

Appendix D
Botanical and Habitat Survey and
Focused Biological Survey

BOTANICAL AND HABITAT SURVEY
FOR
DEEP CREEK RANCH PROJECT

Prepared for:

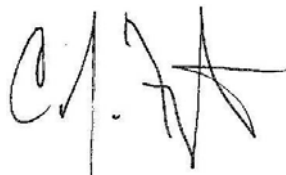
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May 2009

Certification: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



CJ Fotheringham

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Location and Environmental Setting

Deep Creek Ranch is located 4.5 miles east of Hesperia in western San Bernardino County (Map 1). The property is approximately 249 contiguous-acres located largely in the Mojave River floodplain. Soils are approximately 60% (150ac) Cajon sand and approximately 40% Cajon-Wasco cool complex (Appendix I). The land is composed of two flat terraces with an approximate 60 feet escarpment between the two. There is also a knoll in the southeastern most corner. Elevation ranges from 2,873 feet at the northwest corner to 2,945 feet on the upper terrace. Rainfall in the area averages 5.5-inches per year with February generally the wettest month. July is the warmest month with daily average temperature of 79.3°F while January is the coolest with daily average temperature of 44.2°F.

Based on irrigation equipment and residual furrows, the majority of the ranch appears to have been cultivated in the past although the crop is unknown. The exception is the southeastern knoll which does not appear to have ever been tilled. More recently it has been heavily grazed, including the knoll, apparently by the adjacent cattle farm to the south.

Surrounding land use includes the previously mentioned cattle farm to the south and rural residential with lots ranging from 2.5 to 5 acres in size.

Previous Biological Surveys

The site has been surveyed for biological resources in the past, including a 2003 Report submitted by LSA Associates of Riverside, California. This survey had similar botanical findings to the current survey (no special status species occurred onsite) but some differences in methodology. Specifically, the prior survey included three quads north and south of site in addition to the three that were searched in the CNDDDB for this survey. While this can potentially increase the number of rare species that could occur on the site and prevent a potential oversight of a potential occurrence, in this case it does not. This has to do with the topography of the region; to the south the San Bernardino Mountains rise rapidly and rare species that occur listed for these quads are either included in the three quads searched or are from radically different, high elevation communities (e.g., pebble plains, coniferous forest, meadows, etc.) and are no more likely to occur in the desert habitat of the site than are rare tropical orchids. To the north the habitat is much the same as occurred on the site and all special status species listed for these quads are also listed in the three quads that were searched. To this point a summary of species that would occur if the southern northern quads were included is discussed in Appendix II.

Botanical Survey and Habitat Assessment Methods

Prior to visiting the site, a search was run on the California Fish and Games 'California Natural Diversity Data Base' (henceforth CNDDDB). The search criteria included all special status species within the USGS – Apple Valley South Quadrangle, in which the site occurred, as well as the adjacent USGS – Apple Valley North, Victorville, and Hesperia quadrangles. Herbaria collections from the area were also viewed on calflora.org.

The site was surveyed on May 2, 2008, approximately 6 weeks after the last rainfall event on March 16, 2008. Rainfall was higher than normal with 9.27-inches falling between September 1, 2007 and May 2, 2008.

A wandering transect was walked with the intentional bias of seeing all habitat on the site and investigating any areas that appeared different from ones already visited. Plants were identified onsite and a census of species was recorded. Specimens were collected of species not readily identifiable for later identification using a Leica dissecting microscope and botanical dichotomous keys including The Jepson Manual of the California Flora, The Manual of the Grasses of the United States, as needed.

A Magellen Meridian Gold hand held GPS unit was carried to record points of interest and location of sensitive species should they be encountered.

Results

While past the peak bloom, many species still had individuals flowering (see photos) and all species encountered were identified.

Broadly, three plant communities were found onsite; 4.5 acres Joshua Tree Woodland (Holland community type 73000), Desert Dunes 0.75 acres (Holland community type 22200), and the remaining ~ 244 acres fallow Agricultural Land (Holland community type 11200) (Photos 1-6, Map 2).

A total of 52 plant species were identified on site, 11 (21%) of which were non-native species. While the number of non-native species were small they accounted for the majority of the cover on both the upper and lower terraces south of Ocotillo Way. In particular *Erodium cicutaria* was prevalent. The field north of the road appears to have been fallow longer and showed no evidence of recent cattle grazing. This latter area was dominated by native colonizers such as *Amsinkia tessellata*, *Mentzelia spp.*, and *Chrysothamnus nauseosus*. The knoll area on the southeast corner was native Joshua Tree woodland but has been disturbed by cattle grazing and is at risk of type conversion. The western toe of the knoll had a small dune community including *Abronia pognantha*.

The CNNDDB search resulted in five plant species of concern. Of these there was appropriate habitat onsite for three species; *Camissonia boothii* ssp. *boothii* (Booth's evening-primrose), *Cymopterus deserticola* (desert cymopterus), and *Opuntia basilaris* var. *brachyclada* (short-joint beavertail). All special status plant species produced by the CNDDDB report are discussed in detail below.

■ *Camissonia Boothii* ssp. *Boothii*

Natural History

Camissonia Boothii ssp. *Boothii* is an annual species in the Onagraceae (primrose family). The leaves are 30-80 mm (1.2 to 3 in.) long, lanceolate to narrowly ovate with serrate and sometimes slightly wavy margins. Flowers opening at dusk are generally white (red) fading reddish with hypanthium that is 4-8 mm (0.15-0.30 in.) in diameter, rounded petals 3-7.5 mm (0.15-0.30 in.) in length and four separate, acute sepals 4-8 mm (0.15-0.30 in.) in length. Fruits are a capsule which is 8-35 mm (0.3-1.4 in.) long and 1-3.8 mm (up to 0.15 in) wide, mostly cylindrical except base wider than tip, generally very wavy and twisted. Fruits open late and seeds may be shed over a period of 1-2 years from the dead plant (pers. obs.). Stems are usually between 15-40 cm (6-16 in.) in length but can be even smaller under exceptionally harsh conditions.

There are no published studies that specifically address the ecology or life-history characteristics but limited seed germination studies (C. Fotheringham, 2000, unpublished M.Sc. thesis) indicate that seeds are dormant and require physical scarification, or possibly repeated wetting and drying cycles, in order to germinate.

There are six subspecies of *C. Boothii*, all of which will likely interbreed, however only two subspecies occurs in the Apple Valley area, *C. B. ssp Boothii* and *C. B. ssp desertorum*. These two subspecies can be most readily distinguished by the lack of basal rosette at flowering, leaf-like bracts and fruits that are twisted or contorted in *C. B. ssp Boothii* while *C. B. ssp desertorum* generally still has a basal rosette at flowering, inconspicuous bracts and fruits that are only curved upwards and not contorted or twisted.

Habitat Requirements

As mentioned previously, there are no published studies that address habitat requirement for *C. B. ssp Boothii*. However reviewing herbaria collections in conjunction with information available in published floras it appears that *C.B. ssp Boothii* has a broad tolerance of habitat in regards temperatures as it occurs from southern California into Arizona and Nevada. The species is primarily found on bajadas and on sandy and loose gravelly slopes. As with many native desert annuals it probably does not do well in competition with non-native species, particularly annual grasses and is not reported as occurring in dense patches of these.

Relevance to the Deep Creek Site

There is abundant habitat at the site and populations within 6 miles both north and south along the Mojave River lead support to the likelihood of it occurring on the site and it may have historically. However grazing, agricultural, and rural development in the past could have lead to it's extirpation from the area. It was not found to occur on the Deep Creek site in this or previous surveys.

■ ***Cymopterus deserticola***

Natural History

Cymopterus deserticola is an early-spring flowering herbaceous perennial in the Apiaceae (carrot family). Desert cymopterus is an acaulescent plant, generally to about 15cm (6 in) high. It has long, slender, deep, tap roots with one or more leaves arising below ground from a short combined stem-root crown. Typically, there are one to several leaves per plant. Petioles 4-10 cm (1.75-6 in.) long, often appearing shorter as some may be buried. Leaf blades 2-6.5 cm (0.75-2.5 in.) long, oblong-ovate in outline, 2x dissected, grayish-green, and hairless. Purple flowers are clustered in a compact globe at the end of each bractless peduncle that rises above the leaves. The fruit is 5-7 mm (~0.25 in) long, with narrow or inconspicuous wings and unequal ribs with oil tubes between the ribs.

Desert parsley (*Lomatium mohavense*) is the only other member of the carrot family within the range of *C. deserticola* that might be confused with it. This species has similar highly dissected leaves in a basal cluster, but is readily distinguished from *C. deserticola* by the dense, short covering of fine hairs on the leaves and by the flowers arranged in distinct compound umbels.

The most condensed source of general information on *C. deserticola* is compiled on behalf of the Bureau of Land Management (http://www.blm.gov/ca/st/en/fo/cdd/wemo_species_plants.html). This document indicates that the species typically grows in the cool, moist conditions of winter and spring. The rainy season normally ends by early spring and plants quickly dry out and go dormant with the onset of hot weather. Thus, there is a long period of dormancy when the plants are not visible above ground.

Very little is known about reproduction and recruitment in this species and nothing is known about pollination. Flowering occurs from March to early May depending on the year. If establishment is infrequent, poor seed production or seed survival may be a factor. Little or no seed production has been observed in several different years at a number of sites.

Habitat Requirements

C. deserticola is known to occur in deep, loose, well drained, fine to coarse sandy soils of alluvial fans and basins, often in swales or stabilized low sand dune areas and occasionally on sandy slopes. The known elevation range of this species is 692-933 m (2060-3060 ft). It occurs in Mojave creosote bush scrub, desert saltbush scrub, and Joshua tree woodland with creosote bush scrub or desert saltbush scrub understory.

Relevance to Deep Creek Site

There is appropriate habitat on the site, particularly in the Joshua tree woodland area and associated dune-like habitat in the southeast corner of the property. However this area has been heavily impacted by cattle-grazing recently. The species was not found, nor any species in the Apiaceae, in this survey nor in previous surveys. The nearest historical collections are believed to have come from near Hwy 18, ~6.75 miles to the north-northeast.

■ ***Opuntia basilaris* var. *brachyclada***

Natural History

Opuntia basilaris var. *brachyclada* is a succulent perennial in the Cactaceae (cactus family). *O. b. brachyclada* has low stature, seldom getting above 40cm (16 in) in height. Stem segments (pads) are typically 5-13 cm (2-5 in) long and 2-5 cm (0.75- 2 in) wide, sometimes slightly flat but generally cylindrical to club-shaped. This species is generally spineless but has abundant areoles of glochids (barbed bristles). Flowers are a bright pink to magenta, 4 cm (1.5 in) in diameter, and filaments deep magenta-red while the styles are white or pink. Fruits are 2-4 cm (0.5-1.5 in), green and purple becoming tan on drying. Seeds are numerous, 6.5-9 mm (0.25-0.35 in) shiny black and spherical.

The most condensed source of general information on *O. b. brachyclada* is compiled on behalf of the Bureau of Land Management (http://www.blm.gov/ca/st/en/fo/cdd/wemo_species_plants.html). The documents available indicate that seeds of *O. b. brachyclada* will germinate under greenhouse conditions at 70°F but germination is apparently increased by physical scarification.

There are two subspecies of *O. basilaris* that occur in the Apple Valley area; *O. b. basilaris* and *O. b. brachyclada*. The subspecies interbreed readily and hybrids have a high degree (~90%) of viability.

Habitat Requirements

Based on CNDDDB reports, herbaria records and information summarized for the BLM, *O.b. brachyclada* can occur in chaparral, creosote scrub and Joshua tree woodland. The species primarily occurs on decomposed granite and sandy soils.

Relevance to Deep Creek Site

While the cited elevational range for the species is 425-1800m (~1400-6000 ft) in the Apple Valley/Cajon Pass area the species has not been found to occur below 900m (3000 ft). In reality, *O. b. brachyclada* seems to primarily occur in the ecotonal grade between the above communities, specifically it occurs in the most xeric stage of chaparral and the more mesic stage of creosote scrub and Joshua tree woodland communities. Thus while there is nominally habitat at Deep Creek site (e.g., Joshua Tree woodland) it is really not within species range of tolerance. In the western Mojave it largely isolated to the transition zone between chaparral and desert in the Cajon pass area. The nearest known occurrence is ~6.3 miles to the southeast at an elevation of 1000 m (3300 ft).

■ ***Scutellaria bolanderi ssp. austromontana***

Natural History

Scutellaria bolanderi ssp. austromontana is a rhizomatous herbaceous perennial in the Lamiaceae (mint family). *S. b. ssp. austromontana* grows between 30–100 cm (12-40 in) in height with slender rhizomes with tips that tend to be swollen. Leaf blades ovate to cordate, crenate (rarely entire), base truncate to ± lobed, tip rounded. Basal leaves have petioles 2–10 mm (<0.25 in.) in length while upper cauline leaves are sessile. The bilateral flowers are 13-19 mm (0.5-0.75 in.) with fused petals forming an upper and lower lip. The upper lip is white while the lower is mottled blue. The pedicel is 2–3 mm (<0.12in) and the calyx 3–5 mm and ridged. The fruit is a dark brown to black capsule.

As with *C. B. ssp Boothii* there is no published studies addressing the ecology or reproductive characteristics of *S.b. ssp austromontana*.

There are two subspecies of *S. bolanderi*; *S. b. ssp bolanderi* and *S.b. ssp austromontana*. While neither occur outside California, their ranges do not appear to overlap, the former is found in the Sierra Nevada mountains and central coast ranges while the latter is restricted to the transverse and peninsular mountain ranges.

Habitat Requirement

Based on habitat reports in Calflora and the CNDDDB as well as information available on herbaria sheets, *S. b. spp austromontana* is primarily a wetland, or wetland adjacent, species which occurs along streams in chaparral, foothill woodland or yellow pine forest. There are also reports of it occurring in meadows, ditches or other disturbed areas with loamy soils and substantial water supply through much of the year.

Relevance to the Deep Creek Site

There is not any appropriate habitat on or adjacent to the property. There are no perennial sources of water or wetlands. There are historic (1886 and 1915) collections of the species near Victorville but the nearest extant location for this species is in willow scrub in Horsethief Canyon, ~9 miles to the southwest but at a similar elevation to the site.

■ ***Symphotrichum defoliatum***

Natural History

Symphotrichum defoliatum (formerly *Aster bernardinus*) is a rhizomatous herbaceous perennial in the Asteraceae (sunflower family). The plants are generally between 40–100 cm (16- 40 in.) in height with strigose (stiff-hairy) on stems and leaves. The acute alternate leaves are narrowly oblong to oblanceolate and covered with strigose hairs, and there are often fascicles of smaller leaves in the axils. The flowering heads are in narrow cymes, with oblong phyllaries that are ciliate and pubescent on the back, the outer obtuse-tipped and the inner acute. The many ray flowers are white to pale violet and 8–12 mm (0.3-0.5 in.) long. Disc flowers are yellow with triangular lobes. Fruits are an achene brown, cylindrical to obovoid, not compressed, 1.5–3 mm, with 5–8 ribs, hairy and a short pappus of white bristle.

There are no published studies that address the reproductive strategies or ecology of *S. defoliatum*.

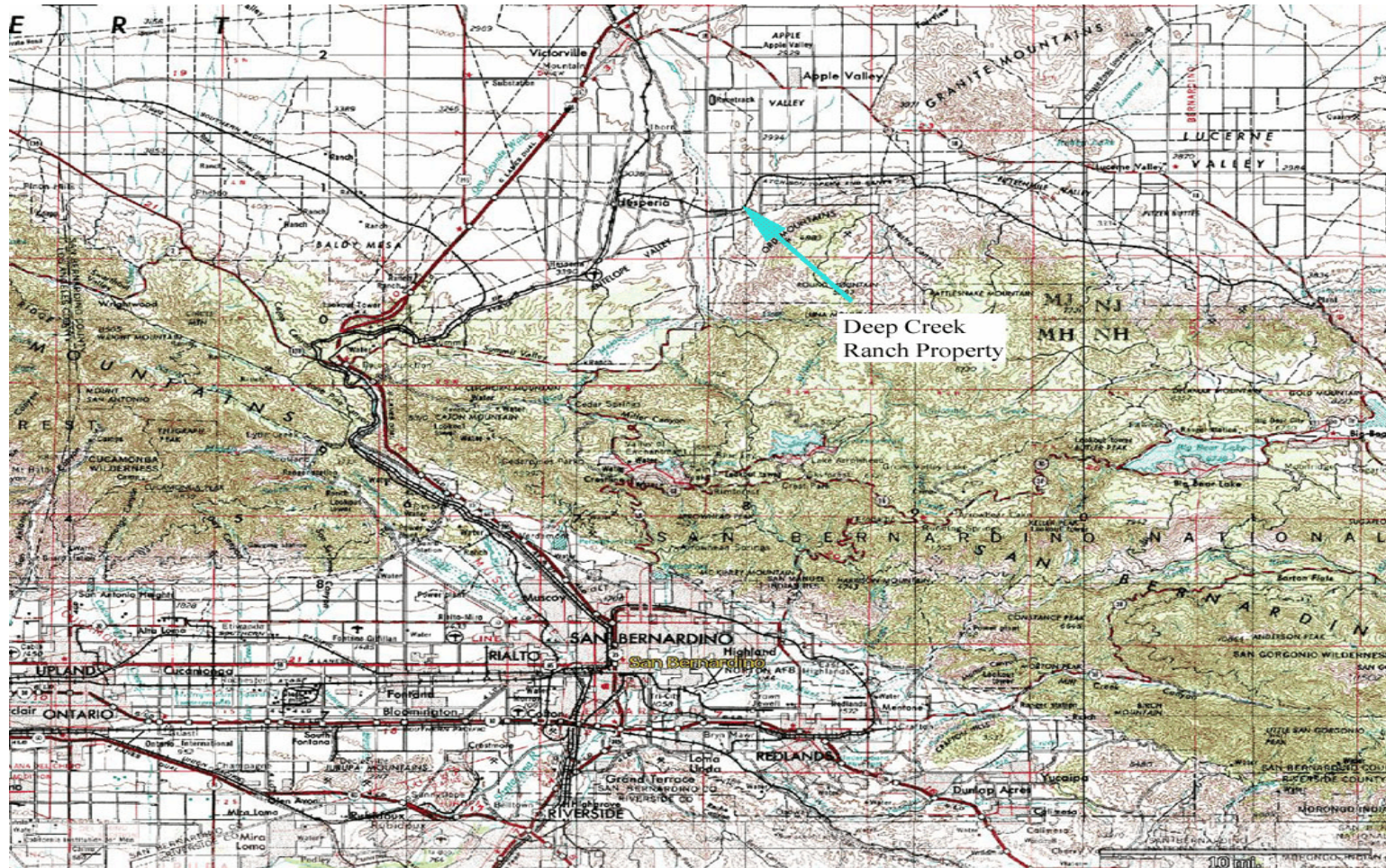
Habitat Requirements

Based on habitat reports in California and the CNDDDB as well as information available on herbaria sheets, *S. defoliatum* is primarily a wetland, or wetland adjacent, species which occurs in meadows or along streams in Chaparral, Foothill Woodland or Yellow Pine Forest. There are also reports of it occurring in meadows, ditches or other disturbed areas with loamy soils and substantial water supply through much of the year.

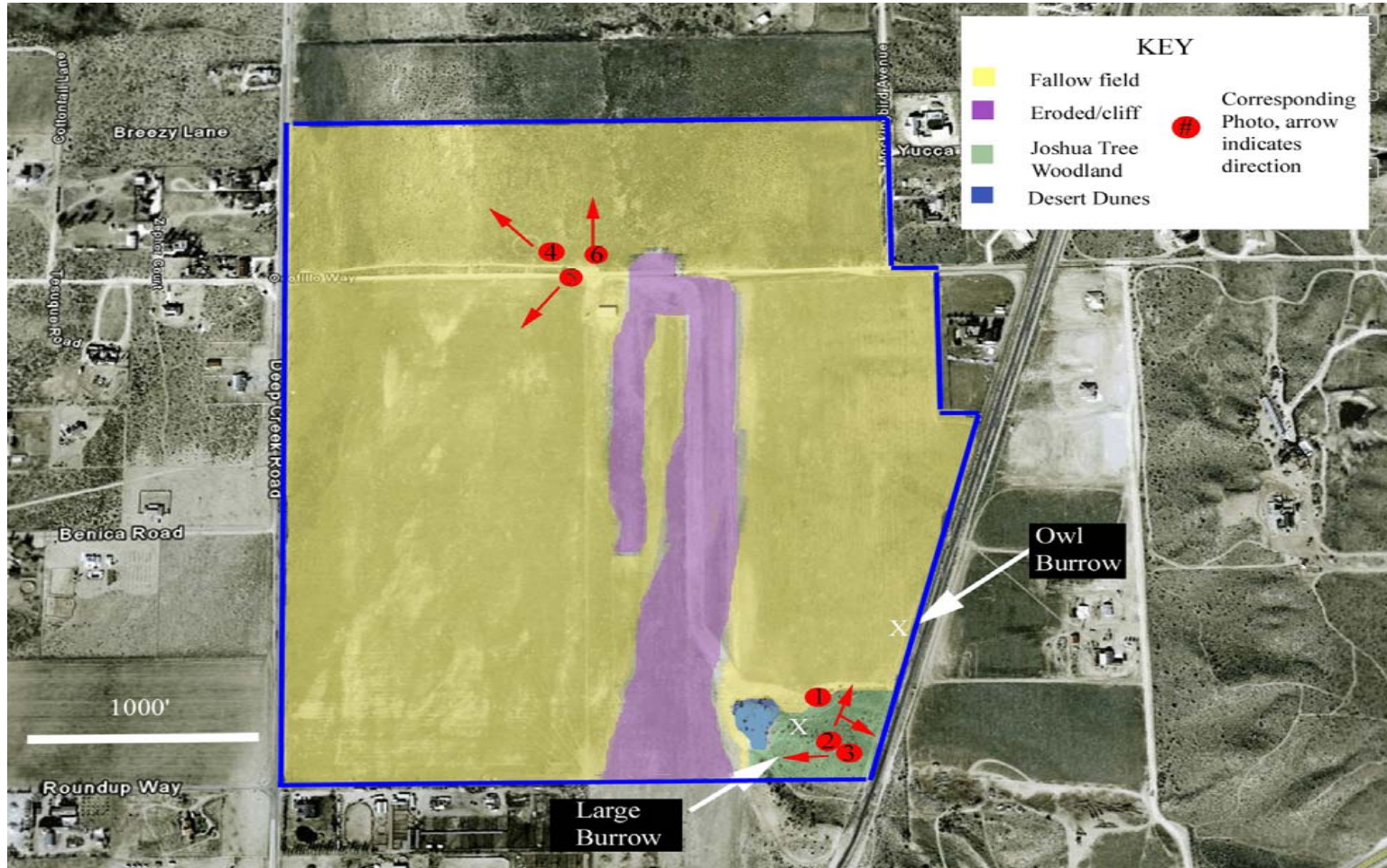
Relevance to the Deep Creek Site

There is simply no appropriate habitat on the site nor does there appear to have been any prior to agricultural development of the property. There does not appear to have ever been any source of water to create the wetland environment necessary for this species.

The nearest historical collection of the species is from “south of Victorville” collected in 1924 and 1928. This appears to be the only collections made in this region and the status of the populations is unknown but likely extirpated due to development.



Map 1. Regional map indicating location of Deep Creek Ranch property.



Map 2. Vegetation and habitat map for the Deep Creek Ranch property.

**Table 1. Plant species identified at the Deep Creek Ranch site
Asterisk (*) indicates non-native**

Scientific Name	Family
<i>Yucca brevifolia</i>	Agavaceae
<i>Adenophyllum cooperi</i>	Asteraceae
<i>Ambrosia psilostachya</i>	Asteraceae
<i>Chaenactis fremontii</i>	Asteraceae
<i>Chrysothamnus nauseosus</i>	Asteraceae
<i>Dicoria canescens</i>	Asteraceae
<i>Hymenoclea salsola</i>	Asteraceae
<i>Layia glandulosa</i>	Asteraceae
<i>Leptosyne californica (Coreopsis californica)</i>	Asteraceae
<i>Machaeranthera arida</i>	Asteraceae
<i>Malacothrix glabrata</i>	Asteraceae
<i>Stephanomeria virgata</i>	Asteraceae
<i>Amsinckia tessellata</i>	Boraginaceae
<i>Cryptantha circumscissa</i>	Boraginaceae
<i>Cryptantha pterocarya</i>	Boraginaceae
<i>Pectocarya penicillata</i>	Boraginaceae
<i>Descurainia pinnata</i>	Brassicaceae
* <i>Descurainia sophia</i>	Brassicaceae
* <i>Sisymbrium altissimum</i>	Brassicaceae
<i>Opuntia acanthocarpa</i>	Cactaceae
<i>Isomeris arborea</i>	Capperaceae
* <i>Chenopodium murale</i>	Chenopodiaceae
* <i>Salsola tragus</i>	Chenopodiaceae
<i>Ephedra nevadensis</i>	Ephedraceae
<i>Chamaesyce albomarginata</i>	Euphorbiaceae
<i>Lotus strigosus</i>	Fabaceae
<i>Lupinus spp.</i>	Fabaceae
* <i>Erodium cicutarium</i>	Geraniaceae
<i>Nama demissum</i>	Hydrophyllaceae
<i>Phacelia distans</i>	Hydrophyllaceae
<i>Salazaria mexicana</i>	Lamiaceae
<i>Salvia columbariae</i>	Lamiaceae
<i>Mentzelia sp1</i>	Loasacea
<i>Mentzelia sp2</i>	Loasacea
<i>Eremalche exilis</i>	Malvaceae
<i>Sphaeralcea ambigua</i>	Malvaceae
<i>Abronia pogonantha</i>	Nyctaginaceae
<i>Camissonia claviformis</i>	Onagraceae
<i>Oenothera californica</i>	Onagraceae

	Scientific Name	Family
	<i>Achnatherum hymenoides</i>	Poaceae
*	<i>Bromus inermis ssp. inermis</i>	Poaceae
*	<i>Bromus madritensis</i>	Poaceae
*	<i>Bromus tectorum</i>	Poaceae
*	<i>Hordeum murinum</i>	Poaceae
*	<i>Schismus barbatus</i>	Poaceae
	<i>Eriastrum sapphirinum</i>	Polemoniaceae
	<i>Gilia sinuata</i>	Polemoniaceae
	<i>Ipomopsis polycladon</i>	Polemoniaceae
	<i>Rumex hymenosepalus</i>	Polygonaceae
	<i>Calyptridium monandrum</i>	Portulacaceae
	<i>Larrea tridentata</i>	Zygophyllaceae
*	<i>Tribulus terrestris</i>	Zygophyllaceae

PHOTOGRAPHS



Photo 1. Joshua Tree Woodland community on Deep Creek Ranch property. See Map 2 for location of photo.



Photo 2. Joshua Tree Woodland community on Deep Creek Ranch property. See Map 2 for location of photo.



Photo 3. Joshua Tree Woodland community with dune in background (black arrow) on Deep Creek Ranch property. See Map 2 for location of photo.



Photo 4. Fallow agricultural field on Deep Creek Ranch property. See Map 2 for location of photo.



Photo 5. Fallow agricultural field (heavily grazed by cattle) on Deep Creek Ranch property. See Map 2 for location of photo.



Photo 6. Fallow agricultural field on Deep Creek Ranch property. See Map 2 for location of photo.



Photo 7. Burrowing owl in pipe on eastern margin of property. See Map 2 for location.

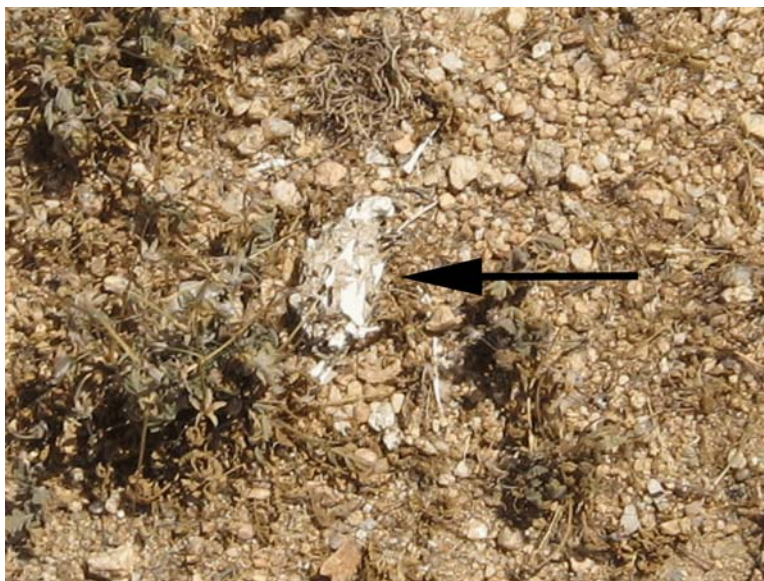


Photo 8. Casting (owl pellet) in front of pip in Photo 7.



Photo 9. Large burrow (~2' diameter) in Joshua Tree Woodland on the Deep Creek Ranch property. See Map 2 for location.



Photo 10. Small burrows (note pen for scale) were abundant throughout the Deep Creek Ranch property. See Map 2 for location.

APPENDIX I


Soil Map—San Bernardino County, California, Mojave River Area
(Deep Creek Property Soil)



Soil Map—San Bernardino County, California, Mojave River Area
(Deep Creek Property Soil)

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
-  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

Municipalities

-  Cities
-  Urban Areas






Water Features

-  Oceans
-  Streams and Canals

Transportation

 Rails

Roads

-  Interstate Highways
-  US Routes
-  State Highways
-  Local Roads
-  Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 11N

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

Soil Survey Area: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 4, Jan 3, 2008

Date(s) aerial images were photographed: 5/29/1994; 10/7/1995

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

San Bernardino County, California, Mojave River Area (CA671)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
112	CAJON SAND, 0 TO 2 PERCENT SLOPES	12.3	4.9%
113	CAJON SAND, 2 TO 9 PERCENT SLOPES	89.4	35.6%
114	CAJON SAND, 9 TO 15 PERCENT SLOPES	48.6	19.4%
119	CAJON-WASCO, COOL COMPLEX, 2 TO 9 PERCENT SLOPES*	100.5	40.1%
Totals for Area of Interest (AOI)		250.7	100.0%

APPENDIX II

Results of an extended CNDDDB search that includes nine USGS Quadrangles; the three included in the current study (Apple Valley North, Victorville, and Hesperia quads) as well as six included in a study conducted by LSA in 2003 (Apple Valley South, Lake Arrowhead, Baldy Mesa, Silverwood Lake, Fairview Valley, Fifteenmile Valley, and Butler Peak).

Scientific Name	Vernacular Name	General habitat	Microhabitat	Detectability	Comments
<i>Arabis dispar</i>	pinyon rock cress	Joshua tree woodland, pinyon-juniper woodland, Mojavean desert scrub.	Granitic, gravelly slopes & mesas. Often under desert shrubs which support it as it grows. 1200-2400m	<i>A. dispar</i> has eye-catching lavender flowers and large distinct fruit. This species flowers from April to May so the survey was at the peak flowering period.	This occurs at a much higher elevation than the Deep Creek site. There was no appropriate habitat onsite and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Arabis parishii</i>	Parish's rock cress	Pebble plain, pinyon-juniper woodland, upper montane coniferous forest.	Generally found on pebble plains on clay soil with quartzite cobbles; sometimes on limestone. 1770-2900m	<i>A. parishii</i> is a small, distinct cushion-like plant. Has dark purple flowers which are apparent from spring into early summer.	Pebble Plains endemic, only found high elevation. There was no appropriate habitat onsite and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Arabis shockleyi</i>	Shockley's rock cress	Pinyon and juniper woodland.	On ridges, rocky outcrops and openings on limestone or quartzite; usually in pinyon or p-j series. 875-2205m (1000-2000m according to the Jepson manual)	<i>A. shockleyi</i> has foliage which is a distinct grey-green and conspicuous flowers. The species flowers between May and June so the survey would have been conducted at the beginning of the flowering season.	It is unclear why the CNDDDB lists this species as occurring at such a low elevation, all herbaria species that were viewed were collected at >1200m. The nearest population is ~13 miles east-southeast at 1280m elevation. Species was not found during focused surveys.

Scientific Name	Vernacular Name	General habitat	Microhabitat	Detectability	Comments
<i>Astragalus leucolobus</i>	Big Bear Valley woollypod	Lower montane coniferous forest, pebble plain, pinyon and juniper woodland, upper montane coniferous forest.	Dry pine woods, gravelly knolls among sagebrush, or stony lake shores in the pine belt. (425)1670-2515m	<i>A. leucolobus</i> , as with many <i>Astragalus</i> species, has distinct pinnate leaves and comparatively large flowers. This species also has distinct wooly fruit that make identification in the field relatively easy.	The lowest elevation collection of this species is at 1480m and 25 miles to the southeast of Deep Creek. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa lily	Meadows and seeps, chaparral, lower montane coniferous forest.	Vernally moist places in yellow-pine forest, chaparral. 600-2245m	<i>Calochortus</i> are easy to spot even when they aren't flowering with a frequently long solitary leaf recumbant on the ground. However they are difficult to identify to species without flowers.	The Deep Creek site is much too arid and dry for this species which generally occurs along streams. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. No <i>Calochortus</i> species were found during focused surveys.
<i>Calochortus plummerae</i>	Plummer's mariposa lily	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest.	Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 90-1610m	<i>Calochortus</i> are easy to spot even when they aren't flowering with a frequently long solitary leaf recumbant on the ground. However they are difficult to identify to species without flowers.	The Deep Creek site is much too arid and dry for this species which occurs in chaparral and sage scrub. The lower elevations refer to more mesic parts of its range. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. No <i>Calochortus</i> species were found during focused surveys.

Scientific Name	Vernacular Name	General habitat	Microhabitat	Detectability	Comments
<i>Camissonia boothii</i> <i>ssp. boothii</i>	Booth's evening-primrose	Joshua tree woodland, pinyon-juniper woodland.	900-2400m	<i>C. Boothii</i> is an annual species that can be recognized prior to flowering because of its relatively large and very red rosette of leaves. Distinguishing between sub-species would require visits during flowering.	Included in survey report. Species was not found during focused surveys.
<i>Castilleja lasiorhyncha</i>	San Bernardino Mountains owl's-clover	Meadows, pebble plain, upper montane coniferous forest, chaparral.	Mesic to drying soils in open areas of stream and meadow margins or of vernal wet areas. 1135-2390m	This species has large conspicuous flowers and very glandular herbage. Based on dated herbaria collections, flowers from May into August. All collections are at much higher elevations so if it were to occur in the deep creek area it would presumably flower much earlier.	Pebble Plains endemic, only found high elevation. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Cymopterus deserticola</i>	desert cymopterus	Joshua tree woodland, mojavean desert scrub. Most occurrences located near or in Edwards AFB.	On fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand. 625-910m	<i>C. deserticola</i> has a very distinctive spherical flower, with the appearance of a dark purple drumstick. The "ball" is composed of hundreds of tiny florets. This structure is equally distinct in fruit. Flowers are produced in April followed by fruit formation. This species would have been readily identifiable at the time of survey.	Included in survey report. Species was not found during focused surveys.

Scientific Name	Vernacular Name	General habitat	Microhabitat	Detectability	Comments
<i>Deinandra mohavensis</i>	Mojave tarplant	Riparian scrub, chaparral.	Low sand bars in river bed; mostly in riparian areas or in ephemeral grassy areas. 850-1600m		The type collection was made at the confluence of Deep Creek and the Mojave river but this site has been extirpated and no other collections have been made in San Bernardino County since 1933. In addition, this is a Riparian species and no such habit found at the site. Species was not found during focused surveys.
<i>Dudleya abramsii ssp. affinis</i>	San Bernardino Mountains dudleya	Pebble (pavement) plain, upper montane coniferous forest, pinyon and juniper woodland.	Outcrops, granite or quartzite, rarely limestone. 1270-2600m	<i>D. abramsii ssp. Affinis</i> is a small but distinct plant and readily identifiable throughout the year.	This is only found high elevation under more mesic conditions. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Erigeron parishii</i>	Parish's daisy	Mojavean desert scrub, pinyon-juniper woodland, Joshua tree woodland.	Often on carbonate; limestone mountain slopes; often associated with drainages. 1090-2000m	<i>E. parishii</i> has large flowers which bloom from May through July.	A high elevation, primarily edaphic endemic. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Eriogonum kennedyi var. austromontanum</i>	southern mountain buckwheat	Pebble (pavement) plain, lower montane coniferous forest.	Usually found in pebble plain habitats. 1755-2375m	<i>E. kennedyi</i> is a cushion plant that is distinct but can be confused with <i>E. wrightii var. subscaposum</i> with which it co-occurs.	Pebble Plains, only found high elevation. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.

Scientific Name	Vernacular Name	General habitat	Microhabitat	Detectability	Comments
<i>Ivesia argyrocoma</i>	silver-haired ivesia	Meadows, pebble plains, upper montane coniferous forest.	In pebble plains and meadows with other rare plants. 1480-2680m	<i>I. argyrocoma</i> is a distinct herbaceous perennial with finely dissected, almost tubular leaves. It flowers from April through July and would have been readily apparent during the survey.	Pebble Plains, only found high elevation. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Lilium parryi</i>	lemon lily	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest.	Wet, mountainous terrain; gen in forested areas; on shady edges of streams, in open boggy meadows & seeps. 1300-2790m	<i>L. parryi</i> is one of the largest lilies in California, This species is easy to distinguish in the absence of flowers due to its large whirled leaves. It has large flowers that bloom from July until as late as October.	This is high elevation species that requires much more mesic conditions than those at Deep Creek. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Loeflingia squarrosa</i> <i>var. artemisiarum</i>	sagebrush loeflingia	Great basin scrub, sonoran desert scrub, desert dunes.	Sandy flats and dunes. Sandy areas around clay slicks w/sarcobatus, atriplex, tetradymia, etc. 700-1200m	<i>L. squarrosa</i> var. <i>artemisiarum</i> is a very diminutive species with non-descript flowers and could easily be overlooked by a casual observer. However, crassula conata and other small desert species it is readily identifiable and not difficult to locate when sampled in the spring as when this survey was conducted.	The habitat on the deep Creek site would appear to suitable for this species but the eastern and southern most population in San Bernardino county is >11 miles to the north west. Species was not found during focused surveys.

Scientific Name	Vernacular Name	General habitat	Microhabitat	Detectability	Comments
<i>Lycium parishii</i>	Parish's desert-thorn	Coastal scrub, sonoran desert scrub.	300-1000m	<i>L. Parishii</i> is a large shrub and is identifiable throughout the year, at least to genus.	There is no habitat on site and this species has not been collected in San Bernardino County since 1885 and is believed extirpated from the county. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland, riparian woodland.	Sandy soil or coarse, granitic loam. 425-1800m	<i>O. basilaris</i> var. <i>brachyclada</i> is readily identifiable throughout the year based on the unique club-like stem sections that lack tubercles.	Included in survey report. There was no appropriate habitat onsite and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Oxytheca parishii</i> var. <i>goodmaniana</i> (<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i>)	Cushenbury oxytheca	Pinyon and juniper woodland.	Ridge north of Holcomb Valley on the north edge of the San Bernardino Mtns. On limestone talus and rocky slopes. 1300-2375m	<i>O. parishii</i> var. <i>goodmaniana</i> is an annual species with unique flowers. As is typical with high elevation annuals, the species flowers from July to as late as October.	A high elevation edaphic endemic. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	Chaparral, Mojavean desert scrub.	Rocky or sandy substrate. 400-1900m	<i>S. latimeri</i> is an annual species and recent segregate from <i>S. australis</i> . It is easily identified in flower and would have been in bloom at the time of the survey.	This is primarily an eastern Mohave species and the nearest collection is 13 miles to the east at >1400m elevation. Species was not found during focused surveys.

Scientific Name	Vernacular Name	General habitat	Microhabitat	Detectability	Comments
<i>Scutellaria bolanderi</i> <i>ssp. austromontana</i>	southern skullcap	Chaparral, cismontane woodland, lower montane coniferous forest.	In gravelly soils on streambanks or in mesic sites in oak or pine woodland. 425-2000m	<i>S. bolanderi ssp austromontana</i> is an herbaceous perennial that is readily identifiable to genus in the absence of flowers. The bloom period for this species is from June to August.	Included in survey report. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.
<i>Symphotrichum defoliatum</i>	San Bernardino aster	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland.	Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040m	<i>S. defoliatum</i> is a large herbaceous perennial plant that spreads by rhizomes and thus can form relatively large 'clumps'. It has large, white-lavender, daisy-like flowers and blooms from May to August.	Included in survey report. There was no appropriate habitat on site and there is a zero possibility that this species would occur on this site. Species was not found during focused surveys.

FOCUSED BIOLOGICAL SURVEY FOR A 249-ACRE PARCEL

LOCATED IN THE TOWN OF APPLE VALLEY
USGS – APPLE VALLEY SOUTH QUADRANGLE, 7.5-MINUTE SERIES
TOWNSHIP 4 NORTH, RANGE 3 WEST, SECTIONS 17 AND 20
SAN BERNARDINO COUNTY, CALIFORNIA

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May 2009

Report prepared by Shay Lawrey
Fieldwork by C.J. Fotheringham, Shay Lawrey, Craig Lawrey, and Lisa Tollstrup

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I. CERTIFICATION

CERTIFICATION: *"I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Fieldwork conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project."*



DATE: May 7, 2009

SIGNED: _____
Shay Lawrey (Report Author)

II. EXECUTIVE SUMMARY

Tom Dodson and Associates (TDA) was contracted to assess the biological resources and potential impacts associated with a proposed residential development on a 249-acre parcel located in an unincorporated portion of San Bernardino County in the Apple Valley area. The property is located between the BNSF Railroad and the Mojave River, north of Round Up Way, east of Deep Creek Road, south of Breezy Lane, and west of Mockingbird Avenue (see Figures 1 through 3). The project site can be found on 2007 Thomas Guide, page 4477, Sections E and F5.

The body of literature prepared for this parcel and used for background information includes the following sources: a *Biological Resources Report* dated September 2, 2003 prepared by LSA Associates, Inc; the California Natural Diversity Database; an April 28, 2006 letter report prepared by O'Farrell Biological Consulting regarding the site suitability for Mojave ground squirrel (MGS); a May 12, 2006 letter of concurrence from the California Department of Fish and Game (CDFG) regarding the April 28, 2006 MGS habitat assessment letter report; and a *Botanical Survey and Habitat Assessment Report* dated May 2008 prepared by TDA.

The California Native Diversity Data Base (CNDDDB) indicated 29 sensitive species have been documented to occur in USGS – Apple Valley South Quadrangle, 7.5-Minute Series. Please refer to Table 1 for a complete list of the species occurrence potential on the property. The table includes the habitat requirements of each species and the potential of their occurrence on the site, based on required habitat elements and range relative to the current site conditions. The species of special status identified to have a potential to occur within the vicinity of the project area include Booth's evening-primrose (*Camissonia boothii* ssp. *boothii*), desert cymopterus (*Cymopterus deserticola*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), prairie falcon (*Falco mexicanus*), desert tortoise (*Gopherus agassizii*), Mojave River vole (*Microtus californicus mohavensis*), Mojave ground squirrel (*Spermophilus mohavensis*), and burrowing owl (*Athene cunicularia*). Please note that a separate *Focused Botanical Report* has been prepared for this project. Therefore, this report strictly focuses on the wildlife elements onsite, not botanical resources.

The site contains a vast fallow field with ruderal vegetation, a bluff or eroded cliff, desert dune habitat, and a knoll with Joshua tree woodland habitat. The habitat quality within the survey area ranges from moderate to highly disturbed. Apparently, discing for agriculture and/or weed abatement and livestock grazing are the primary sources of disturbance onsite.

After examining the background information sources and conducting the initial site evaluation, TDA biologists Shay Lawrey and Lisa Tollstrup determined that there was a potential for burrowing owl (*Athene cunicularia*) to occur in portions of the parcel. This determination was based on the presence of small mammal burrows of appropriate shape, size, and aspect for burrowing owl. Although the site is highly disturbed, focused attention was also made on the potential for desert tortoise (*Gopherus agassizii*).

S. Lawrey and Tollstrup conducted the initial site assessment on August 16, 2008. S. Lawrey and Craig Lawrey completed the focused surveys on August 19, 25 and September 12, 2008. The purpose of the focused survey was to determine the presence or absence of burrowing owl, desert tortoise or any other sensitive species within or adjacent to the subject parcel.

The result of the survey was that no desert tortoise or their sign (i.e., burrows, scat, scutes or tracks) were detected. Evidence of burrowing owl was found onsite in the southeastern quarter of the parcel. Four burrows were found in the southeastern quarter of the property that had white wash, castings, and feathers near the burrow entrances. No burrowing owl individuals were found during the surveys, but there was evidence that they had been there previously. Therefore, the southeastern quarter of the property has been historically occupied and should be considered suitable burrowing owl habitat. Although the site is located within the range of the Mojave ground squirrel (MGS), the surveys corroborated the findings of O'Farrell Biological Consulting that the habitat onsite is not suitable for MGS.

The subject parcel is located approximately 3 miles south of the nearest known occurrence of the Mojave River vole, a State listed Species of Special Concern. The preferred habitat of the Mojave River vole occurs within the benches and vegetated channel of the Mojave River. This species requires dense vegetative cover with high moisture content. Since these conditions do not exist onsite, the site is not considered suitable for Mojave River vole. There is no potential for this species to occur onsite.

The 249-acre parcel provides habitat for a variety of birds, some of which are appropriate prey species of prairie falcon. There was no sign of prairie falcons onsite, but there is a moderate potential for this species to utilize the site for foraging. There is no indication that prairie falcon use the site for roosting or nesting. No appropriate habitat capable of supporting prairie falcon nesting exists on site. Development of the site would result impacts to potentially suitable foraging habitat for the prairie falcon. At this time, there are no regulatory permits required for impacts to prairie falcon foraging habitat. In the local vicinity of the parcel, there are a number of areas suitable for prairie falcons to forage and the development of this parcel would not result in significant adverse impacts to the local or regional population of prairie falcons.

The site is not identified within the San Bernardino County General Plan as a Wildlife Corridor or Linkage. The County identifies Wildlife Corridors and Areas of Critical Environmental Concern in their open space element of the Environmental Impact Report. See Figures 5 and 6 for San Bernardino County Corridors locations.

The site encompasses a large area of open land and although it is not within the San Bernardino County's identified corridor, it is located east of the Mojave River Wildlife Corridor. Because of this proximity, the site was evaluated for corridor and linkage values. The result of this evaluation is that the site is not likely to serve as linkage or corridor for wildlife. Considering the site is not designated as a Corridor, the general site characteristics, the general lack of resource, and lack of habitat to elicit migration by any local species; the site is not likely to serve as a corridor that facilitates wildlife movement in the local area or provides connection to the Mojave River Wildlife Corridor.

III. PROPERTY AND PROJECT DESCRIPTION

The subject property is mapped on the USGS – Apple Valley South Quadrangle, 7.5 Minute Series topographic map, Township 4 North, Range 3 West, Sections 17 and 20, San Bernardino County, California. The property is located between the BNSF Railroad and the Mojave River, north of Round Up Way, east of Deep Creek Road, south of Breezy Lane, and west of Mockingbird Avenue (see Figures 1 through 3). The project site can be found on 2007 Thomas Guide page 4477, Sections E and F5.

The proposed project is a residential development which generally consists of using a variety of resources (i.e. , labor, materials, necessary tools, equipment) to install and construct the needs of a single-family residential community (i.e., houses, roads, storm drain, utility services, sewer, etc).

The local climatic conditions in the project area are characterized by hot summers, mild winters, infrequent rainfall, and dry humidity. The soils in the project area primarily consist of Cajon sand and Cajon-Wasco cool complex. The land is composed of two flat terraces with a 60-foot escarpment between the two terraces. There is also a knoll in the southeastern-most corner. Elevation ranges from 2,873 feet at the northwest corner to 2,945 feet on the upper terrace. Based on the disturbance characteristics, the majority of the 249-acre parcel appears to have been cultivated in the past. The exception is the southeastern knoll, which does not appear to have ever been tilled. More recently it has been heavily grazed, including the knoll, apparently by burros onsite and by the adjacent cattle farm to the south. Surrounding land uses include agriculture, cattle farming, rural residential, and railway transportation.

IV. LINKAGES AND CORRIDORS

The site is not identified within the San Bernardino County General Plan as a Wildlife Corridor or Linkage. The County identifies Wildlife Corridors and Areas of Critical Environmental Concern in their open space element of the Environmental Impact Report. See Figures 5 and 6 for San Bernardino County Corridors locations.

The site encompasses a large area of open land and although it is not within the San Bernardino County's identified corridor, it is located east of the Mojave River Wildlife Corridor. Because of this proximity, the site was evaluated for corridor and linkage values. The result of this evaluation is that the site is not likely to serve as linkage or corridor for wildlife.

This conclusion is based upon the following: (1) during inspection of the site it was noted that chainlink fencing was installed around the portion of the property used for grazing. The northern limit of the fencing is the south side of Ocotillo Way, with the remaining fencing following property lines. This fencing could impede fluid movement across the site by coyotes, bobcats, skunks, and other common local wildlife. (2) A large bluff with steep vertical walls bisects property from north to south. The bluff topography would also impede fluid movement of wildlife across the site in a east-west direction. (3) To the east of the property, there is an active rail road, which is an additional impediment to wildlife movement. (4) The site is generally surrounded by rural residential housing in all directions. Most of the residential lots bordering the site are fenced and have dogs. There is a sizable dog kennel and breeding facility located on the east boundary of the property. The presence of high canine densities along the parcel boundaries should be highlighted because wildlife tends to avoid encounters with dogs. (5) There is a cattle feed lot located along the southwest property boundary.

With all of these factors taken into consideration along with the general lack of resource and lack of habitat to elicit migration by any local species; the site is not likely to serve as a corridor that facilitates wildlife movement in the local area or provides connection to the Mojave River Wildlife Corridor.

V. FOCUSED STUDY / SPECIES OF CONCERN

Background information was gathered prior to visiting this site in order to determine what species would be expected in this area. This background check included a search of the CDFG's Natural Diversity Database (NDDDB) and a review of previously conducted biological surveys on the subject parcel. The body of literature prepared for this parcel and used for background information includes the following sources: a *Biological Resources Report* dated September 2, 2003 prepared by LSA Associates, Inc; the California Natural Diversity Database; an April 28, 2006 letter report prepared by O'Farrell Biological Consulting regarding the site suitability for Mojave ground squirrel (MGS); a May 12, 2006 letter of concurrence from the California Department of Fish and Game (CDFG) regarding the April 28, 2006 MGS habitat assessment letter report; and a *Botanical Survey and Habitat Assessment Report* dated May 2008 prepared by TDA.

The California Native Diversity Data Base (CNDDDB) indicated 29 sensitive species have been documented to occur in USGS – Apple Valley South Quadrangle, 7.5-Minute Series. The species of special status identified to have a potential to occur within the vicinity of the project area include Booth's evening-primrose (*Camissonia boothii* ssp. *boothii*), desert cymopterus (*Cymopterus deserticola*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), prairie falcon (*Falco mexicanus*), desert tortoise (*Gopherus agassizii*), Mojave River vole (*Microtus californicus mohavensis*), Mojave ground squirrel (*Spermophilus mohavensis*), and burrowing owl (*Athene cunicularia*).

According to the West Mojave Plan Environmental Impact Report/Environmental Impact Statement, (Map 3-15) and according to the MGS Partnership Workshop, the subject property is located within the extreme southern periphery of the MGS range. In 2006, the site was evaluated for the potential of MGS by O'Farrell Biological Consulting and according to O'Farrell, the habitat on site is not suitable for MGS. The CDFG concurred with this assertion and the 2008 field evaluation conducted by TDA also corroborated these findings. Therefore, no protocol surveys were conducted and it is assumed that the site is not occupied by this species.

The project site is located within the range of the desert tortoise, but is not located within designated critical habitat for the desert tortoise. According to the West Mojave Conservation Plan, the project site is located in an area where desert tortoise are considered extirpated. In 2003, LSA Associates, Inc. surveyed the site surveyed for desert tortoise and did not find any historical or current sign of desert tortoise. However, since the site is considered marginally suitable for this species, follow-up focused surveys were conducted in 2008.

After examining the background information sources and conducting the initial site evaluation, it was determined that there was a potential for burrowing owl (*Athene cunicularia*) to occur in portions of the parcel. This determination was based on the presence of small mammal burrows of appropriate shape, size, and aspect for burrowing owl. Therefore, phase II surveys were conducted.

VI. SPECIAL STATUS SPECIES BACKGROUND INFORMATION

Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is listed under both state and federal law as a threatened species. Throughout its range it is threatened by habitat loss, domestic grazing, predation, collections, and increased mortality rates (Feldmeth et al. 1990). Critical habitat for the desert tortoise was designated on February 8, 1994 (FR 59 5820 5866). The project site is not located within designated critical habitat. The desert tortoise is typically found in creosote bush scrub. They are most often found on level ground where the substrate is firm but not too rocky. Tortoise burrows are typically found at the base of shrubs, in the sides of washes and in hillsides. Recent activity at tortoise burrows may be indicated by footprints, fresh dirt on the apron of the burrow, fresh scat, crushed vegetation or recently exposed roots in the burrow wall. Tortoise scat is very distinctive and may remain on the desert floor for many years. General estimates of the age of tortoise scat can be made based upon sun bleaching and moisture levels. Home ranges for desert tortoise vary, depending upon the size and sex of a tortoise as well as the availability of food and shelter. According to the CDFG, information on the western Mojave population of desert tortoise, home range typically varies from 5 to 38 acres. Neonatal tortoises can travel up to 3-5 km after hatching (Becky Jones, CDFG personal communications). Because a single tortoise may have many burrows distributed throughout its home range, it is not possible to predict exact numbers of individuals on a site based upon burrow numbers.

In 1992 the U.S. Bureau of Land Management issued the California Statewide Desert Tortoise Management Policy which included categorizing habitat into three levels of classification. The management goal for Category I areas is to maintain stable, viable, populations and to increase the population where possible. The management goal for Category II areas is to maintain stable, viable, populations. The management goal for Category III areas is to limit population declines to the extent feasible. The entire project occurs in desert tortoise habitat designated as Class II.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a state and federal Species of Special Concern. This owl is a mottled brownish and sand colored, dove-sized raptor, with large, yellow eyes, a rounded head lacking ear tufts, white eyebrows, and long legs compared to other owl species. It is a ground dwelling owl typically found in arid prairies, fields, and open areas where vegetation is sparse and low to the ground. The burrowing owl is heavily dependent upon the presence of mammal burrows, commonly ground squirrel, in its habitat to provide shelter from predators, inclement weather, and to provide a nesting place (Coulombe 1971). They are also known to make use of human-created structures such as cement culverts and pipes for burrows.

Burrowing owls spend a great deal of time standing on dirt mounds at the entrance to a burrow, or perched on a fence post or other low to the ground perch from which they hunt for prey. Burrowing owls frequently hunt by hovering in place above the ground and dropping on their prey from above. Burrowing owls feed primarily on insects, such as grasshoppers, June beetles and moths, but will also take small rodents, birds, and reptiles. They are active during the day and night, but are considered a crepuscular owl; generally observed in the early morning hours or at twilight. The breeding season for the burrowing owl is February 1 through August 31. Up to 11, but typically 7 to 9 eggs are laid in a burrow, abandoned pipe, or other subterranean hollow where incubation is

complete in 28-30 days. Young burrowing owls fledge in 44 days. The burrowing owl is considered a migratory species in portions of its range, which includes western North America from Canada to Mexico, and east to Texas and Louisiana. Burrowing owl populations in California are considered to be sedentary or locally migratory.

Throughout its range it is vulnerable to habitat loss, predation, vehicular collisions, destruction of burrow sites and poisoning of ground squirrels (Grinnell and Miller 1944, Zarn 1974, Remsen 1978). Burrowing owls have disappeared from significant portions of their range in the last 15 years and overall nearly 60% of the breeding groups of owls known to have existed in California during the 1980s had disappeared by the early 1990s (Burrowing Owl Consortium 1993). The burrowing owl is not listed under the state or federal Endangered Species Act, but is considered both a federal and state "Species of Special Concern." The burrowing owl is a migratory bird protected by the international treaty under the Migratory Bird Treaty Act of 1918 and by State law under the California Fish and Game Code (CDFG Code #3513 & #3503.5).

Prairie falcon

The prairie falcon is a medium to large bird with wingspans approaching 3.5 feet (106.7 cm). The female tends to be considerably larger than the male, in some cases a full one-third bigger. Adult prairie falcons are a pale brown to sandy brown across the top of their wings and back. The head is streaked with light areas around the face. A faint dark mustache appears on either side of the bill. Underneath, the birds are creamy white with brown spotting or streaking on the breast and belly. Falcons all have slender bodies, long tails and characteristic long, pointed wings. Prairie falcons can be abundant when suitable habitats for nesting and foraging are present. They do migrate in the spring and fall, but some birds may reside in the area the entire year. Prairie falcons prefer rough, broken terrain, which is where they establish nesting territories. Nesting occurs from mid-April through July. Their nests are often found in rock crevices and sometimes in vacated stick nests left by other birds.

The prairie falcon is a locally common bird. These falcons prey chiefly on small birds and mammals, and on a variety of reptiles and insects. Prairie falcons hunt using low, rapid, searching flight, usually capturing prey on or near the ground. The prairie falcon, as do other species of falcon, swoops down upon its prey from behind. A similar species, the peregrine falcon, has been clocked at speeds of over 90 mph in their descents upon prey. Prairie falcons nest primarily on cliff ledges, but may also nest on low ridges. All birds of prey are protected by law. It is illegal to harm them or to disturb their nests. It is also against the law to have in your possession any artifacts from birds of prey, such as feathers, talons or preserved specimens. Injured hawks and owls should be reported to the Department of Game, Fish and Game or the U.S. Fish and Wildlife Service. Officials will arrange for birds that can be saved to be cared for at rehabilitation centers

Mojave River Vole

Mojave River vole (*Microtus californicus mohavensis*) is a U.S. Fish and Wildlife Services (USFWS) Species of Concern and BLM Sensitive California, Species of Special Concern (CDFG 1998). The Mojave River vole, also referred to as the Mojave River meadow mouse, is one of 17 named subspecies of the California vole, *Microtus californicus* (Hall 1981). The species is restricted to moist habitats along the Mojave River between Victorville and Helendale. Appropriate habitat may also exist upstream of Victorville towards Hesperia (Williams 1986). The Mojave River vole

measures 7.5 to 8.4 inches in total length. It has brown fur overlaid with longer black hairs above, grayish below. The tail is black above, brown below, and averages one-third of the length of the head and body. Mojave River voles construct runways in grassy habitats by clipping vegetation. These runways often lead to shallow burrows in friable soil. They forage primarily on the stems and leaves of grasses and forbs, but will switch to grass seeds during the drier parts of the year (Batzli and Pitelka 1971). Suitable habitat is associated with ponds and irrigation canals along with the Mojave River proper. Elevations of known localities range between 750-823 meters (2325-2700 feet).

The primary threats to the Mojave River vole are the destruction and fragmentation of habitat resulting from agriculture and urbanization. Urbanization adjacent to the Mojave River restricts the availability of upland habitat that may be critical during flood events. Agricultural development affects this subspecies by removing and modifying native habitats. Channelization of surface water and pumping of groundwater may continue to be a significant threat along the Mojave River. Introduction and spread of salt cedar (*Tamarix* sp.) displaces native plants and alters the composition and structure of native plant communities. Concentrated off-highway vehicle use and other surface-disturbing activities also threaten *M.c. mohavensis* by removing vegetation required for foraging and cover.

Mojave Ground Squirrel

MGS is endemic to 2 million hectares in the western Mojave Desert. It typically inhabits sandy soils of alkali sink and creosote bush scrub habitat. MGS are listed as threatened by CDFG due to habitat loss, fragmentation, and deterioration (Brooks and Matchett 2002). CDFG does not designate critical habitat.

MGS measure about 9 inches from nose to tip of tail, forage on leaves and seeds, and aestivate/hibernate for long periods of the year. Aestivation (reduction of body temperature, heart rate, and metabolism) begins usually in the early summer when vegetation begins to dry up. MGS re-animate after winter rains have produced new vegetative growth, generally in February. Males may travel up to a mile per day in search of mates after they have emerged from aestivation in the spring. Litters of 6-9 young are born by the end of March; young are weaned by early May and disperse within a few weeks. Young often establish home ranges adjacent to the maternal home range; however some young will disperse up to 4 miles. When winter rains fail, MGS do not reproduce and can enter dormancy as early as April. As a result, MGS numbers decline after a low rainfall year, and two successive years of drought can lead to the extinction of local populations. Young can re-colonize suitable habitat rapidly after good reproductive seasons (Leitner 1999).

In the Coso Grazing Enclosure Monitoring Study (CEGMS, Leitner and Leitner 1998) several individuals survived until 5 years of age, the maximum life-span recorded for this species. In general, the majority of juveniles do not survive to reach one year of age. Evidence from radiotelemetry and weight gain patterns suggest that juvenile survivorship is low because of predation and the frequent failure of juveniles to accumulate sufficient fat reserves for their first season of dormancy. However, once individual ground squirrels successfully reach yearling status and become established in a home range, survivorship tends to be high. (CEGMS, p.28)

Plants documented as forage for MGS include: fiddleneck (*Amsinckia tessellata*), wolfberry (*Lycium andersonii*), Joshua tree (*Yucca brevifolia*), winterfat (*Krascheninnikovia* (formerly *Eurotia*) *lanata*),

spiny hopsage (*Grayia spinosa*), allscale (*Atriplex canescens* and *A. polycarpa*), desert holly (*Hymene lytaya*), coreopsis (*Coreopsis* sp.), Russian thistle (*Salsola tragus*), and the seeds of Joshua tree (*Y. brevifolia*). It is suspected that MGS forage on the plant species with the highest water content available at the time.

VII. BIOLOGICAL REGULATORY SETTING

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to the continued existence and existing knowledge of population levels. The USFWS administers the federal Endangered Species Act (ESA) of 1973. The ESA provides a legal mechanism for listing species as either threatened or endangered, and a process of protection for those species listed. Section 9 of the ESA prohibits "take" of threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in such conduct. "Take" can include adverse modification of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the ESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act. Take authorization can be obtained under Section 7 or Section 10 of the act.

Migratory Bird Treaty Act: The Migratory Bird Treaty Act protects all native breeding birds, whether or not they are considered sensitive by resource agencies.

The California Department of Fish and Game (CDFG) administers the state Endangered Species Act. The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management; a rare species is one present in such small numbers throughout its range that it may become endangered if its present environment worsens. Rare species applies only to California native plants. Further, all raptors and their nests are protected under '3503.5 of the California Fish and Game Code. Species that are California fully protected include those protected by special legislation for various reasons, such as the California condor.

Species of Special Concern is an informal designation used by CDFG for some declining wildlife species that are not proposed for listing as threatened or endangered, such as the burrowing owl. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by CDFG.

Other applicable regulations include, the County of San Bernardino native plant protection ordinance. The protected native plant species (e.g., Joshua trees) are identified in Section 89.0420 of the San Bernardino County Government Code. If the project proposes to remove any of these native plant species, the project proponent shall comply with Section 89.0420 of the San Bernardino County Code regarding the harvesting of desert native plants.

VIII. METHODOLOGY

TDA biologists Shay Lawrey and Lisa Tollstrup conducted the initial site assessment on August 16, 2008. Shay Lawrey and Craig Lawrey completed the focused surveys on August 19, 25 and September 12, 2008. The purpose of the focused survey was to determine the presence or absence of burrowing owl, desert tortoise, or any other sensitive species within or adjacent to the subject parcel. Indicators for wildlife observations included scat, tracks, burrows, nest, calls, and individual animals.

The parcel was surveyed in accordance with both the desert tortoise and burrowing owl survey protocols. The desert tortoise protocol requires 100% coverage surveys with transects spaced at no more than 30-foot intervals so that 15-foot areas on either side of each transect are observed. Tortoise protocol requires zone of influence transects be conducted wherever possible at 100, 200, 400, 800, 1,200 and 2,400-foot intervals. Based on the habitat conditions onsite, disturbances in the surrounding vicinity and the proximity of residences to the property, zone of influence surveys were not performed as they are not warranted in this case.

Focused burrowing owl surveys were conducted in accordance with the "Burrowing Owl Survey Protocol and Mitigation Guidelines" prepared by the California Burrowing Owl Consortium on April 1993 and the October 17, 1995 California Department of Fish and Game staff report on Burrowing Owl Mitigation. The protocol requires surveying the site at no more than 30 meter (~100 foot) intervals. The bases of perennial shrubs were checked for burrows and signs. Natural and non-natural substrates were examined for potential burrow sites. All burrows encountered were examined for shape, scat, pellets, and tracks. Disturbance characteristics and all other animal signs encountered on the site are recorded in the results section.

Burrowing owl burrow locations were marked using a handheld Magellan Explorist 600 GPS unit. Habitat characteristics were photo documented and all species encountered were recorded. Date time and weather conditions were also logged.

IX. GENERAL BIOLOGICAL SURVEY RESULTS

The property is approximately 249 acres and is located largely in the Mojave River floodplain. The soils in the project area primarily consist of Cajon sand and Cajon-Wasco cool complex. The land is composed of two flat terraces with a 60-foot escarpment between the two terraces. There is also a knoll in the southeastern-most corner. Elevation ranges from 2,873 feet at the northwest corner to 2,945 feet on the upper terrace. The local area climate is semi-arid, with an average annual temperature of 62°F. July is the warmest month with daily average temperature of 79.3°F while January is the coolest with daily average temperature of 44.2°F. The rainy season begins in November and continues through March, with the quantity and frequency of rain varying from year to year.

Based on the disturbance characteristics, the majority of the 249-acre parcel appears to have been cultivated in the past. The exception is the southeastern knoll, which does not appear to have ever been tilled. More recently it has been heavily grazed, including the knoll, apparently by burros on site and by the adjacent cattle farm to the south. The land uses in the vicinity of the project are rural residential, agricultural, vacant land, utility infrastructure (electricity, water, and natural gas), and transportation infrastructure (rail road and roads).

During the survey, the general weather conditions were clear and slightly breezy. Temperatures ranged between 79° and 101°F. This temperature range provides suitable conditions for burrowing owl and tortoise activity. Common wildlife observed during the survey include coyote (*Canis latrans*), California jack-rabbit (*Lepus californicus*), pocket gopher (*Thomomys bottae*), raven (*Corvus corax*), mourning dove (*Zenaida macroura*), and side-blotched lizard (*Uta stansburiana*).

The site is comprised of disturbed fallow field, a bluff or eroded cliff, desert dune habitat, and a knoll with Joshua tree woodland habitat. The habitat quality within the survey area ranges from moderate to highly disturbed. The general disturbances on site have occurred from regular discing for agriculture and or weed abatement and grazing.

The project site is not located within designated critical habitat for the desert tortoise and according to the West Mojave Conservation Plan, the project site is located in an area where desert tortoise are considered extirpated. Although desert tortoise are known to occur in the overall local vicinity of the project site, the result of the survey was that no desert tortoise or their signs (i.e., burrows, scat, scutes or tracks) were detected. There are geographic barriers as well as development around the site. Therefore the likelihood of tortoise entering site is very unlikely. The conclusion of this report is that no tortoise will be impacted by this project.

Evidence of burrowing owl was found on site in the southeastern quarter of the parcel. Four burrows were found in the southeastern quarter of the property that had white wash, castings, and feathers near the burrow entrances. No burrowing owl individuals were found during the surveys, but there was evidence that they had been there previously. Therefore the southeastern quarter of the property should be assumed as suitable burrowing owl habitat. Although the site is located within the range of the Mojave ground squirrel (MGS), the surveys corroborated the findings of O'Farrell Biological Consulting that the habitat on site is not suitable for MGS.

The subject parcel is located approximately 3 miles south of the nearest known occurrence the Mojave River vole, a State listed Species of Special Concern. The preferred habitat of the Mojave

River vole occurs within the benches and vegetated channel of the Mojave River. This species requires dense vegetative cover with high moisture content. Since these conditions do not exist onsite, the site is not considered suitable for Mojave River vole. There is no potential for this species to occur onsite.

The 249-acre parcel provides habitat for a variety of birds, some of which are appropriate prey species of prairie falcon. There was no sign of prairie falcons on site, but there is a moderate potential for this species to utilize the site for foraging. There is no indication that prairie falcon use the site for roosting or nesting. No appropriate habitat capable of supporting prairie falcon nesting exists onsite. Development of the site would result impacts to potentially suitable foraging habitat for the prairie falcon. At this time, there are no regulatory permits required for impacts to prairie falcon foraging habitat. In the local vicinity of the parcel, there are a number of areas suitable for prairie falcons to forage and the development of this parcel would not result in significant adverse impacts to the local or regional population of prairie falcons.

The site is not identified within the San Bernardino County General Plan as a Wildlife Corridor or Linkage. The County identifies Wildlife Corridors and Areas of Critical Environmental Concern in their open space element of the Environmental Impact Report. See Figures 5 and 6 for San Bernardino County Corridors locations.

The site encompasses a large area of open land and although it is not within the San Bernardino County's identified corridor, it is located east of the Mojave River Wildlife Corridor. Because of this proximity, the site was evaluated for corridor and linkage values. The result of this evaluation is that the site is not likely to serve as linkage or corridor for wildlife. Considering the site is not designated as a Corridor, the general site characteristics, the general lack of resource, and lack of habitat to elicit migration by any local species, the site is not likely to serve as a corridor that facilitates wildlife movement in the local area or provides connection to the Mojave River Wildlife Corridor.

In 2003, Glen Lukos Associates (GLA) conducted a delineation of jurisdictional waters of the project site. GLA concluded that the site did not contain any wetlands. During the 2008 field investigations the assertion that no wetlands exist on site was confirmed. There is a culvert that provides drainage for the rail road that drains into the project site on the east. This drainage does not provide any connectivity to waters considered Waters of the United States. Furthermore, the water from the culvert flows to the low areas in the knoll and then sheet-flows across the site. There is no evidence of bed-bank or channel, riparian elements or aquatic resources. Given these factors, the drainage is not considered a jurisdictional streambed.

X. IMPACTS AND PROPOSED MITIGATION MEASURES

Based on the data collected and analyzed, it was determined that there are possible impacts to special status species. The proposed residential development project may disrupt the integrity or continuity of habitat suitable for and presumed occupied by burrowing owl. This project also has the potential to impact sensitive cactus species. Regulatory approval will be required for impacts to burrowing owl and adherence to the San Bernardino County Ordinance pertaining to plant protection is required. All impacts to plants (including Joshua tree and cactus) protected or regulated by the State Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.) must be addressed prior to the issuance of any 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. (Ord. 250 (part), 1997; SBCC § 811.0420) The project proponent will have to follow the guidelines of the cities or County should removal of Joshua trees and other cacti be necessary.

A number of burrowing owl burrows were encountered on site during the surveys. Burrowing owls nest and roost in modified, expanded burrows originally created by fossorial animals including ground squirrels. They are also known to make use of human-created structures such as cement culverts and pipes for burrows. It is recommended that the project proponent come to a collective agreement with the CDFG on the appropriate mitigation and avoidance measures. These measures may include phasing of project construction, passive relocation, and habitat conservation.

Although the California Desert Tortoise (*Gopherus agassizii*) occurs in the local area, no desert tortoise were detected during survey. Because there is still a remote possibility that desert tortoise could wander onto the site, it is recommended that prior to and within 30 days of the start of any land disturbance activities, a qualified biologist should survey the site to determine if tortoise are present. If tortoise are encountered, land disturbance activities shall not commence until the biologist has implemented appropriate measures according to the CDFG and USFWS to clear the site for construction.

A biologist/monitor should be present at the site during all land disturbance activities. The biologist/monitor should remain on-call during construction activities in developed roads. If tortoise or burrowing owls are encountered during construction, construction activities shall be halted in the vicinity of the find and the biologist/monitor called to the site. The contractor shall implement the recommendations of the biologist/monitor. All personnel associated with the construction on the site should attend a worker education class. This class should include general information regarding the Mojave ground squirrel, desert tortoise, and burrowing owl; relevant Federal and State laws; and worker responsibilities when working in Mojave desert habitat.

The State of California prohibits the "take" of active bird nests. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal will be conducted outside of the State identified nesting season (nesting season is February 15 through September 1). Alternatively, the site will be evaluated by a qualified biologist prior to initiation of ground disturbance to determine the presence or absence of nesting birds. Bird nests will be avoided during the nesting season.

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TABLES

**Table 1
CNDDDB SEARCH**

Results of CNDDDB search based on USGS – Apple Valley South, Apple Valley North, Victorville, and Hesperia quadrangles. Yellow shading indicates species for which there was potential habitat but the species was not found on the 249-acre parcel. Green shading indicates a species, or evidence of, which was found on the 249-acre parcel.

Scientific Name	Vernacular Name	Federal Status	State Status	**CDFG	*CNPS Rank	General Habitat	Microhabitat Preference	Status Onsite
<i>Camissonia boothii</i> <i>ssp. boothii</i>	Booth's evening-primrose	N/A	N/A		2.3	Joshua tree woodland, pinon-juniper woodland.	900-2400m	Some suitable habitat on site but species was not found during focused botanical surveys. (See attached Focused Botanical Report by CJ Fotheringham for occurrence details.)
<i>Cymopterus deserticola</i>	desert cymopterus	N/A	N/A		1B.2	Joshua tree woodland, Mojavean desert scrub. Most occurrences located near or in Edwards AFB.	On fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand. 625-910m	Some suitable habitat on site but species was not found during focused botanical surveys. (See attached Focused Botanical Report by CJ Fotheringham for occurrence details.)
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	N/A	N/A		1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinon-juniper woodland, riparian woodland.	Sandy soil or coarse, granitic loam. 425-1800m	Some suitable habitat onsite but species was not found during focused botanical surveys. (See attached Focused Botanical Report by CJ Fotheringham for occurrence details.).
<i>Scutellaria bolanderi</i> <i>ssp. austromontana</i>	southern skullcap	N/A	N/A		1B.2	Chaparral, cismontane woodland, lower montane coniferous forest.	In gravelly soils on streambanks or in mesic sites in oak or pine woodland. 425-2000m	No suitable habitat onsite and species was not found during focused botanical surveys. (See attached Focused Botanical Report by CJ Fotheringham for occurrence details.)
<i>Symphotrichum</i>	San Bernardino	N/A	N/A		1B.2	Meadows and seeps,	Vernally mesic grassland	No suitable occurs on

Scientific Name	Vernacular Name	Federal Status	State Status	**CDFG	*CNPS Rank	General Habitat	Microhabitat Preference	Status Onsite
<i>defoliatum</i>	aster					marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland.	or near ditches, streams and springs; disturbed areas. 2-2040m	site. Further, species was not found during focused botanical surveys. (See attached Focused Botanical Report by CJ Fotheringham for botanical occurrence details.)
<i>Helminthoglypta mohaveana</i>	Victorville shoulderband	N/A	N/A			Known only from along the Mojave River in San Bernardino County.	Found among granite boulders and at the base of rocky cliffs.	No suitable habitat for this species occurs on site. The potential for this species to occur on this site is zero. No additional surveys are required.
<i>Plebulina emigdionis</i>	San Emigdio blue butterfly	N/A	N/A			Found in desert canyons and along riverbeds on the southern-most edge of the San Joaquin Valley.	Host-plant is a triplex canescens; maybe lotus purshianus also.	No suitable habitat on site, and the site is outside the range of this species. The potential for his species to occur on site is zero. No additional surveys required.
<i>Rana aurora draytonii</i>	California red-legged frog	Threatened	N/A	SC		Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	There are no water sources on site, and therefore no suitable habitat for this species. The potential for this species to occur on this site is zero. No additional surveys are required.
<i>Emys (Clemmys) marmorata pallida</i>	southwestern pond turtle	N/A	N/A	SC		Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6000 ft elev.	Require basking sites such as partially submerged logs, vegetation mats, or open mud banks. Need suitable nesting sites.	There are no water sources onsite, and therefore no suitable habitat for this species. The potential for this species to occur on this site is zero. No additional surveys are required.
<i>Gopherus agassizii</i>	desert tortoise	Threatened	Threatened			Most common in desert scrub, desert wash, and Joshua tree habitats;	Require friable soil for burrow and nest construction. Creosote	Some marginally suitable habitat on site. Focused protocol surveys were

Scientific Name	Vernacular Name	Federal Status	State Status	**CDFG	*CNPS Rank	General Habitat	Microhabitat Preference	Status Onsite
						occurs in almost every desert habitat.	bush habitat with large annual wildflower blooms preferred.	conducted on site, the result of this focused survey is there are no desert tortoise or sign of desert tortoise found on this site. No additional surveys are required.
<i>Phrynosoma coronatum (blainvillii population)</i>	Coast (San Diego) horned lizard	N/A	N/A	SC		Inhabits coastal sage scrub and chaparral in arid and semi-arid climate condit.	Prefers friable, rocky, or shallow sandy soils.	No suitable on site, and the site is outside the range of this species. The potential for this species to occur on site is zero. No additional surveys required.
<i>Sauromalus ater</i>	chuckwalla	N/A	N/A			Found in a variety of desert woodland & scrub habitats; but most often in creosote communities.	Requires large rock outcrops, boulder piles or scattered large rocks. Sandy, well-drained soil needed for nesting.	No suitable habitat on site. The potential for this species to occur on site is zero. No additional surveys required.
<i>Accipiter cooperii</i>	Cooper's hawk	N/A	N/A	SC		(Nesting) woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	No suitable nesting habitat onsite surveys. The species may utilize the site for foraging. The probability of this species occurring on site is low to moderate. The probability of this species nesting on site is zero. No additional surveys are required.
<i>Asio otus</i>	long-eared owl	N/A	N/A	SC		(Nesting) riparian bottomlands grown to tall willows & cottonwoods; also, belts of live oak paralleling stream courses.	Require adjacent open land productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	No suitable nesting habitat on site surveys. The species may utilize the site for foraging. The probability of this species occurring on site is low to moderate. The probability of this species nesting on site is zero. No additional surveys are required.

Scientific Name	Vernacular Name	Federal Status	State Status	**CDFG	*CNPS Rank	General Habitat	Microhabitat Preference	Status Onsite
<i>Athene cunicularia</i>	burrowing owl	N/A	N/A	SC		(Burrow sites) open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the california ground squirrel.	7 burrowing owl burrows found with white wash, castings and or feathers near burrow entrance. Southeast 1/4 of property is suitable and considered occupied.
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Candidate	Endangered			(Nesting) riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.
<i>Dendroica petechia brewsteri</i>	yellow warbler	N/A	N/A	SC		(Nesting) riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	Also nests in montane shrubbery in open conifer forests.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	Endangered	Endangered			(Nesting) riparian woodlands in southern California. State listing includes all subspecies.		No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.

Scientific Name	Vernacular Name	Federal Status	State Status	**CDFG	*CNPS Rank	General Habitat	Microhabitat Preference	Status Onsite
<i>Falco mexicanus</i>	prairie falcon	N/A	N/A	SC		(Nesting) inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Suitable habitat for foraging. This species likely occurs in the area and may utilize the site for foraging.
<i>Icteria virens</i>	yellow-breasted chat	N/A	N/A	SC		(Nesting) summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses.	Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forage and nest within 10 ft of ground.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.
<i>Piranga rubra</i>	summer tanager	N/A	N/A	SC		(Nesting) summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts.	Require cottonwood-willow riparian for nesting and foraging; prefers older, dense stands along streams.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.
<i>Toxostoma lecontei</i>	Le Conte's thrasher	N/A	N/A	SC		Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats.	Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required..
<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered	Endangered			(Nesting) summer resident of southern calif in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite.	No suitable habitat occurs onsite. The probability of this species occurring on site is zero. Additional surveys are not required.
<i>Vireo vicinior</i>	gray vireo	N/A	N/A	SC		(Nesting) dry chaparral; w of desert, in chamise-dominated habitat; mtns of Mojave Desert, assoc w/juniper-artemisia.	Forage, nest, and sing in areas formed by a continuous growth of twigs, 1-5 ft above ground.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.

Scientific Name	Vernacular Name	Federal Status	State Status	**CDFG	*CNPS Rank	General Habitat	Microhabitat Preference	Status Onsite
<i>Chaetodipus fallax pallidus</i>	pallid San Diego pocket mouse	N/A	N/A	SC		Desert border areas in eastern San Diego Co.. In desert wash, desert scrub, desert succulent scrub, pinon-juniper, etc.	Sandy herbaceous areas, usually in association with rocks or coarse gravel.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	N/A	N/A	SC		Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	No suitable habitat occurs on site. The probability of this species occurring on site is zero. Additional surveys are not required.
<i>Microtus californicus mohavensis</i>	Mohave river vole	N/A	N/A	SC		Occurs only in weedy herbaceous growth in wet areas along the Mojave river. May be found in some irrigated pastures.	Burrows into soft soil. Feeds on leafy parts of grasses, sedges and herbs. Clips grasses to form runways from burrow.	Nearest known location is 3 miles to the north in the Mojave River. No habitat elements required by this species exist on site. This species requires very moist and densely vegetated habitat.
<i>Spermophilus mohavensis</i>	Mohave ground squirrel	N/A	Threatened			Open desert scrub, alkali scrub & Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert.	Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	The site is within the edge of its range. 2006 habitat assessment conducted by O'Farrell Biological Consulting concluded the site was not suitable. CDFG concurred and 2008 surveys confirmed the previous finding.

FIGURES

FIGURE 1. REGIONAL LOCATION



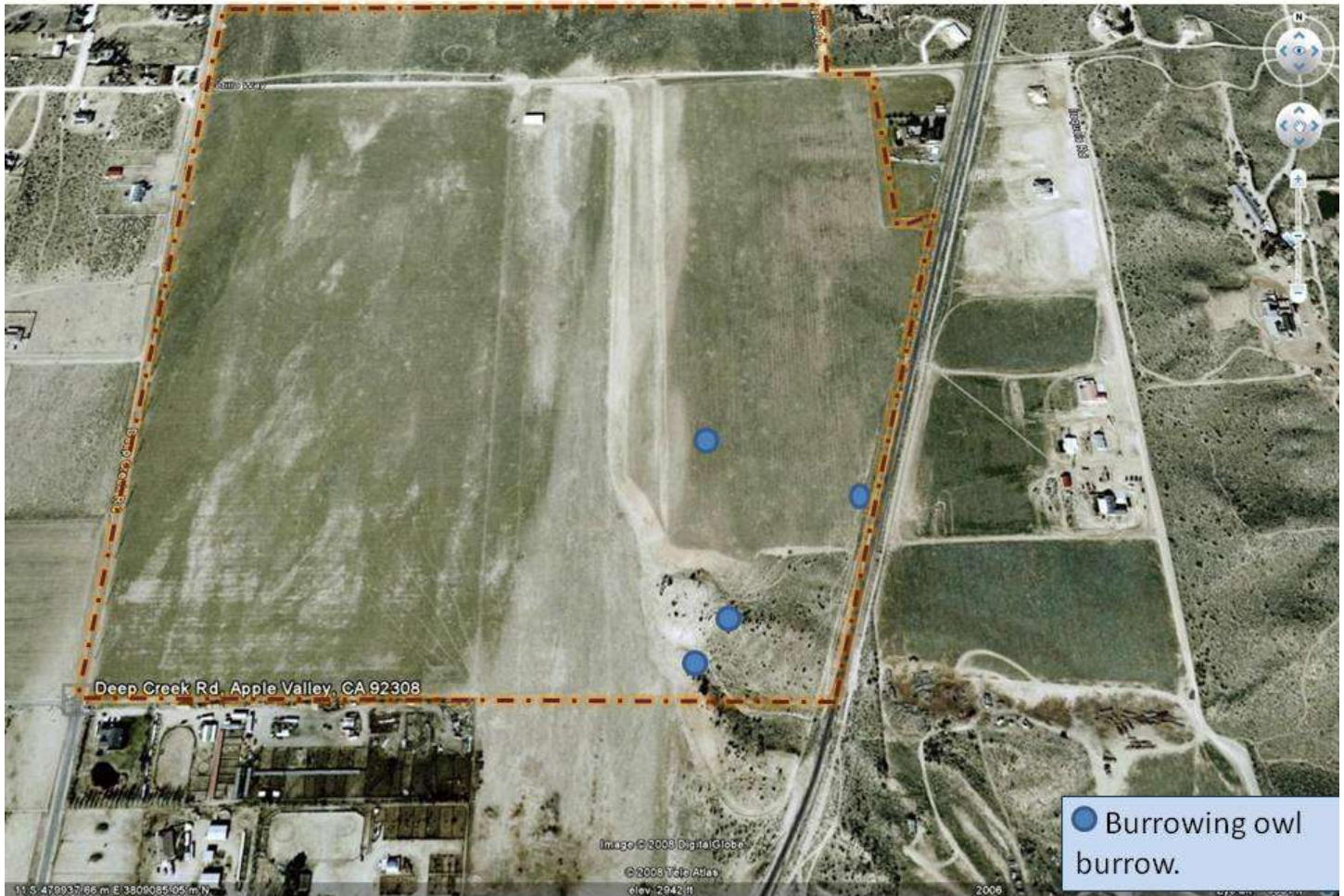
FIGURE 2. PROJECT VICINITY



FIGURE 3. SITE LOCATION



FIGURE 4. BURROWING OWL BURROW LOCATIONS



**FIGURE 5
 SAN BERNARDINO COUNTY CORRIDOR LOCATIONS**

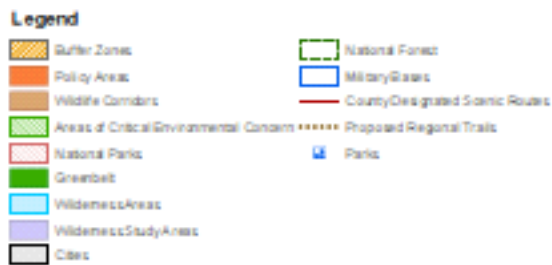
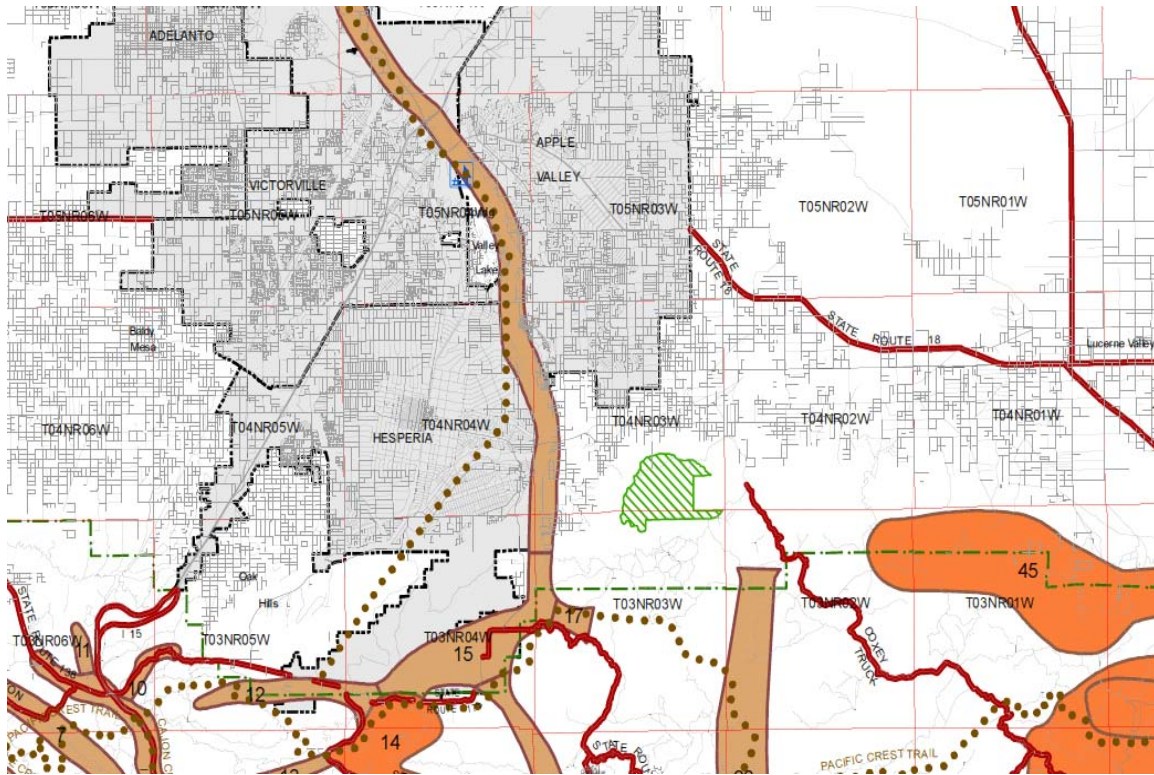
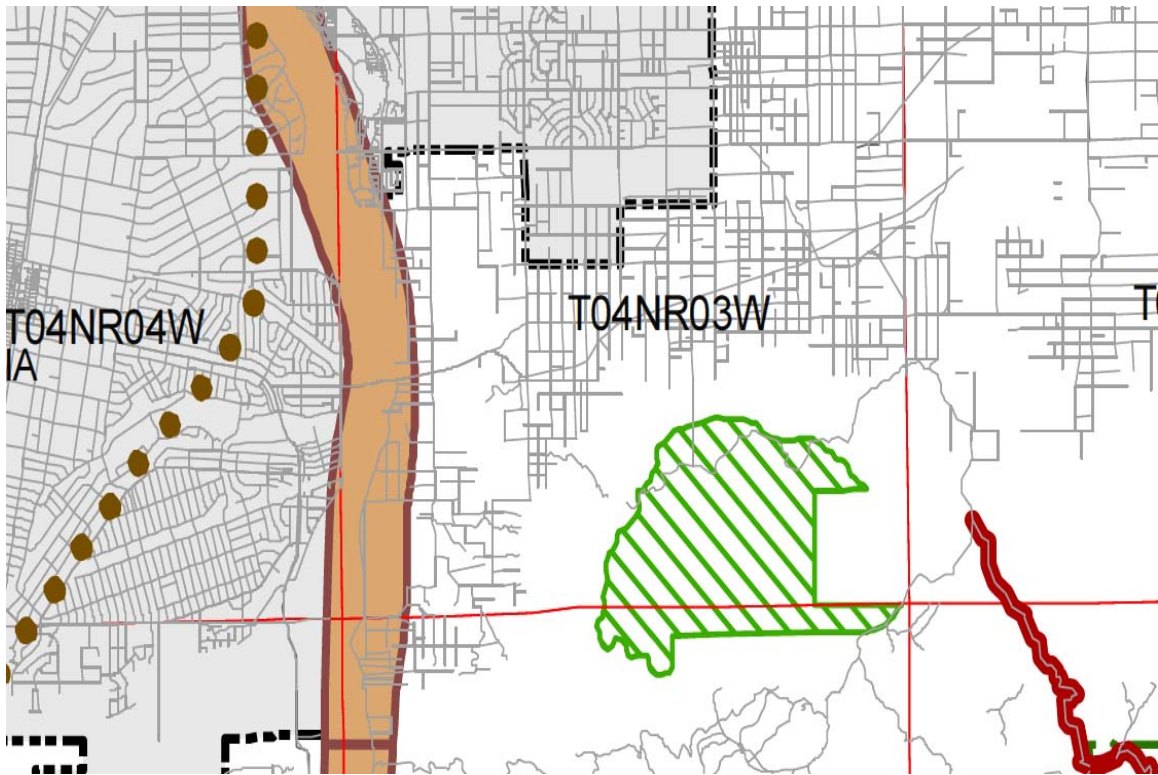


FIGURE 6
SAN BERNARDINO COUNTY CORRIDOR LOCATIONS



SITE PHOTOS



PHOTO 1. Looking west, down Ocotillo Way



PHOTO 2. Looking east, up Ocotillo Way



PHOTO 3. Looking south, across Ocotillo way



PHOTO 4. Looking southeast, across Ocotillo way



PHOTO 5. Looking southwest, across fallow field in central portion of the parcel.



PHOTO 6. Looking south approaching top of knoll and beginning of Joshua Tree woodland habitat.



PHOTO 7. Looking northeast at BNSF Railroad at culverts that provide drainage for the tracks.



PHOTO 8. Looking from top of knoll in a northwest direction at the Joshua Tree woodland habitat and at drainage area that originates from the water coming from culverts that provide drainage to the tracks. Note that the water naturally flows to the low areas and then sheet flow across the fallow field.



PHOTO 9. Looking east from top of knoll.



PHOTO 10. Burrow with bird prints and casting material.



PHOTO 11. Looking southeast at the bottom of the knoll from the base of the dune habitat.



PHOTO12. Looking northwest on the north of Ocotillo Way in old fallow field with dune habitat remnants. The dune habitat remaining in the north part of the parcel is highly degraded and has become stabilized.



PHOTO 13. Pipe used by BUOW