

Simmondsiaceae

Simmondsia chinensis

Jojoba Family

Jojoba

Solanaceae

Datura wrightii
Lycium andersonii
Lycium cooperi

Nightshade Family

Jimsonweed
Anderson's box-thorn
Peach thorn

Viscaceae

Phoradendron californicum

Mistletoe Family

Desert mistletoe

Zygophyllaceae

Larrea tridentata

Caltrop Family

Creosote bush

ANGIOSPERMAE: MONOCOTYLEDONES

MONOCOT FLOWERING PLANTS

Liliaceae

Yucca brevifolia
Yucca schidigera

Lily Family

Joshua tree
Mojave yucca

Poaceae

Achnatherum hymenoides
Pleuraphis (Hilaria) rigida
**Schismus barbatus*

Grass Family

Indian ricegrass
Big galleta
Mediterranean grass

* - indicates a nonnative (introduced) species.

c.f. - compares favorably to a given species when the actual species is unknown.

**Vascular Plants Observed on the JT 105 Project Site,
San Bernardino County, California**

April 11, 2007

Some species may not have been detected because of the seasonal nature of their occurrence. Common names are taken from Hickman (1993), Jaeger (1969), and Munz (1974).

**Vertebrates Observed on the JT 105 Project Site,
San Bernardino County, California**

April 11, 2007

REPTILES

Horned Lizards and allies

Side-blotched lizard

Teiidae

Great Basin whiptail

BIRDS

New World Quail

California Quail

Kites, Eagles, Hawks, and allies

Red-tailed Hawk

Caracaras and Falcons

American Kestrel

Pigeons and Doves

Rock Pigeon

Mourning Dove

Cuckoos, Roadrunners, and Anis

Greater Roadrunner

Hummingbirds

Costa's Hummingbird

Tyrant Flycatchers

Hammond's Flycatcher (M)

Say's Phoebe

Western Kingbird

Jays, Magpies, and Crows

Common Raven

REPTILIA

Phrynosomatidae

Uta stansburiana

Whiptails and relatives

Aspidoscelis tigris tigris

AVES

Odontophoridae

Callipepla californica

Accipitridae

Buteo jamaicensis

Falconidae

Falco sparverius

Columbidae

Columba livia

Zenaidura macroura

Cuculidae

Geococcyx californianus

Trochilidae

Calypte costae

Tyrannidae

Empidonax hammondi

Sayornis saya

Tyrannus verticalis

Corvidae

Corvus corax

**Vertebrates Observed on the JT 105 Project Site,
San Bernardino County, California**

April 11, 2007

Larks

Horned Lark

Penduline Tits and Verdin

Verdin

Wrens

Cactus Wren

Mockingbirds, Thrashers, and allies

Northern Mockingbird

Starlings and Allies

European Starling

Emberizines

Black-throated Sparrow

White-crowned Sparrow (M)

Fringilline and Cardueline Finches

House Finch

Old World Sparrows

House Sparrow

MAMMALS

Rabbits and Hares

Desert Cottontail

Black-tailed Jackrabbit

Squirrels, Chipmunks, and Marmots

White-tailed Antelope Squirrel

Mice and Rats

Desert Woodrat (middens)

Foxes, Wolves, and relatives

Coyote (scat, remains)

Alaudidae

Eremophila alpestris

Remizidae

Auriparus flaviceps

Troglodytidae

Campylorhynchus brunneicapillus

Mimidae

Mimus polyglottos

Sturnidae

Sturnus vulgaris

Emberizidae

Amphispiza bilineata

Zonotrichia leucophrys

Fringillidae

Carpodacus mexicanus

Passeridae

Passer domesticus

MAMMALIA

Leporidae

Sylvilagus audubonii

Lepus californicus

Sciuridae

Ammospermophilus leucurus

Muridae

Neotoma lepida

Canidae

Canis latrans

**Vertebrates Observed on the JT 105 Project Site,
San Bernardino County, California**

April 11, 2007

Kit Fox (scat, burrows)

Vulpes macrotis

M = species observed during migration or wintering (not a year round resident)