

# **Appendix G**

## **Biological Resources Technical Report**

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### **Mesa Wind Project Repower**

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# Contents

<b>1.0 Introduction</b> .....	<b>1</b>
1.1 Project Description.....	1
1.2 Project Location.....	2
<b>2.0 Methods</b> .....	<b>3</b>
2.1 Literature Review.....	3
2.2 Field Surveys.....	4
2.2.1 Reconnaissance Wildlife and Botanical Surveys (2013).....	4
2.2.2 Focused Desert Tortoise and Botanical Surveys (2019).....	4
2.2.3 Vegetation.....	6
2.2.4 Avian Surveys.....	6
2.2.5 Bat Activity Surveys.....	7
<b>3.0 Results</b> .....	<b>7</b>
3.1 Special-status Plants.....	18
Listed Threatened or Endangered Plants.....	18
BLM Sensitive Plants.....	18
Other Special-Status Plants.....	19
3.2 Special-status Wildlife.....	19
Listed Threatened or Endangered Wildlife.....	19
Species Protected Under the Federal Bald and Golden Eagle Protection Act.....	22
BLM Sensitive Wildlife Species.....	23
Other Special-Status Wildlife Species.....	24
3.3 Native Birds: Migratory Bird Treaty Act / California Fish and Game Code.....	25
Bird Migration in the San Geronio Pass.....	26
3.4 Vegetation and Habitat.....	26
<b>4.0 References</b> .....	<b>27</b>

## Tables

Table 1. Biological Surveys Conducted for the Mesa Wind Repower Project 2013-2019.....	3
Table 2. 2019 Focused Survey Dates and Team.....	5
Table 3. Special Status Species Not Addressed*.....	8
Table 4. Special-status Species of the Cabazon/Whitewater Area.....	10
Table 5. Desert Tortoise Observations (2019).....	18

## Attachments

### Attachment 1 Figures

Figure 1. Project Location and Layout

Figure 2. Existing Conditions and Reported Species Locations

Figure 3. Land Use Designations

Figure 4. Field Survey Coverage and Results

Figure 5. Golden Eagle Nest Survey Results

Figure 6. Anabat Locations

Figure 7. Vegetation and Land Cover

### Attachment 2 Photo Exhibit

### Attachment 3 California Natural Diversity Database Results

### Attachment 4 Species List

### Attachment 5 California Natural Diversity Database Completed Forms

### Attachment 6 Inventory of potential desert tortoise burrows at existing foundations

### Attachment 7. Field Team Resumes

# APPENDIX G

## Draft Biological Resources Technical Report: Mesa Wind Energy Project

Aspen Environmental Group  
September 2019

### 1.0 Introduction

This report presents the methods and results of focused surveys for desert tortoise and special-status plants in 2019, as well as biological surveys conducted between 2012 and 2017, at the proposed Mesa Wind Energy Project site, located on Bureau of Land Management (BLM) land in unincorporated Riverside County, California (Figure 1). This report provides baseline information on biological resources to support the BLM's environmental review of the proposed project.

### 1.1 Project Description

Mesa Wind Power Corporation (Mesa Corp), a subsidiary of Brookfield Renewable Energy (Brookfield), proposes to repower the existing Mesa Wind Project by replacing and upgrading wind energy generation equipment and facilities. The proposed project is summarized here and described in detail in the project Plan of Development.

The existing Mesa Wind project has a disturbance area of about 40 acres (including access roads, pad sites for wind turbine generators (WTGs), and operations and maintenance (O&M) facilities.

The repowering of Mesa Wind would remove the approximately 460 legacy turbines (129 that are still in operation) and install up to 11 new WTGs with a total power production of 30 megawatts (MW). The new WTGs would be entirely within the existing BLM right of way (ROW). Maximum rotor height of the proposed new WTGs would be 150 meters (492 feet). Figure 1 shows the ROW, proposed disturbance areas, and WTG locations. Figure 2 shows existing legacy turbine locations. The construction required to repower Mesa Wind would temporarily disturb 107 acres for the entire project (WTG work areas, laydown area, and temporary access roads) and permanently disturb 30 acres for the entire project (including new WTG foundations and slightly wider existing on-site roads). About 18 acres of the planned disturbance area are currently disturbed by the existing wind project, such as access roads and work areas. The O&M building would remain in the same location. The substation would remain in the same location but would require upgrades and potentially an expanded fence line.

Currently, 30 acres (almost 90,000 feet of roadway) are located on site. Approximately 15.4 acres (28,000 feet of existing roadway) would be improved by widening the roadway through grading to accommodate wide loads that would transport new WTGs; and 0.4 acres (790 feet) would be constructed to access new WTG pads. During the repower approximately 20 acres (62,000 feet) of roadway would be removed and reclaimed by scarifying the land and planting native seeds during the appropriate season. Because the roads would be used over a five year period to remove the legacy turbine foundations, major grading or moving of rocks would not occur until after that period.

## 1.2 Project Location

The project site is located in the San Gorgonio Pass on public lands managed by the BLM. It is west of the Whitewater River and east of Cottonwood Creek, shown on the White Water USGS 7.5-minute topographic quad. The nearest proposed new WTG site and nearest existing legacy turbine are both approximately 0.5 miles west of the active Whitewater River channel. Elevation of the project area ranges from approximately 2,250 feet at the western site boundary to approximately 2,900 feet at the northeastern corner.

Most surrounding lands are natural open space, with the exception of an adjacent parcel to the southeast that is also in use for wind energy production. Nearby communities include the neighborhood accessed from Haugen-Lehmann Way, southwest of the site; the community of Bonnie Bell to the east; the community of Whitewater to the southeast; and the unincorporated community of Snow Creek, located 3.3 miles south of the Project site.

The Mesa Wind Project site is located on public lands managed by BLM, according to several applicable planning documents:

- California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended)
- Northern and Eastern Colorado Desert Coordinated Management Plan (BLM 2002a, as amended)
- CDCA Coachella Valley Plan Amendment (BLM, 2002b)
- Desert Renewable Energy and Conservation Plan LUPA (BLM, 2016)

Part of the Project site is within the Whitewater River Area of Critical Environmental Concern (ACEC) and the Sand to Snow National Monument lands are adjacent to the Project site at the north, west, and east (Figure 3). The DRECP LUPA specifically allows for wind energy repowers within ACECs and Special Recreation Management Areas (SRMAs) if the repower project remains within the existing approved wind energy ROW and reduces environmental impacts.

The site is within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) boundaries (CVAG 2007). The CVMSHCP includes mapped “modeled habitat” for certain covered species. Modeled habitat for the following three species is located within the Mesa Wind Project Area:

- Coachella Valley milk-vetch: 4.03 acre (of 41,098 acres of modeled habitat in the MSHCP area)
- Coachella Valley Jerusalem cricket: 4.03 acre (of 27,446 acres of modeled habitat in the MSHCP area)
- Desert tortoise: 401.25 acres (i.e., the entire ROW; of 587,926 acres of modeled habitat in the MSHCP area)

The CVMSHCP identifies several Conservation Areas within its coverage area. The western portion of the Mesa Wind site is within the Stubbe and Cottonwood Canyons Conservation Area, and the eastern area of the site is within the Whitewater Canyon Conservation Area of the CVMSHCP. For projects located on private lands within the MSHCP area, the CVMSHCP provides state and federal Endangered Species Act coverage for several listed species as well as mitigation coverage for multiple other special-status plants and animals. However, the BLM is not a permittee under the CVMSHCP and therefore the project would not be eligible for listed species take coverage under the CVMSHCP.

## 2.0 Methods

This Biological Resources Technical Report (BRTR) incorporates the results of biological surveys and literature review conducted between 2013 and 2019. Table 1 summarizes the surveys that have been conducted for the Mesa Wind Energy Project.

**Table 1. Biological Surveys Conducted for the Mesa Wind Repower Project 2013-2019**

Survey/Study	Dates	Survey Area
General reconnaissance	▪ April 9, 10, and 18, 2013	Entire site
Vegetation mapping	▪ April 9, 10, and 18, 2013	Entire site
Focused botanical surveys	▪ April 9, 10, and 18, 2013 (below average rainfall) ▪ May 24, 30, and 31, 2019 (above average rainfall)	Entire site
Bird use count surveys	▪ Fall: September 15 to December 15, 2012 ▪ Spring: February 1 to April 15, 2013 ▪ Winter: December 16, 2012 to January 31, 2013 ▪ Summer: April 16, 2013 to August 31, 2013	Three observation points within the site representing 6 survey areas
Small bird count surveys	▪ Fall: September 15 to October 31, 2012 ▪ Spring: March 1 to May 9, 2013 ▪ Winter: December 15, 2012 to February 15, 2013 ▪ Summer: May 10 to June 10, 2013	13 survey stations within the site
Special-status bird surveys	1-2 times per month between September 2012 through August 2013	All areas within 300 feet (100 meters) of all current and proposed Project-related roads and structures, including the main access road, beginning at the west gate and facilities building
Golden eagle use and fatality prediction analysis	Golden eagle observations made concurrently with all surveys in 2012-2013, 2015-2016, and incidental observations reported from the site.	Entire site
Golden eagle nest surveys	2013 and June 2019	10-mile radius surrounding site
Large bird use surveys	Weekly between November 2015 and November 2016.	Three fixed-point survey stations selected to provide 100% visual coverage of all proposed turbine locations within the site
Bat activity surveys	June 28, 2016 through October 1, 2017	Two meteorological (met) towers located in desert scrub land cover types representative of potential turbine locations.
Desert tortoise surveys	▪ December 17, 2015 ▪ April 10, 16, 17, 23, 25, and May 10, 2019	<ul style="list-style-type: none"> <li>▪ The 2015 survey was focused on two proposed meteorological tower locations: Met Tower 29a (33°56'58.38"N 116°39'25.78"W) and Met Tower 35 (33°56'44.52"N 116°40'29.16"W)</li> <li>▪ The 2019 survey covered the entire site</li> </ul>

### 2.1 Literature Review

Prior to field surveys, Aspen biologists reviewed available literature to identify special-status biological resources known from the vicinity. The literature and databases listed below were reviewed.

- CNDDDB (CDFW 2019a) for the following 7.5-minute USGS topographic quads: Cabazon, Catclaw Flat, Desert Hot Springs, Lake Fulmor, Morongo Valley, Palm Springs, San Gorgonio Mountain, San Jacinto Peak, and White Water;

- CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2019), for the same topographic quads;
- Coachella Valley Multiple Species Habitat Conservation Plan (CVAG 2007);
- List of California BLM Sensitive Animals and Plant Species (BLM 2014; 2012); and
- Environmental documents previously prepared for earlier repower proposals on the Mesa Wind site including the Biological Opinion (USFWS 2009a), and the general biological resources report prepared by Natural Resource Associates Inc. (NRA Inc. 2008).

In addition, Aspen discussed prior wildlife observations with on-site operations manager Rowland Griese. Those observations are included in the text discussions of desert tortoise, golden eagle, and desert bighorn sheep.

## 2.2 Field Surveys

### 2.2.1 Reconnaissance Wildlife and Botanical Surveys (2013)

Field surveys in 2013 covered a study area of approximately 85 acres, including then-proposed temporary and permanent disturbance areas and access roads. Surveys consisted of walking controlled-intuitive transects (according to BLM 2009) throughout all proposed permanent and temporary impact areas as then proposed within the study area.

All plant and wildlife species noted were recorded in field notes. All plant species observed were identified in the field or collected for later identification. Plants were identified using keys, descriptions, and illustrations in regional references such as Baldwin et al. (2002; 2012). All species noted in the study area are included in the attached species list (Attachment 4). In conformance with California Department of Fish and Wildlife (CDFW) guidelines (CDFG 2009) and (BLM 2009), surveys (a) were conducted during flowering seasons for the special-status plants known from the area, (b) were floristic in nature, (c) were consistent with conservation ethics, (d) systematically covered all habitat types on the ROW, and (e) were well documented, by this report and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden.

**Rainfall:** Average annual precipitation recorded at the Cabazon weather station (Station No. 041250), located approximately 5.5 miles west of the study area, is 15.72 inches (39.9 cm; WRCC 2013). Annual precipitation from the 2012-2013 rainfall year (July 1 through June 30) at the Cabazon weather station was 5.17 inches (13.13 cm; WRCC 2013). Due to low rainfall during the 2012-13 season, certain herbaceous plants, potentially including special-status plants, may not have been evident during the 2013 botanical surveys.

### 2.2.2 Focused Desert Tortoise and Botanical Surveys (2019)

Focused concurrent field surveys during 2019 provided 100 percent visual coverage of all safely accessible areas within the field survey coverage area (see Figure 4), conducted by walking along parallel transects at 10-meter intervals. The survey dates, field team, and weather conditions for each date are listed in Table 2. During the field surveys, all plant and wildlife species noted were recorded in field notes and sensitive species locations were recorded using hand-held GPS units.



**Table 2. 2019 Focused Survey Dates and Team**

Date	Biologist*	Weather Conditions**							
		Time		Temp (°F)		Winds (mph)		Cloud Cover	
		Start	End	Start	End	Start	End	Start	End
10-Apr	AD, BL, JA, JW, SL	845	1500	60	76	8-10	8-10	Clear	Clear
16-Apr	AD, BL, JA, SL	630	1245	48	54	14-17	30-40	80%	Clear
17-Apr	AD, BL, JA, SL	700	1400	50	77	3-5	13-16	Clear	Clear
23-Apr	AD, BL, JA, SL	630	1400	53	92	2-4	4-7	Clear	Clear
25-Apr	AD, BL, JA, SL	630	1400	71	84	8-12	2-4	Clear	Clear
10-May	AD, BL, GS, JA	630	1400	71	84	8-12	2-4	Clear	Clear

\*Temperature and wind speed measured with Kestrel 3000.

\*\*AD= Adam DeLuna, BL= Brian Leatherman, GS= Greg Stratton JA= Jacob Aragon, JW= Justin Wood, SL= Sandy Leatherman. Resumes for the survey team are provided in Attachment 7.

The field surveys conformed to full coverage desert tortoise protocol surveys (USFWS 2010a). All tortoise sign (e.g., live tortoises, burrows/pallets, tracks, scat, or other indication of current or previous tortoise occurrence) observed was recorded. The condition of burrows was categorized according to the following class designations (USFWS 2009b):

- Class 1. Currently active, with desert tortoise or recent desert tortoise sign;
- Class 2. Good condition (no evidence of recent use), definitely desert tortoise;
- Class 3. Deteriorated condition (including collapsed burrows), definitely desert tortoise;
- Class 4. Good condition - possibly desert tortoise; and
- Class 5. Deteriorated condition (including collapsed burrows), possibly desert tortoise.

Lovich and Daniels (2000) have reported that desert tortoises excavate or occupy burrows beneath concrete foundations at the Mesa Wind site. Most of the legacy turbines, as well as electrical boxes or other infrastructure, are supported by concrete slab foundations allowing for burrow construction beneath them. Some of the legacy turbines are built on deep concrete pier foundations where there is no accessible soil for burrow excavation. In addition to the parallel transects, each concrete foundation on the site was inspected by Jacob Aragon for potential desert tortoise burrows. A total of 441 concrete foundations were inspected; 347 of these supported active or inactive legacy turbines or supported lattice steel structures without turbines. The other 94 foundations either supported electrical infrastructure or were no longer in use (such as former turbine foundations where the lattice structure was no longer present). The project switchyard and adjacent SCE substation are fenced and were not accessed or inspected. Similarly, foundations within a fenced microwave station located on a hilltop within the project site, but not part of the Mesa Wind Project Repower, were not accessed, although no potential tortoise burrows were visible from outside the fence.

The botanical surveys conformed to the complete coverage method as described in the Survey Protocols for Special Status Plants which has been developed by BLM-California (BLM 2009b). This method was developed to survey for special status plants on projects that must comply with BLM policy, the National Environmental Policy Act (NEPA), and the Endangered Species Act (ESA). As described above, botanical surveys were also conducted in conformance with California Department of Fish and Wildlife guidelines (CDFG 2009). Plants of uncertain identity were collected and identified later using keys, descriptions, and illustrations in Baldwin et al. (2012), the Jepson eFlora database of California plants (Jepson Flora Project 2018), and other regional references. All plant species observed during the surveys are listed in Attachment 4.

**Rainfall:** Rainfall during 2018-2019 rainy season was above average at 18.53 inches (47.07 cm; WRCC 2019). Due to the above-average rainfall during the 2018-19 season and widely-reported exceptional flowering season (“superbloom”), the 2019 survey results fulfill the BLM’s requirements for complete spring-season botanical surveys (confirmed via email 19 Mar 2019).

### 2.2.3 Vegetation

Vegetation maps were prepared by drawing tentative vegetation-type boundaries onto high-resolution aerial images during the 2013 site visits, then digitizing these boundaries into GIS, and confirming the mapping on a subsequent 2013 site visit by Justin Wood. The 2013 polygons were reviewed and updated by Wood in 2019.

Vegetation in the study area was difficult to distinguish on aerial images due to homogeneous vegetation structure throughout much of the site. The smallest mapping unit was approximately 0.25 acre; GIS data for most mapped vegetation boundaries is accurate to within 3 feet. Any vegetation map is subject to imprecision for several reasons:

- Vegetation types tend to intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
- Vegetation types as they are named and described tend to intergrade; that is, a given stand of real-world vegetation may not fit into any named type in the classification scheme used. Thus, a mapped and labeled polygon is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches its mapped name.
- Vegetation tends to be patchy. Small patches of one named type are often included within mapped polygons of another type. The size of these patches varies, depending on the minimum mapping units and scale of available aerial imagery.
- Photo interpretation of some types is difficult, such as distinguishing brittlebush scrub from California sagebrush-California buckwheat scrub.

Invasive plants. Several non-native and invasive plants species were common throughout the site, particularly several species in the mustard family (e.g., Sahara mustard, shortpod mustard) and grass family (e.g., slender wild-oat, red brome, cheatgrass, and Mediterranean schismus). They tended to be most common at the upstream side of culverts or other sites that may briefly impound storm flows. All non-native species are indicated by an asterisk in Attachment 4 (Species List).

### 2.2.4 Avian Surveys

Bird surveys were conducted by Bloom Biological Inc. (BBI), including bird use counts (long-period point counts, principally for golden eagles and other raptors), small bird counts (structured point count surveys), and special-status bird surveys (repeated meandering transects throughout the site). Study designs were based on pre-permitting assessment criteria for biological resources as recommended in the U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines (USFWS 2012). BBI conducted field surveys from September 2012 through August 2013 to evaluate the abundance, diversity, and patterns of use of birds and other vertebrates on and in proximity to the proposed project site across seasons. Detailed methodology is described in the *Mesa Wind Project 2012-2013 Final Avian Survey Report* (BBI 2013).

Additional avian surveys were conducted by Western Ecosystems Technology, Inc. (WEST) between November 2015 and November 2016. These surveys focused on large birds and eagles. The principal objectives of the large bird/eagle observation surveys were: 1) to provide site-specific avian resource and

use data that would be useful in evaluating potential impacts of the proposed Project on diurnal raptors and other large bird groups; and 2) to collect data to evaluate the temporal and spatial use of the Mesa site specifically by golden eagles to support development of an Eagle Conservation Plan for the Project, if deemed warranted. Weekly fixed-point large bird/eagle surveys were conducted at three surveys stations located throughout the Project from November 13, 2015, through November 7, 2016. Detailed methodology is described in *Large Bird Use Surveys for the Mesa Wind Energy Repower Project, Riverside County, California Final Report* (WEST 2017).

A compilation of known golden eagle nests within a 10-mile radius of the Project site was prepared in coordination with USFWS and BBI (see Figure 5). Field surveys to identify golden eagle nesting activity were conducted during June 2019 by BBI, using a combination of helicopter surveys and the Palm Springs Aerial Tram.

Special-status species observed during all avian surveys are included in Table 4. See Attachment 4 for a complete list of all species observed on the site.

### 2.2.5 Bat Activity Surveys

Bat acoustic surveys were conducted at the Mesa Wind site to estimate levels of bat activity throughout the year. Acoustic surveys were conducted between June 28, 2016, and October 1, 2017, at two meteorological (met) towers located in desert scrub land cover types representative of potential turbine locations (see Figure 6). AnaBat™ SD1 and SD2 detectors were paired at each met tower, with one placed near the ground at 1.5 meters (five feet) and one elevated to 45 meters (148 feet) above ground level. The raised detector was placed to sample bat activity near the potential rotor-swept zone (Rintz et al. 2018). Special-status bats detected during acoustic surveys are included in Table 4. See Attachment 4 for a complete list of all species observed on the site.

## 3.0 Results

Based upon review of the literature, databases, and field surveys identified above, Aspen biologist Justin Wood compiled a list of special-status species that are present or may be found in the project vicinity. Plant and wildlife species classified as one or more of the following are considered special-status species in this report:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Listed as threatened or endangered, or candidates for listing under the California Endangered Species Act (CESA);
- Designated by BLM as Sensitive Plants, “all plant species that are currently on List 1B of the CNPS Inventory of Rare and Endangered Plants of California, are BLM sensitive species, along with others that have been designated by the California State Director” (BLM 2012; note that the CNPS Lists are now known as California Rare Plant Ranks, or CRPR);
- Designated by BLM as a Sensitive Animal or Plant;
- Plants listed as rare under the California Native Plant Protection Act;
- Meet the definition of rare or endangered under CEQA § 15380 (b) and (d);
- Considered special-status species in local or regional plans, policies, or regulations.

Three of the 7.5-minute USGS topographic quads (Lake Fulmor, San Gorgonio Mountain, and San Jacinto Peak) represent much higher elevations and very different habitats than those present on the project site,

and CNDDDB contains numerous records of special-status species from those quads that have no potential for occurrence in the study area. Therefore, these three quads were excluded from this report. Many of the special-status species identified in the remaining six quads are found only in specialized native habitats (e.g., wetlands, riparian, or high elevation mountains) that are not present in the project vicinity. These plants and animals are listed in Table 3 but are not addressed further in this report. Table 4 lists all special-status plants and animals known from comparable habitats within the region and summarizes their habitat, distribution, conservation status, and probability of occurrence on the site (based on geographic and elevational ranges, habitat conditions, and proximity to known locations).

**Table 3. Special Status Species Not Addressed<sup>1</sup>**

Latin Name	Common Name	Reason for Exclusion
<b>PLANTS</b>		
<i>Allium marvinii</i>	Yucaipa onion	No suitable clay soils present.
<i>Almutaster pauciflorus</i>	Alkali marsh aster	No suitable alkali meadow or seep habitat
<i>Astragalus pachypus</i> var. <i>jaegeri</i>	Jaeger's milk-vetch	East of geographic range.
<i>Atriplex parishii</i>	Parish's brittle-scale	No suitable alkali playa or chenopod scrub habitat.
<i>Boechea lincolnensis</i> ( <i>Arabis pulchra</i> var. <i>munciensis</i> )	Lincoln rockcress	No suitable carbonate soils; below elevational range.
<i>Boechea parishii</i>	Parish's rockcress	Below elevational range.
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	No suitable meadow habitat.
<i>Calochortus plummerae</i>	Plummer's mariposa lily	East of geographic range.
<i>Caulanthus simulans</i>	Payson's jewel-flower	Well outside of known geographic range.
<i>Chamaesyce arizonica</i> ( <i>Euphorbia arizonica</i> )	Arizona spurge	Outside of known range; no suitable sand flat habitat present.
<i>Deinandra mohavensis</i>	Mojave tarplant	Well outside of known range; no suitable chaparral habitat present.
<i>Dodecahema leptoceras</i>	Slender-horned spineflower	No suitable mature alluvial bench habitat.
<i>Eriastrum harwoodii</i>	Harwood's eriastrum	No suitable dune or stabilized windblown sand habitat.
<i>Heuchera hirsutissima</i>	Shaggy-haired alumroot	Below elevational range.
<i>Heuchera parishii</i>	Parish's alumroot	Below elevational range.
<i>Horkelia cuneata</i> var. <i>puberula</i>	Mesa horkelia	Well outside known geographic range.
<i>Imperata brevifolia</i>	California satintail	No suitable meadow or riparian habitat.
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	Silver-haired ivesia	Below elevational range.
<i>Lilium parryi</i>	Lemon lily	Below elevational range.
<i>Linanthus jaegeri</i>	San Jacinto linanthus	Below elevational range.
<i>Linanthus orcutti</i>	Orcutt's linanthus	East of geographic range.
<i>Monardella robisonii</i>	Robison's monardella	Well outside known geographic range.
<i>Nemacaulis denudata</i> var. <i>gracilis</i>	Slender cottonheads	No suitable aeolian sand habitat present.
<i>Petalonyx linearis</i>	Narrow-leaf sandpaper-plant	Well to west of extant geographic range.
<i>Silene krantzii</i>	Krantz's catchfly	Well below elevation range.
<i>Stemodia durantifolia</i>	Purple stemodia	No suitable wetland habitat present.
<i>Streptanthus campestris</i>	Southern jewel-flower	Well outside known geographic range.
<i>Symphotrichum defoliatum</i>	San Bernardino aster	No suitable meadow or riparian habitat.
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern	No suitable wetland habitat present.
<i>Xylorhiza cognate</i>	Mecca-aster	Well outside known geographic range.

**Table 3. Special Status Species Not Addressed<sup>1</sup>**

Latin Name	Common Name	Reason for Exclusion
<b>INVERTEBRATES</b>		
<i>Bombus caliginosus</i>	Obscure bumble bee	Outside of geographic range (Santa Barbara Co. and north). Historic record from Strawberry Valley is doubtful.
<i>Calleptoneta oasa</i>	Andreas Canyon leptonetid spider	Outside known geographic range (known from a single location near Palm Springs).
<i>Dinacoma caseyi</i>	Casey's June beetle	Outside known geographic range; no suitable alluvial silt deposits in project disturbance area.
<i>Macrobaenetes valgum</i>	Coachella giant sand treater cricket	No suitable aeolian sand habitat present.
<b>AMPHIBIANS</b>		
<i>Anaxyrus californicus</i> ( <i>Bufo californicus</i> , <i>Bufo microscaphus californicus</i> ) <sup>2</sup>	Arroyo toad	No suitable wash habitat with seasonal intermittent stream flows present.
<i>Ensatina eschscholtzii klauberi</i>	Large-blotched salamander	No suitable seep or mesic forest understory habitat.
<i>Rana draytonii</i> <sup>3</sup>	California red-legged frog	No suitable aquatic habitat present.
<i>Rana muscosa</i> <sup>4</sup>	Sierra Madre yellow-legged frog	No suitable aquatic habitat present.
<b>REPTILES</b>		
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	East of the geographic range (the common desert subspecies occurs on site)
<i>Phrynosoma mcallii</i>	Flat-tailed horned lizard	No suitable aeolian sand habitat present.
<i>Thamnophis hammondi</i>	Two-striped garter snake	No suitable aquatic habitat present.
<i>Uma inornata</i>	Coachella Valley fringe-toed lizard	No suitable aeolian sand habitat present.
<b>BIRDS</b>		
<i>Icteria virens</i>	Yellow-breasted chat	No suitable riparian vegetation present.
<i>Myiarchus tyrannulus</i>	Brown-crested flycatcher	No suitable desert woodland or riparian vegetation present.
<i>Piranga rubra</i>	Summer tanager	No suitable riparian vegetation present.
<i>Progne subis</i>	Purple martin	No suitable woodland or forest habitat present.
<i>Pyrocephalus rubinus</i>	Vermilion flycatcher	No suitable riparian vegetation present.
<i>Toxostoma crissale</i>	Crissal thrasher	Outside known geographic range; minimal habitat present.
<b>MAMMALS</b>		
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	East of geographic range (desert subspecies is addressed in Table 4).
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	Outside geographic range (San Bernardino and San Jacinto Valleys); no suitable alluvial wash habitat.
<i>Ovis canadensis nelsoni</i> (distinct population segment)	Peninsular bighorn sheep	Geographically restricted to the Peninsular Ranges, south of Interstate 10.
<i>Perognathus longimembris bangsi</i>	Palm Springs pocket mouse	West of geographic range.
<i>Xerospermophilus tereticaudus chlorus</i>	Palm Springs round-tailed ground squirrel	No suitable sand flat or mesquite habitats; restricted to the Coachella Valley.

1. Special status species reported from the region, but not addressed in this report due to habitat or geographic range.
2. Arroyo toad has been reported from the Whitewater River; that record has since been revised due to mis-identification (Ervin et al. 2013).
3. California red-legged frog occurs upstream at the former Whitewater Trout Farm about 2.5 miles north of the Project site.
4. There are no extant or historic reports of mountain yellow-legged from the Whitewater River watershed. Almost all perennial streams in the San Bernardino, San Gabriel, and San Jacinto Mountains are identified as suitable habitat as potential sites for re-introduction.

**Table 4. Special-status Species of the Cabazon/Whitewater Area**

Species Name	Habitat Requirements	Flowering or Activity Season	Conservation Status	Potential to Occur
<b>PLANTS</b>				
<i>Abronia villosa</i> var. <i>aurita</i> Chaparral sand verbena	Annual or perennial herb; sand, about 250-5300 ft. elev.; San Jacinto Mtns, Inland Empire, adj. Colorado Des, Orange & San Diego cos; mostly alluvial fans and benches in w Riverside Co; dunes in deserts.	Feb–Jul	Fed ESA: none BLM: sensitive CA: S2, 1B.1	Minimal; no suitable habitat on site; not seen during surveys.
<i>Acemispion haydonii</i> ( <i>Lotus haydonii</i> ) Pygmy lotus	Perennial herb; rocky, pinyon and juniper woodland, Sonoran Desert scrub; 1700-3940 ft. elev.; SE Peninsular ranges, SW Sonoran Desert, Baja California	Jan–Jun	Fed ESA: none BLM: sensitive CA: S3, 1B.3	Low; potentially suitable habitat; at margin of known range; not seen during surveys.
<i>Ambrosia monoqyra</i> ( <i>Hymenoclea monoqyra</i> ) Singlewhorl burrobush	Shrub or small tree; desert and inland cismontane flats, washes, alluvial fans; below about 1700 ft. elev.; San Bernardino Valley; San Diego Co., east to Texas and mainland Mexico	Aug–Nov	Fed ESA: none BLM: none CA: S2, 2B.2	Minimal; no suitable habitat on site; not seen during surveys.
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> Coachella Valley milk-vetch	Annual or perennial herb; open sand, gen. dunes but also wash margins; below about 2200 ft. elev.; endemic to Coachella Valley. 4.03 ac of CVMSHCP modeled habitat in ROW but outside disturbance area	Feb. - May	Fed: <b>END</b> BLM: sensitive, Calif: S1 CRPR: 1B.2 MSHCP: covered	Low; not found during protocol field survey 2019; suitable habitat present but disjunct from aeolian sand in Coachella Valley
<i>Astragalus tricarinatus</i> Triple-ribbed milk-vetch	Perennial herb; exposed rocky slopes, canyon walls, alluvial fans; Whitewater Canyon, Mission Creek, and Morongo Canyon areas; ±1500 to 5000 ft. elev.	Feb–May	Fed ESA: <b>END</b> BLM: sensitive CA: S2, 1B.2 MSHCP: covered	Low; potentially suitable habitat present but not observed; known from within one mile to the east.
<i>Ayenia compacta</i> California ayenia	Perennial herb; desert shrubland, gen. rocky sites, washes and mountain slopes below about 3600 ft. elev.; W low desert margins, Chuckwalla Valley, and E Mojave.	Mar–Apr	Fed ESA: none BLM: none CA: S3, 2B.3	Low; suitable habitat; not observed; at western margin of the known range.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	Annual; shrublands; open sandy places on alluvial slopes below about 5600 ft. elev.; Inland Empire and also coastal LA Co., Banning Pass, Cajon Pass	Apr–Jun	Fed ESA: none BLM: sensitive CA: S2, 1B.1	Low; suitable habitat present; not observed; known from within one mile of the site.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> White-bracted spineflower	Annual; sandy soil, desert shrubland, pinyon-juniper woodland, about 1000-4000 ft. elev.; Mountains and foothills, Cajon Pass and Banning Pass areas; also reported from Liebre Mtns.	Apr-Jun	Fed ESA: none BLM: sensitive CA: S3, 1B.2	Low; minimal suitable habitat on site; not seen during surveys. known from within one mile of the site.
<i>Euphorbia misera</i> Cliff spurge	Low shrub; coastal bluffs (Orange and San Diego cos) and rocky desert slopes (Whitewater area, Riv. Co.), below about 1700 ft. elev.	Jan–Aug	Fed ESA: none BLM: none CA: S2, 2B.2	Minimal; marginal habitat; not observed; known from a single location east of Whitewater Canyon.



**Table 4. Special-status Species of the Cabazon/Whitewater Area**

Species Name	Habitat Requirements	Flowering or Activity Season	Conservation Status	Potential to Occur
<i>Linanthus maculatus</i> subsp. <i>maculatus</i> ( <i>Gilia maculata</i> ) Little San Bernardino Mountains linanthus	Annual; sandy washes or dunes in desert shrubland habitats; Whitewater Cyn. through Joshua Tree Natl. Park; about 600–6800 ft. elev.	Mar–May	Fed ESA: none BLM: sensitive CA: S2, 1B.2 MSHCP: covered	Minimal; no suitable habitat on site; not seen during surveys; margin of the range.
<i>Mentzelia tricuspis</i> Spiny-hair blazing star	Annual; sandy or gravelly soil (exposed consolidated alluvial deposits), slopes and washes, Mojave desert scrub; 500-4200 ft. elev.; desert mts, east Sonoran Desert, to Utah, Arizona	Mar – May	Fed ESA: none BLM: none CA: S2, 2B.1	Low; marginal habitat; not observed; recent specimens from Whitewater and San Gorgonio within ca. 1 mile of site.
<i>Penstemon pseudospectabilis</i> subsp. <i>pseudospectabilis</i> Desert beardtongue	Perennial herb; sandy washes and rocky slopes in canyons; about 300-6400 ft. elev.; scattered locations, Mojave and Colo. Deserts in California and Arizona	Jan–May	Fed ESA: none BLM: none CA: S3, 2B.2	Low; suitable habitat; not detected; recent record from 4 miles south in Snow Creek.
<i>Saltugilia latimeri</i> (segr. from <i>Gilia [Saltugilia] australis</i> ) Latimer's woodland gilia	Annual; chaparral and desert shrublands, arid mountains and foothills; about 1300-6200 ft. elev.; desert margins, Riv. Co to Inyo Co	Mar–June	Fed ESA: none BLM: sensitive CA: S3, 1B.2	Low; suitable habitat present; not detected during surveys.
<i>Selaginella eremophila</i> Desert spike-moss	Perennial herb; mountainous or hillside rock outcrops and crevices, about 600–3000 ft. elev.; lower desert-facing slopes of San Jacinto Mtns and adj. desert, to Texas and Baja	n/a	Fed ESA: none BLM: none CA: S3, 2B.2	Low; suitable habitat; not observed; margin of geographic range.
<b>INVERTEBRATES</b>				
<i>Bombus crotchii</i> Crotch bumble bee	Colonial insect; open grassland and scrub; underground colonies, often in old rodent burrows. Many food plants including <i>Chaenactis</i> , <i>Lupinus</i> , <i>Phacelia</i> , <i>Salvia</i> , and <i>Eriogonum</i> . Much of southern and central CA, SW Nevada and Baja.	Spring - summer	Fed ESA: none BLM: none CA: S1S2	Moderate; suitable habitat and food plants present; historical records from within 5 miles.
<i>Eremarionta morongoana</i> Morongo (=Colorado) desertsnailed	Terrestrial gastropod mollusk; found under rocks, sandy/gravelly washes; known only from a gulch on the north side of Morongo Pass, San Bernardino County, near Riverside County line.	Unknown	Fed ESA: none BLM: none CA: S1	Low (Cottonwood Creek only); suitable habitat; known from a single location 15 miles to the northeast.
<i>Parnopes borregoensis</i> Borrego parnopes cuckoo wasp	Chrysidid wasp; endemic to California; Sonoran and Mojave Deserts; desert scrub, creosotebush scrub, yucca and cholla cactus, saltbush, and desert dune communities	Unknown	Fed ESA: none BLM: none CA: S1S2	Low; suitable habitat; known from very few locations including one 15 miles to the northeast.
<i>Stenopelmatus cahuilensis</i> Coachella Valley Jerusalem cricket	Open sand, gen. dunes and sandy/gravelly soils, endemic to Coachella Valley. 4.03 ac of CVMSHCP modeled habitat in ROW but outside disturbance area; site is outside mapped current distribution polygon (CVCC 2014)	Primarily winter (dependent on humidity and soil moisture)	Fed ESA: none BLM: none CA: S1S2 MSHCP: covered	Low. Modeled habitat present, although disjunct from similar aeolian sand within the Coachella Valley and outside the current distribution

**Table 4. Special-status Species of the Cabazon/Whitewater Area**

Species Name	Habitat Requirements	Flowering or Activity Season	Conservation Status	Potential to Occur
<b>REPTILES</b>				
<i>Anniella pulchra pulchra</i> Silvery legless lizard	Mtns and valleys, Bay Area to N Baja (excluding desert); shrublands and woodlands, loose soils and leaf litter, below about 6500 ft. elev.	Spring–Fall	Fed ESA: none BLM: none CA: S3S4, SC	Low; suitable habitat; not observed; known from just west of project.
<i>Aspidoscelis hyperythra</i> ( <i>Cnemidophorus hyperythra</i> ) Orangethroat whiptail	Open coastal sage scrub, chaparral; SW California to S Baja, most populations in Riverside and San Diego Cos.; sea level to about 3000 ft. elev.	Spring–Summer	Fed ESA: none BLM: none CA: S2S3	Low; suitable habitat; not observed; one observation from Whitewater canyon
<i>Crotalus ruber</i> Red diamond rattlesnake	Chaparral, woodland, desert, rocky areas and dense vegetation; coastal San Diego Co. to E. slopes of the Peninsular range and north thru W. Riverside Co. into S. San Bernardino Co.; sea level to about 3000 ft. elev.	Mid-Spring–Mid-Fall	Fed ESA: none BLM: none CA: S3, SC	Moderate; suitable habitat; not observed; known from numerous collections in Whitewater Canyon.
<i>Gopherus agassizii</i> ( <i>Xerobates agassizii</i> ) Desert tortoise	Desert shrublands where soil suitable for burrows; Mojave and Sonoran des. (E Calif., S Nevada, W Ariz., and Sonora, Mexico)	Spring–Summer	Fed ESA: <b>THR</b> BLM: sensitive CA: <b>THR</b> , S2S3 MSHCP: covered	Present; sign observed in 2013 and 2019; animals observed in 2019.
<i>Phrynosoma blainvillii</i> ( <i>Phrynosoma coronatum blainvillii</i> ) Coast horned lizard	Forest, shrubland or grassland; sandy soils; W Calif. from LA Co S through N Baja Calif., below about 6000 ft. elev.	Spring–Summer	Fed ESA: none BLM: sensitive CA: S3S4, SC	Present; suitable habitat throughout; at margin of range.
<b>BIRDS</b>				
<i>Accipiter striatus</i> Sharp-shinned hawk	Nests in forest and woodland, hunts in woods and open areas; breeds in Sierra Nevada and N, winters through US & Cent. Amer.	Winter	Fed ESA: none BLM: none CA: S4 (nesting)	Nesting: minimal Winter/Migration: present
<i>Accipiter cooperii</i> Cooper's hawk	Nests in forest and woodland, hunts in woods and open areas; breeds through most of US, winters south through Mexico	Year-around	Fed ESA: none BLM: none CA: S4 (nesting)	Nesting: minimal Winter/Migration: present
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	Coastal sage scrub, open chaparral; S Calif. and NW Baja Calif.; not migratory	Year-around	Fed ESA: none BLM: none CA: S3	Present; observed during 2013 surveys
<i>Aquila chrysaetos</i> Golden eagle	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout W N America, winters to E coast	Year-around	Fed: Eagle Protection Act BLM: sensitive CA: S3, FP	Nesting: minimal Year-around foraging or flyover: present
<i>Asio otus</i> Long-eared owl	Breed in riparian woodlands; forage (nocturnally) over open land; sea level to about 6000 ft. elev.; through N America and Eurasia	Year-around	Fed ESA: none BLM: none CA: S3?, SC (nesting)	Nesting: minimal Winter/Migration: present
<i>Athene cunicularia</i> ( <i>Speotyto cunicularia</i> ) Burrowing owl	Nests mainly in rodent burrows, usually in open grassland or shrubland; forages in open habitat; increasingly uncommon in S Calif.; through W US and Mexico	Year-around	Fed ESA: none BLM: sensitive CA: S3, SC (burrow sites) MSHCP: covered	High; suitable habitat present; occurs in surrounding area; not detected during surveys.



**Table 4. Special-status Species of the Cabazon/Whitewater Area**

Species Name	Habitat Requirements	Flowering or Activity Season	Conservation Status	Potential to Occur
<i>Buteo regalis</i> Ferruginous hawk	Forages over grassland and shrubland; winters in W and SW N Amer. (breeds in Great Basin and N plains)	Winter	Fed ESA: none BLM: none CA: S3S4 (winter)	Nesting: minimal Winter/Migration: present
<i>Buteo swainsonii</i> Swainson's hawk	Breeds in open habitats (e.g., grassland), Central Valley and W Mojave Desert (Calif.) and east to cent. US, S. Canada, New Mexico; winters in S America	Spring–Summer	Fed ESA: none BLM: sensitive CA: THR, S3	Nesting: minimal Migration: present
<i>Calypte costae</i> Costa's hummingbird	Breeds throughout central and southern CA, east through S AZ and south through Baja CA and Sonora, Mexico. Desert and chaparral shrublands.	Year-round	Fed ESA: none BLM: none CA: S4	Present. Observed during 2019 surveys Nesting: High
<i>Chaetura vauxi</i> Vaux's swift	Breeds central Calif. and northward, in coastal and montane forests; winters in Central and S America	Spring and fall migration seasons	Fed ESA: none BLM: none CA: SC S3 (nesting)	Nesting: minimal Winter/Migration: present
<i>Circus hudsonius</i> Northern harrier	Breeds colonially in marshlands, San Diego and northward; winters to south through Central Amer.; forages over open terrain; N America and Eurasia	Winter; rare in summer	Fed ESA: none BLM: none CA: SC, S3 (nesting)	Nesting: minimal Winter/Migration: present
<i>Coccyzus americanus</i> Western yellow-billed cuckoo	Large patches of riparian forest and woodland, usually near surface water; historically common in floodplain habitats. Reported in nearby Whitewater River corridor during summer but apparently not breeding.	Spring–Fall	Fed ESA: <b>THR</b> BLM: Sensitive CA: <b>END</b> , S1	Nesting: Minimal; no suitable habitat on or adjacent to the site; Migration: Potential flyover or stopover
<i>Cypseloides niger</i> Black swift	Breeds on cliffs, often at waterfalls	Spring–fall	Fed ESA: none BLM: none CA: S2, SC (nesting)	Nesting: minimal Winter/Migration: low
<i>Setophaga petechia</i> ( <i>Dendroica petechia</i> ) Yellow warbler	Breeds in willow and cottonwood riparian habitat, near sea level to 9000 ft. elev.; much of N Amer.; sensitive in S Calif. due to habitat loss & cowbird parasitism; winters Mexico to S Amer.	Spring–summer	Fed ESA: none BLM: none CA: SC S3S4 (nesting) MSHCP: covered	Nesting: minimal Winter/Migration: present
<i>Empidonax traillii</i> Willow flycatcher (incl. subspecies <i>extimus</i> , southwestern willow flycatcher)	Breeds in dense riparian forests & shrublands; scattered locations in Arizona, California, and North Baja; near sea level to about 8000 ft. elevation; winters in Central America. Reported in nearby Whitewater River corridor during migratory and marginal breeding season (breeding status unknown).	Spring–Fall	Fed ESA: <b>END</b> (ssp <i>extimus</i> only) BLM: Sensitive CA: <b>END</b> , S1S2 MSHCP: covered	Nesting: Minimal; no suitable habitat on or adjacent to the site; Migration: Potential flyover or stopover
<i>Eremophila alpestris actia</i> California horned lark	Open, flat lands incl. sparse sagebrush or grassland, meadows, alkali flats; wide elev. range; breeds in western Calif (San Diego Co through Humboldt Co) and Baja Calif; winters in same range	Summer	Fed ESA: none BLM: none CA: S4	Nesting: minimal Winter/Migration: present

**Table 4. Special-status Species of the Cabazon/Whitewater Area**

Species Name	Habitat Requirements	Flowering or Activity Season	Conservation Status	Potential to Occur
<i>Falco columbarius</i> Merlin	Uncommon wintering species in S Calif. desert and valleys (breeds in northern N America and Eurasia)	Winter	Fed ESA: none BLM: none CA: S3S4 (winter)	Nesting: minimal Winter/Migration: present
<i>Falco mexicanus</i> Prairie falcon	Nests on high cliffs, forages primarily over open lands; throughout arid western US and Mexico	Year-around	Fed ESA: none BLM: none CA: S4 (nesting)	Nesting: minimal Year-around foraging and flyover: present
<i>Falco peregrinus</i> American peregrine falcon	Nests on high cliffs, generally near water bodies; feed on birds (esp. shorebirds & waterfowl); widespread but rare worldwide	Spring–Summer	Fed ESA: delisted BLM: none Calif: FP, S3S4 (nesting)	Nesting: minimal Winter/Migration: present
<i>Haliaeetus leucocephalus</i> Bald eagle	Breed in large trees, usually near major rivers or lakes; winters more widely; scattered distribution in N America; esp. coastal regions	Winter	Fed: Eagle Protection Act BLM: sensitive CA: END, S3, FP (nesting and wintering)	Nesting: minimal Winter/Migration: present
<i>Lanius ludovicianus</i> Loggerhead shrike	Woodlands, shrublands, open areas with scattered perch sites; not dense forest; widespread in N America; valley floors to about 7000 ft. elev.	Year-around	Fed ESA: none BLM: none CA: S4, SC (nesting)	Present. Suitable habitat throughout area, observed during several field surveys.
<i>Pandion haliaetus</i> Osprey	Nests in northern N America and Mexican coastlines near large water bodies, preys primarily on fish; winters in central Calif to S America;	Spring–Fall	Fed ESA: none BLM: none CA: S4	Nesting: minimal Winter/Migration: present
<i>Plegadis chihi</i> White-faced ibis	Freshwater and brackish marsh; breeding range scattered in W N America incl. central & S Calif wetlands; winters in Mexico & to S	Year-around	Fed ESA: none BLM: none CA: S3S4 (rookery sites)	Nesting: minimal Winter/Migration: present
<i>Polioptila californica californica</i> Coastal California gnatcatcher	Primarily coastal sage scrub below about 2,000 feet elev.; southwestern California, Ventura County to northern Baja California; inland to San Gorgonio Pass area (e.g., Banning)	Year-around	Fed ESA: <b>THR</b> BLM: Sensitive CA: SC, S2	Moderate. Margin of geogr. range (reported by BLM staff at adjacent Pacific Crest Trail)
<i>Polioptila melanura</i> Black-tailed gnatcatcher	Desert shrublands, gen. nests in shrub thickets along washes; occas. in open scrub (esp. in winter); Calif. deserts, to W Texas, Baja, and central Mexico	Year-around	Fed ESA: none BLM: none CA: S3S4	Present. Suitable habitat mainly near dry washes; observed in 2019.
<i>Spinus lawrencei</i> Lawrence's goldfinch	CA coastal ranges, western Sierra Nevada, desert margins through northern Baja CA; winters in AZ and Sonora. Shrublands and woodlands usually near water.	Year-around	Fed ESA: none BLM: none CA: S3S4 (nesting)	Present. Suitable habitat mainly near dry washes; observed in 2019.
<i>Toxostoma lecontei</i> LeConte's thrasher	Calif. deserts, SW Central Val. & Owens Val., east to Utah, Arizona; open shrubland, often sandy or alkaline flats	Year-around	Fed ESA: none BLM: none CA: S3, SC MSHCP: covered	Low; suitable habitat present; not detected during recent surveys; historically known from the project vicinity.

**Table 4. Special-status Species of the Cabazon/Whitewater Area**

Species Name	Habitat Requirements	Flowering or Activity Season	Conservation Status	Potential to Occur
<i>Vireo bellii pusillus</i> Least Bell's vireo	Summer resident of southern California in low riparian habitats in vicinity of water or dry river bottoms; found below 2000 ft; nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mesquite, baccharis. Occurs during breeding and migratory season in modeled habitat in nearby Whitewater River corridor,	Spring–Fall	Fed ESA: <b>END</b> BLM: sensitive CA: <b>END</b> MSHCP: covered	Nesting: minimal. No potential habitat on site. Winter/Migration: potential stopover or flyover
<b>MAMMALS</b>				
<i>Antrozous pallidus</i> Pallid bat	Rock outcrops of shrublands, mostly below about 6000 ft. elev.; Calif, SW N Amer through interior Oregon and Washington; hibernates in winter	Warm season	Fed ESA: none BLM: sensitive CA: S3, SC	Present; detected on site during 2016-2017 acoustic bat surveys
<i>Chaetodipus fallax pallidus</i> ( <i>Perognathus f. pallidus</i> ) Pallid San Diego pocket mouse	Open shrublands and sandy areas; deserts and desert-facing foothills, LA Co. south to N Baja Calif.	Spring–Fall (Winter dormant)	Fed ESA: none BLM: none CA: S3S4, SC	Low; suitable habitat present; known from the vicinity of the study area.
<i>Corynorhinus (Plecotus) townsendii</i> Townsend's big-eared bat (incl. "pale," "western," and other subspecies)	Many habitats throughout Calif and W N Amer, scattered pop'ns in E; day roosts in caves, tunnels, mines; feed primarily on moths	Year-around	Fed ESA: none BLM: sensitive CA: S2, SC	Present; detected on site during 2016-2017 acoustic bat surveys
<i>Euderma maculatum</i> Spotted bat	Desert (cool seasons) to pine forest (summer), much of SW N Amer. but very rare; roosts in deep crevices in cliffs, feeds on moths captured over open water	Not known	Fed: none BLM: Sensitive Calif: S3, SC	Low potential for roosting or foraging on site; potential flyover
<i>Eumops perotis californicus</i> Western mastiff bat	Lowlands (with rare exceptions); cent. and S Calif., S Ariz., NM, SW Tex., N Mexico; roost in deep rock crevices, forage over wide area; recorded in 2016 at nearby wind site	Year-around	Fed: none BLM: Sensitive Calif: S3S4, SC	Low potential for roosting on site; high potential for foraging in area
<i>Lasiurus blossevillii</i> Western red bat	Shasta Co. to the Mexican border, W of the Sierra Nevada. Winters in lowlands and coastal regions south of SF Bay. Roosts in forests and woodlands. Feeds over grasslands, shrublands, open woodlands and forests, and croplands. Generally not found in desert areas.	Spring/Fall migration	Fed ESA: none BLM: none CA: S3, SC	Present; detected on site during 2016-2017 acoustic bat surveys.
<i>Lasiurus xanthinus</i> ( <i>Nycteris ega xanthina</i> ) Western (Southern) yellow bat	Mexico and Cent. Amer., to S AZ; Riv., Imperial and San Diego Cos.; riparian and wash habitats; roosts in trees; evidently migrates from Calif. during winter	Year-around?	Fed ESA: none BLM: none CA: S3, SC MSHCP: covered	Roosting: minimal Foraging: low (not detected)
<i>Macrotus californicus</i> ( <i>M. waterhousii</i> ) California leaf-nosed bat	Arid lowlands, S Calif., S and W Ariz., Baja Calif. and Sonora, Mexico; roost in mine-shafts, forage over open shrublands	Year-around	Fed: none BLM: Sensitive Calif: S3	Low potential for roosting on site; high potential for foraging in area

**Table 4. Special-status Species of the Cabazon/Whitewater Area**

Species Name	Habitat Requirements	Flowering or Activity Season	Conservation Status	Potential to Occur
<i>Myotis evotis</i> Long-eared myotis	Much of the western US, southern Canada and N Baja Calif.; generally forested lands, also shrublands; roosts in broken rock outcrops, crevices, structures, crevices, mines and tunnels; feeds on large insects.	Year-around?	Fed: none BLM: Sensitive Calif: S3	Low potential for roosting on site; moderate to high potential for foraging in area
<i>Myotis thysanodes</i> Fringed myotis	Widespread in CA, but generally not in Central Valley and deserts. Wide variety of habitats; sea level to higher mountains. Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally at 1300-2200 m (4000-7000 ft).	Year-around?	Fed ESA: none BLM: sensitive CA: S3	Present; detected on site during 2016-2017 acoustic bat surveys.
<i>Myotis velifer</i> Cave myotis	S Calif through Arizona to TX and Mexico; generally roosts in caves; feeds over water or riparian vegetation	Spring - Summer	Fed: none BLM: Sensitive Calif: S1, SC	Minimal potential for roosting on site; moderate potential for flyover to access foraging habitat
<i>Myotis yumanensis</i> Yuma myotis	Widespread in CA, uncommon in deserts, many habitats, sea level to 3300 m (11,000 ft), but uncommon above 2560 m (8000 ft); feeds over open water.	Year-around	Fed ESA: none BLM: sensitive CA: S4	Present; detected on site during 2016-2017 acoustic bat surveys.
<i>Nyctinomops femorosaccus</i> ( <i>Tadarida femorosaccus</i> ) Pocketed free-tailed bat	Deserts and arid lowlands, SW US, Baja Calif., mainland Mexico; Roost mainly in crevices of high cliffs; forage over water and open shrubland	Year-around	Fed ESA: none BLM: none CA: S3, SC	Present; detected on site during 2016-2017 acoustic bat surveys.
<i>Nyctinomops macrotis</i> ( <i>Tadarida molossa</i> ) Big free-tailed bat	Roosts in crevices of rocky cliffs, scattered localities in W N. Amer. through Cent. Amer.; ranges widely from roost sites; often forages over water	Year-around (?)	Fed ESA: none BLM: none CA: S3, SC	Roosting: minimal Foraging: moderate (not detected)
<i>Ovis canadensis nelsoni</i> Nelson's bighorn sheep	Open shrublands and conifer forest, remote mountains; scattered populations in desert mountains and surrounding ranges, incl. Transverse and Peninsular ranges	Year-around	Fed ESA: none BLM: sensitive CA: S3, FP (selected populations)	Present; observed on the site during 2013 surveys. Sign observed in northeastern part of the site.
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	Open shrublands, grasslands; often sandy alluvial benches; S Calif. valleys, LA, SW San Bernardino and W Riverside Cos.	Year-around (?)	Fed ESA: none BLM: none CA: S1S2, SC	Low (Cottonwood Creek only); marginal habitat; not observed.
<i>Vulpes macrotis arsipus</i> Desert kit fox	Arid areas with grasslands, agricultural lands, or scattered shrubby vegetation. Requires open, level areas with loose-textured, sandy loamy soils for digging dens. SW US and northern Mexico.	Year-around	Fed ESA: none BLM: none CA: Fully Protected Furbearer	Moderate; potentially suitable habitat throughout.
<i>Taxidea taxus</i> American badger	Mountains, deserts, interior valleys where burrowing animals are avail as prey and soil permits digging; throughout cent and W N Amer	Year-around	Fed ESA: none BLM: none CA: S3, SC	Present; suitable habitat present; sign observed in 2019 (9 burrows found in northeastern part of the site).

General references (botany): Baldwin et al. 2012; CDFW 2019a, b, CNPS 2019; CCH 2019

General references (wildlife): American Ornithologists Union 1998 (including supplements through 2011); Barbour and Davis 1969; CDFW 2019a; Feldhammer et al. 2003; Gannon 2003; Garrett and Dunn 1981; Grinnell and Miller 1944; Hall 1981; Hatfield et al. 2019; Jennings and Hayes 1994; Pierson and Rainey 1988; Sibley 2000; Stebbins 2003; Wilson and Ruff 1999.

### Conservation Status

**Federal designations:** (federal ESA, USFWS).

END: Federally listed, endangered.

THR: Federally listed, threatened.

Candidate: Sufficient data are available to support federal listing, but not yet listed.

Proposed: Formally proposed for federal status shown.

**Federal designations:** (federal Bald and Golden Eagle Protection Act, US Fish and Wildlife Service).

Eagle Protection Act: Bald and Golden Eagle Protection Act.

### Bureau of Land Management Designations:

**Sensitive:** Species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. BLM Sensitive species also include all federal Candidate species and federal Delisted species which were so designated within the last 5 years, and CRPR 1B plant species that occur on BLM lands.

### State designations: (CESA, CDFG)

END: State listed, endangered.

THR: State listed, threatened.

RARE: State listed as rare (applied only to certain plants).

SC: California species of special concern. Considered vulnerable to extinction due to declining numbers, limited geographic ranges, or ongoing threats.

FP: Fully protected. May not be taken or possessed without permit from CDFG.

**CDFG Natural Diversity Data Base Designations:** Applied to special-status plants and sensitive plant communities; where correct category is uncertain, CDFG uses two categories or question marks.

S1: Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres.

S1.1: Very threatened

S1.2: Threatened

S1.3: No current threats known

S2: 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimal suffixes same as above).

S3: 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimal suffixes same as above).

S4: Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.

S5: Demonstrably secure or ineradicable in California. No threat rank.

SH: All California occurrences historical (i.e., no records in > 20 years).

SX: Presumed extirpated in California.

**California Native Plant Society (CNPS) Rare Plant Rank designations.** Note: According to CNPS

(<http://www.cnps.org/cnps/rareplants/ranking.php>), plants ranked as CRPR 1A, 1B, and 2 meet definitions as threatened or endangered and are eligible for state listing. That interpretation of the state Endangered Species Act is not in general use.

1A: Plants presumed extinct in California.

1B: Plants rare and endangered in California and throughout their range.

2: Plants rare, threatened or endangered in California but more common elsewhere in their range.

3: Plants about which we need more information; a review list.

4: Plants of limited distribution; a watch list.

### California Rare Plant Rank Threat designations:

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Fairly endangered in California (20-80% occurrences threatened)

.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

**Definitions of occurrence probability:** Estimated occurrence probabilities based literature sources cited earlier and field surveys and habitat analyses reported here.

*Present:* Observed on the site by qualified biologists.

*Expected:* Not observed or recorded on the site, but very likely present during at least a portion of the year.

*High:* Habitat is a type often utilized by the species and the site is within the known range of the species.

*Moderate:* Site is within the known range of the species and habitat on the site is a type occasionally used.

*Low:* Site is within the species' known range but habitat is rarely used, or the species was not found during focused surveys covering less than 100% of potential habitat or completed in marginal seasons.

*Minimal:* No suitable habitat on the site; or well outside the species' known elevational or geographic ranges; or a focused study covering 100% of all suitable habitat, completed during the appropriate season and during a year of appropriate rainfall, did not detect the species.

*Unknown:* No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.



## 3.1 Special-status Plants

### Listed Threatened or Endangered Plants

This section describes plant species reported from the region that are listed as threatened or endangered under the federal ESA or CESA. One federally listed endangered plant, triple-ribbed milk-vetch, has been reported in Whitewater Canyon, just east of the project disturbance area. Other listed threatened or endangered plant species of the low desert region (e.g., Coachella Valley milk-vetch) grow on wind-blown sands to the east, well outside the study area and are not addressed in this report. No listed threatened or endangered plant species, species proposed for listing, or candidates for listing have been documented from the study area.

**Coachella Valley milk-vetch:** Coachella Valley milk-vetch is an annual or short-lived perennial endemic to the Coachella Valley. It is federally listed as endangered, a BLM sensitive species, and ranked as CRPR 1B. It is primarily found on loose aeolian (wind transported) or, less-often, in alluvial (water transported) sands, on dunes or flats and along disturbed margins of sandy washes. There is no designated critical habitat for Coachella Valley milk-vetch on the Project site (USFWS 2011a). A patch of CVMSHCP-modeled habitat for Coachella Valley milk-vetch is within the ROW but outside the proposed disturbance area (see Figure 3). This area is located at the top of a “sand ramp” just above a steep eroded slope. Vegetation is creosote bush scrub. No Coachella Valley milk-vetch were located in the modeled habitat (or elsewhere on the Project site) during 2019 linear transect protocol surveys or during 2013 controlled-intuitive surveys. Based on the results of these field surveys, Coachella Valley milk-vetch is not expected to occur on the site, and there is no suitable or modeled habitat within the proposed disturbance area.

**Triple-ribbed milk-vetch:** Triple-ribbed milk-vetch is found in arroyos, canyons, and hillsides between about 1,400 and 4,000 feet elevation. It grows in Whitewater Canyon just east of the project disturbance area and in nearby canyons, hills, and mountains to the east (Baldwin et al. 2012) including Morongo Canyon and Mission Canyon and one disjunct site some 40 miles south at Agua Alta Canyon (White 2004). It is very rare, and several known locations consist of only a single plant. Prior to 2004, almost all known occurrences consisted of a few scattered plants in alluvial wash or on adjacent slopes. More recently, occurrences consisting of much larger numbers of plants have been documented, all on unusual upland gravelly substrates. One of these is in the Whitewater River watershed at about 3900 ft. elevation (White 2004), one is near Catclaw Flat (Amsberry and Meinke 2007), and there are one or more similar sites in Joshua Tree National Park (LaDoux, pers. comm.). There also is a record of a few small plants near the Super Creek decorative rock quarry, about a mile east of the Project site, growing on parent material that was visually unlike other upland or alluvial occurrences (personal observation). Based on knowledge of its upland occurrences, it now appears that the alluvial wash occurrences originated from seed dispersed downstream from the much larger upland populations higher in the watersheds. Triple-ribbed milk-vetch is covered under the Coachella Valley Multiple Species Habitat Conservation Plan. There is no CVMSHCP-modeled habitat within the ROW and Aspen did not locate triple-ribbed milk-vetch during our surveys. Habitat suitability is difficult to evaluate (due to occurrences on upland and alluvial sites, with little more characterization of substrate). Potentially suitable habitat is present in the project disturbance area but there is a low potential that it may grow in the study area due to negative results of field surveys.

### BLM Sensitive Plants

The BLM (2012) maintains a list of sensitive plant species, including species that are rare, declining, or dependent on specialized habitats. The list includes all plants ranked by CNPS and CDFW as CRPR 1B. The BLM manages sensitive species to provide protections comparable to species that may become listed as

threatened or endangered (i.e., candidate species for federal listing). None of these species has been documented from the Mesa Wind site and none are expected to occur there (Table 4).

## Other Special-Status Plants

In addition to the statutes and policies described above, several public agencies and private entities maintain lists of plants and animals of conservation concern. The CDFW compiles these species including CDFW and CNPS rankings as CRPR 2, 3, or 4 in its compendium of “Special Plants” (CDFW 2019b). These plants are treated here as “special-status species.” None of these species has been documented from the Mesa Wind site and none are expected to occur there (Table 4).

## 3.2 Special-status Wildlife

### Listed Threatened or Endangered Wildlife

This section includes species listed as threatened or endangered under CESA or ESA. Three listed threatened or endangered species, the desert tortoise, coastal California gnatcatcher, and Swainson’s hawk, have been observed in or adjacent to the study area. Other listed species of the region are either limited to riparian and aquatic habitats (e.g., southwestern willow flycatcher, least Bell’s vireo, and western yellow-billed cuckoo) or aeolian sands (e.g., Coachella Valley fringe-toed lizard). Note that recent studies indicate that southwestern willow flycatchers generally do not migrate over the southern California desert (BLM 2017 and citations therein). However, other willow flycatcher subspecies (state listed but not federally listed) may pass through the area during migration. Identification of subspecies is difficult and may necessitate hearing the calls. Identification of willow flycatchers subspecies seen during migration, including birds found dead, is usually not possible.

**Desert Tortoise.** The desert tortoise is listed as threatened under CESA, and the Mojave population (i.e., west of the Colorado River) is listed as threatened under the federal ESA. East of the Colorado River, the desert tortoise’s range extends into the Arizona deserts, and south through Sonora (Mexico). All wild desert tortoises in California are part of the state and federally listed Mojave population.

The USFWS reviewed desert tortoise biology and population status in the recent Revised Recovery Plan (USFWS 2011). The following summary is based on that review and literature cited therein. Desert tortoises spend much of their lives in burrows. They enter brumation during autumn. In late winter or early spring, they emerge from over-wintering burrows and typically remain active or partially active through the fall. Activity decreases in summer, but tortoises often emerge during summer to drink and to take advantage of seasonal food availability during the few weeks following late summer rains. They may become dormant during extended periods of summer heat and dryness. A single tortoise may have a dozen or more burrows within its home range, and different tortoises may use these burrows at different times. Even during their active seasons, they are inactive during much of the day or night, within burrows or at “palettes” (partially sheltered flattened areas, often beneath shrubs or large rocks) or other shaded sites.

The size of desert tortoise home ranges varies with respect to location and resource availability and may fluctuate over time. Male tortoises’ home ranges can be as large as 200 acres, while females’ long-term home ranges may be less than half that size. Over its lifetime, a desert tortoise may use more than 1.5 square miles of habitat and may make periodic forays of several miles at a time.

Tortoises are long-lived and grow slowly. They require 13 to 20 years to reach sexual maturity. Their reproductive rates are low, though their reproductive lifespan is long. Mating may occur both during

spring and fall. The number of clutches (sets of eggs laid at a single time) and number of eggs that a female desert tortoise produces is dependent on habitat quality, seasonal food and water availability, and the animal’s physiological condition. Egg-laying takes place primarily between April and July; the female typically lays 2-14 (average 5-6) eggs, which are buried near the mouth of a burrow or beneath a shrub. The eggs typically hatch 90 to 120 days later, between August and October. Clutch success rates are unknown and nest predation rates are variable, but predation appears to be an important cause of clutch failure.

Desert tortoises and their sign have been overserved in throughout the site (including both the northeastern and southwestern portions) and the access road southwest of the site over many years (R. Griese, pers. comm.). Desert tortoises at the Mesa Wind site have been studied extensively. Researchers conducted focused desert tortoise surveys of the Mesa Wind Project in 1997, 1998, 1999, 2000, 2009, and 2010. The total number of tortoises censused increased with each survey (31, 42, 49, 59, 63, and 69 tortoises, respectively) (Lovich et al. 2011). Researchers found 136 individuals (48 adult tortoises and 88 hatchling and immature tortoises) and 32 active desert tortoise burrows on 868 acres on and around the 401-acre ROW, primarily around the roads and turbines of the existing wind farm (1999 data, summarized by USFWS 2009a). Based on their census methods, Lovich et al. (2011) estimated a total population of 96 desert tortoises (all age classes) in their study area, and an estimated density of 15.4 tortoises per square km. The tortoise detection methods are not described in the publications but included repeated observations of previously tagged animals and appears to consist of more lengthy and labor-intensive field efforts than the USFWS (2009b) presence/absence protocol. During NRA’s desert tortoise surveys in 2008, four tortoises as well as burrows and scat were observed, and it was estimated that there were between eight and twelve tortoises within the project disturbance area (NRA Inc. 2008). They all were located in the northeastern part of the ROW, including one tortoise and burrow located along the access road southwest of the O&M building. Desert tortoises at the Mesa Wind site constructed burrows under shrubs (41% of burrows were located under shrubs), but also constructed burrows under anthropogenic features in the landscape (e.g., roads, concrete foundations associated with wind energy turbines and transformers) (Lovich and Daniels 2000). A disproportionate number of desert tortoise burrows were located near roads and concrete foundations associated with wind energy turbines and transformers as opposed to available undisturbed habitat in the vicinity. These results suggest that well-planned wind energy development and operations may be compatible with desert tortoise conservation (Lovich and Daniels 2000).

There have been two known human-caused desert tortoise mortalities on the Project site. One was a vehicle strike on the publicly-accessible road southwest of the O&M building in approximately 1995, and the other was trapped in a culvert during a rainstorm in approximately 2008 (R. Griese, pers. comm.; see Figure 2).

Desert tortoise numbers at the site have apparently declined since the 2010 field season. Focused surveys for desert tortoise in 2019 detected three living tortoises and several burrows and scat within the field survey coverage area, listed in Table 5. All the desert tortoises and sign were located in the northeastern portion of the site.

**Table 5. Desert Tortoise Observations (2019)**

Date	Sign	UTM	Notes
April 16, 2019	potential burrow	11 S 531664 3756501	Class 5 burrow: possibly an old tortoise burrow, slightly collapsed and in poor condition
April 17, 2019	burrow	11 S 531334 3756482	Class 2 burrow: Definitely tortoise. 150mm H x 350mm W x 2ft D. No sign observed.
April 17, 2019	scat	11 S 531161 3756513	Three pieces of scat observed in general area, all >12mm = adult. Appears to be of this year.



**Table 5. Desert Tortoise Observations (2019)**

Date	Sign	UTM	Notes
April 17, 2019	individual	11 S 531133 3756518	Adult female greater than 200mm in length. Old epoxy mark on RC4.
April 17, 2019	individual	11 S 531132 3756527	Adult male greater than 200mm in length. Notch on LM2, old tag (illegible) on RC4.
April 23, 2019	burrow	11 S 531283 3757208	Class 2 burrow: definitely tortoise. 170 mm H x 390mm W x greater than 4ft D. No sign observed.
April 23, 2019	burrow	11 S 531144 3757236	Class 1 burrow: currently active with fresh tracks and freshly dug burrow. 180mm H x 280mm W x 450mm D.
April 23, 2019	scat	11 S 531156 3757207	Scat possibly of this year, faded but soft green inside with scent. >12mm = adult.
April 25, 2019	burrow	11 S 531099 3756546	Class 2 burrow: definitely tortoise. 140 mm H x 220 mm W x 350 mm D, good condition not recently used.
April 25, 2019	individual	11 S 531079 3756595	Adult female 1/2 out of burrow, Tag on RC4 "150"; slightly sunken scutes on left side.
April 25, 2019	scat	11 S 531030 3756521	Scat of this year >12mm = adult. Fresh scat black with glaze.
May 7, 2019	potential burrow	11 S 531668 3757522	Class 5 burrow: under concrete foundation
June 10, 2019	potential burrow	11 S 531351 3757693	Class 5 burrow: under concrete foundation
June 10, 2019	potential burrow	11 S 531348 3757706	Class 5 burrow: under concrete foundation
June 14, 2019	potential burrow	11 S 531497 3757076	Class 5 burrow: under concrete foundation
June 14, 2019	potential burrow	11 S 531527 3756927	Class 5 burrow: under concrete foundation
June 14, 2019	potential burrow	11 S 531236 3757347	Class 5 burrow: under concrete foundation
June 14, 2019	potential burrow	11 S 531524 3756560	Class 5 burrow: under concrete foundation
June 14, 2019	potential burrow	11 S 531490 3756546	Class 5 burrow: under concrete foundation
June 14, 2019	potential burrow	11 S 531342 3756528	Class 5 burrow: under concrete foundation

A total of 441 concrete foundations (i.e., all Project-related foundations except those within fenced the switchyard, including legacy turbine foundations and other electrical infrastructure foundations) were inspected for potential tortoise burrows. Nine of these had suitable desert tortoise burrows beneath them, but none were occupied by desert tortoise. Attachment 6 includes a list and map of the foundations.

The Mesa Wind site is not within USFWS designated critical habitat for the desert tortoise and is also not within any BLM Desert Wildlife Management Areas (USFWS 1994). Desert tortoise is covered under the CVMSHCP.

**Coastal California gnatcatcher.** The coastal California gnatcatcher is listed as threatened under the ESA. Its geographic range is primarily coastal southern California from Ventura County, inland to the Santa Clarita area, Banning area, and southward through northwestern Baja California. Its habitat is coastal sage scrub largely composed of California sagebrush, California buckwheat, and other low-growing, drought-deciduous shrubs. The coastal California gnatcatcher, as well as several shrubs that are characteristic of its habitat, reach their inland range margins in the San Gorgonio Pass. In this area, the ranges of Coastal California gnatcatcher and the more common black-tailed gnatcatcher, may overlap. The black-tailed gnatcatcher occurs on the site and throughout the general area. Coastal California gnatcatcher has been reported by BLM staff along the Pacific Crest Trail, north of the Project site. There is a low possibility that coastal California gnatcatcher may occur on the Project site and, if so, most likely outside the breeding season during the dispersal phase of its life cycle.

**Swainson's Hawk.** Swainson's hawk is listed as threatened under the CESA. In California, it nests in the San Joaquin Valley, western Antelope Valley, and Owens Valley. It migrates to South America every fall and returns to California every spring. Swainson's hawk migrates along the Pacific flyway and several were observed over the project disturbance area during migration. The project disturbance area is well outside of the breeding range but Swainson's hawk may migrate over the site biannually. At least one Swainson's hawk was observed migrating over the project disturbance area during the fall of 2012 but it was not observed flying within the proposed rotor-swept zone for the new turbines (Bloom 2012).

## Species Protected Under the Federal Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d; BGEPA) prohibits take of bald eagles and golden eagles. The BGEPA defines *take* to include "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing." The USFWS (2007) further defines *disturb* as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

**Golden Eagle.** Golden eagles are year-round residents throughout most of their range in the western United States. In the southwest, they are more common during winter when eagles that nest in Canada migrate south into the region. They breed from late January through August, mainly during late winter and early spring in the California deserts (Pagel et al. 2010). In the desert, they generally nest in steep, rugged terrain, often on sites with overhanging ledges, cliffs or large trees as cover. Golden eagles are wide-ranging predators, especially outside of the nesting season, when they don't need to return to tend eggs or young at their nests.

Golden eagle foraging habitat consists of open terrain such as grasslands, deserts, savanna, and early successional forest and shrubland habitats throughout the regional foothills, mountains, and deserts. They prey primarily on rabbits and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002).

The mountains and canyons surrounding the project disturbance area provide suitable golden eagle nesting habitat. The Mesa Wind site does not have suitable nesting habitat, but the entire site is suitable foraging habitat. There are several documented golden eagle nest locations within a 10-mile radius of the site including locations to the north in the San Bernardino Mountains and to the south, in the San Jacinto Mountains. The nearest previously recorded nest sites are about 2.5 miles of the Mesa Wind site (from USFWS data). There have been two known golden eagle fatalities on the site, one in the mid-1990s and one in approximately 2017, both in the southwestern part of the Project site (R. Griese, pers. comm.; see Figure 2).

In fall of 2012, BBI recorded a total of 121 observations of golden eagles flying over the site. This included 24 eagles that flew within the proposed rotor-swept elevational zone for the WTGs proposed at that time (BBI 2013). In 2019, BBI viewed 27 possible golden eagle nests comprising 14 to 16 territories within a 10-mile radius of the Mesa Wind site. They found that 2019 was a relatively poor year for nest occupancy. They found evidence that one golden eagle nest had fledged young earlier in the year, and that another golden eagle nest had been active early in the nesting season but had not fledged young. A third potential golden eagle nest had apparently been active by either golden eagle or red-tailed hawk, without fledging young. BLM staff observed a juvenile golden eagle in the vicinity of the Project site in 2019.

**Bald Eagle.** Bald eagles are occasional migrants in southern California during the winter when birds from areas further to the north migrate south. There are a few year-round resident birds, regularly seen near Lake Hemet in Riverside County, and more recently Big Bear Lake in San Bernardino County and Irvine Lake in Orange County. A bald eagle was observed flying over the project disturbance area during field surveys (BBI 2013).

## Wildlife Species Fully Protected Under the California Fish and Game Code

Under the state Fish and Game Code, selected fish and wildlife species are designated as fully protected, prohibiting take except under permit for scientific purposes. Most of the designated fully protected species occur well outside the project vicinity, but several may be found in the study area. These are: golden eagle and bald eagle (discussed above, Species Protected under the Bald and Golden Eagle Protection Act), Nelson's bighorn sheep, and American peregrine falcon.

**American Peregrine Falcon.** Peregrine falcons were formerly listed under CESA and ESA but have been delisted under both acts. They are fully protected under the state Fish and Game Code. They are found irregularly in the region, generally during migratory and winter seasons. They feed primarily on birds captured during flight. Waterfowl and shorebirds make up a large proportion of their prey, and nest sites are often within foraging range of large water bodies. At least one American peregrine falcon was observed migrating over the project disturbance area during fall of 2012. It was observed at a high altitude and never entered the proposed rotor-swept zone for the new turbines (BBI 2013).

**Desert Bighorn Sheep.** Desert bighorn sheep (also known as Nelson's bighorn sheep) are known from the Transverse Ranges, California Desert Ranges, Nevada, northern Arizona, and Utah. Its populations in the Peninsular Ranges (the Santa Rosa and San Jacinto Mountains, and southward into Baja California), south of the Mesa Wind site, are federally listed as a threatened distinct vertebrate population segment. The populations in the San Bernardino Mountains have no CESA or ESA listing status. Desert bighorn sheep is a BLM Sensitive Species and is fully protected under the state Fish and Game Code. Desert bighorn sheep were observed on the site during recent surveys (BBI 2013) and are expected to forage on the site regularly. According to R. Griese (pers. comm.) they are regularly seen throughout the Project site.

## BLM Sensitive Wildlife Species

The BLM maintains a list of Sensitive Wildlife Species, including species that are rare, declining, or dependent on specialized habitats (BLM 2014). It manages sensitive species to provide protections comparable to species that may become listed as threatened or endangered (i.e., candidate species for federal listing).

**Burrowing Owl.** The burrowing owl is a BLM Sensitive Species and a CDFW Species of Special Concern. As a native bird, it is also protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (below). It is a small, terrestrial owl of open country. During breeding season, it ranges throughout most of the western US. It occurs year-around in southern California, but may be more numerous during fall and winter, when migratory individuals from farther north join the regional resident population. Burrowing owls favor flat, open annual or perennial grassland or gentle slopes and sparse shrub or tree cover. They use the burrows of ground squirrels and other rodents for shelter and nesting. Availability of suitable burrows is an important habitat component. Where ground squirrel burrows are not available, the owls may use alternate burrow sites or man-made features (such as drain pipes, debris piles, or concrete slabs). In the California deserts, burrowing owls generally occur in low numbers in scattered populations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant (Wilkerson and Siegel 2011). Burrowing owl nesting season, as recognized by the California Burrowing Owl Consortium (CBOC 1993), is February 1 through August 31.

Burrowing owls are covered under the Coachella Valley Multiple Species Habitat Conservation Plan. No burrowing owls or burrowing owl sign have been observed on the site, but suitable burrows are present and have been observed in the nearby area. There is a high potential that burrowing owls may occasionally occur on the Mesa Wind site, either during winter or during breeding season.

**Coast horned lizard.** Coast horned lizard (BLM Sensitive) is found throughout much of coastal southern California, inland as far as the southern Mojave Desert and to about 6000 feet elevation in the mountains. Coast horned lizards occur in sandy soils in a variety of shrubland, grassland, and woodland habitat types. They have been extirpated from much of their historic range by land use changes, but they remain fairly common in natural open space areas where their primary prey (native ants) are found. They have been documented from Whitewater Canyon to the east and from the vicinity of Cabazon to the southwest. Coast horned lizard was not observed on the site although habitat throughout the Mesa Wind site is suitable.

**Bats.** The BLM includes several bat species on its list of sensitive species. Four bat species detected on the Mesa Wind site are managed as BLM sensitive species: Pallid bat, Townsend's big-eared bat, fringed myotis, and Yuma myotis. One additional BLM sensitive bat species, western mastiff bat, was recorded in 2016 at a nearby wind project site. In addition, several of the bats known from the project vicinity are CDFW "Special Animals" (2018) as described below. The special-status bats of the local area roost in rock crevices, tunnels, or caves and one species (western yellow bat) roosts in the foliage of riparian trees. Roost sites may be used seasonally (e.g., inactive cool seasons) or daily (day roosts, used during inactive daylight hours). Maternity roosts are particularly important overall for bat life histories. Knowledge of bat distributions and occurrences is sparse. Bat life histories vary widely. Some species hibernate during winter or migrate south. During the breeding season, bats generally roost during the day, either alone or in communal roost sites, depending on species. All special-status regional bats are insectivorous, catching their prey either on the wing or on the ground. Some species feed mainly over open water where insect production is especially high, but others forage over open shrublands such as those found on the Mesa Wind site. Several special-status bats, including BLM sensitive species, are likely to forage over the site or fly over the site en route to foraging habitat elsewhere (Table 4). The metal lattice towers, disused turbines, and electrical vaults may provide some roosting habitat for common bat species, but the likelihood of sensitive bat species roosting on-site is low. The USGS Mineral Resources Data System (2019) reports several mines in the project vicinity including unnamed gravel pits, the Super Creek Quarry, and the Painted Hills Quarry. All of these are open pits or quarries, rather than subterranean mines. MRDS also reports gold claims or prospects on the site or in the vicinity but does not indicated active or abandoned mines at the claim sites. There is a vertical excavation about 4 feet wide and 10-15 feet deep in the northeastern part of the site and a horizontal excavation off-site about 0.5 mile northeast of the O&M building (R. Griese pers. comm.; see Figure 2). We are not aware of any caves or subterranean mines on the site or in the vicinity.

## Other Special-Status Wildlife Species

In addition to the statutes and policies described above, several public agencies and private entities maintain lists of wildlife species of conservation concern. The CDFW compiles these in its compendium of "Special Animals" (2018). These species are treated here as special-status species.

**Crotch Bumble Bee.** Crotch bumble bee is a widespread secretive species that is known from more than two hundred locations over a broad geographic range (CNDDDB 2019). It is typically found in openings in grassland and scrub habitats where it burrows into the ground and lives in colonies. It feeds on native

plants including milkweed, pincushion, lupine, phacelia, sage, snapdragon, clarkia, bush poppy, and buckwheat. Many of these food plants are present in the vicinity of the Mesa Wind site and suitable burrowing or foraging is also present. Crotch bumblebee has a moderate potential to be present on the site.

**Red Diamond Rattlesnake.** Red diamond rattlesnakes live between sea level and about 5000 feet elevation throughout most of Orange County and western Riverside County, south through San Diego and Baja California and inland to the Colorado Desert margins. Their habitats include coastal sage scrub, chaparral, and woodlands through most of their geographic range, and desert scrub at the eastern margins of their range. They are generally found around boulders and rock outcrops (Klauber 1972; Zeiner et al. 1988; Stebbins 2003). There are numerous records of red diamond rattlesnakes from Whitewater Canyon just east of the project disturbance area. Red diamond rattlesnakes have not been reported on the site, but habitat throughout the site appears suitable.

**Raptors.** In addition to the raptors discussed above, several other special-status birds of prey are found seasonally in the region, especially during winter and during migration. These include osprey, ferruginous hawk, Cooper's hawk, sharp-shinned hawk, northern harrier, prairie falcon, merlin, and long-eared owl (Table 4). All these species were observed migrating over the Mesa Wind site during surveys summarized here. None of these raptors are expected to nest on the site due to lack of suitable habitat, but all of them are expected to fly over the site and occasionally forage on the site. Suitable winter or migratory season foraging habitat for all of these raptors is widely available throughout the region.

**Upland Perching Birds.** Several upland perching bird species are included in the CDFW Special Animals compilation (2018). These include Costa's hummingbird, loggerhead shrike, LeConte's thrasher, black-tailed gnatcatcher, California horned lark, southern California rufous-crowned sparrow, and Lawrence's goldfinch. All of these species have been observed on the site during field surveys summarized in this report or are likely to occur on the site (based on their habitat and geographic range).

**Migratory Riparian/Wetland Birds.** Three additional special-status bird species were observed migrating over the project area during bird surveys: yellow warbler, Vaux's swift, and white-faced ibis.

**Other Mammals.** Several mammal species range widely through desert habitats, either among partially isolated mountain ranges (e.g., Desert bighorn sheep, above) or more often in valleys. These include American badger and desert kit fox. Desert kit fox is not listed as a special-status species by CDFW or USFWS, but it is protected under the California Code of Regulations (Title 14, § 460). Several American badger burrows were observed on the site in 2019 (see Figure 4, Field Survey Coverage and Results). Desert kit fox, although not observed, has a moderate to high probability of occurring on the site. Two special-status bats (in addition to the BLM sensitive bats addressed above) were detected on the site: pocketed free-tailed bat and western red bat.

### 3.3 Native Birds: Migratory Bird Treaty Act / California Fish and Game Code

The federal MBTA prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting of waterfowl or upland game species). Under the MBTA, "migratory bird" is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle" and thus applies to most native bird species. California Fish and Game Code Section 3503 prohibits take, possession, or needless destruction of bird nests or eggs; Section 3503.5 prohibits take or possession of birds of prey or their eggs; and Section 3513 prohibits take or possession of any migratory nongame bird. With the exception of a few non-native



birds such as European starling, the take of any birds or loss of active bird nests or young is regulated by these statutes. Most of these species have no other special conservation status as defined above.

The entire Mesa Wind site and surrounding area provides suitable nesting habitat for numerous resident and migratory bird species. BBI (2013) reported a total of 90 species observed.

Many adult birds would flee from equipment during project construction; however, nestlings and eggs would be vulnerable. If initial site grading or brush removal were to take place during nesting season, then it would likely destroy bird nests, including eggs or nestling birds. For most birds, these impacts can be avoided by scheduling initial clearing and grading outside the nesting season. Or, if initial clearing and grading are undertaken during nesting season, work may be limited only to areas where no nesting birds are present, as documented by pre-construction nest surveys. One special-status species, the burrowing owl, is unlikely to flee the site during construction, even outside the nesting season, due to its characteristic behavior of taking cover in burrows. Avoidance of burrowing owls during initial clearing and grading necessitates pre-construction surveys for active burrows, and follow-up measures to “passively relocate” the owls if they are present. Passive relocation may require authorization from CDFW.

Some birds will be likely to nest in the project disturbance area during construction, even after initial grading and clearing. Depending on the species, birds may nest on the ground close to equipment; within the existing lattice structures; on foundations, structures, or construction trailers; or on idle vehicles or construction equipment left overnight or during a long weekend. The species most likely to nest in the project disturbance area during construction are common ravens, house finches, and mourning doves, all of which are protected by the MBTA and Fish and Game Code. Due to the high probability that birds may nest on site during construction, regular monitoring and nest site management may be necessary throughout the breeding season. Due to documented predation by common ravens on hatchling and juvenile desert tortoises, it is noteworthy that common ravens are seen regularly throughout the Project site and may use existing structures on the site for nesting. BBI (2013) reported more than 1,800 common raven observations during their surveys, more than almost any other species observed.

### **Bird Migration in the San Gorgonio Pass**

The San Gorgonio Pass is a high-use nocturnal flyway for migratory songbirds and possibly for migratory bats. Using a combination of electronic visual and radar technologies, McCrary et al. (1983) estimated 32 million birds flew through the Coachella Valley during spring of 1982, and recorded rates of 5,000–10,000 birds per hour through the Valley. A large proportion of these migratory birds would have migrated through the San Gorgonio Pass, at the northwest margin of the Coachella Valley. Migrating birds were recorded at altitudes ranging from 19 m to 1,483 m. Most migration was below 400 m (65%) and 12.9% was below 100 m.

## **3.4 Vegetation and Habitat**

Vegetation mapping units (Figure 6), descriptions and names are based on alliance level nomenclature of Sawyer et al. (2009). Each vegetation type is also defined according to Holland (1986) and to Mayer and Laudenslayer (1988) whenever possible. None of the vegetation types identified on the Mesa Wind site are classified as sensitive (CDFG 2010a). Common names of plant species are used throughout the following descriptions; Latin names for each species may be found in Attachment 4 (Species List).

**Brittlebush Scrub.** This vegetation is characterized by the dominance of brittlebush. It is the most abundant vegetation on site and is found primarily on exposed, west- and south-facing slopes. Many other species were observed within brittlebush scrub but were present in either low numbers or in small

patches. Other species observed included California jointfir, cheesebush, California buckwheat, beavertail cactus, Mojave yucca, and chaparral yucca. Brittlebush is a common to dominant species in desert shrublands and in coastal scrub of the interior valleys west of the project vicinity. On the study area, brittlebush scrub is similar to descriptions of Riversidean Sage Scrub (Holland 1986), Coastal Scrub (De Becker 1988) and Desert Scrub (Laudenslayer and Boggs 1988).

**California Juniper Woodland.** This vegetation is characterized by the dominance of California juniper. Within the site it is found primarily on north-facing slopes and in the lower portions of several of the drainages. Additional species observed within juniper woodland include sugar sumac, Parry's jujube, chamise, California buckwheat, Mojave yucca, and narrow-leaved goldenbush. This vegetation matches descriptions of Semi-Desert Chaparral and Cismontane Juniper Woodland and Scrub (Holland 1986) and best matches the habitat description for Mixed Chaparral (England 1988).

**California Sagebrush–California Buckwheat Scrub.** This vegetation is characterized by the co-dominance of California sagebrush and California buckwheat. Within the site it is most common on disturbed soils such as along road cuts and adjacent to graded areas. Additional species, similar to those listed above in brittlebush scrub, are also found in low numbers. This vegetation matches descriptions of Riversidean Sage Scrub and Upper Sonoran Subshrub Scrub (Holland 1986) and best matches the habitat description for Coastal Scrub (De Becker 1988).

**Creosote Bush–Brittlebush Scrub.** This vegetation is characterized by the co-dominance of creosote bush and brittlebush. It is found primarily on the eastern portion of the site on areas with relatively flat topography. Other species present include white bursage, Parry's jujube, Mojave yucca, narrow-leaved goldenbush, silver cholla, and California buckwheat. This vegetation best matches the description of Sonoran Creosote Bush Scrub (Holland 1986) and the habitat description of Desert Scrub (Laudenslayer and Boggs 1988).

**Desert Willow Woodland.** This vegetation is characterized by the dominance of desert willow. It is not found within the limits of the Mesa Wind ROW but is along the access road, west of the site where the road crosses Cottonwood Creek. Other species observed within this vegetation include California broomsage, cheesebush, brittlebush, and punctate rabbit-brush. This vegetation best matches the description of Mojave Desert Wash Scrub (Holland 1986) and Desert Wash (Laudenslayer 1988).

**Unvegetated/Ruderal.** The remainder of the study area is occupied by roads, cleared areas, and building or O&M pads for the existing wind turbines. These areas are primarily unvegetated but there are some ruderal species present, including red brome, red-stemmed filaree, and schismus grass. In addition, there are several native shrubs on and adjacent to the building pads, such as California buckwheat, narrow-leaved goldenbush, and deerweed. These areas do not match published vegetation descriptions.

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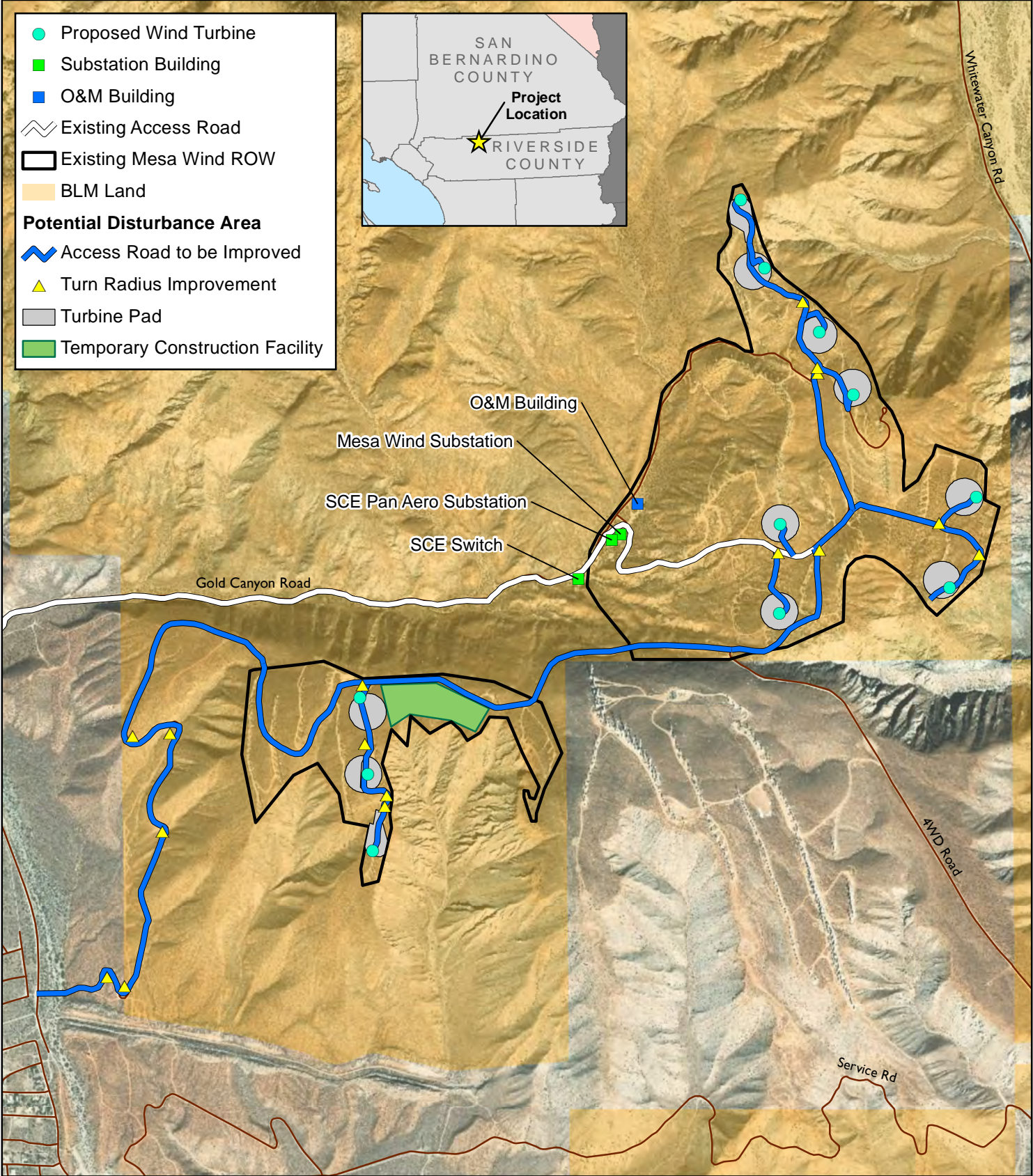
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## **Attachment 1 – Figures**











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Figure 1.

Project Location and Layout



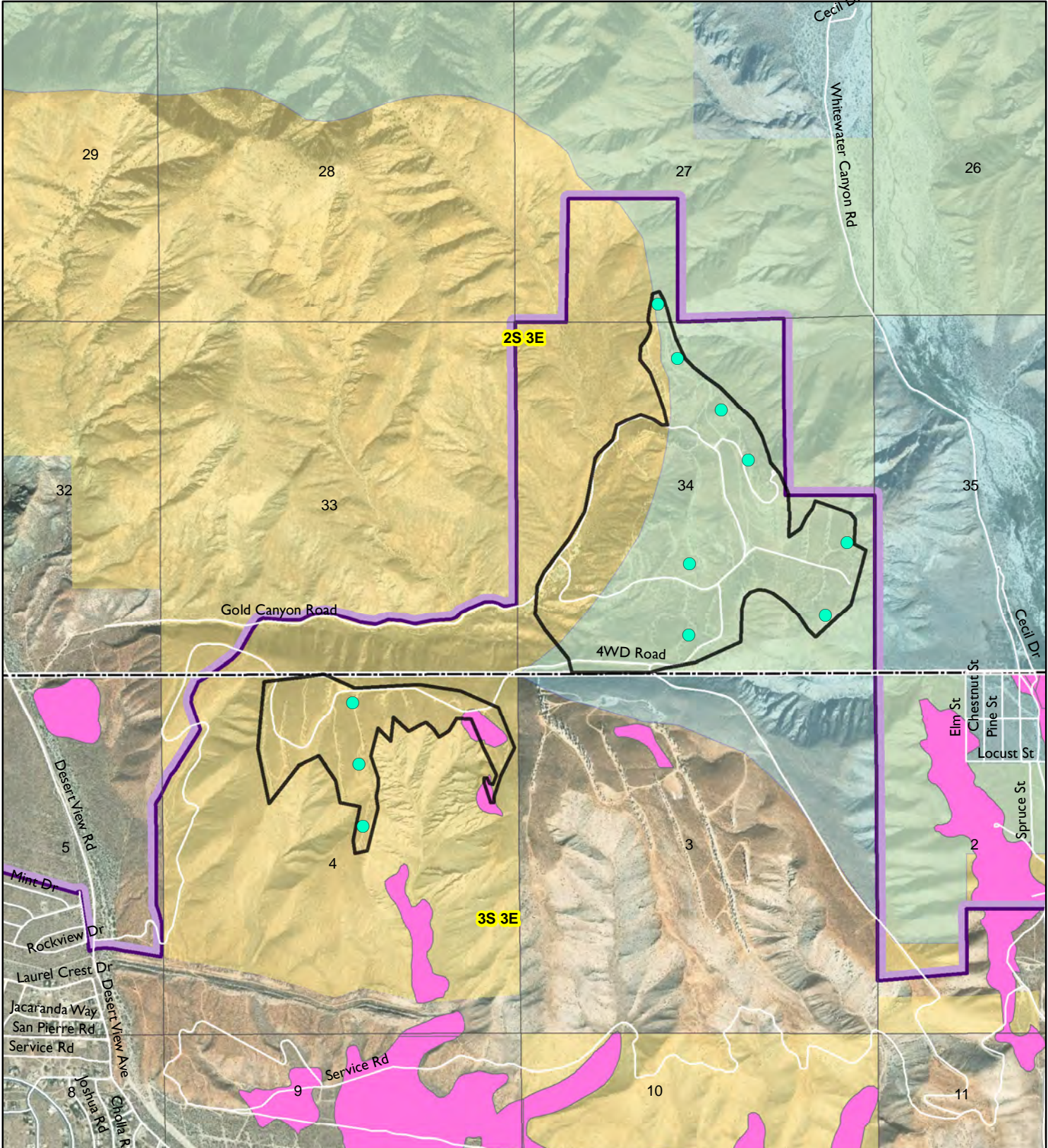


-  Mesa Wind Existing ROW
-  Existing Transmission Line
- Existing Wind Turbines
-  Operational
-  Non-operational
-  Township and Range Boundary
-  PLSS Section Boundary

**Figure 2.**

**Existing Conditions**





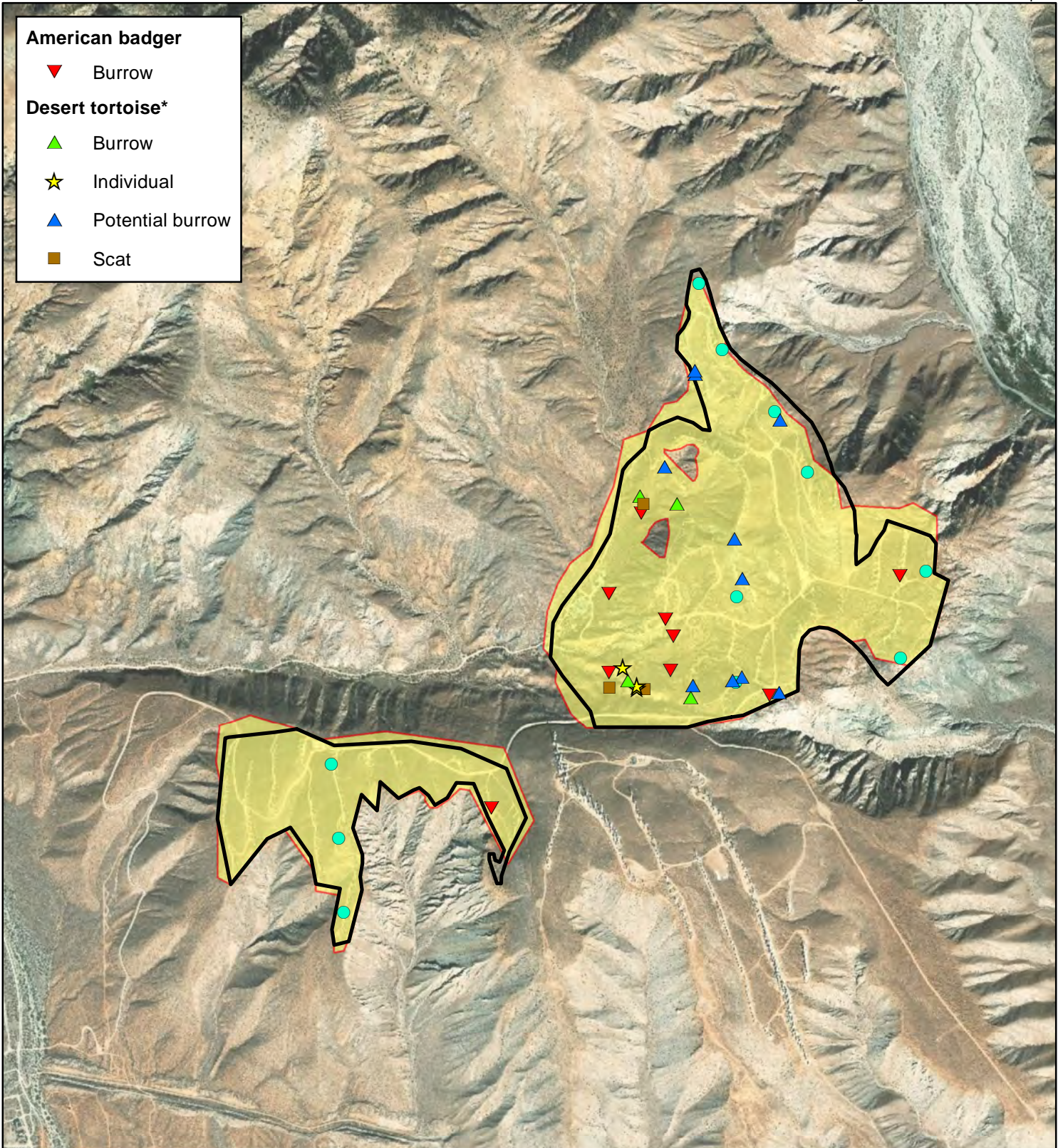
- Mesa Wind Existing ROW
- Proposed Turbine
- BLM Land
- Township and Range Boundary
- PLSS Section Boundary
- Whitewater Canyon ACEC
- CVMSHCP-modeled Coachella Valley milk-vetch and Coachella Valley Jerusalem cricket
- Sand to Snow National Monument

\*Entire ROW is CVMSHCP-modeled desert tortoise habitat

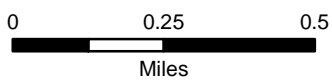
**Figure 3.**

**Land Use Designations**





\*See Table 5



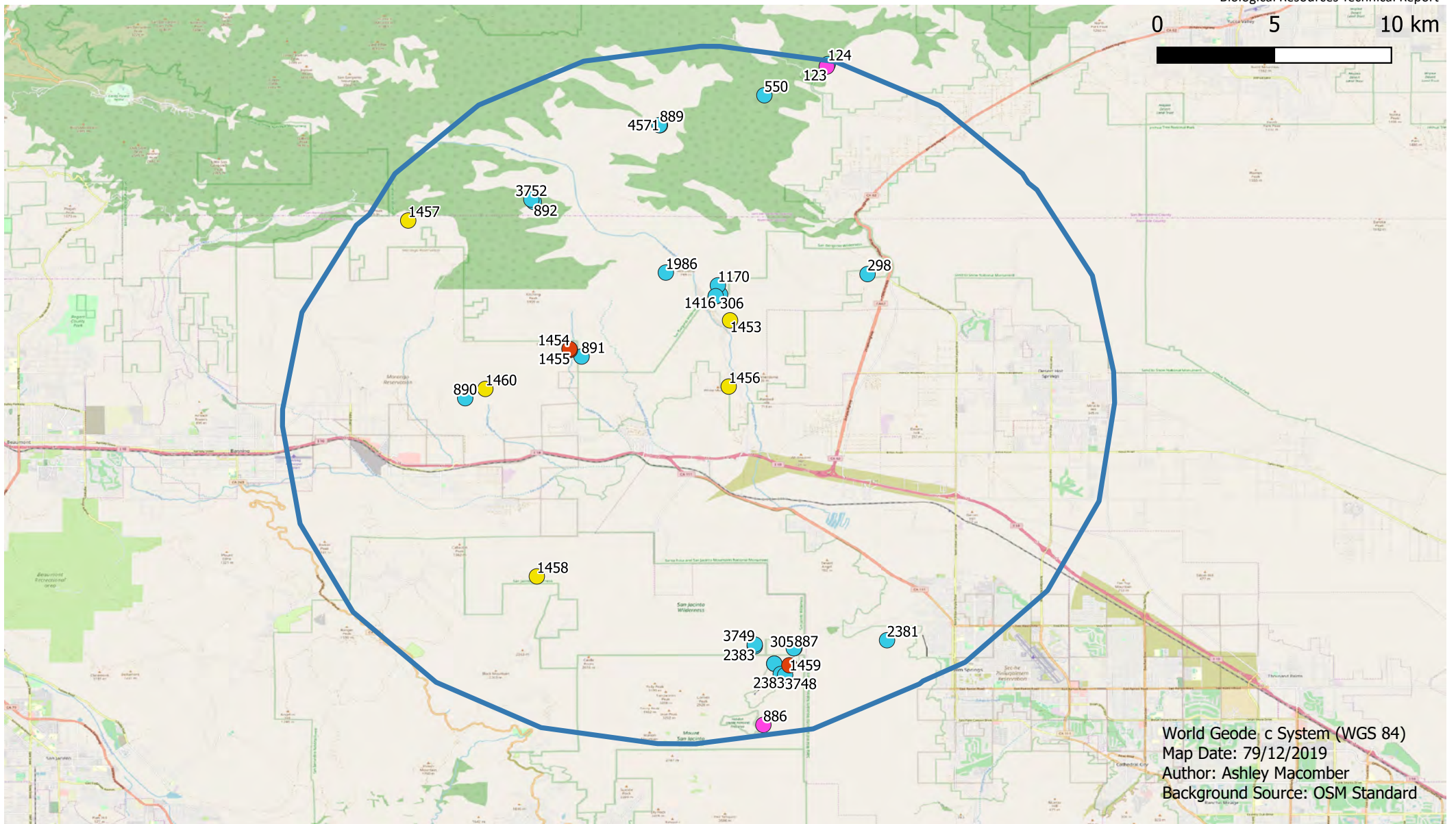
- Proposed Wind Turbine Generator
- Existing Transmission Line
- ▭ Mesa Wind Existing ROW
- ▭ Survey Area

**Figure 4.**

**Field Survey Coverage and Results**



0 5 10 km



- MESA\_10\_mile\_buffer
- Active GOEA Nests\*
- New GOEA Nests (Inactive)\*
- New Potential Future GOEA Nests (currently other species)\*
- Confirmed Historical GOEA Nests (Inactive)\*

\* see Table 1 for further information



Figure 5.

Golden Eagle Nest Survey Results 2019





Source: West, Inc., 2018.



Project Area



Anabat Locations

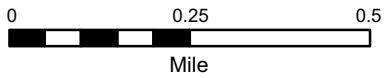
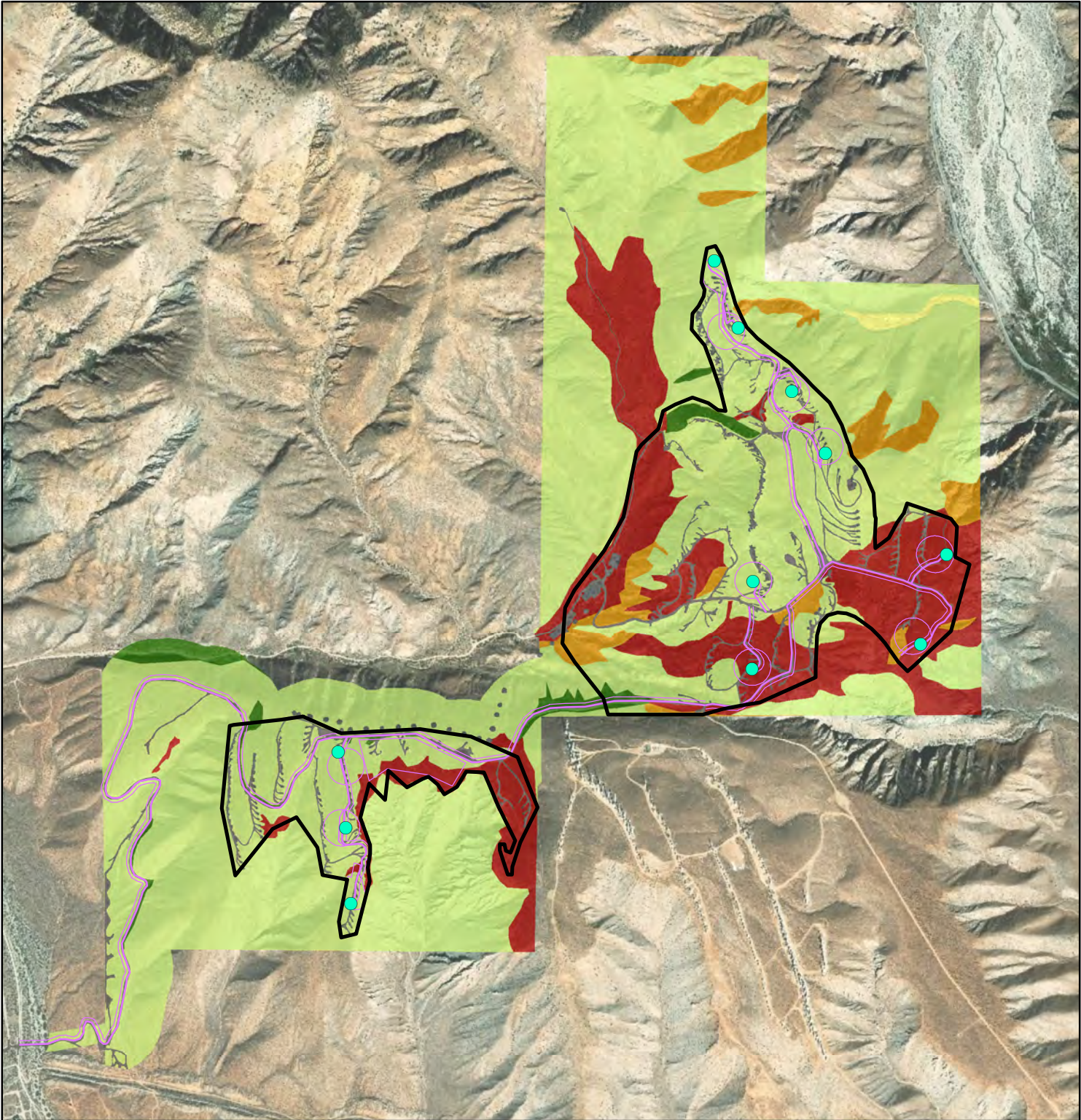


Figure 6.

Anabat Locations

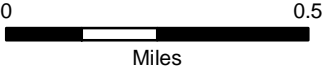




- |                                 |                                      |
|---------------------------------|--------------------------------------|
| Mesa Wind Existing ROW          | <u>Vegetation and Cover Types</u>    |
| Potential Disturbance Area      | Brittlebush scrub                    |
| Proposed Wind Turbine Generator | California juniper woodland alliance |
| Existing Transmission Line      | California sagebrush-buckwheat scrub |
|                                 | Cheesebush scrub                     |
|                                 | Creosote bush-brittle bush scrub     |
|                                 | Ruderal / Disturbed                  |

Figure 7.

**Vegetation and Land Cover**



**Attachment 2 – Photo Exhibit**



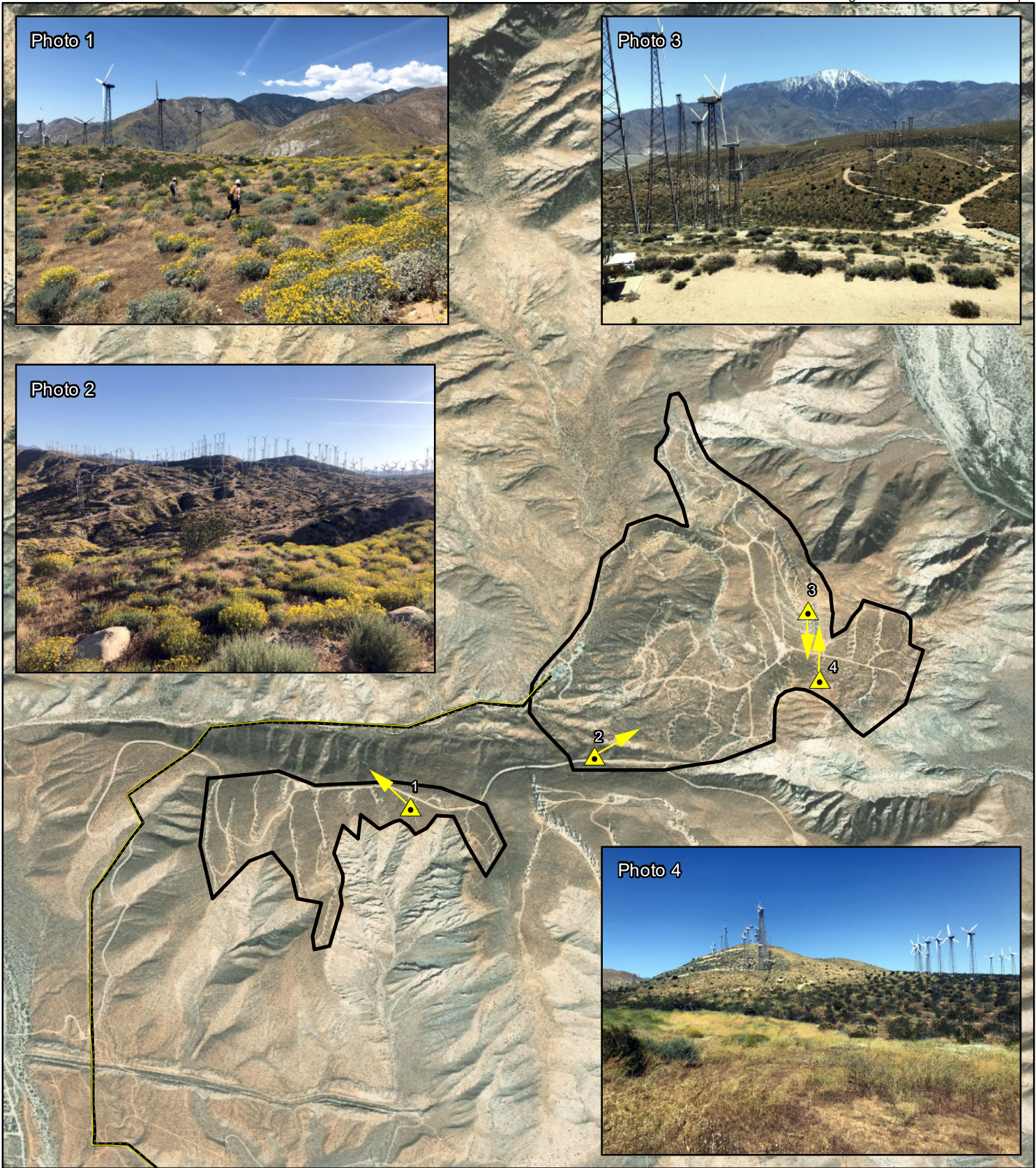


Photo 1

Photo 3

Photo 2

Photo 4



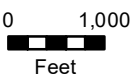
Photo Point



Mesa Wind Existing ROW



Existing Transmission Line



Attachment 2.

Photo Exhibit



**Attachment 3 – California Natural Diversity Data Base Records**





# Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Cabazon) OR Catclaw Flat OR Desert Hot Springs OR Lake Fulmor OR Morongo Valley OR Palm Springs OR San Geronio Mtn. OR San Jacinto Peak OR White Water

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	PDNYC010P1	None	None	G5T2?	S2	1B.1
<i>Accipiter cooperii</i> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<i>Acmispon haydonii</i> pygmy lotus	PDFAB2A0H0	None	None	G3	S3	1B.3
<i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
<i>Allium marvinii</i> Yucaipa onion	PMLIL02330	None	None	G1	S1	1B.2
<i>Almutaster pauciflorus</i> alkali marsh aster	PDASTEL010	None	None	G4	S1S2	2B.2
<i>Ambrosia monogyra</i> singlewhorl burrobrush	PDAST50010	None	None	G5	S2	2B.2
<i>Anniella stebbinsi</i> southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
<i>Antennaria marginata</i> white-margined everlasting	PDAST0H1G0	None	None	G4G5	S1	2B.3
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Arenaria lanuginosa</i> var. <i>saxosa</i> rock sandwort	PDCAR040E4	None	None	G5T5	S2	2B.3
<i>Arizona elegans occidentalis</i> California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
<i>Asio otus</i> long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
<i>Aspidoscelis hyperythra</i> orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
<i>Aspidoscelis tigris stejnegeri</i> coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> Coachella Valley milk-vetch	PDFAB0FB97	Endangered	None	G5T1	S1	1B.2
<i>Astragalus pachypus</i> var. <i>jaegeri</i> Jaeger's milk-vetch	PDFAB0F6G1	None	None	G4T1	S1	1B.1



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California Department of Fish and Wildlife  
California Natural Diversity Database



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<b><i>Astragalus tricarinatus</i></b> triple-ribbed milk-vetch	PDFAB0F920	Endangered	None	G2	S2	1B.2
<b><i>Athene cunicularia</i></b> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<b><i>Atriplex parishii</i></b> Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
<b><i>Ayenia compacta</i></b> California ayenia	PDSTE01020	None	None	G4	S3	2B.3
<b><i>Boechea johnstonii</i></b> Johnston's rockcress	PDBRA060Y0	None	None	G1	S1	1B.2
<b><i>Boechea lincolnensis</i></b> Lincoln rockcress	PDBRA061M3	None	None	G4G5	S3	2B.3
<b><i>Boechea parishii</i></b> Parish's rockcress	PDBRA061C0	None	None	G2	S2	1B.2
<b><i>Boechea peirsonii</i></b> San Bernardino rockcress	PDBRA06053	None	None	G1	S1	1B.2
<b><i>Bombus caliginosus</i></b> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<b><i>Bombus crotchii</i></b> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<b><i>Botrychium crenulatum</i></b> scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
<b><i>Buteo regalis</i></b> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<b><i>Calileptoneta oasa</i></b> Andreas Canyon leptonetid spider	ILARAU6020	None	None	G1	S1	
<b><i>Calochortus palmeri var. munzii</i></b> San Jacinto mariposa-lily	PMLIL0D121	None	None	G3T3	S3	1B.2
<b><i>Calochortus palmeri var. palmeri</i></b> Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
<b><i>Calochortus plummerae</i></b> Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
<b><i>Carex occidentalis</i></b> western sedge	PMCYP039M0	None	None	G4	S3	2B.3
<b><i>Castilleja lasiorhyncha</i></b> San Bernardino Mountains owl's-clover	PDSCR0D410	None	None	G2?	S2?	1B.2
<b><i>Caulanthus simulans</i></b> Payson's jewelflower	PDBRA0M0H0	None	None	G4	S4	4.2
<b><i>Chaenactis parishii</i></b> Parish's chaenactis	PDAST200D0	None	None	G3G4	S3	1B.3
<b><i>Chaetodipus californicus femoralis</i></b> Dulzura pocket mouse	AMAFD05021	None	None	G5T3	S3	SSC



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



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<b><i>Chaetodipus fallax fallax</i></b> northwestern San Diego pocket mouse	AMAFD05031	None	None	G5T3T4	S3S4	SSC
<b><i>Chaetodipus fallax pallidus</i></b> pallid San Diego pocket mouse	AMAFD05032	None	None	G5T34	S3S4	SSC
<b><i>Charina umbratica</i></b> southern rubber boa	ARADA01011	None	Threatened	G2G3	S2S3	
<b><i>Chorizanthe parryi var. parryi</i></b> Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
<b><i>Chorizanthe xanti var. leucotheca</i></b> white-bracted spineflower	PDPGN040Z1	None	None	G4T3	S3	1B.2
<b><i>Corynorhinus townsendii</i></b> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<b><i>Crotalus ruber</i></b> red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
<b><i>Cypseloides niger</i></b> black swift	ABNUA01010	None	None	G4	S2	SSC
<b><i>Deinandra mohavensis</i></b> Mojave tarplant	PDAST4R0K0	None	Endangered	G2	S2	1B.3
<b><i>Desert Fan Palm Oasis Woodland</i></b> Desert Fan Palm Oasis Woodland	CTT62300CA	None	None	G3	S3.2	
<b><i>Dinacoma caseyi</i></b> Casey's June beetle	IICOLX5010	Endangered	None	G1	S1	
<b><i>Dipodomys merriami parvus</i></b> San Bernardino kangaroo rat	AMAFD03143	Endangered	None	G5T1	S1	SSC
<b><i>Dodecahema leptoceras</i></b> slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
<b><i>Draba saxosa</i></b> Southern California rock draba	PDBRA110Q2	None	None	G2G3	S2S3	1B.3
<b><i>Ensatina eschscholtzii klauberi</i></b> large-blotched salamander	AAAAD04013	None	None	G5T2?	S3	WL
<b><i>Eremarionta morongoana</i></b> Morongo (=Colorado) desertsnaail	IMGASB9070	None	None	G1G3	S1	
<b><i>Eriastrum harwoodii</i></b> Harwood's eriastrum	PDPLM030B1	None	None	G2	S2	1B.2
<b><i>Eriogonum kennedyi var. alpigenum</i></b> southern alpine buckwheat	PDPGN083B1	None	None	G4T3	S3	1B.3
<b><i>Euphorbia arizonica</i></b> Arizona spurge	PDEUP0D060	None	None	G5	S3	2B.3
<b><i>Euphorbia misera</i></b> cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
<b><i>Falco mexicanus</i></b> prairie falcon	ABNKD06090	None	None	G5	S4	WL



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California Natural Diversity Database



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<b><i>Galium angustifolium ssp. jacinticum</i></b> San Jacinto Mountains bedstraw	PDRUB0N04C	None	None	G5T2?	S2?	1B.3
<b><i>Galium californicum ssp. primum</i></b> Alvin Meadow bedstraw	PDRUB0N0E6	None	None	G5T2	S2	1B.2
<b><i>Glaucomys oregonensis californicus</i></b> San Bernardino flying squirrel	AMAFB09021	None	None	G5T1T2	S1S2	SSC
<b><i>Gopherus agassizii</i></b> desert tortoise	ARAAF01012	Threatened	Threatened	G3	S2S3	
<b><i>Halictus harmonius</i></b> harmonius halictid bee	IIHYM75010	None	None	G1	S1	
<b><i>Heuchera hirsutissima</i></b> shaggy-haired alumroot	PDSAX0E0J0	None	None	G3	S3	1B.3
<b><i>Heuchera parishii</i></b> Parish's alumroot	PDSAX0E0S0	None	None	G3	S3	1B.3
<b><i>Horkelia cuneata var. puberula</i></b> mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
<b><i>Hulsea vestita ssp. pygmaea</i></b> pygmy hulsea	PDAST4Z077	None	None	G5T1	S1	1B.3
<b><i>Icteria virens</i></b> yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
<b><i>Imperata brevifolia</i></b> California satintail	PMPOA3D020	None	None	G4	S3	2B.1
<b><i>Ivesia argyrocoma var. argyrocoma</i></b> silver-haired ivesia	PDROS0X021	None	None	G2T2	S2	1B.2
<b><i>Ivesia callida</i></b> Tahquitz ivesia	PDROS0X040	None	Rare	G1	S1	1B.3
<b><i>Lampropeltis zonata (parvirubra)</i></b> California mountain kingsnake (San Bernardino population)	ARADB19062	None	None	G4G5	S2?	WL
<b><i>Lanius ludovicianus</i></b> loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
<b><i>Lasiurus xanthinus</i></b> western yellow bat	AMACC05070	None	None	G5	S3	SSC
<b><i>Lilium parryi</i></b> lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
<b><i>Linanthus jaegeri</i></b> San Jacinto linanthus	PDPLM08030	None	None	G2	S2	1B.2
<b><i>Linanthus maculatus ssp. maculatus</i></b> Little San Bernardino Mtns. linanthus	PDPLM041Y1	None	None	G2T2	S2	1B.2
<b><i>Macrobaenetes valgum</i></b> Coachella giant sand treader cricket	IIORT22020	None	None	G1G2	S1S2	
<b><i>Malaxis monophyllos var. brachypoda</i></b> white bog adder's-mouth	PMORC1R010	None	None	G4?T4	S1	2B.1



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<b><i>Meesia uliginosa</i></b> broad-nerved hump moss	NBMUS4L030	None	None	G5	S3	2B.2
<b><i>Mentzelia tricuspis</i></b> spiny-hair blazing star	PDLOA031T0	None	None	G4	S2	2B.1
<b>Mesquite Bosque</b> Mesquite Bosque	CTT61820CA	None	None	G3	S2.1	
<b>Mojave Riparian Forest</b> Mojave Riparian Forest	CTT61700CA	None	None	G1	S1.1	
<b><i>Monardella nana ssp. leptosiphon</i></b> San Felipe monardella	PDLAM180F2	None	None	G4G5T2Q	S2	1B.2
<b><i>Monardella robisonii</i></b> Robison's monardella	PDLAM180K0	None	None	G3	S3	1B.3
<b><i>Myiarchus tyrannulus</i></b> brown-crested flycatcher	ABPAE43080	None	None	G5	S3	WL
<b><i>Nemacaulis denudata var. gracilis</i></b> slender cottonheads	PDPGN0G012	None	None	G3G4T3?	S2	2B.2
<b><i>Neotamias speciosus speciosus</i></b> lodgepole chipmunk	AMAFB02172	None	None	G4T2T3	S2S3	
<b><i>Neotoma lepida intermedia</i></b> San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
<b><i>Nyctinomops femorosaccus</i></b> pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
<b><i>Nyctinomops macrotis</i></b> big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
<b><i>Onychomys torridus ramona</i></b> southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
<b><i>Oreonana vestita</i></b> woolly mountain-parsley	PDAP1G030	None	None	G3	S3	1B.3
<b><i>Ovis canadensis nelsoni</i></b> desert bighorn sheep	AMALE04013	None	None	G4T4	S3	FP
<b><i>Ovis canadensis nelsoni pop. 2</i></b> Peninsular bighorn sheep DPS	AMALE04012	Endangered	Threatened	G4T3Q	S1	FP
<b><i>Oxytropis oreophila var. oreophila</i></b> rock-loving oxytrope	PDFAB2X0H3	None	None	G5T4T5	S2	2B.3
<b><i>Parnassia cirrata var. cirrata</i></b> San Bernardino grass-of-Parnassus	PDSAX0P030	None	None	G5T2	S2	1B.3
<b><i>Parnopes borregoensis</i></b> Borrego parnopes cuckoo wasp	IIHYM73010	None	None	G1G2	S1S2	
<b><i>Penstemon pseudospectabilis ssp. pseudospectabilis</i></b> desert beardtongue	PDSAX0P030	None	None	G4G5T4	S3	2B.2
<b><i>Perognathus longimembris bangsi</i></b> Palm Springs pocket mouse	AMAFD01043	None	None	G5T2	S2	SSC



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



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<b><i>Perognathus longimembris brevinasus</i></b> Los Angeles pocket mouse	AMAFD01041	None	None	G5T1T2	S1S2	SSC
<b><i>Petalonyx linearis</i></b> narrow-leaf sandpaper-plant	PDLOA04010	None	None	G4	S3?	2B.3
<b><i>Phrynosoma blainvillii</i></b> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<b><i>Phrynosoma mcallii</i></b> flat-tailed horned lizard	ARACF12040	None	None	G3	S2	SSC
<b><i>Piranga rubra</i></b> summer tanager	ABPBX45030	None	None	G5	S1	SSC
<b><i>Polioptila californica californica</i></b> coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
<b><i>Polioptila melanura</i></b> black-tailed gnatcatcher	ABPBJ08030	None	None	G5	S3S4	WL
<b><i>Potentilla rimicola</i></b> cliff cinquefoil	PDROS1B2G0	None	None	G2	S1	2B.3
<b><i>Progne subis</i></b> purple martin	ABPAU01010	None	None	G5	S3	SSC
<b><i>Psiloscops flammeolus</i></b> flammulated owl	ABNSB01020	None	None	G4	S2S4	
<b><i>Pyrocephalus rubinus</i></b> vermillion flycatcher	ABPAE36010	None	None	G5	S2S3	SSC
<b><i>Rana draytonii</i></b> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<b><i>Rana muscosa</i></b> southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
<b><i>Saltugilia latimeri</i></b> Latimer's woodland-gilia	PDPLM0H010	None	None	G3	S3	1B.2
<b><i>Selaginella eremophila</i></b> desert spike-moss	PPSEL010G0	None	None	G4	S2S3	2B.2
<b><i>Setophaga petechia</i></b> yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
<b><i>Sidalcea malviflora ssp. dolosa</i></b> Bear Valley checkerbloom	PDMAL110FH	None	None	G5T2	S2	1B.2
<b><i>Sidothea emarginata</i></b> white-margined oxytheca	PDPGN0J030	None	None	G3	S3	1B.3
<b><i>Silene krantzii</i></b> Krantz's catchfly	PDCAR0U2H0	None	None	G1	S1	1B.2
<b>Southern Coast Live Oak Riparian Forest</b> Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
<b>Southern Cottonwood Willow Riparian Forest</b> Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	





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**California Natural Diversity Database**



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<b>Southern Mixed Riparian Forest</b> Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
<b>Southern Riparian Forest</b> Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
<b>Stemodia durantifolia</b> purple stemodia	PDSCR1U010	None	None	G5	S2	2B.1
<b>Stenopelmatus cahuilensis</b> Coachella Valley jerusalem cricket	IIORT26010	None	None	G1G2	S1S2	
<b>Streptanthus bernardinus</b> Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
<b>Streptanthus campestris</b> southern jewelflower	PDBRA2G0B0	None	None	G3	S3	1B.3
<b>Symphotrichum defoliatum</b> San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
<b>Taraxacum californicum</b> California dandelion	PDAST93050	Endangered	None	G1G2	S1S2	1B.1
<b>Taxidea taxus</b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b>Thamnophis hammondi</b> two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
<b>Thelypteris puberula var. sonorensis</b> Sonoran maiden fern	PPTHE05192	None	None	G5T3	S2	2B.2
<b>Toxostoma crissale</b> Crissal thrasher	ABPBK06090	None	None	G5	S3	SSC
<b>Toxostoma lecontei</b> Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
<b>Trichostema austromontanum ssp. compactum</b> Hidden Lake bluecurls	PDLAM22022	Delisted	None	G3G4T1	S1	1B.1
<b>Uma inornata</b> Coachella Valley fringe-toed lizard	ARACF15010	Threatened	Endangered	G1Q	S1	
<b>Vireo bellii pusillus</b> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
<b>Xerospermophilus tereticaudus chlorus</b> Palm Springs round-tailed ground squirrel	AMAFB05161	None	None	G5T2Q	S2	SSC
<b>Xylorhiza cognata</b> Mecca-aster	PDASTA1010	None	None	G2	S2	1B.2

**Record Count: 141**

## **Attachment 4 – Species List**

<b>Latin Name</b>	<b>Common Name</b>
<b>VASCULAR PLANTS</b>	
<b>Dicotyledons</b>	
SELAGINELLACEAE	SPIKE-MOSS FAMILY
<i>Selaginella bigelovii</i>	Bigelow spike moss
CUPRESSACEAE	CYPRESS FAMILY
<i>Juniperus californica</i>	California juniper
EPHEDRACEAE	EPHEDRA FAMILY
<i>Ephedra californica</i>	Desert tea
<sup>1</sup> <i>Ephedra nevadensis</i>	Nevada ephedra
AMARANTHACEAE	AMARANTH FAMILY
* <i>Amaranthus albus</i>	Tumbleweed
ANACARDIACEAE	SUMAC or CASHEW FAMILY
<i>Rhus ovata</i>	Sugar bush
ASTERACEAE	ASTER FAMILY
<i>Acamptopappus sphaerocephalus</i>	Rayless goldenhead
<i>Ambrosia acanthicarpa</i>	Annual bur-sage
<i>Ambrosia dumosa</i>	White bur-sage, burrobrush
<i>Ambrosia salsola</i>	Common burrobrush, cheesebush
<i>Artemisia californica</i>	California sagebrush
<i>Bahiopsis parishii</i>	Parish's goldeneye
<i>Bebbia juncea</i> var. <i>aspera</i>	Sweetbush
<i>Brickellia californica</i>	California brickellbush
<i>Chaenactis fremontii</i>	Fremont pincushion
<i>Corethrogyne filaginifolia</i>	California-aster, sand-aster
<i>Encelia farinosa</i>	Brittlebush
<i>Encelia frutescens</i>	Rayless encelia
<i>Encelia virginensis</i>	Virgin River encelia
<i>Ericameria linearifolia</i>	Interior goldenbush
<i>Ericameria nauseosa</i>	Common rabbitbrush
<i>Ericameria paniculata</i>	Black-banded rabbitbrush, punctate rabbitbrush
<i>Ericameria pinifolia</i>	Pine-bush, pine goldenbush
<i>Eriophyllum wallacei</i>	Wallace's woolly daisy
<i>Geraea canescens</i>	Desert-sunflower
<i>Gutierrezia sarothre</i>	Matchweed
<i>Isocoma acradenia</i>	Alkali goldenbush
<i>Lasthenia gracilis</i>	Goldfields
<i>Lasthenia californica</i>	California goldfields
<i>Lepidospartum squamatum</i>	Scale-broom
* <i>Logfia gallica</i>	Daggerleaf cottonrose
<i>Malacothrix glabrata</i>	Desert dandelion
<i>Rafinesquia neomexicana</i>	Desert chicory
<i>Stephanomeria exigua</i>	Wreath plant
<i>Stephanomeria pauciflora</i>	Wire-lettuce, desert straw
<i>Tetradymia comosa</i>	Hairy horsebrush
<i>Uropappus lindleyi</i>	Silverpuffs
BIGNONIACEAE	TRUMPET-CREEPER or JACARANDA FAMILY
<i>Chilopsis linearis</i> ssp. <i>arcuata</i>	Desert-willow
BORAGINACEAE	BORAGE OR WATERLEAF FAMILY
<i>Amsinckia intermedia</i>	Large flower rancher's fiddleneck
<i>Amsinckia tessellata</i>	Checker fiddleneck

	<i>Cryptantha angustifolia</i>	Narrow-leaved cryptantha
	<i>Cryptantha barbiger</i>	Bearded cryptantha
1	<i>Cryptantha micrantha</i>	Purpleroot cryptantha
	<i>Cryptantha muricata</i>	Prickly cryptantha
	<i>Emmenanthe penduliflora</i>	Whispering bells
	<i>Eucrypta chrysanthemifolia</i>	Spotted eucrypta
	<i>Heliotropium curassavicum</i> var. <i>oculatum</i>	Alkali heliotrope, salt heliotrope
	<i>Nemophila menziesii</i>	Baby blue eyes
	<i>Pectocarya linearis</i> ssp. <i>ferocula</i>	Narrow-toothed pectocarya, comb-bur
	<i>Pectocarya platycarpa</i>	Wide-toothed pectocarya, broad-fruited comb-bur
	<i>Phacelia distans</i>	Common phacelia
	<i>Phacelia minor</i>	Wild canterbury bells
	BRASSICACEAE	MUSTARD FAMILY
*	<i>Brassica tournefortii</i>	Sahara mustard, wild turnip
*	<i>Hirschfeldia incana</i>	Shortpod mustard
	<i>Lepidium nitidum</i>	Shining peppergrass
*	<i>Sisymbrium orientale</i>	Hare's ear cabbage
	<i>Streptanthella longirostris</i>	Streptanthella
	<i>Tropidocarpum gracile</i>	Slender adobe-pod
	CACTACEAE	CACTUS FAMILY
	<i>Cylindropuntia echinocarpa</i>	Silver cholla
	<i>Cylindropuntia ramosissima</i>	Pencil cholla
	<i>Echinocereus engelmannii</i>	Engelmann hedgehog cactus
	<i>Opuntia basilaris</i> var. <i>basilaris</i>	Beavertail cactus
	CHENOPODIACEAE	GOOSEFOOT FAMILY
	<i>Atriplex canescens</i>	Four-wing saltbush
	<i>Grayia spinosa</i>	Spiny hop-sage
	CLEOMACEAE	SPIDERFLOWER FAMILY
	<i>Peritoma arborea</i>	Bladderpod
	CRASSULACEAE	STONECROP FAMILY
	<i>Crassula connata</i>	Pygmy-weed
	<i>Dudleya lanceolata</i>	Lance-leaved dudleya
	<i>Dudleya saxosa</i> spp. <i>aloides</i>	Desert dudleya
	CROSSOSOMATAACEAE	CROSSOSOMA FAMILY
	<i>Crossosoma bigelovii</i>	Bigelow's ragged rock flower
	CUCURBITACEAE	GOURD FAMILY, CUCUMBER FAMILY
	<i>Marah macrocarpa</i>	Chilicothe, wild cucumber
	EUPHORBIACEAE	SPURGE FAMILY
	<i>Stillingia linearifolia</i>	Linear-leaved stillingia
	FABACEAE	LEGUME FAMILY, PEA FAMILY
	<i>Acmispon glaber</i> var. <i>glaber</i>	Deerweed
1	<i>Acmispon procumbens</i>	Silky deerweed
	<i>Acmispon strigosus</i>	Desert lotus
	<i>Lupinus bicolor</i>	Annual lupine
	<i>Lupinus concinnus</i>	Bajada lupine
	<i>Lupinus sparsiflorus</i>	Coulter's lupine
	<i>Lupinus truncatus</i>	Collar lupine
*	<i>Melilotus indicus</i>	Sourclover, India sweetclover
	<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Honey mesquite
	<i>Psoralethamnus emoryi</i>	Emory indigo-bush, dye-weed
	<i>Senegalia greggii</i>	Catclaw acacia

GERANIACEAE	GERANIUM FAMILY
* <i>Erodium cicutarium</i>	Redstem filaree
KRAMERIACEAE	RHATANY FAMILY, KRAMERIA FAMILY
<sup>1</sup> <i>Krameria bicolor</i>	White rhatany
LAMIACEAE	MINT FAMILY
<i>Salvia apiana</i>	White sage
<i>Salvia columbariae</i>	Chia
<i>Scutellaria mexicana</i>	Bladder-sage, paper bag bush
LOASACEAE	LOASA FAMILY, STICK-LEAF FAMILY
<i>Mentzelia involucrata</i>	Sand blazing star
MALVACEAE	MALLOW FAMILY
<i>Sphaeralcea ambigua</i> var. <i>ambigua</i>	Apricot mallow, desert mallow
MONTIACEAE	MINER'S LETTUCE FAMILY, MONTIA FAMILY
<i>Calandrinia ciliata</i>	Red maids
<i>Calyptidium monandrum</i>	Pussypaws, common calyptidium
NYCTAGINACEAE	FOUR O'CLOCK FAMILY
<i>Abronia villosa</i> var. <i>villosa</i>	Sand verbena
<i>Mirabilis laevis</i> var. <i>villosa</i>	Desert wishbone bush
ONAGRACEAE	EVENING-PRIMROSE FAMILY
<i>Camissonia campestris</i>	Field evening-primrose
<i>Camissoniopsis bistorta</i>	California sun cup
<i>Camissoniopsis pallida</i>	Pale suncup
<i>Eremothera boothii</i> ssp. <i>condensata</i>	Booth's evening primrose
<i>Eulobus californica</i>	California false mustard
PAPAVERACEAE	POPPY FAMILY
<i>Eschscholzia parishii</i>	Parish's gold poppy
PLANTAGINACEAE	PLANTAIN FAMILY
<i>Plantago ovata</i>	Desert plantain
POLEMONIACEAE	PHLOX FAMILY
<i>Eriastrum eremicum</i> ssp. <i>eremicum</i>	Desert woolly-star
<sup>1</sup> <i>Eriastrum sapphirinum</i>	Sapphire woollystar
<i>Gilia angelensis</i>	Chaparral gilia, common gilia
<i>Gilia capitata</i>	Blue field gilia
<i>Gilia ochroleuca</i> ssp. <i>exilis</i>	Volcanic gilia
<i>Leptosiphon lemmonii</i>	Lemmon's linanthus
<i>Leptosiphon liniflorus</i>	Flax-flowered linanthus
POLYGONACEAE	BUCKWHEAT FAMILY
<i>Chorizanthe brevicornu</i>	Brittle spine flower
<i>Eriogonum elongatum</i> var. <i>elongatum</i>	Long-stem wild buckwheat, wand buckwheat
<i>Eriogonum fasciculatum</i>	California buckwheat
<i>Eriogonum inflatum</i>	Desert trumpet
<i>Lastarriaea coriacea</i>	Leather spineflower
RANUNCULACEAE	BUTTERCUP FAMILY
<i>Delphinium parishii</i> ssp. <i>parishii</i>	Parish's larkspur
RHAMNACEAE	BUCKTHORN FAMILY
<i>Ziziphus parryi</i> var. <i>parryi</i>	Parry's jujube, lotebush
ROSACEAE	ROSE FAMILY
<i>Adenostoma fasciculatum</i>	Chamise
<i>Prunus ilicifolia</i>	Hollyleaf cherry
SOLANACEAE	NIGHTSHADE FAMILY
<i>Lycium andersonii</i>	Anderson box-thorn
<sup>1</sup> <i>Lycium cooperi</i>	Peach desert thorn

ZYGOPHYLLACEAE	CALTROP FAMILY
<i>Larrea tridentata</i>	Creosote bush
<b>Monocotyledons</b>	
AGAVACEAE	CENTURY PLANT FAMILY, AGAVE FAMILY
<i>Hesperoyucca whipplei</i>	Chaparral yucca
<i>Yucca schidigera</i>	Mojave yucca
LILIACEAE	LILY FAMILY
** <i>Calochortus plummerae</i>	Plummer's mariposa lily
POACEAE	GRASS FAMILY
* <i>Avena barbata</i>	Slender wild oat
* <i>Bromus berterianus</i>	Chilean chess
* <i>Bromus madritensis ssp. rubens</i>	Red brome
* <i>Bromus tectorum</i>	Cheat grass
<i>Festuca microstachys</i>	Small fescue
<i>Festuca octoflora</i>	Sixweeks grass, slender fescue
<i>Hilaria rigida</i>	Big galleta
* <i>Hordeum murinum</i>	Wall barley, hare barley
<i>Poa secunda</i>	Nevada blue grass, nodding blue grass
* <i>Schismus barbatus</i>	Mediterranean schismus
<i>Stipa hymenoides</i>	Sand rice grass, Indian rice grass
<i>Stipa speciosa</i>	Desert needle grass
THEMIDACEAE	BRODIAEA FAMILY
<i>Dichelostemma capitatum</i>	Blue dicks, wild hyacinth
<b>VERTEBRATE ANIMALS</b>	
REPTILIA	REPTILES
TESTUDINIDAE	LAND TORTOISES
** <i>Gopherus agassizii</i>	Desert tortoise
IGUANIDAE	IGUANID LIZARDS
<i>Phrynosoma platyrhinos</i>	Desert horned lizard
<i>Sceloporus magister</i>	Desert spiny lizard
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Uta stansburiana</i>	Side-blotched lizard
XANTUSIIDAE	NIGHT LIZARDS
<i>Xantusia vigilis</i>	Desert night lizard
TEIIDAE	WHIPTAILS
<i>Aspidoscelis tigris tigris</i>	Great Basin whiptail
BOIDAE	BOAS AND PYTHONS
<i>Lichanura trivirgata</i>	Rosy boa
COLUBRIDAE	COLUBRIDS
<sup>1</sup> <i>Masticophis flagellum</i>	Coachwhip
<i>Pituophis catenifer</i>	Gopher snake
VIPERIDAE	VIPERS
<sup>2</sup> <i>Crotalus mitchellii</i>	Speckled rattlesnake
AVES	BIRDS
PELECANIDAE	PELICANS
<i>Pelecanus erythrorhynchos</i>	American white pelican
PHALACROCORACIDAE	CORMORANTS
<i>Phalacrocorax auritus</i>	Double-crested cormorant
THRESKIORNITHIDAE	IBISES AND SPOONBILLS
**2 <i>Plegadis chihi</i>	White-faced ibis



ANATIDAE	DUCKS, GEESE AND SWANS
<i>Branta canadensis</i>	Canada goose
CATHARTIDAE	VULTURES
<i>Cathartes aura</i>	Turkey vulture
ACCIPITRIDAE	HAWKS, EAGLES, HARRIERS
**2 <i>Pandion haliaetus</i>	Osprey
**2 <i>Elanus caeruleus</i>	White-tailed kite
** <i>Aquila chrysaetos</i>	Golden eagle
**2 <i>Haliaeetus leucocephalus</i>	Bald eagle
**2,3 <i>Circus cyaneus</i>	Northern harrier
**2 <i>Accipiter striatus</i>	Sharp-shinned hawk
** <i>Accipiter cooperii</i>	Cooper's hawk
**2 <i>Buteo swainsoni</i>	Swainson's hawk
<i>Buteo jamaicensis</i>	Red-tailed hawk
**2,3 <i>Buteo regalis</i>	Ferruginous hawk
<sup>2</sup> <i>Buteo lagopus</i>	Rough-legged hawk
FALCONIDAE	FALCONS
<i>Falco sparverius</i>	American kestrel
**2 <i>Falco columbarius</i>	Merlin
**2,3 <i>Falco peregrinus</i>	Peregrine falcon
**2,3 <i>Falco mexicanus</i>	Prairie falcon
PHASIANIDAE	GROUSE AND QUAIL
<i>Alectoris chukar</i>	Chukar
<sup>2,3</sup> <i>Callipepla gambelii</i>	Gambel's quail
<i>Callipepla californica</i>	California quail
COLUMBIDAE	PIGEONS AND DOVES
<sup>2</sup> <i>Columba livia</i>	Rock dove
* <i>Streptopelia decaocto</i>	Eurasian collared dove
<i>Zenaida macroura</i>	Mourning dove
CUCULIDAE	CUCKOOS
<i>Geococcyx californianus</i>	Greater roadrunner
STRIGIDAE	TYPICAL OWLS
**2 <i>Asio otus</i>	Long-eared owl
CAMPRIMULGIDAE	NIGHTJARS
<i>Chordeiles acutipennis</i>	Lesser nighthawk
<sup>2</sup> <i>Phalaenoptilus nuttallii</i>	Common poorwill
APODIDAE	SWIFTS
**2,3 <i>Chaetura vauxi</i>	Vaux's swift
<i>Aeronautes saxatalis</i>	White-throated swift
TROCHILIDAE	HUMMINGBIRDS
<i>Calypte anna</i>	Anna's hummingbird
** <i>Calypte costae</i>	Costa's hummingbird
<i>Selasphorus sasin</i>	Allen's hummingbird
PICIDAE	WOODPECKERS
<sup>2</sup> <i>Picoides scalaris</i>	Ladder-backed woodpecker
<i>Picoides pubescens</i>	Downy woodpecker
<i>Picoides villosus</i>	Hairy woodpecker
<i>Colaptes auratus</i>	Northern flicker
TYRANNIDAE	TYRANT FLYCATCHERS
<i>Empidonax wrightii</i>	Gray flycatcher
<i>Sayornis nigricans</i>	Black phoebe

<i>Sayornis saya</i>	Say's phoebe
<i>Tyrannus vociferans</i>	Cassin's kingbird
<i>Tyrannus verticalis</i>	Western kingbird
ALAUDIDAE	LARKS
<i>Eremophila alpestris</i>	Horned lark
HIRUNDINIDAE	SWALLOWS
<i>Tachycineta bicolor</i>	Tree swallow
<sup>2</sup> <i>Tachycineta thalassina</i>	Violet-green swallow
<i>Stelgidopteryx serripennis</i>	Northern rough-winged swallow
<i>Hirundo pyrrhonota</i>	Cliff swallow
<sup>2</sup> <i>Hirundo rustica</i>	Barn swallow
CORVIDAE	CROWS AND JAYS
<i>Aphelocoma coerulescens</i>	Scrub jay
<i>Corvus corax</i>	Common raven
REMIZIDAE	VERDINS
<i>Auriparus flavipes</i>	Verdin
AEGITHALIDAE	BUSHTITS
<i>Psaltriparus minimus</i>	Bushtit
TROGLODYTIDAE	WRENS
<i>Campylorhynchus brunneicapillus</i>	Cactus wren
<i>Salpinctes obsoletus</i>	Rock wren
<i>Thryomanes bewickii</i>	Bewick's wren
<i>Troglodytes aedon</i>	House wren
MUSCICAPIDAE	THRUSHES AND ALLIES
<i>Regulus calendula</i>	Ruby-crowned kinglet
<i>Poliophtila caerulea</i>	Blue-gray gnatcatcher
** <i>Poliophtila melanura</i>	Black-tailed gnatcatcher
<i>Sialia mexicana</i>	Western bluebird
<i>Catharus guttatus</i>	Hermit thrush
<i>Turdus migratorius</i>	American robin
<i>Chamaea fasciata</i>	Wrenit
MIMIDAE	MOCKINGBIRDS AND THRASHERS
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Toxostoma redivivum</i>	California thrasher
MOTACILLIDAE	WAGTAILS AND PIPITS
<sup>2</sup> <i>Anthus spinoletta</i>	American pipit
BOMBYCILLIDAE	WAXWINGS
<sup>2</sup> <i>Bombycilla cedrorum</i>	Cedar waxwing
PTILOGONATIDAE	SILKY FLYCATCHERS
<i>Phainopepla nitens</i>	Phainopepla
LANIIDAE	SHRIKES
** <i>Lanius ludovicianus</i>	Loggerhead shrike
STURNIDAE	STARLINGS
* <i>Sturnus vulgaris</i>	European starling
VIREONIDAE	VIREOS
<i>Vireo huttoni</i>	Hutton's vireo
EMBERIZIDAE	SPARROWS, WARBLERS, TANAGERS
<i>Vermivora celata</i>	Orange-crowned warbler
<i>Vermivora ruficapilla</i>	Nashville warbler
**2 <i>Setophaga petechia</i>	Yellow warbler
<i>Setophaga townsendi</i>	Townsend's warbler
<i>Setophaga coronata</i>	Yellow-rumped warbler

3	<i>Wilsonia pusilla</i>	Wilson's warbler
2	<i>Coccothraustes vespertinus</i>	Evening grosbeak
	<i>Piranga ludoviciana</i>	Western tanager
3	<i>Pheucticus melanocephalus</i>	Black-headed grosbeak
	<i>Pipilo crissalis</i>	California towhee
	<i>Aimophila ruficeps</i>	Rufous-crowned sparrow
	<i>Spizella passerina</i>	Chipping sparrow
	<i>Chondestes grammacus</i>	Lark sparrow
	<i>Amphispiza bilineata</i>	Black-throated sparrow
	<i>Artemisiospiza nevadensis</i>	Sagebrush sparrow
	<i>Passerculus sandwichensis</i>	Savannah sparrow
	<i>Passerella iliaca</i>	Fox sparrow
	<i>Melospiza melodia</i>	Song sparrow
	<i>Melospiza lincolni</i>	Lincoln's sparrow
	<i>Zonotrichia leucophrys</i>	White-crowned sparrow
	<i>Junco hyemalis</i>	Dark-eyed junco
2	<i>Agelaius phoeniceus</i>	Red-winged blackbird
	<i>Sturnella neglecta</i>	Western meadowlark
	<i>Euphagus cyanocephalus</i>	Brewer's blackbird
	FRINGILLIDAE	FINCHES
3	<i>Haemorhous cassinii</i>	Cassin's finch
	<i>Haemorhous mexicanus</i>	House finch
2	<i>Spinus pinus</i>	Pine siskin
	<i>Spinus psaltria</i>	Lesser goldfinch
	<i>Spinus lawrencei</i>	Lawrence's goldfinch
	MAMMALIA	MAMMALS
	VESPERTILIONIDAE	EVENING BATS
**3	<i>Antrozous pallidus</i>	Pallid bat
**3	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat
3	<i>Eptesicus fuscus</i>	Big brown bat
**3	<i>Lasiurus blossevillii</i>	Western red bat
**3	<i>Lasiurus cinereus</i>	Hoary bat
3	<i>Myotis californicus</i>	California myotis
**3	<i>Myotis evotis</i>	Western long-eared myotis
**3	<i>Myotis lucifugus</i>	Little brown myotis
**3	<i>Myotis thysanodes</i>	Fringed myotis
**3	<i>Myotis volans</i>	Long-legged myotis
**3	<i>Myotis yumanensis</i>	Yuma myotis
3	<i>Pipistrellus hesperus</i>	Western pipistrelle
	MOLOSSIDAE	FREE-TAILED BATS
3	<i>Tadarida brasiliensis mexicana</i>	Mexican free-tailed bat
	LEPORIDAE	HARES AND RABBITS
	<i>Lepus californicus desarticola</i>	Black-tailed jackrabbit
	<i>Sylvilagus audubonii</i>	Desert cottontail
	<i>Sylvilagus bachmani cinerascens</i>	Brush rabbit
	SCIURIDAE	SQUIRRELS
	<i>Otospermophilus beecheyi</i>	Beechey (California) ground squirrel
	<i>Ammospermophilus leucurus</i>	Antelope ground squirrel
	GEOMYIDAE	POCKET GOPHERS
	<i>Thomomys bottae</i>	Botta pocket gopher
	HETEROMYIDAE	POCKET MICE

<i>Dipodomys</i> sp.	Kangaroo rat
<i>Dipodomys merriami</i>	Merriam kangaroo rat
CRICETIDAE	RATS AND MICE
<i>Neotoma lepida lepida</i>	Desert wood rat
MURIDAE	OLD WORLD RATS AND MICE
* <i>Rattus rattus</i>	Black rat
CANIDAE	FOXES, WOLVES AND COYOTES
<i>Canis latrans</i>	Coyote
MUSTELIDAE	WEASELS AND SKUNKS
** <i>Taxidea taxus</i>	American badger
FELIDAE	CATS
<i>Felis concolor</i>	Mountain lion
<sup>2</sup> <i>Lynx rufus</i>	Bobcat
CERVIDAE	ELKS, MOOSE, CARIBOU, DEER
<sup>2</sup> <i>Odocoileus hemionus</i>	Mule deer
BOVIDAE	SHEEP AND GOATS
<sup>2,3</sup> <i>Ovis canadensis</i>	Bighorn

Non-native species are indicated by an asterisk. Special-status species are indicated by two asterisks. Species detected during surveys by NRA Inc. (2008) and not detected during recent surveys are indicated by a superscript 1, while those observed by Bloom Biological (2013) are indicated by a superscript 2, and those identified by WEST (2017) are indicated by a superscript 3. Other species may have been overlooked or inactive/absent because of the season (amphibians are active during rains, reptiles during summer, some birds (and bats) migrate out of the area for summer or winter, some mammals hibernate etc.). Taxonomy and nomenclature generally follow Stebbins (2003) for amphibians and reptiles, AOU (1998) for birds, and Jones et al. (1992) for mammals.

**Attachment 5 – California Natural Diversity Data Base Report Forms**



Mail to:  
California Natural Diversity Database  
California Dept. of Fish & Wildlife  
P.O. Box 944209  
Sacramento, CA 94244-2090  
CNDDDB@wildlife.ca.gov

For Office Use Only

Source Code: \_\_\_\_\_ Quad Code: \_\_\_\_\_  
Elm Code: \_\_\_\_\_ Occ No.: \_\_\_\_\_  
EO Index: \_\_\_\_\_ Map Index: \_\_\_\_\_

Date of Field Work (mm/dd/yyyy): 04/17/2019

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Gopherus agassizii*

Common Name: Desert tortoise

Species Found?  Yes  No If not found, why? \_\_\_\_\_

Total No. Individuals: 3 Subsequent Visit?  Yes  No

Is this an existing NDDDB occurrence?  No  Unk. Yes, Occ. # \_\_\_\_\_

Collection? If yes: \_\_\_\_\_ Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Justin Wood

Address: 615 N. Benson, Suite E  
Upland, CA 91786

E-mail Address: Jwood@aspeneg.com

Phone: 909-568-5235

Plant Information

Phenology: \_\_\_\_\_  
% vegetative \_\_\_\_\_ % flowering \_\_\_\_\_ % fruiting \_\_\_\_\_

Animal Information

3  
# adults # juveniles # larvae # egg masses # unknown  
 wintering  breeding  nesting  rookery  burrow site  lek  other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Mesa Wind Farm, 1.2 miles west of the Whitewater River and 1.85 miles north of Interstate 10.

County: Riverside Landowner / Mgr: BLM

Quad Name: White Water Elevation: 2450 feet

T 2S R 3E Sec 34, SW 1/4 of 1/4, Meridian: H  M  S  Source of Coordinates (GPS, topo. map & type): GPS

T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H  M  S  GPS Make & Model: Garmin eTrex

DATUM: NAD27  NAD83  WGS84  Horizontal Accuracy: 9 feet \_\_\_\_\_ meters/feet

Coordinate System: UTM Zone 10  UTM Zone 11  OR Geographic (Latitude & Longitude)

Coordinates: Adult male (531133, 3756518); Adult female (531132, 3756527); Adult female (531079, 3756595)

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

All three tortoises were active, two were foraging and one was partially in a burrow. Habitat is mixed creosote bush and brittlebush scrub. Abundant annual forage present during 2019. Additional sign including burrows and scat also observed. burrow (531334, 3756482); burrow (531283, 3757208); burrow (531144, 3757236); (531099, 3756546); scat (531161, 3756513); scat (531156, 3757207); and scat (531030, 3756521). Observations were made between April 16 and April 25, 2019.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population):  Excellent  Good  Fair  Poor

Immediate AND surrounding land use: Wind energy production and open space

Visible disturbances: None

Threats: Vehicle collision

Comments: This population is known and well studied by Jeff Lovich (USGS).

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): \_\_\_\_\_
- Compared with specimen housed at: \_\_\_\_\_
- Compared with photo / drawing in: \_\_\_\_\_
- By another person (name): Brian Leatherman
- Other: \_\_\_\_\_

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense?  yes  no

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California Dept. of Fish & Wildlife  
P.O. Box 944209  
Sacramento, CA 94244-2090  
CNDDDB@wildlife.ca.gov

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Source Code: \_\_\_\_\_ Quad Code: \_\_\_\_\_  
Elm Code: \_\_\_\_\_ Occ No.: \_\_\_\_\_  
EO Index: \_\_\_\_\_ Map Index: \_\_\_\_\_

Date of Field Work (mm/dd/yyyy): 04/10/2019

Clear Form

**California Native Species Field Survey Form**

Print Form

Scientific Name: Taxidea taxus

Common Name: American badger

Species Found?  Yes  No \_\_\_\_\_  
If not found, why? \_\_\_\_\_

Total No. Individuals: 0 Subsequent Visit?  Yes  No

Is this an existing NDDDB occurrence? \_\_\_\_\_  
Yes, Occ. # \_\_\_\_\_  No  Unk.

Collection? If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Justin Wood

Address: 615 N. Benson, Suite E  
Upland, CA 91786

E-mail Address: Jwood@aspeneeg.com

Phone: 909-568-5235

**Plant Information**

Phenology:  
% vegetative \_\_\_\_\_ % flowering \_\_\_\_\_ % fruiting \_\_\_\_\_

**Animal Information**

# adults \_\_\_\_\_ # juveniles \_\_\_\_\_ # larvae \_\_\_\_\_ # egg masses \_\_\_\_\_ # unknown \_\_\_\_\_  
 wintering  breeding  nesting  rookery  burrow site  lek  other

**Location Description (please attach map AND/OR fill out your choice of coordinates, below)**

Mesa Wind Farm, 1.2 miles west of the Whitewater River and 1.85 miles north of Interstate 10.

County: Riverside Landowner / Mgr: BLM

Quad Name: White Water Elevation: 2500 feet

T 2S R 3E Sec 34, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H  M  S  Source of Coordinates (GPS, topo. map & type): GPS

T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian: H  M  S  GPS Make & Model: Garmin eTrex

**DATUM:** NAD27  NAD83  WGS84  Horizontal Accuracy: 9 feet \_\_\_\_\_ meters/feet

Coordinate System: UTM Zone 10  UTM Zone 11  OR Geographic (Latitude & Longitude)

Coordinates: Badger burrows at the following coordinates: 532116, 3756938; 531629, 3756492; 531258, 3756585; 531268, 3756713; 531240, 3756775; 531150, 3757172; 531029, 3756576; 531029, 3756872; and 530589, 3756069

**Habitat Description (plants & animals)** plant communities, dominants, associates, substrates/soils, aspects/slope:

**Animal Behavior** (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Nine badger burrows present within the Mesa Wind Farm. No badgers observed. Habitat is mixed creosote bush and brittlebush scrub. Observations were made between April 10 and April 25, 2019.

Please fill out separate form for other rare taxa seen at this site.

**Site Information** Overall site/occurrence quality/viability (site + population):  Excellent  Good  Fair  Poor

Immediate AND surrounding land use: Wind energy production and open space

Visible disturbances: None

Threats: Vehicle collision

Comments: \_\_\_\_\_

**Determination:** (check one or more, and fill in blanks)

- Keyed (cite reference): \_\_\_\_\_
- Compared with specimen housed at: \_\_\_\_\_
- Compared with photo / drawing in: \_\_\_\_\_
- By another person (name): Brian Leatherman
- Other: \_\_\_\_\_

**Photographs:** (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense?  yes  no

**Attachment 6 – Inventory of Existing Foundations**

Inventory of potential desert tortoise burrows at existing foundations

Locn	Structure	Structure #	Burrow	Notes	Locn	Structure	Structure #	Burrow	Notes
1	WTG	R2 x 6	None		51	Electric	F2 T8	None	
2	WTG	R2 x 7	None		52	Electric	4 x 13	Burrow present	Small Mammal
3	WTG	R2 x 8	None		53	WTG	R6 x 57	None	
4	WTG	R2 x 9	None		54	WTG	R6 x 56	None	
5	WTG	R2 x 10	None		55	Empty pad	R6 x 55	None	
6	Electric	3 x 3	None		56	WTG	R6 x 54	None	
7	WTG	R2 x 11	None		57	WTG	R6 x 55	None	
8	WTG	R2 x 12	None		58	WTG	R6 x 53	None	
9	WTG	R2 x 13	None		59	Electric	none	None	
10	WTG	R2 x 14	None		60	WTG	R6 x 51	None	
11	WTG	R2 x 17	None		61	WTG	R6 x 50	None	
12	WTG	R2 x 18	None		62	WTG	R6 x 49	None	
13	Electric	3 x 4	None		63	Electric	3 x 5	None	
14	WTG	R2 x 19	None		64	WTG	R6 x 48	None	
15	WTG	R2 x 20	None		65	WTG	R6 x 47	None	
16	WTG	R2 x 21	Burrow present	Small Mammal	66	WTG	R6 x 46	None	
17	WTG	R2 x 22	None		67	WTG	R6 x 35	None	
18	WTG	R2 x 23	None		68	WTG	R6 x 36	None	
19	WTG	R2 x 24	None		69	WTG	R6 x 37	None	
20	WTG	R2 x 25	None		70	WTG	R6 x 38	None	
21	WTG	R3 x 25	None		71	WTG	R6 x 39	None	
22	WTG	R3 x 24	None		72	Empty pad	R6 x 40	None	
23	WTG	R3 X 23	None		73	WTG	R6 x 41	None	
24	WTG	R3 x 22	None		74	WTG	R6 x 42	None	
25	WTG	R3 x 21	None		75	Electric	3 x 7	Burrow present	Potential DT
26	Electric	3 x 6	None		76	WTG	R6 x 43	Burrow present	Potential DT
27	Control Box	none	None		77	WTG	R6 x 44	None	
28	WTG	R3 x 20	None		78	Empty pad	R6 x 45	None	
29	WTG	R3 x 19	None		79	WTG	R5 x 57	None	
30	WTG	R3 x 18	None		80	WTG	R5 x 56	None	
31	WTG	R3 x 17	Burrow present	Small Mammal	81	Electric	none	None	
32	Electric	301	None		82	WTG	R5 x 55	None	
35	Electric	F2 T10	None		83	WTG	R5 x 54	None	
36	Control Box	none	None		84	WTG	R5 x 53	None	
37	Electric	F3 T1	None		85	WTG	R5 x 51	None	
38	Electric	3 x 2	None		86	WTG	R5 x 52	None	
39	Empty pad	none	None		87	WTG	R5 x 50	None	
40	Empty pad	none	None		88	WTG	R5 x 49	None	
41	WTG	R5 x 33	None		89	WTG	R5 x 48	None	
42	WTG	R4 x 10	None		90	WTG	R5 x 47	None	
43	Empty pad	R4 x 9	None		91	WTG	R5 x 45	None	
44	Empty pad	R4 x 8	None		92	WTG	R5 x 46	None	
45	Steel containe	none	None		93	WTG	R5 x 44	None	
46	WTG	R5 x 34	None		94	WTG	R5 x 41	None	
47	Electric	none	Burrow present	Potential DT	95	WTG	R5 x 35	None	
48	WTG	none	None		96	WTG	R5 x 36	None	
49	Electric	2 x 5	None		97	WTG	R5 x 37	None	
50	Control Box	none	None		98	WTG	R5 x 38	None	

## Inventory of potential desert tortoise burrows at existing foundations

Locn	Structure	Structure #	Burrow	Notes	Locn	Structure	Structure #	Burrow	Notes
99	WTG	R5 x 39	None		148	WTG	R7 x 27	None	
100	Electric	none	None		149	WTG	R6 x 24	None	
101	Control Box	none	None		150	WTG	R6 x 23	None	
102	WTG	R5 x 43	None		151	WTG	R6 x 22	None	
103	WTG	R5 x 42	None		152	WTG	R6 x 20	None	
104	Electric	none	None		153	Electric	220	None	
105	WTG	R6 x 27	None		154	WTG	R6 x 21	None	
106	WTG	R6 x 28	None		155	WTG	R6 x 17	Burrow present	Small Mammal
107	Electric	2 x 9	None		156	WTG	R6 x 18	None	
108	WTG	R6 x 29	None		157	WTG	R6 x 18	None	
109	WTG	R6 x 30	None		158	Electric	none	None	
110	WTG	R6 x 31	None		159	WTG	none	None	
111	WTG	R6 x 32	None		160	Electric	404	None	
112	WTG	R6 x 33	None		161	Empty pad	none	None	
113	WTG	R6 x 34	None		162	WTG	R7 x 18	None	
114	WTG	R7 x 56	None		163	WTG	R7 x 19	None	
115	Empty pad	none	None		164	Empty pad	R7 x 26	None	
116	Electric	none	None		165	WTG	R7 x 25	Burrow present	Potential DT
117	WTG	R7 x 53	None		166	WTG	R7 x 24	None	
118	Empty pad	R7 x 52	None		167	Electric	405	None	
119	WTG	R7 x 51	None		168	Empty pad	R7 x 23	Burrow present	Potential DT
120	WTG	R7 x 50	None		169	WTG	R7 x 22	None	
121	WTG	R7 x 49	None		170	Empty pad	R7 x 21	None	
122	WTG	R7 x 48	None		171	WTG	R7 x 20	None	
123	WTG	R7 x 47	None		172	WTG	R8 x 8	None	
124	WTG	R7 x 46	None		173	WTG	R8 x 7	None	
125	WTG	R7 x 45	None		174	WTG	R8 x 6	None	
126	WTG	R7 x 44	None		175	WTG	R8 x 5	None	
127	Electric	none	None		176	Empty pad	R8 x 9	None	
128	WTG	R7 x 43	None		177	Empty pad	R8 x 10	None	
129	WTG	R7 x 42	None		178	WTG	R8 x 22	None	
130	WTG	R7 x 41	None		179	Empty pad	none	None	
131	Electric	3 x 9	None		180	Electric	504	None	
132	WTG	R7 x 40	None		181	Control Box	none	None	
133	WTG	R7 x 39	None		182	WTG	R8 x 27	None	
134	WTG	R7 x 38	None		183	WTG	R8 x 26	None	
135	WTG	R7 x 37	None		184	WTG	R8 x 25	None	
136	WTG	R7 x 36	None		185	Electric	505	None	
137	WTG	R7 x 35	None		186	WTG	R8 x 24	None	
138	WTG	R7 x 34	None		187	WTG	R10 x 15	None	
139	Control Box	none	None		188	WTG	R10 x 14	None	
140	Electric	509	None		189	WTG	R10 x 13	None	
141	WTG	R7 x 33	None		190	WTG	R10 x 12	None	
142	WTG	R7 x 32	None		191	WTG	R10 x 11	None	
143	WTG	R7 x 31	None		192	WTG	R10 x 19	None	
144	WTG	R7 x 30	None		193	Electric	502	None	
145	Electric	510	Burrow present	Potential DT	194	WTG	R10 x 18	None	
146	WTG	R7 x 29	None		195	WTG	R10 x 17	None	
147	WTG	R7 x 28	None		196	WTG	R10 x 16	None	



## Inventory of potential desert tortoise burrows at existing foundations

Locn	Structure	Structure #	Burrow	Notes	Locn	Structure	Structure #	Burrow	Notes
197	WTG	R10 x 10	None		246	WTG	R7 x 7	None	
198	WTG	R10 x 9	None		247	WTG	R7 x 6	Burrow present	Potential DT
199	WTG	R10 x 8	None		248	WTG	R7 x 5	None	
200	WTG	R10 x 7	None		249	WTG	R7 x 4	None	
201	WTG	R10 x 6	None		250	WTG	R7 x 3	None	
202	Electric	608	None		251	WTG	R7 x 2	None	
203	WTG	R10 x 5	None		252	WTG	R7 x 1	None	
204	WTG	R10 x 4	None		253	WTG	R8 x 10	None	
205	WTG	R10 x 3	None		254	WTG	R8 x 11	None	
206	WTG	R10 x 2	None		255	WTG	R8 x 12	None	
207	WTG	R10 x 1	None		256	Electric	none	Burrow present	Potential DT
208	WTG	R9 x 13	None		257	WTG	R8 x 13	None	
209	Empty pad	R9 x 12	None		258	WTG	R8 x 14	None	
210	WTG	R9 x 11	None		259	WTG	R8 x 15	None	
211	WTG	R9 x 10	None		260	WTG	R8 x 16	None	
212	Empty pad	R9 x 9	None		261	WTG	R8 x 17	None	
213	WTG	R9 x 8	None		262	WTG	R8 x 18	Burrow present	Small Mammal
214	WTG	R9 x 7	None		263	WTG	R6 x 1	None	
215	WTG	R9 x 6	None		264	WTG	R6 x 2	None	
216	WTG	R9 x 5	None		265	WTG	R6 x 3	None	
217	Electric	none	None		266	WTG	R6 x 4	None	
218	WTG	R9 x 3	None		267	Electric	402	None	
219	WTG	R9 x 4	None		268	Control Box	none	None	
220	Electric	none	None		269	WTG	R6 x 5	None	
221	Control Box	none	None		270	WTG	R6 x 6	None	
222	WTG	R8 x 4	None		271	WTG	R6 x 7	None	
223	WTG	R8 x 3	None		272	WTG	R6 x 8	None	
224	WTG	R8 x 2	None		273	WTG	R6 x 9	None	
225	WTG	R8 x 1	None		274	WTG	R6 x 10	None	
226	WTG	R8 x 19	None		275	WTG	R6 x 11	None	
227	WTG	R10 x 20	None		276	WTG	R6 x 12	None	
228	WTG	R10 x 21	None		277	Electric	2 x 11	None	
229	WTG	R10 x 22	None		278	WTG	R6 x 13	None	
230	WTG	R10 x 23	None		279	WTG	R6 x 16	None	
231	WTG	R10 x 24	None		280	WTG	R6 x 15	None	
232	Control Box	none	None		281	Empty pad	R6 x 14	None	
233	Electric	501	Burrow present	Small Mammal	282	Electric	308	None	
234	WTG	R10 x 25	None		283	WTG	R5 x 17	None	
235	Electric	501	None		284	WTG	R5 x 16	None	
236	Electric	401	None		285	WTG	R5 x 15	None	
237	WTG	R7 x 15	None		286	WTG	R5 x 14	None	
238	WTG	R7 x 14	None		287	WTG	R5 x 13	None	
239	WTG	R7 x 13	None		288	WTG	R5 x 12	None	
240	WTG	R7 x 12	None		289	WTG	R5 x 11	None	
241	WTG	R7 x 11	None		290	WTG	R5 x 10	None	
242	WTG	R7 x 10	None		291	WTG	R5 x 9	None	
243	WTG	R7 x 9	None		292	WTG	R5 x 8	None	
244	Electric	401	Burrow present	Potential DT	293	WTG	R5 x 7	None	
245	WTG	R7 x 8	None		294	Electric	403	None	

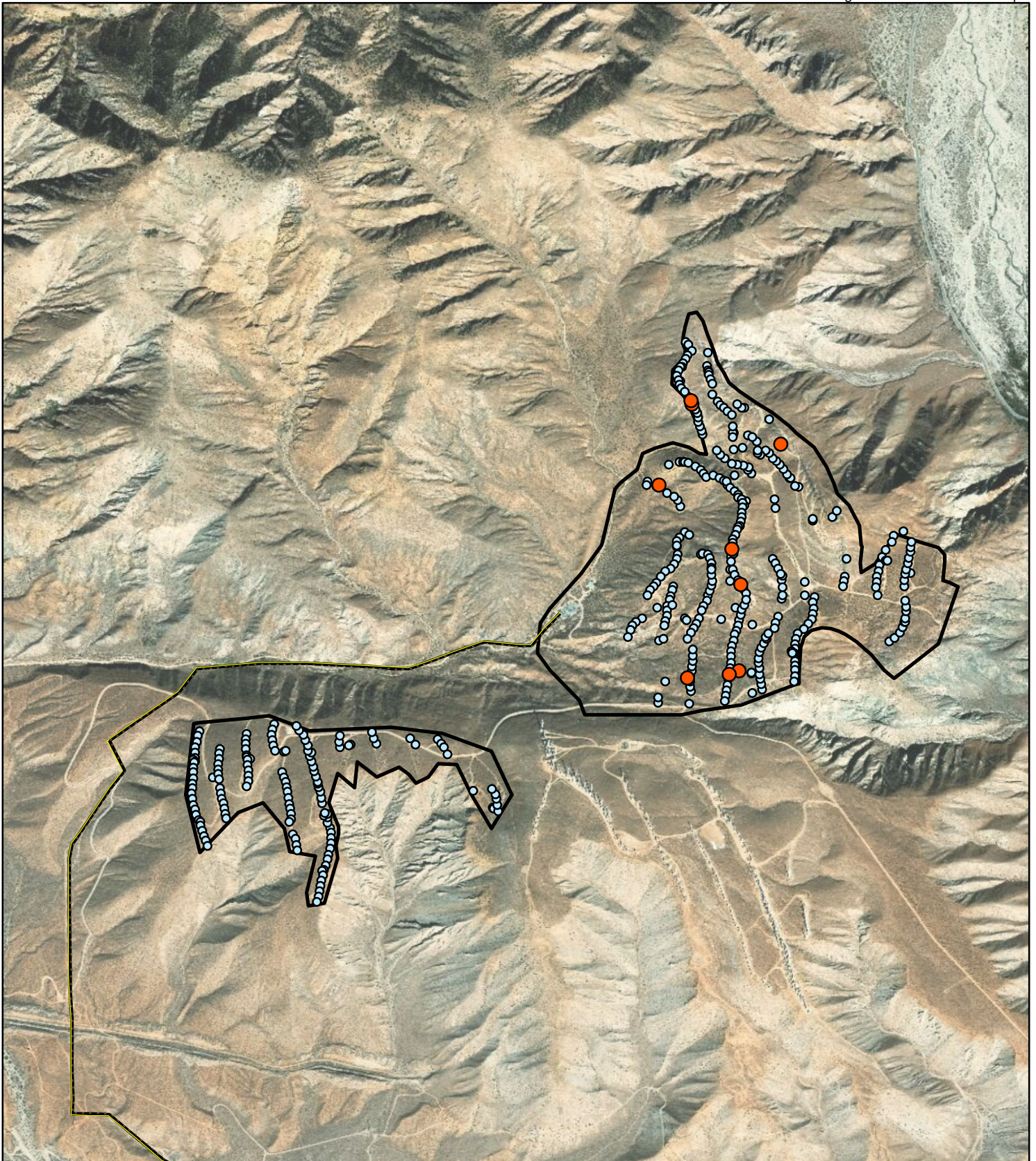
## Inventory of potential desert tortoise burrows at existing foundations

Locn	Structure	Structure #	Burrow	Notes	Locn	Structure	Structure #	Burrow	Notes
295	Pad, Concrete	R5 x 6	None		343	WTG	R22 x 2	None	
296	WTG	R5 x 5	None		344	WTG	R22 x 1	None	
297	WTG	R5 x 4	None		345	WTG	R21 x 11	None	
298	WTG	R5 x 3	None		346	WTG	R21 x 10	None	
299	WTG	R5 x 2	None		347	WTG	R21 x 9	None	
300	WTG	R5 x 1	None		348	WTG	R21 x 8	None	
301	WTG	R8 x 9	None		349	WTG	R21 x 7	None	
302	WTG	R9 x 1	None		350	Electric	407	None	
303	WTG	R9 x 2	None		351	Control Box	none	None	
304	WTG	R23 x 23	None		352	WTG	R21 x 6	None	
305	WTG	R23 x 22	None		353	WTG	R21 x 5	None	
306	WTG	R23 x 21	None		354	WTG	R21 x 4	None	
307	WTG	R23 x 20	None		355	WTG	R21 x 3	None	
308	WTG	R23 x 19	None		356	WTG	R21 x 2	None	
309	WTG	R23 x 18	None		357	WTG	R21 x 1	None	
310	Electric	213	None		358	WTG	R20 x 22	None	
311	Control Box	none	None		359	WTG	R20 x 21	None	
312	WTG	R23 x 17	None		360	WTG	R20 x 20	None	
313	WTG	R23 x 16	None		361	WTG	R20 x 19	None	
314	WTG	R23 x 15	None		362	WTG	R20 x 18	None	
315	WTG	R23 x 14	None		363	WTG	R20 x 17	None	
316	WTG	R23 x 13	None		364	Electric	209	None	
317	WTG	R23 x 12	None		365	Control Box	none	None	
318	WTG	R23 x 11	None		366	WTG	R20 x 16	None	
319	WTG	R23 x 10	None		367	WTG	R20 x 15	None	
320	WTG	R23 x 9	None		368	WTG	R20 x 14	None	
321	WTG	R23 x 8	None		369	WTG	R20 x 13	None	
322	WTG	R23 x 7	None		370	WTG	R20 x 12	None	
323	WTG	R23 x 6	None		371	Pad, Concrete	R20 x 11	None	
324	Electric	212	None		372	Pad, Concrete	R20 x 10	None	
325	WTG	R23 x 5	None		373	WTG	R20 x 9	None	
326	Pad, Concrete	R23 x 4	None		374	WTG	R20 x 8	None	
327	WTG	R23 x 3	None		375	WTG	R20 x 7	None	
328	WTG	R23 x 2	None		376	Electric	208	None	
329	WTG	R23 x 1	None		377	WTG	R20 x 4	None	
330	Electric	408	None		378	WTG	R20 x 3	None	
331	WTG	R22 x 14	None		379	WTG	R20 x 2	None	
332	WTG	R22 x 13	None		380	WTG	R20 x 1	None	
333	WTG	R22 x 12	None		381	WTG	R19 x 15	None	
334	WTG	R22 x 11	None		382	WTG	R19 x 14	None	
335	WTG	R22 x 10	None		383	WTG	R19 x 13	None	
336	WTG	R22 x 9	None		384	WTG	R19 x 12	None	
337	WTG	R22 x 8	None		385	WTG	R19 x 11	None	
338	WTG	R22 x 7	Burrow present	Small Mammal	386	WTG	R19 x 10	None	
339	WTG	R22 x 6	None		387	WTG	R19 x 9	None	
340	WTG	R22 x 5	None		388	WTG	R19 x 8	None	
341	WTG	R22 x 4	None		389	WTG	R19 x 7	None	
342	WTG	R22 x 3	None		390	Electric	208	None	

## Inventory of potential desert tortoise burrows at existing foundations

Locn	Structure	Structure #	Burrow	Notes	Locn	Structure	Structure #	Burrow	Notes
391	WTG	R19 x 6	None		438	WTG	R14 x 2	None	
392	WTG	R19 x 5	None		439	WTG	R14 x 3	None	
393	WTG	R19 x 4	None		440	WTG	R14 x 4	None	
394	WTG	R19 x 3	None		441	WTG	R14 x 5	None	
395	WTG	R19 x 2	None						
396	WTG	R19 x 1	None						
397	WTG	R19 x 16	None						
398	WTG	R19 x 17	None						
399	Electric	206	None						
400	Control Box	none	None						
401	WTG	R19 x 18	None						
402	WTG	R19 x 19	None						
403	WTG	R19 x 20	None						
404	WTG	R19 x 21	None						
405	WTG	R19 x 22	None						
406	Electric	406	None						
407	WTG	R19 x 23	None						
408	WTG	R19 x 24	None						
409	WTG	R19 x 25	None						
410	WTG	R19 x 26	None						
411	WTG	R19 x 27	None						
412	WTG	R19 x 28	None						
413	Electric	206	None						
414	WTG	R19 x 29	None						
415	WTG	R19 x 30	None						
416	WTG	R19 x 31	None						
417	WTG	R19 x 32	None						
418	WTG	R19 x 33	None						
419	WTG	R19 x 34	None						
420	Control Box	none	None						
421	Electric	203	None						
422	WTG	R18 x 5	None						
423	WTG	R18 x 6	None						
424	WTG	R18 x 7	None						
425	WTG	R17 x 5	None						
426	WTG	R17 x 6	None						
427	WTG	R17 x 7	None						
428	WTG	R16 x 8	None						
429	Electric	201	None						
430	WTG	R15 x 4	None						
431	WTG	R15 x 3	None						
432	WTG	R15 x 2	None						
433	WTG	R15 x 1	None						
434	WTG	R15 x 11	None						
435	Control Box	none	None						
436	Electric	202	None						
437	WTG	R14 x 1	None						





0 1,000  
Feet

□ Mesa Wind Existing ROW  
— Existing Transmission Line

○ Structures  
● Desert tortoise burrow present

Attachment 6.

**Inventory of Potential  
Desert Tortoise Burrows  
at Existing Foundations**



**Attachment 7 – Field Team Resumes**



## Academic Background

Master of Science in Biological Sciences, California State Polytechnic University, Pomona, 2011  
BS, Biology, California State Polytechnic University, Pomona, 2006

## Professional Experience

Justin M. Wood has seventeen years of experience with biological surveys, botanical surveys, jurisdictional delineations, CEQA and NEPA reporting, and mitigation monitoring in California and the western U.S. He holds Master's and Bachelor's degrees in biology from California State Polytechnic University, Pomona. For his master's thesis he worked with his advisor Dr. Jonathan Baskin to develop and implement a 12-month study to document the impacts from and recovery of a stream diversion channel in Santa Paula Creek, Ventura County. He has extensive experience conducting focused special-status fish surveys throughout southern California and holds a federal 10(a)(1)(A) recovery permit for conducting surveys for the federally threatened Santa Ana sucker. In addition to his experience with native fish, he is also an exceptional field botanist and has conducted dozens of focused plant surveys throughout southern California. He specializes in botanical surveys and has a special interest in the flora of Southern California. He is experienced with the regional flora, including rare, threatened, and endangered species. He recently completed his Field Botanist Certification through the California Native Plant Society and is currently serving as the president of the Southern California Botanist. His knowledge of California natural history is broad and includes aquatic life, upland wildlife species, and vascular plants. Wood has extensive experience conducting general and focused wildlife surveys for reptiles, amphibians, fish, mammals, and birds. He has extensive experience working throughout Orange County.

## Aspen Environmental Group.....2009-present

The following project summaries represent some of the projects Mr. Wood was been involved in over the past ten years with Aspen Environmental Group.

- **Alamitos Bay Pump Station Discharge Pipe Replacement, Los Angeles County Department of Public Works (2017-present).** Mr. Wood is the lead biologist assigned to this project. He conducted special-status plant and wildlife surveys and habitat assessments. He has also mapped vegetation and assessed the site for state jurisdictional waters. He assisted with the preparation of a biological resources memorandum and has served as lead author for the biological resource's sections of the CEQA document. The project is in the coastal zone, within Long Beach and will replace a stormwater discharge pipe in Alamitos Bay.
- **San Gabriel Tower Improvement Project, Metropolitan Water District (2018-present).** Mr. Wood is one of several biologists assigned to this project. He conducted special-status plant and wildlife surveys. He has also mapped vegetation and assessed the site for state jurisdictional waters. He assisted with the preparation of a biological resources technical report that will be used as a constraints assessment to help guide the project development and planning. The project is in San Gabriel Canyon, just below Morris Reservoir, in Los Angeles County.
- **Azusa Canyon Flume Project, City of Pasadena Department of Water and Power (2017-2018).** Mr. Wood served as the lead field biologist to conduct focused botanical and biological surveys along approximately 6 miles of the Azusa Canyon Flume. The flume was installed prior to 1900 and repairs are needed to continue to operate it and the hydroelectric powerplant that it provides water to. The

City of Pasadena is currently working with the Federal Energy Regulatory Commission and the Angeles National Forest to permit the project and needed repairs.

- **Ventura River Levee (VR-1) Improvement Project, Ventura County Watershed Protection District (2018).** Mr. Wood is the lead botanist on the project and conducted protocol-level rare plant surveys of the project area that extends from the Pacific Ocean inland approximately 2.5 miles. The survey included an assessment of all Ventura County locally sensitive plant species. He also mapped vegetation throughout the project area according to the latest methods and classifications used by CDFW and CNPS. Mr. Wood is also currently assisting with the preparation of the biological resources section of the EIR for a levee improvement project along the Ventura River in Ventura.
- **Littlerock Dam and Reservoir Restoration Project EIR/EIS-BE/BA, Palmdale Water District/US Forest Service (2010-present).** Mr. Wood conducted focused special-status plant and wildlife surveys and created vegetation maps for the sediment removal activities associated with the Littlerock Dam and Reservoir in the Angeles National Forest. Mr. Wood also surveyed the project area and access routes for invasive plants and helped prepare a weed management plan. Mr. Wood also conducted the field investigation to support a jurisdictional declination report and project permitting.
- **Lake Gregory Dam Rehabilitation Project, San Bernardino County Special Districts Department (2014-present).** Mr. Wood conducted focused surveys for special-status plants and animals for the proposed project. Lake Gregory is located in the San Bernardino Mountains approximately 14 miles north of the City of San Bernardino in the community of Crestline. The Lake Gregory Dam Rehabilitation Project consists of the construction of physical improvements to the dam, earthen material excavation from borrow sites, earthen material hauling and processing, relocation of utilities on Lake Drive, and interim traffic detour routes.
- **Santa Clara River Levee (SCR-3) Improvement Project, Ventura County Watershed Protection District (2013-present).** Mr. Wood surveyed the project site for special-status plants and assisted with the preparation of the biological resources section of the EIR for a levee improvement project along the Santa Clara River in Ventura. He is also assisted with conducting pre-construction surveys for project construction and providing support to the biological monitors throughout the duration of construction.
- **Virginia Colony Biological Assessment and Constraints Analysis, Ventura County Watershed Protection District (2011-2012).** Mr. Wood surveyed the project site for special-status plants and is assisted with the preparation of a Biological Technical Report and Constraints Analysis for the proposed Virginia Colony Detention Basin Project in Moorpark, CA.
- **Sespe Creek Levee Improvement Initial Study, MND and EA, Ventura County Watershed Protection District (2011-2012).** Mr. Wood surveyed the project site for special-status plants and is one of the biologists that prepared the biological resources section of the Initial Study and EA for a levee improvement project on the east side of Sespe Creek just north of the Hwy. 126 bridge.
- **Avila Point Development Project, County of San Luis Obispo (2013-2015).** Mr. Wood surveyed the project site for special-status plants, assessed habitat for special-status wildlife, and mapped vegetation. He also assisted in the preparation of the biological resources section of the EIR for the development of an old tank farm property owned by Chevron in San Luis Obispo County.
- **San Gorgonio Canyon Water Conveyance System (2015-present).** Mr. Wood conducted special-status plant surveys and assessed the habitat for special-status wildlife species. Surveys were conducted over more than 15 miles of water conveyance infrastructure in the San Bernardino Mountains. Wood also coordinated with the botanist, biologist, and hydrologist from the San

Bernardino National Forest. Surveys were completed to support the project which includes SCE's hydroelectric project license surrender and subsequent transfer of facilities local agencies.

- **Calleguas Projects Off-Site Mitigation Project, Ventura County Watershed Protection District (2017-present).** Mr. Wood monitored non-native plant removal and container plant installation at the habitat restoration site located along Calleguas Creek at Upland Road in Camarillo. He also conducted annual vegetation monitoring and assisted with the preparation of the annual reports for 2017 and 2018.
- **Santa Ana Sucker Translocation Plan, San Bernardino Valley Municipal Water District (2015-present),** Mr. Wood is on a team of several consultants and various resource agencies developing a translocation plan for the federally threatened Santa Ana sucker. Mr. Wood has assisted with preparation of the plan and was also one of the key team members responsible for conducting Santa Ana sucker habitat assessments in a number of tributaries to the Santa Ana River including Plunge Creek, City Creek, Alder Creek and others. The translocation plan is being developed in coordination with the U.S. Fish and Wildlife Service as part of the recovery plan for the species.
- **Santa Ana Sucker Microhabitat Analysis and Report, San Bernardino Valley Municipal Water District (2016).** Mr. Wood served as the project manager and one three biologists assigned to the project to write a micro-habitat report summarizing habitat data collected in Big Tujunga Canyon. The report was prepared to guide habitat creation associated with the Sterling Natural Resource Center wastewater treatment plant being developed by the SBVMWD.
- **Mojave River Conservation Lands, San Bernardino County Department of Public Works (2016-present).** Mr. Wood is the lead biologist responsible for conducting biological surveys, mapping vegetation, and completing a jurisdictional delineation of a nearly 300-acre County property within the Mojave River of San Bernardino County.
- **Rialto Channel Jurisdictional Delineation, San Bernardino County Department of Public Works (2015 and 2018).** Mr. Wood conducted a field delineation of state and federally jurisdictional waters of State and waters of the U.S. He also delineation the extent of the federal wetlands and prepared a Jurisdictional Delineation Report for three reaches of Rialto Channel, in support of state and federal permitting for the County's proposed improvements to the channel. In 2018, Mr. Wood re-mapped one of the three reaches and prepared a separate Jurisdictional Delineation Report.
- **Rimforest Storm Drain EIR, San Bernardino County Department of Public Works (2012-present).** Mr. Wood conducted biological surveys for a series of flood control structures in the community of Rimforest, California in San Bernardino County. The project will redirect flows that are currently causing extensive erosion to the Strawberry Creek Watershed to the south, north into Daley Canyon, a tributary of the Mojave River.
- **Hawker-Crawford Channel Biological Resources Technical Report and Jurisdictional Delineation, San Bernardino County Department of Public Works (2018).** Mr. Wood conducted a field delineation of state and federally jurisdictional waters of State and waters of the U.S. He also delineation the extent of the federal wetlands and prepared a Jurisdictional Delineation Report to support the County in obtaining state and federal permits for the proposed channel improvement project. Mr. Wood also surveyed the site for special-status plants and animals and prepared a biological resources technical report.
- **Donnell Basin IS/MND, San Bernardino County Department of Public Works (2013).** Mr. Wood wrote the Biological Resources Technical Report and biology sections of the Initial Study for a planned flood control basin in the town of Twentynine Palms, California. The Project will protect the town from large floods by increasing the capacity of an existing flood control basin.

- **Institution Road Improvement and Maintenance Project (2015-present).** Mr. Wood completed special-status species surveys along a one-mile road improvement project that crossed the Cajon Wash in San Bernardino County. He also mapped vegetation and assessed potential for special-status species to be found within the project area. He is the lead biologist for conducting a delineation of potentially jurisdictional state and federal waters and was the primary author of the delineation report and a biological resources technical report for the project.
- **Barren Ridge Renewable Transmission Project, Los Angeles Department of Water and Power (2015-present).** Mr. Wood is one of several biologists assigned to this project. He has conducted special-status plant surveys, special-status plant relocations, and nesting bird surveys. He has also mapped non-native species and state jurisdictional waters. He worked closely with staff from the Angeles National Forest and the Department of Public Works to implement mitigation measures to protect and relocate special-status plants.
- **San Luis Transmission Project, Western Area Power Administration (2016-present).** Mr. Wood served as lead botanist to coordinate focused special-status plant surveys of the project to construct a new transmission line (500 and 230 kV) between Western's Tracy and Dos Amigos substations. Mr. Wood was the primary author of the survey report and he also managed a field team of seven sub-consultants, completed field surveys, and coordinated with resource agencies. The project crosses through portions of Alameda, San Joaquin, Stanislaus, and Merced Counties, California.

### Previous Experience 2001 to 2009

- **White & Leatherman BioServices** ..... 2001-2006
- **Leatherman BioConsulting Inc.** ..... 2006-2008
- **San Marino Environmental Associates** ..... 2004-2008
- **Harmsworth and Associates**..... 2006-2007

### Certifications & Permits

- California Native Plant Society, **Certified Field Botanist-#0011**
- Federal 10(a)(1)(A) recovery permit (**USFWS Permit TE-37481A-1**) for conducting surveys for federally threatened Santa Ana sucker.
- Federal 10(a)(1)(A) recovery permit (**USFWS Permit TE-009018-5**) for vouchering federally listed plants (Research Association permittee under RSABG permit).
- State Plant Voucher Collecting Permit (**No. 2081 (a)-17-033-V**) to voucher state listed plants.
- State Scientific Collecting Permit (**No. SC-12776**) for working with mammals, reptiles, amphibians, vernal pool invertebrates, terrestrial invertebrates, freshwater fishes, freshwater invertebrates, anadromous fishes, marine fishes, marine tidal plants, and marine tidal invertebrates.

### Workshops

- Invasive plant management workshop, California Invasive Plant Council, 2009
- Vegetation mapping workshop. California Native Plant Society, 2011
- Bryophyte identification workshop. U.C. Berkeley/Jepson Herbaria, 2012
- Southwestern willow flycatcher workshop. Southern Sierra Research Station, 2013
- Yellow-billed cuckoo workshop. Southern Sierra Research Station, Blythe, CA, 2013
- Army Corps of Engineers Wetland Delineation Training, Wetland Training Institute, 2014
- CEQA 101 workshop, California Native Plant Society, 2018.

## Academic Background

BA, Organismal Biology, Pitzer College, 2019

AS, Biological, Physical Sciences and Mathematics, Citrus College, 2013

Forestry Certificate, Citrus College, 2009

## Professional Experience

Jacob M. Aragon has more than 10 years of experience with wildlife surveys, botanical surveys, reporting, and mitigation monitoring in southern California. He recently joined Aspen Environmental Group as an associate biologist and is based out of Aspen's Inland Empire Office. His knowledge of California natural history is broad and includes aquatic life, upland wildlife species, and vascular plants. His areas of expertise include bird surveys, biological monitoring, and reptile and amphibian surveys. He has extensive desert tortoise monitoring experience and attended the desert tortoise surveying and handling techniques workshop in 2012. He also has experience with revegetation planning and implementation, non-native species removal, freshwater fish surveys, and various habitat assessments. He has extensive experience working throughout southern California.

## Aspen Environmental Group.....2019-present

The following projects represent some of the projects Mr. Aragon was been involved in since recently joining Aspen Environmental Group.

- **Mesa Wind, Confidential Client (2019-present).** Mr. Aragon is part of a team of biologists completed focused desert tortoise and special-status plant surveys for the project. Five adult tortoises were encountered during the surveys. The project includes a wind re-power project. The project site includes approximately 400 acres of on public lands managed by the BLM within Riverside County.
- **Alta Mesa Wind, Confidential Client (2019-present).** Mr. Aragon is part of a team of biologists completed focused desert tortoise and special-status plant surveys for the project. The project includes a wind re-power project. The project site includes approximately 300 acres of private land within Riverside County.
- **Littlerock Dam and Reservoir Restoration Project, Palmdale Water District/US Forest Service (2019-present).** Mr. Aragon is part of a team of biologists conducting biological compliance monitoring and wildlife surveys for the sediment removal activities associated with the Littlerock Dam and Reservoir in the Angeles National Forest.
- **Santa Ana River Mainstem Project, U.S. Army Corps of Engineers (2019-present).** Mr. Aragon is serving as a biological monitor on the U.S. Army Corps of Engineers' Santa Ana River Mainstem Project. He has completed focused surveys for least Bell's vireo, burrowing owl, nesting birds, and southwestern pond turtle. He has also mapped vegetation and assessed habitat for special-status species. He has worked on several of the project components located within the Prado Basin and downstream along the Santa Ana River.
- **Live Oak Dam Rehabilitation Project, Los Angeles County Public Works (2019-present).** Mr. Aragon is assisting with nesting bird surveys for the dam rehabilitation project. He also assisted with the



preparation of the nesting bird management plan and is the lead biological monitor responsible for the day to day compliance monitoring.

- **Calleguas Projects Off-Site Mitigation Project, Ventura County Watershed Protection District (2019-present).** Mr. Aragon conducted vegetation surveys and assisted with the report preparation for the habitat restoration site located along Calleguas Creek at Upland Road in Camarillo.
- **Fuel Modification Project, Angeles National Forest (2019-present).** Mr. Aragon is part of a team of biologists completing biological surveys for a proposed fuel modification project in the Liebre Mountains. Surveys being completed include a habitat assessment for spotted owl, focused special-status plant surveys, and general wildlife surveys.
- **Mojave River Conservation Lands, San Bernardino County Department of Public Works (2019-present).** Mr. Aragon is assisting with land management of the 200-acre conservation lands within the Mojave River, downstream of Victorville. He is monitoring non-native plant removal during the nesting season. He is also assisting with regular vegetation monitoring and photo documentation.
- **Santa Ana Sucker Translocation Site Evaluations, San Bernardino Valley Municipal Water District (2019-present).** Mr. Aragon is part of a team of biologists assessing five translocation sites for Santa Ana sucker in the San Bernardino National Forest. The habitat assessments include a variety of habitat measurements using SWAMP-protocols. The site evaluation locations include Bear Creek, Deer Creek, Lytle Creek, Cajon Creek, and the upper Santa Ana River.

### **Previous Professional Experience 2011 to 2019**

The following highlights some of the previous professional experiences that Mr. Aragon had prior to joining Aspen Environmental Group.

- **Associate Biologist, Harmsworth Associates (2012-2019).** Mr. Aragon served as a project manager and associate biologist for more than seven years on a variety of projects throughout Orange County and southern California. He conducted focused surveys for least Bell's vireo, desert tortoises, California gnatcatcher, burrowing owls, and other special-status birds. He was listed as an independent surveyor for California gnatcatcher under Harmsworth Associates recovery permits. He has extensive experience with mitigation monitoring, including nesting bird monitoring. He also conducted general flora and fauna surveys and habitat assessments for numerous special-status species.
- **Project Biologist, Endemic Environmental Services, Inc. (2012-2013).** Mr. Aragon served as a project biologist for several projects during 2012 and 2013. He conducted focused wildlife surveys and biological monitoring for several projects including the following:
  - **Desert Tortoise Monitoring, San Bernardino County Department of Public Works.** Mr. Aragon was one of several biologists that conducting construction monitoring and desert tortoise surveys on various San Bernardino County road resurfacing and grading projects centered around Barstow, CA. Tasks include site inspections, desert tortoise surveys, monitoring and reports. All active burrows were mapped on aerial photographs and flagged onsite.
  - **Biological Field Technician, Harmsworth Associates (2011-2012).** Mr. Aragon started his career with Harmsworth Associates as a biological field technician. In this role he conducted biological and construction monitoring, nesting bird surveys, brown-headed cowbird trapping, and vegetation surveys.

- **Field Technician, Endemic Environmental Services (2012-2013).** Mr. Aragon work on a variety of projects for Endemic Environmental Services. These included desert tortoise monitoring, wildlife trapping and relocation (avian, turtle, and fishes), nesting bird surveys, biological monitoring, and extensive flora and fauna surveys on Camp Pendleton Marine Corps Base.

## **Workshops**

- **California Rapid Assessment Method (CRAM) for Wetlands,** the California Wetlands Monitoring Workgroup, 2019
- **Desert tortoise surveying and handling techniques workshop,** the Desert Tortoise Council, 2012



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**BRIAN LEATHERMAN**  
**PRINCIPAL WILDLIFE BIOLOGIST**

**EDUCATION**

**California State University, Fullerton, California**

Master of Arts, Biological Science, 1993.

Bachelor of Arts, Biological Science, 1991.

**PROFESSIONAL EXPERIENCE**

**Leatherman BioConsulting, Inc. 2006 – present; White & Leatherman BioServices 2000-2006; Psomas and Associates, 1997-2000; Chambers Group 1996-1997; Dames and Moore 1993-1996; Independent Consulting Biologist 1991-1993.** Primarily responsible for biological surveys, report preparation, project management, and agency coordination. Specialties include habitat assessments, general wildlife documentation, focused surveys for endangered species, construction and mitigation compliance monitoring, and wildlife corridor assessment and monitoring. Prepares biological technical reports to document field work and propose mitigation strategies to meet requirements of CEQA and NEPA, and to initiate formal consultation under the federal Endangered Species Act.

**CERTIFICATIONS/PERMITS**

- Section 10(a)(1)(A) Permit for Southwestern Willow Flycatcher, California Gnatcatcher, Western Yellow-billed Cuckoo, Least Bell's Vireo (Permit No. TE827493-9).
- California Department of Fish and Game Scientific Collecting/Trapping Permit SC-001567; MOU for Southwestern Willow Flycatcher, Western Yellow-billed Cuckoo, Least Bell's Vireo; nest monitoring for California gnatcatcher; trapping for southern rubber boa and southwestern pond turtle.

**GENERAL EXPERIENCE**

Mr. Leatherman has over twenty-five years of experience as a professional biologist conducting general and focused avian, herpetological, mammalian, and special status species surveys, and preparing biological reports and biological resources sections for environmental documents. His expertise lies in documenting wildlife diversity and habitat utilization, evaluating habitats for their potential to support rare, threatened, and endangered wildlife species, and analyzing impacts of proposed projects on biological resources. He has designed and implemented studies to monitor wildlife usage of restoration sites and movement corridors, and has developed and implemented relocation efforts for several special status species. He has monitored a variety small- and large-scale construction projects to ensure and document compliance with project permits or mitigation monitoring plans. A list of some of the special status species he has worked with includes the quino checkerspot butterfly, arroyo toad, California red-legged frog, southwestern pond turtle, desert tortoise, southwestern willow flycatcher, least Bell's vireo, California gnatcatcher, San Joaquin kit fox, and many others. More recently, his focus has been



on projects that use science based survey techniques and applied biological principles on conservation lands and preserves to be managed for their biological resources.

## REPRESENTATIVE PROJECT EXPERIENCE

### Desert Tortoise Experience

**Desert Tortoise Monitoring for Emergency Bridge Repair along National Trails Highway (Route 66), Amboy, San Bernardino Department of Public Works.** Leatherman BioConsulting Inc. has been working with San Bernardino County Department of Public Works and Flood Control District under an on-call contract since 2011. Representative services provided include focused surveys for the Least Bell's Vireo, Southwestern Willow Flycatcher, Western Yellow-billed Cuckoo, and California Gnatcatcher, full time monitoring of the South Fork Lytle Creek Bridge Replacement Project and Maple Lane Drainage Improvement Project, Desert Tortoise monitoring for routine roadside grading in the eastern Mojave Desert, and operation of their Brown-headed Cowbird Trapping Program along the Mojave and Santa Ana Rivers systems. In the fall of 2014, severe thunderstorms resulted in major flooding in portions of the Mojave Desert, resulting in the complete failure or damage to numerous bridges along National Trails Highway (historic Route 66) between Ludlow and Essex in San Bernardino County. Leatherman BioConsulting, Inc. provided qualified desert tortoise biologists to monitor the emergency repair of over 50 bridges along a 60-mile stretch of National Trails Highway, which was closed for several months. Monitoring included conducting pre-construction nesting bird surveys prior to vegetation clearing upstream and downstream of the bridges, conducting clearance sweeps of access roads and bridges prior to beginning bridge repair work, conducting daily sweeps for desert tortoise in each active work area, and continually surveying National Trails Highway for desert tortoises in active work areas. Desert tortoises found on the road surface were continuously monitored by a biologist to ensure they weren't hit by road crews working in the areas. Over a dozen tortoises were monitored during the project.

**Authorized Biologist for Desert Tortoise Clearance Survey for Western Mesquite Mines, Brawley, Imperial County, CA. Hernandez Environmental Services. 2017.** Conducted clearance surveys for desert tortoise on an 1800-acre site for the Western Mesquite Gold Mine. The surveys were conducted as part of a biological opinion re-initiation process by the BLM, USFWS, and CDFW and followed the current clearance survey protocol. The surveys were conducted using 100% visual coverage surveys by walking parallel belt transects with five biologists throughout the project site searching for desert tortoise and associated sign. In addition, Mr. DeLuna assisted with burrow excavation.

**Authorized Desert Tortoise Biologist, Mead-Adelanto Transmission Line, Los Angeles Department of Water and Power.** Performed preconstruction surveys and monitored for desert tortoise for LADWP during construction of a 200-mile power line in the Mojave Desert through portions of Nevada and California. Provided education training to contractor personnel as needed to comply with conditions of the biological opinion. Filed compliance and tortoise report forms on a weekly basis. Tagged and processed dozens of desert tortoises, removed tortoises





from construction zones, and excavated and constructed tortoise burrows. Mohave ground squirrels were observed in several locations during the monitoring effort.

**Desert Tortoise Monitoring for Harper Lake Road Resurfacing Project, San Bernardino County, CA. 2013.** Conducted construction monitoring for the desert tortoise along Harper Lake Road during the demolition and resurfacing of a 7-mile stretch of the road north of State Route 58. Monitoring was conducted along sections of the road that did not have tortoise fencing, and in areas where there were gaps in the tortoise fencing at road intersections, to ensure that no impacts to desert tortoises occurred during the project.

**Desert Tortoise Survey on Onyx Ranch in Kern County, TRA Environmental Sciences, 2012.** Designed and implemented a large-scale survey to sample the approximately 44.5 square-mile Onyx Ranch property for the desert tortoise. Conducted 150 miles of transects on 15 sections (parcels) of land to evaluate relative abundance, presence and distribution of the desert tortoise throughout the area. Over 60 individual sign of desert tortoise, including 13 tortoise sightings, were documented during the survey.

**Desert Tortoise Monitoring for Wheaton Wash Delineation Project, Molycorp Minerals, San Bernardino County. Lilburn Corporation, 2011.** Served as Authorized Biologist (by U.S. Fish and Wildlife Service and Bureau of Land Management) to conduct preconstruction surveys, clearance surveys, and monitor for desert tortoise so individuals could be moved out of harm's way during well drilling, construction, and development along Wheaton Wash. Escorted drill crews into project site through desert tortoise habitat and monitored all phases of construction for desert tortoise.

**Focused Desert Tortoise Surveys for Molycorp, San Bernardino County. Lilburn Corporation, 2009.** Conducted focused surveys desert tortoises along a 12-mile pipeline route. Conducted focused surveys along the alignment and zone of influence surveys at 100, 300, 600, and 1,200 feet from the alignment. Evaluated all desert tortoise sign (burrows, scat, carcasses etc.) and recorded location data using GPS technology. Navigated zone of influence surveys by uploading and following UTM coordinates on GPS.

**Focused Surveys and Monitoring for Desert Tortoise along Honda Test Track, San Bernardino County. APEX Performance, 2008.** Served as lead biologist to conducted focused surveys for desert tortoises along an established route in the Mecca Hills for a Honda SUV test drive. Prepared and implemented desert tortoise education program for event sponsor and all participants. Monitored the test track throughout the event to make sure that drivers remained on established route and to ensure that no impacts to desert tortoises occurred during event.

**Desert Tortoise Education and Construction Monitoring, Adelanto Main Post Office, Parsons Infrastructure and Technology Group, Inc.** Developed and implemented education program for the desert tortoise pursuant to the Biological Opinion issued by the U.S. Fish and Wildlife Service for the project. Performed pre-construction surveys, monitored installation of fencing around perimeter of project site and construction staging areas, and conducted clearance



surveys in project construction area. Prepared progress and final reports to document compliance with resource agency permits. Mr. Leatherman served as authorized biologist permitted under Biological Opinion.

**Desert Tortoise Surveys on Fort Irwin, Lilburn Corporation.** Conducted 100% coverage and zone of influence surveys for three alternative proposed natural gas and water supply pipelines to Ft. Irwin in 2004. One alternative included survey of a fourteen mile stretch along the main access road (Fort Irwin Road) approaching and within the Fort Irwin boundary. Desert tortoise surveys, botanical surveys, and general biological surveys were conducted in 2004 in support of a biological report in preparation under contract to Lilburn Corporation.

**Desert Tortoise Studies, U.S. Army, Fort Irwin.** Part of a team of biologists who conducted 100% coverage surveys for desert tortoise on the north Alvord slope/Coyote Dry Lake area south of Fort Irwin, and BLM triangular strip transect surveys on approximately 300 square miles in the Silurian Valley east of Fort Irwin and as part of the NEPA and CEQA evaluation for the proposed base expansion project for Chambers Group, Inc.

**Desert Tortoise Studies, U.S. Army.** Part of a team of biologists who conducted BLM triangular strip transect surveys for desert tortoise on approximately 350 square miles on the north Alvord slope/Coyote Dry Lake area south of Fort Irwin and in the Silurian Valley east of Fort Irwin for the base expansion project. Mohave ground squirrels were observed in several location during the intensive study.

**Focused Desert Tortoise Surveys, U. S. Marine Corps.** Conducted 100% and zone of influence surveys for desert tortoise on proposed development sites and associated pipelines at 29 Palms Marine Air Ground Combat Center for the extension of existing runways. Subsequently monitored access routes and drilling pads for drilling crews.

**Desert Tortoise Studies on Fort Irwin, Kiva Biological Consulting.** Assisted with 100% coverage to find, radio telemeter, and eventually relocate desert tortoises from 39 square miles along the southern boundary of Ft. Irwin in the fall of 2006 and spring 2007. The project was being implemented in compliance with the Biological Opinion that would allow the U.S. Army to conduct training exercises in the southern portion of the existing base.

**Desert Tortoise Studies on Fort Irwin, Lilburn Corporation.** Conducted 100% coverage and zone of influence surveys for three alternative proposed natural gas and water supply pipelines to Ft. Irwin in 2004. One alternative included survey of a fourteen mile stretch along the main access road (Fort Irwin Road) approaching and within the Fort Irwin boundary. Desert tortoise surveys, botanical surveys, and general biological surveys were conducted in 2004 in support of a biological report in preparation under contract to Lilburn Corporation.



## Bird Experience

**Focused Western Yellow-billed Cuckoo and Southwestern Willow Flycatcher Surveys, Los Angeles Dept. of Water and Power's Devil's Gate Sediment Removal Project, Los Angeles County, ECORP, Inc. 2016, 2017.** Conducted focused survey for southwestern willow flycatcher and western yellow-billed cuckoo within cottonwood-willow riparian forest along Arroyo Seco for the Devils Gate Dame Sediment Removal Project upstream of Devil's Gate Dam, where LADWP plans to remove sediment to restore flood control capacity and restore habitat.

**Focused Surveys for Western Yellow-billed Cuckoo, Least Bell's Vireo, and Southwestern Willow Flycatcher, Mojave River, San Bernardino County Flood Control District, 2013.** Conducted focused surveys for the western yellow-billed cuckoo, least Bell's vireo, and southwestern willow flycatcher in mature cottonwood-willow riparian forest near Mojave Narrows along the Mojave River. The proposed project involved the reconstruction of an existing levee along the east bank of the Mojave River off 6<sup>th</sup> Street in Victorville, San Bernardino County. No cuckoos or vireos were observed and one migrant flycatcher was observed.

**Focused Survey for the Yellow-billed Cuckoo and Least Bell's Vireo, Santa Ana River, Riverside County, CA. Ecorp Consulting, Inc., 2016.** Assisted with focused surveys for the yellow-billed cuckoo and least Bell's vireo under the supervision of a permitted biologist along the Santa Ana River for the Santa Ana River Trail Project.

**Nesting Bird and Raptor Pre-Construction Surveys, City of Riverside, Riverside County, CA. Rancho Sierra Vista, 2007.** Conducted a thorough survey of a small grove of large eucalyptus trees on the Tentative Tract 32476 Rancho Sierra Vista project site for active raptor nests. Other trees, such as avocado trees, Brazilian pepper trees, elderberry trees, and silk oak trees, that were mixed in the eucalyptus grove were also surveyed. The purpose of the survey was to document the presence or absence of active raptor nests prior to the removal of the trees to comply with California Fish and Game Code and Federal Migratory Bird Treaty Act.

**Focused California Gnatcatcher Surveys, Tesoro del Valle Development Project, Bonterra/Psomas, 2015.** Conducted focused surveys for the California gnatcatcher on over 300 acres of the 1,200-acre Tesoro del Valle development site located north of Santa Clarita in Los Angeles County. Standard protocol-level surveys were conducted in all suitable habitat. Mr. DeLuna conducted or assisted with 12 surveys and accumulated nearly 90 hours of survey time. One juvenile California gnatcatcher was observed on the final survey, documenting a significant occurrence for that region.

**Focused Survey for California Gnatcatcher, Cajon Wash, San Bernardino County, CA. Lilburn Corporation, 2008.** Conducted focused surveys within the San Bernardino County Flood Control District's proposed 400-acre Cajon Wash Mitigation Bank. Purpose of the survey was to evaluate potential occurrence of California gnatcatchers within mitigation bank because the area is historically known to support very low density population.



**SANDRA LEATHERMAN**  
**PRINCIPAL BIOLOGIST**

**EDUCATION**

**California State University, Fullerton, California**

Bachelor of Arts, Biological Science, 1991.

**PROFESSIONAL EXPERIENCE**

**Leatherman BioConsulting, Inc. 2011– present; BonTerra Consulting 1998-2011; P&D Consultants 1993-1998; MBA 1992-1993; USFS Stanislaus 1991.** Primarily responsible for biological surveys, report preparation, project management, and agency coordination. Specialties include habitat assessments, general vegetation documentation, vegetation mapping, focused surveys for endangered species, restoration plan development, restoration monitoring, and construction and mitigation compliance monitoring. Prepares biological technical reports to document field work and propose mitigation strategies to meet requirements of CEQA and NEPA, and to initiate formal consultation under the federal Endangered Species Act. Also prepares Habitat Mitigation Plans.

**MEMBERSHIPS**

- Southern California Botanists Board of Directors
- California Native Plant Society
- California Botanical Society
- Society of Ecological Restoration
- California Native Grasslands Association
- California Invasive Plant Council
- The Desert Tortoise Council

**PERMITS AND CERTIFICATIONS**

- CDFG Rare, Threatened and Endangered Plant Voucher Collecting Permit (No. 06022)

**SEMINARS AND SPECIALIZED TRAINING**

- California Native Plant Society Conservation Conference January 2015
- Southern California Botanists Symposiums Annually 1991-2018
- California Native Plant Society Conservation Conference January 2012
- 20<sup>th</sup> Annual Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop. The Desert Tortoise Council. Ridgecrest, California. November 2011.
- California Native Plant Society Conservation Conference November 2009
- SERCAL's 14<sup>th</sup> Annual Conference "Restoration from Sea to Shining Sea" October 2007
- SERCAL's 13<sup>th</sup> Annual Conference "Shovel to Science: A Full Range of Restoration Practice in California" October 2006
- California Exotic Pest Plant Council Symposium October 1998



- California Exotic Pest Plant Council Symposium October 1995

## **GENERAL EXPERIENCE**

Sandra Leatherman has over twenty years of experience as a professional biologist conducting general biological surveys, focused special status plant surveys, vegetation mapping, and preparing biological reports and biological resources sections for environmental documents. Ms. Leatherman's professional experience has focused on plant ecology and taxonomy. She has conducted and/or managed both general and directed surveys for biological resources, including plants listed as special status or endangered under State and federal laws and regulations. She has been responsible for developing habitat restoration programs and evaluating restoration site conditions on a quantitative and qualitative basis for public-sector and private-sector clients throughout southern California. Ms. Leatherman has developed and monitored numerous restoration projects which were approved by the resource agencies and released from further maintenance and monitoring. Ms. Leatherman has also authored the biological resources sections of numerous environmental impact reports (EIRs) and separate biological reports, including biological assessments (pursuant to Section 7 consultations with the U.S. Fish and Wildlife Service [USFWS]), Natural Environmental Studies (pursuant to California Department of Transportation [Caltrans] guidelines), and reports in accordance with NCCP guidelines (e.g. Western Riverside MSHSP). She has also authored focused survey reports for special status species, tree reports, and general biological assessments.

## **REPRESENTATIVE PROJECT EXPERIENCE**

**Interstate 10/Monterey Interchange Improvement Project, Riverside County, BonTerra Consulting.** Served as the lead botanist for a freeway interchange project in Coachella Valley. Performed focused surveys for Coachella Valley milk-vetch, prepared detailed field notes and California Natural Diversity Database (CNDDDB) data forms; mapped population locations; collected voucher specimens; and performed other related analyses. Responsibilities also included: preparation of a detailed special status species report, which included mitigation recommendations and a complete plant list.

**Garden of Champions Biological Surveys, Riverside County, BonTerra Consulting.** Served as the lead botanist for the Garden of Champions project site in Coachella Valley. Mapped vegetation and performed focused surveys for Coachella Valley milk-vetch. Prepared detailed field notes and California Natural Diversity Database (CNDDDB) data forms; mapped population locations; collected voucher specimens; and performed other related analyses. Responsibilities also included: prepared a detailed special status species report (which included mitigation recommendations and a complete plant list) and a Biological Technical Report for the project site.

**Special Status Plant Surveys, U.S. Gypsum Plaster City Quarry, Imperial County, CA. Aspen Environmental 2016 and 2017.** Conducted special status plant surveys on the U.S. Gypsum mine with a team of botanists. Responsibilities includes: plant identification, recording GIS data and detailed field notes.

**Narrow Endemic Plant Surveys, Newcastle Eastvale Site, Western Riverside County, CA. Alden Environmental Inc, 2017.** Conducted focused narrow endemic plant surveys (per the MSHCP) on the approximately 16 acre project site in the City of Eastvale, western Riverside County. The surveys were conducted using 100% visual coverage surveys by walking parallel belt transects throughout the project site. Responsibilities included: documenting reference populations prior to the survey, recording all plant species present and collecting voucher specimens on the site to be submitted to the herbarium.

**Special Status Plant Surveys, Thousand Palms Flood Control Project, Riverside County, CA. Aspen Environmental Group, 2016.** Assisted with focused surveys for special status plant species including the Coachella Valley Milk Vetch (*Astragalus lentiginosus var. coachellae*) along four reaches of the project, two of which are adjacent to the Coachella Valley Preserve. The surveys were conducted in linear transects in a team of four biologists.

**Construction Monitoring, Mojave River West Levee Phase II Project, Victorville, San Bernardino County, California. San Bernardino County, 2017.** Conducts weekly biological monitoring for compliance with mitigation measures, site-specific BMPs and provides worker environmental awareness program training (WEAP training). Provides a summary of the project activities related to biological resources and jurisdictional waters. Prepares weekly monitoring memoranda using daily monitoring logs and site photographs.

**Special Status Plant Surveys Valley-Ivyglen Transmission Line Project for Edison, Riverside County, CA. Kidd Biological Inc./AECOM, 2015.** Served as a botanist on the 27 mile Edison Transmission Alignment in Western Riverside County. Conducted systematic surveys of the project site with a team of six biologists. Prepared detailed field notes and collected special status plant data with a hand-held Garmin GPS.

**Approximate 500-Acre Adelanto Project Site, San Bernardino County, BonTerra Consulting.** Served as the lead botanist for the Adelanto Project site in San Bernardino County. Conducted general plant surveys, mapped vegetation, assisted in the preparation of a technical report, and made recommendations for special status plant surveys at the site.

**Dos Palmas Monitoring Wells, Riverside County, BonTerra Consulting.** Served as botanist for the Monitoring Wells construction in Riverside County. Responsibilities included: vegetation mapping and a general plant survey on the site.

**Cottonwood Creek, Riverside County, BonTerra Consulting.** Served as the project manager and lead botanist for the proposed development in western Riverside County. Responsibilities included: mapping vegetation; a general plant survey on the site; preparation a Habitat Assessment (per the County guidelines) and a detailed plant list.

**Mira-Serra, Riverside County, BonTerra Consulting.** Served as the lead botanist for a 50-acre project site in Palm Springs. Performed focused surveys for Coachella Valley milk-vetch. Prepared detailed field notes and California Natural Diversity Database (CNDDB) data forms; mapped population locations; collected voucher specimens; and performed other related

analyses. Responsibilities also included: preparation of a detailed special status species report, which included mitigation recommendations and a complete plant list.

**20-Acre K. Hovnanian Site in Palm Springs, Riverside County, BonTerra Consulting.** Served as the lead botanist for a 20-acre project site in Palm Springs. Performed focused surveys for Coachella Valley milk-vetch. Prepared detailed field notes and California Natural Diversity Database (CNDDDB) data forms; mapped population locations; collected voucher specimens; and performed other related analyses. Responsibilities also included: preparation of a detailed special status species report, which included mitigation recommendations and a complete plant list.

**126 Acres in Hesperia for Stonegate Development, San Bernardino County, BonTerra Consulting 2017.** Served as the lead botanist for the 126-acre project site in Hesperia. Conducted general plant surveys, mapped vegetation, prepared a Constraints Analysis, and acted as Technical Editor.

**15-Acre Site in Cathedral City for Burnett, Riverside County, BonTerra Consulting.** Served as the lead botanist for a 15-acre project site in Cathedral City. Performed focused surveys for the Coachella Valley milk-vetch. These studies included the preparation of detailed field notes and California Natural Diversity Database (CNDDDB) data forms; the mapping of population locations; the collection of voucher specimens; and the conducting of other related analyses. Responsibilities also included: the preparation of a detailed Special Status Species Report, which includes mitigation recommendations and a complete plant list.

**Antelope Transit, Los Angeles County, BonTerra Consulting.** Served as the lead botanist for the Antelope Valley Transit Authority project. Conducted general plant and wildlife surveys and mapped vegetation on 16 acres of open space in the City of Lancaster.

**Washington Street, Riverside County, BonTerra Consulting.** Served as the lead botanist for the Washington Street widening project in Coachella Valley. Mapped vegetation on the project site, conducted general plant surveys, and prepared a Biological Technical Report.

**Trampas Canyon Dam and Reservoir Project, Santa Margarita Water District. 2018-Present.** Project Manager and field biologist for SMWD Trampas Canyon Dam and Reservoir Project, a \$123,000,000 project that is currently under construction. The project involves the reconstruction of the Trampas Canyon Dam to create a 5,000 acre-foot (ac-ft) recycled water reservoir. Responsibilities include monitoring the installation of fencing along construction limits and all clearing and grubbing activities, identifying and establishing Environmentally Sensitive Areas, and conducting pre-construction nesting bird surveys. Ms. Leatherman also submits weekly reports to RWQCB, USFWS, CDFW and USACE.

**Botanical Inventory and Rare Plant Mapping, Canyon Fire, Orange County California 2018** Served as one of the lead botanists large scale botanical inventory to document plant diversity and to locate, map and estimate the population size of all special status plant species within the Canyon Fire footprints. Surveys were conducted throughout the spring and summer of 2018 throughout lands managed by the Irvine Ranch Conservancy and the NCCP Central

Reserve managed by the Natural Communities Coalition. The locations and extent of each special status plant species was mapped in the field using handheld GPS units and downloaded into mapping software to develop a GIS data base with all plant populations. Ten rare plant were detected during the surveys, including the federally endangered Braunton's milkvetch (*Astragalus brauntonii*), a very rare species that germinates and persists for short periods in areas that recently burned. Special status plant populations were recorded at 338 points and extensive populations were mapped in 96 polygons.

**Vegetation Mapping South County Mobility Project Vegetation Mapping, Orange County, CA. Psomas 2017.** Served as senior botanist on South County Transportation Corridor Analysis. Responsibilities include mapping over 2,000 acres of native habitats on aerial photographs for digitizing in GIS. This task also included qualitative data collection and sampling. The habitats mapped included but were not limited to: coastal sage scrub, chaparral, riparian, native grasslands, annual grassland, and oak woodlands and riparian forests. The vegetation was mapped using the OC GIS classification system and Sawyer Keeler-Wolf.

**Special Status Plant Surveys, South County Mobility Project Special Status Plant Surveys, Orange County, CA. Psomas 2017.** Served as the lead botanist for the special status plant surveys in southern Orange County. Responsibilities included: organizing crews of 20 people in the field, surveying over 3,000 of natural habitat, organizing all the gis data and plant data, keying plants, submitting herbarium specimens and primary author of the special status plant report. Special status plant species surveyed for included: thread-leaved brodiaea, intermediate mariposa lily, mud nama, white-rabbit tobacco, Catalina mariposa lily, many-stemmed dudleya, small-flowered morning-glory, Robinson's pepper-grass, Coulter's matilija poppy, southern tarplant, paniculate tarplant, and small-flowered microseris.

**Special Status Plant Surveys, Dana Point Preserve Dana Point, Orange County, CA. Center for Natural Lands Management, 2017.** Served as the lead botanist to update special status plant locations and any additional species on the 29-acre Dana Point Headlands. Responsibilities included: surveying and collecting data on special status plant locations with a GPS and Ipad (Avena Program), collecting herbarium specimens and identifying them, and author of the





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**ADAM DELUNA**  
**PROJECT BIOLOGIST**

**EDUCATION**

**California State University, Fullerton, California**

Bachelor of Science, Biological Science, 2012. Focus of major on biodiversity, ecology, and conservation of biological resources in southern California.

**PROFESSIONAL EXPERIENCE**

**Leatherman BioConsulting, Inc. March 2011 – Present.** Primary responsibilities include conducting California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, burrowing owl surveys, nest monitoring, desert tortoise surveys and monitoring, construction monitoring, and arundo removal monitoring on a variety of projects throughout California. Additional experience includes project management, brown-headed cowbird trapping programs, assisting with general botanical and biological surveys, wildlife trapping and control, data input, and report preparation.

**PERMITS AND CERTIFICATIONS**

- Authorized desert tortoise biologist
- California Department of Fish and Wildlife Scientific Collecting Permit (SC-12609).

**SEMINARS AND SPECIALIZED TRAINING**

- Authorized Desert Tortoise Biologist Training Course. The Desert Tortoise Council in cooperation with U.S. Fish and Wildlife Service. Primm, Nevada. September 2017.
- 20<sup>th</sup> Annual Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop. The Desert Tortoise Council. Ridgecrest, California. November 2011.
- CalFlora Training Workshop, CalFlora. Audubon Starr Ranch Sanctuary, Santa Ana Mountains, California. January 2017.

**GENERAL EXPERIENCE**

Adam DeLuna graduated from California State University Fullerton in 2012 with a degree in Biological Science with a focus on the ecology and conservation of vertebrates in Southern California. Since that time, Mr. DeLuna has worked extremely hard to become qualified to work with a variety rare, threatened and endangered plant and wildlife species throughout the region. Mr. DeLuna's work with the desert tortoise, coupled with his attendance to training workshops on surveying and handling desert tortoises, has recently earned him the title of Authorized Biologist, which is the highest level of qualification recognized by the resource agencies. In addition to his work with the tortoise, Mr. DeLuna is qualified and/or permitted to conduct surveys for several special status bird species, and has management experience in survey planning and leading teams of biologists on large scale bird surveys (e.g. burrowing owl, California gnatcatcher, cactus wren). Finally, Mr. DeLuna has extensive experience on a variety of construction projects on which he serves as the lead monitoring biologist, organizing and

conducting nesting bird surveys, establishing buffer areas for nesting birds, conducting pre-construction sweeps and weekly (or daily) sweeps for species identified in project permits, and evaluating and documenting compliance with project related permits from various agencies.

## **REPRESENTATIVE PROJECT EXPERIENCE**

**Desert Tortoise Monitoring for Emergency Bridge Repair along National Trails Highway, Amboy, CA. San Bernardino Department of Public Works, 2013-2018.** Conducted daily surveys and monitoring for emergency bridge repair work along National Trails Highway (historic Route 66). Monitoring activities included daily surveys for desert tortoise within project area, roadside surveys prior to grading, and monitoring construction crews during supplemental construction and removal of excess material. Based on his work in 2014, the county has requested his participation on emergency bridge repair projects on an annual basis following thunderstorms that result in damage to roads and bridges throughout the Mojave Desert. Accumulated over 2,100 hours of field experience surveying and monitoring for desert tortoise for the County of San Bernardino.

**Burrowing Owl, Desert Kit Fox, and American Badger Surveys, Camera Monitoring, Burrow Excavation, Fence Checks, Beacon Solar Project, Kern County, CA. BonTerra Psomas, 2016-2017.** Conducted focused surveys for burrowing owl, desert kit fox, and American badger on Site 2 and Site 5 of the Beacon Solar Project in the Mojave Desert. The surveys were conducted using 100% visual coverage surveys by walking parallel belt transects with a team of biologists throughout the project site searching for target species, active burrows, and potential burrows. Conducted multiple rounds of crepuscular surveys on active and potential burrows; installed camera monitoring stations on active and potential burrows; and conducted camera monitoring for target species. Constructed and installed one-way doors to passively relocate burrowing owl according to the project's Burrowing Owl Exclusion Plan and to ensure other potential burrows were inactive prior to excavation. Assisted with burrow checks using a bore scope video camera and excavated inactive burrows. Conducted weekly desert tortoise fence checks on both sites, including associated lay-down yards.

**Desert Tortoise Surveys and Authorized Desert Tortoise Biologist, California City, CA. Psomas, 2017-2018.** Served as an Authorized Desert Tortoise Biologist on a 35-acre prison expansion project in California City. Conducted pre-construction desert tortoise surveys and was in charge of excavating unoccupied/inactive burrows throughout the site. Surveys were conducted using 100% visual coverage surveys by walking parallel belt transects throughout the project site searching for target species, active burrows, and potential burrows.

**Desert Tortoise Monitoring for Twentynine Palms Channel Grading, Twentynine Palms, CA. San Bernardino County Flood Control District, 2013 and 2017.** Conducted daily monitoring along Twentynine Palms channel along Utah Road. Monitoring activities included daily surveys for desert tortoise and burrowing owl within the impact area, and monitoring for target species' as heavy equipment was used to restore the levee and channel.

**Desert Tortoise Monitoring for Road Grading, Locations Throughout San Bernardino County, CA. San Bernardino County, 2013-2018.** Conducted monitoring for San Bernardino County road grading crews at various locations supporting desert tortoise habitat throughout the

Mojave Desert. Surveyed shoulders and drainages prior to equipment work (graders and loaders) to ensure that no impacts to desert tortoises occurred during road maintenance. Coordinated with County workers, conducted contractor education, and was responsible in identifying and marking grading limits throughout the county maintained roads and washes.

**Desert Tortoise Clearance Survey for Western Mesquite Mines, Brawley, Imperial County, CA. Hernandez Environmental Services, 2017.** Conducted clearance surveys for desert tortoise on an 1800-acre site for the Western Mesquite Gold Mine. The surveys were conducted as part of a biological opinion re-initiation process by the BLM, USFWS, and CDFW and followed the current clearance survey protocol. The surveys were conducted using 100% visual coverage surveys by walking parallel belt transects with five biologists throughout the project site searching for desert tortoise and associated sign. In addition, Mr. DeLuna observed and assisted with relocation of six tortoises and excavated ten burrows.

**Desert Tortoise Monitoring for Communications Tower Upgrade, Ivanpah Valley, CA. Aspen Environmental, 2013.** Conducted daily monitoring along access road as well as within and around a communication tower facility during an upgrade to communication towers in an occupied desert tortoise habitat near state line (Primm, Nevada). Monitoring activities included daily sweeps for desert tortoise within project area, roadside sweeps prior to accessing the facility, escorting work crews to the facility, checking tortoise fencing around facility, and monitoring crews during construction process.

**Pre-Construction Surveys and Arundo Removal Monitoring, Santa Clara River, Santa Clarita, Los Angeles County, CA. Wildscape Restoration, 2012.** Conducted pre-construction survey for special status species and monitored the removal of arundo and other non-native invasive species within the Santa Clara River. Exotic species removal was conducted under the Santa Clara River Arundo and Tamarisk Removal Project (SCARP), within Area E of the Site Specific Implementation Project area near the confluence with San Francisquito Creek. Work was conducted under the auspices and conditions set forth in the California Department of Fish and Wildlife Streambed Alteration Agreement (File No. 1600-2005-0275-R5) and U. S. Fish and Wildlife Service Biological and Conference Opinions (File No. 1-8-06-F-5).

**Riparian and Native Grassland Invasive Plant Removal, Dune Restoration, Camp Pendleton, San Diego County, CA. Gulf South Research Corporation, 2015-2016.** Conducted surveys and mapped distribution of invasive plants in riparian habitats occupied by Least Bell's Vireo and Southwestern Willow Flycatcher, along coastal bluffs occupied by California Gnatcatcher, and in native grassland habitats with thread-leaved brodiaea populations. Assisted with special status plant surveys and monitoring for coast woolly-threads, Nuttall's lotus, Brand's phacelia and sand verbena in California least tern and snowy plover habitat. Assisted with sweet fennel removal and monitored application of herbicide treatment on sweet fennel in occupied thread-leaved brodiaea habitat. Identified weeds to be removed during the restoration of the dunes.



**GREGORY STRATTON**  
STAFF BIOLOGIST

**EDUCATION**

**California Polytechnic University, Pomona, California**

Bachelor of Science in Environmental Biology, 2014

Minor in Geology

**PROFESSIONAL EXPERIENCE**

**Leatherman BioConsulting, Inc. March 2015 – present:** Primary responsibilities include conducting California gnatcatcher, least Bell's vireo, burrowing owl, arroyo toad, desert tortoise surveys and monitoring, and monitoring construction sites for compliance with various project-related permits throughout California. Additional experience includes brown-headed cowbird trapping programs, monitoring restoration sites, assisting with general botanical and biological surveys, nesting bird surveys, wildlife trapping and control, data input, and report preparation.

**SPECIALIZED TRAINING**

- 24<sup>th</sup> Annual Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop. The Desert Tortoise Council, Ridgecrest, CA. November 2015.

**GENERAL EXPERIENCE**

Mr. Stratton graduated from California Polytechnic University, Pomona where he majored in Environmental Biology with an emphasis in Ecosystem Ecology and Management. He also earned a minor in Geology. His professional experience with Leatherman BioConsulting, Inc. includes construction monitoring, habitat restoration monitoring, and conducting focused surveys for special status plants and wildlife. Mr. Stratton's list of species includes arroyo toad, desert tortoise, Coachella Valley fringe-toed lizard, California gnatcatcher, least Bell's vireo, burrowing owl, and cactus wren. He has conducted surveys associated with habitat restoration projects for large-scale arundo removal projects, and worked closely with crews implementing an invasive weed control program on Camp Pendleton that involved extensive riparian habitat, coastal dunes, and grassland habitat.

**REPRESENTATIVE PROJECT EXPERIENCE**

**Burrowing Owl, Desert Kit Fox and American Badger Pre-construction Surveys and Burrow Excavation, Beacon Solar Project, Kern County, CA. Pomas, 2016 & 2017.**

Conducted focused surveys for the burrowing owl, desert kit fox and American badger on two sites of the Beacon Solar Project in Kern County, CA. The surveys were conducted using 100% visual coverage surveys by walking parallel belt transects with a team of biologists throughout the project site searching for target species and potential burrows. Assisted the designated

biologist with burrow checks using a borescope and excavating inactive burrows prior to construction activity. Performed weekly perimeter fence checks of tortoise fencing.

**Desert Tortoise Clearance Survey for Western Mesquite Mines, Brawley, Imperial County, CA. Hernandez Environmental Services, 2017.** Conducted clearance surveys for desert tortoise on an 1800-acre site for the Western Mesquite Gold Mine. The surveys were conducted as part of a biological opinion re-initiation process by the BLM, USFWS, and CDFW and followed the current clearance survey protocol. The surveys were conducted using 100% visual coverage surveys by walking parallel belt transects with teams of five biologists throughout the project site searching for desert tortoise and associated sign. In addition, Mr. Stratton observed six tortoises that were to be relocated and assisted with burrow excavation.

**Desert Tortoise Monitoring, Bridge Repair Project, Amboy, San Bernardino County, CA. San Bernardino Department of Public Works, 2015 and 2017.** Conducted daily monitoring for emergency bridge repair along historic Route 66 (National Trails Highway). Monitoring activities included periodic sweeps for desert tortoise within project area, roadside sweeps prior to grading, and monitoring construction crews during supplemental construction and removal of excess material.

**Desert Tortoise and Burrowing Owl Pre-construction Surveys and Monitoring, Needles Flood Control Levee Project, San Bernardino County Flood Control District, CA. 2016.** Conducted daily preconstruction surveys for presence of desert tortoise, burrowing owls and burrows on county storm water levees and basins in Needles, Ca. Monitoring activities included periodic sweeps for desert tortoise within project area, roadside sweeps prior to grading and spraying activity, and monitoring construction crews during supplemental construction and removal of excess material.

**Desert Tortoise Monitoring for Twentynine Palms Channel Grading, Twentynine Palms, CA. San Bernardino County Flood Control District, 2017 and 2018.** Conducted daily monitoring along Twentynine Palms channel along Utah Trail Road. Monitoring activities included daily surveys for desert tortoise and burrowing owl within the impact area and monitoring for desert tortoise as heavy equipment was used to restore the channel.

**Desert Tortoise Monitoring for Road Grading, Locations Throughout San Bernardino County, CA. San Bernardino County, 2017-2018.** Conducted monitoring for San Bernardino County road grading crews at various locations supporting desert tortoise habitat throughout the Mojave Desert. Surveyed shoulders and drainages prior to equipment work (graders and loaders) to ensure that no impacts to desert tortoises occurred during road maintenance. Coordinated with County workers, conducted contractor education, and was responsible in identifying and marking grading limits throughout the county maintained roads and washes.

**Desert Tortoise Monitoring for Joshua Tree Disposal Site, Joshua Tree, San Bernardino County, CA. San Bernardino County, 2018.** Conducted daily monitoring for the San Bernardino Department of Public Works during repair work at the Joshua Tree Disposal Site. The disposal site repairs included access road repair and replacement of the disposal site cover.



Monitoring activities included daily surveys for desert tortoise and burrowing owl within the impact area and monitoring for desert tortoise as heavy equipment performed the site repairs.

**Pre-Construction Surveys and Arundo Removal Monitoring, Santa Clara River, Santa Paula, Ventura County, CA. Land IQ, 2016 - 2018.** Conducted pre-construction surveys for special status species and monitored the removal of giant reed (*Arundo donax*) within the Santa Clara River. Conducted focused surveys for least Bell's vireo to identify nesting pairs and monitor nesting status during arundo removal activities. Monitored the removal of giant reed (*Arundo donax*) within the Santa Clara River. Flagged natives to be avoided during the removal of giant reed and marked boundaries of management blocks. Monitoring was conducted on The Nature Conservancy's Hanson Property in Santa Paula, CA. Accumulated an estimated 150.75 hours in vireo habitat and 75 hours in the presence of vireos. Work conducted under authorization from USFWS under BO 8-8-13-F-33.

**Riparian and Native Grassland Invasive Plant Removal, Dune Restoration, Camp Pendleton, San Diego County, CA. Gulf South Research Corporation, 2015 & 2016.** Conducted surveys and mapped distribution of invasive plants in riparian habitats occupied by Arroyo Toad, Least Bell's Vireo and Southwestern Willow Flycatcher, coastal bluffs occupied by California Gnatcatcher, and native grassland habitats with thread-leaved brodiaea populations. Assisted with special status plant surveys and flagging for coast woolly-threads, Nuttall's lotus, Brand's phacelia and sand verbena in California least tern habitat. Identified weeds to be removed by work crews during the restoration of the dunes. Assisted with sweet fennel removal and monitored application of herbicide treatment on sweet fennel in occupied thread-leaved brodiaea habitat.

**Thousand Palms Flood Control Project Coachella Valley Milk Vetch and Special Status Plant Surveys, Riverside County, Aspen Environmental Group, 2016.** Assisted with focused surveys for special status plant species including the Coachella Valley Milk Vetch along four reaches of the project, two of which are adjacent to the Coachella Valley Preserve.

**Special Status Plant Surveys, Norco Property in the City of Norco, Riverside County, CA. Hernandez Environmental Services, 2016.** Assisted in conducting field surveys for special status plants on a 430-acre site in Norco. Assisted in systematically surveying the entire project site recording all plant species observed. Also assisted in preparing the special status plant report, graphics and CNDDDB forms.

**Arundo Removal Monitoring, Santa Clara River, Santa Clarita, Los Angeles County, CA. Wildscape, 2019.** Monitored the removal of giant reed (*Arundo donax*) within the Santa Clara River floodplain at its confluence with San Franciscito River as part of the Santa Clara River Arundo Removal Project (SCARP). Conducted contractor education meetings, flagged native plants and other biological resources to be avoided during the removal of giant reed, and marked boundaries of management blocks.