

## 5.3 BIOLOGICAL RESOURCES

Section 5.3 addresses the potential impacts to biological resources which could occur from the construction and operation of the Genesis Solar Energy Project (Project). Biological resources include vegetation, wildlife, state jurisdictional waters, and conservation areas designated by federal regulatory agencies. This section first discusses the regional setting in which the Project would occur and any special land management plans or land designations in the general area (sections 5.3.1 and 5.3.2). It then discusses the biological surveys conducted within the area of affect (section 5.3.3), followed by a description of the resources which would be affected (section 5.3.4). Impacts to these resources as well as the mitigation measures which would be implemented are discussed in sections 5.3.5 through 5.3.7, followed by the applicable Laws, Ordinances, Regulations, and Standards (LORS) in section 5.3.8. The agencies with permitting authority as well as the biological permits required are listed in sections 5.3.9 and 5.3.10.

### 5.3.1 Affected Environment

The Project is located in Riverside County, California, approximately 25 miles west of the city of Blythe on lands managed by the Bureau of Land Management (BLM) (Figure 5.3-1). Surrounding features include the McCoy Mountains to the east, the Palen Mountains (including the Palen/McCoy Wilderness Area) to the north, and Ford Dry Lake to the south. Interstate 10 (I-10) is located approximately 2 miles south of the southernmost border of the right-of-way (ROW).

### 5.3.2 Regional Biological Resources

The Project is located in Chuckwalla Valley, immediately north of Ford Dry Lake in the Colorado region of the Sonoran Desert. This region is sparsely vegetated and characterized by broad valleys interspersed with mountain ranges and dry lakes. The vegetation within the Project area is characterized two main vegetation types: Sonoran Creosote Bush Scrub and Stabilized and Partially Stabilized Sand Dunes (Holland, 1986); however, small areas of Chenopod Scrub, Desert Dry Wash Woodland, and Playa (dry lake bed) are located within the one mile of the Project (but outside the Project area [footprint]; Figure 5.3-2). Sonoran Creosote Bush Scrub represents the majority of the survey area, except where Stabilized and Partially Stabilized Sand Dunes are found in the eastern portion of the ROW and along the northern portions of the linear facility routes. There are no surface waters found within the vicinity of the Project or that would be affected by Project activities.

The Project would be located in an area that is both undeveloped area and undisturbed, although the area has been used for grazing and recreation in the past. Ford Dry Lake was formerly open to the public for off-highway vehicle use, but has since been closed and current access is restricted to existing roadways. Access to the ROW is poor as it is limited to 4-wheel-drive roads located on the western end of the ROW.

#### 5.3.2.1 BLM Special Management Areas

In 1976, Congress designated the 25-million-acre California Desert Conservation Area (CDCA). Since then, the BLM has completed a series of regional plan amendments. Among these was the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan (BLM and CDFG, 2002), which encompasses 5.5 million acres in the southeastern California Desert and the entire Project area. For the purposes of this application, the applicant assumes the NECO plan applies to the Project.

The NECO Plan provides for conservation and management of several status species, in a large part through a system of broad management areas including the: Desert Wildlife Management Areas (DWMAs) for desert tortoises, Wildlife Habitat Management Areas (WHMAs) for other special status species and natural communities, Areas of Critical Environmental Concern (ACEC), and wilderness areas. The plant site and portions of the linear facility routes are situated within a Multi-Species WHMA. The Project is outside, but directly adjacent to, the Palen/McCoy Wilderness (located to the north) and the Palen Dry Lake ACEC (located to the west). The southern portions of the linear facilities are within a desert tortoise DWMA (Figure 5.3-3).

The NECO Plan primarily addresses recovery of the desert tortoise, conservation of a variety of other species, modified management of wild burro herds in the planning areas, and updated policies regarding off-highway vehicle use and public land access and use. Emphasis is placed on minimizing disturbance and maximizing mitigation, compensation, and restoration from authorized allowable uses.

#### **Wildlife Habitat Management Area**

The entire requested ROW of the Project is located within a Multi-Species WHMA and the Project's linear facilities overlap with portions of the same WHMA.

#### **Desert Wildlife Management Area**

Through the adoption of the Final NECO Plan, the BLM created the 820,077-acre Chuckwalla DWMA, which is also considered Category I habitat for desert tortoise (see text below regarding the BLM Desert Tortoise Category Designations). Cumulative disturbance within DWMAs is limited to one percent of the surface area and carry a 5:1 compensatory mitigation ratio for any areas disturbed. Approximately 0.5 mile of the proposed transmission line is within the Chuckwalla DWMA (Figure 5.3-3).

#### **BLM Desert Tortoise Category Designations**

BLM habitat categories, ranging in decreasing importance from Category I to Category III, were designed as management tools to insure future protection and management of desert tortoise habitat and its populations. These designations were based on tortoise density, estimated local tortoise population trends, habitat quality, and other land-use conflicts. Category I habitat areas are considered essential to the maintenance of large, viable populations. Outside of desert tortoise DWMAs, all habitat previously categorized as Category I, II, or III habitat, including uncategorized habitat found to be inhabited by desert tortoises, is treated as Category III habitat for the purposes of compensation. The Project is in uncategorized habitat, except for those portions of the linear facility routes that are within the Chuckwalla DWMA.

#### **5.3.2.2 USFWS Designated Critical Habitat for Tortoise**

In June 1994, the final Desert Tortoise (Mojave Population) Recovery Plan was released (USFWS, 1994a). The Recovery Plan identifies six evolutionarily significant units of the desert tortoise in the Mojave region, termed recovery units, based on differences in tortoise behavior, morphology and genetics, vegetation, and climate. Within those recovery units, suggested DWMAs act as reserves in which recovery actions are implemented. The recovery plan works in concert with critical habitat, designated for the desert tortoise in 1994 (USFWS, 1994b), by prescribing management actions to aid recovery, with critical habitat providing legal protection for areas that are considered to have essential features for tortoise survival. Approximately 1.6 miles of the access road, 2.8 miles of the transmission line route, and 1 mile of the gas line route are within desert tortoise critical habitat (Figure 5.3-3).

### 5.3.3 Vegetation Communities and Habitat Types

Vegetation communities are a collection of plant species that occur together in the same area and are generally defined by both species composition and relative abundance. The vegetative community descriptions and nomenclature used in this section are based on the identification of biotic and abiotic characteristics and are adopted from Holland (1986). The vegetative communities described below generally correlate with wildlife habitat types. Figure 5.3-2 illustrates the vegetation communities and habitat types within the survey area.

#### Sonoran Creosote Bush Scrub

The deserts of southeastern California are extensively covered by creosote bush scrub (Holland, 1986), which is recognized by the dominance of creosote bush (*Larrea tridentata*) and the lack of trees. Creosote bush scrub communities typically consist of widely scattered shrubs, 1.5 to 10 feet tall, with bare ground between the plants. Sonoran Creosote Bush Scrub, a subset of creosote bush scrub communities, occurs mainly on well-drained secondary soils of slopes, fans, and valleys rather than on sites with thin residual spoils or areas of high soil salinity (Holland and Keil, 1995). The dominant shrub species in this vegetation community are creosote bush, white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), white rhatany (*Krameria grayi*), and cheesebush (*Ambrosia* [= *Hymenoclea*] *salsola*). Growth occurs during spring and many species of ephemeral herbs may flower in late March and April if the winter rains are sufficient. Other less numerous species of annuals appear following summer thundershowers.

#### Stabilized and Partially Stabilized Sand Dunes

Stabilized and Partially Stabilized Sand Dunes are areas of fine, windblown sand accumulations stabilized by shrubs, perennial grasses, and sand-adapted annual plants (Holland, 1986). Desert dunes typically occur within creosote bush scrub communities where sand that has been deposited by wind or water accumulates over millennia. Sand dunes readily absorb water and can retain water below the surface. These conditions are suitable for plants with deep root systems that are able to take advantage of the retained water.

### 5.3.4 Jurisdictional Waters

There are no wetlands meeting the definition found in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (1997) traversed by any portions of the proposed Project. However, ephemeral washes traverse the Project area and linear facility routes and would be potentially affected during construction and operation (see Section 5.3.6.5.2).

### 5.3.5 Special Status Biological Resources

Several species known to occur on or in the vicinity of the Project are accorded "special status" by federal and state agencies because of their recognized rarity or potential vulnerability to extinction. These species typically have a limited geographic range and/or limited habitat and are referred to collectively as "special status" species. Species were considered to have special status if they meet any of the following criteria: 1) protected under the Endangered Species Act (ESA) and/or California Endangered Species Act (CESA); 2) designated a California Department of Fish and Game (CDFG) species of special concern (SSC); 3) designated a CDFG fully protected species; 4) protected under the Bald and Golden Eagle Protection Act (BGEPA) (USFWS, 2007); 5) a fish or wildlife species with commercial and/or recreational value; or 6) included on the California Native Plant Society (CNPS) List with status of 1A (presumed extinct in California), 1B (rare, threatened, and endangered in

California and elsewhere), or 2 (rare, threatened, or endangered in California, but more common elsewhere). CNPS List 1A, 1B, and 2 species are considered special status plant species if they meet the definitions in Native Plant Protection Act (NPPA) §1901 or CESA §§2050-2098. Prior to field surveys, a target list of special status species that may be affected by the Project was developed (Table 5.3-1) based on the following:

- Records of the California Natural Diversity Data Base (CNDDDB) for special status species that are known to occur within 10 miles of the survey area (Figures 5.3-4a and 5.3-4b)
- Records from the CNPS for special status plants within the survey region
- Requests to and responses by the resource agencies relative to protected species in the Project area (Appendix C-2)
- Special status species identified in the NECO Plan

Field surveys were conducted to determine the presence/absence of species with the potential to occur on or near the survey area (Section 5.3.6).

**Table 5.3-1. Occurring and Potentially Occurring Special Status Species  
within the Genesis Solar Energy Project**

Species	Status <sup>1</sup>			Habitat	Likelihood of Occurrence on the Project Site/Observed during Surveys
	Federal	State	CNPS <sup>2</sup> / Other		
<b>Plants</b>					
Abrams's Spurge ( <i>Chamaesyce abramsiana</i> )	---	---	2	Sandy sites in Mojavean and Sonoran Desert scrubs in eastern California; 0 to 3,000 feet	Possible/Not Observed
Arizona Spurge ( <i>Chamaesyce arizonica</i> )	---	---	2	Sandy flats in Sonoran Desert Scrub, below ~1,000 feet	Possible/Not Observed
Ayenia ( <i>Ayenia compacta</i> )	---	---	2	Sandy and gravelly washes and canyons in desert scrubs, 450 to 6,000 feet	Possible/Not Observed
California Ditaxis ( <i>Ditaxis serrata</i> var. <i>californica</i> )	---	---	3	Sonoran Creosote Bush Scrub from 100 to 3,000 feet	Possible/Not Observed
Chaparral Sand Verbena ( <i>Abronia villosa</i> var. <i>aurita</i> )	---	---	1B	Loose to aeolian sands; chaparral and coastal sage scrub; below 2,000 feet	Highly unlikely/ Not Observed
Coachella Valley Milkvetch ( <i>Astragalus lentiginosus</i> <i>coachellae</i> )	E, BLM Sensitive	---	1B	Loose to soft sandy soils, often in disturbed sites; 100 to 2,200 feet	Highly unlikely; no known nearby populations (population in Chuckwalla Valley misidentified)/Not Observed
Cove's Cassia ( <i>Senna covesii</i> )	---	---	2	Dry washes and slopes in Sonoran Desert Scrub, 1,600 to 1,900 feet	Possible, but elevations may be too low/Not Observed
Crucifixion Thorn ( <i>Castela emoryi</i> )	---	---	2	Mojavean and Sonoran Desert Scrubs; typically associated with drainages	Unlikely/Not Observed
Desert Sand-parsley ( <i>Ammoselinum giganteum</i> )	---	---	2	Sonoran Desert Scrub; known from one site, near Hayfield Dry Lake at 1,200 feet	Highly unlikely, but possible/ Not Observed
Desert Unicorn Plant ( <i>Proboscidea althaeifolia</i> )	---	---	4	Sandy areas in Sonoran Desert Scrub throughout southeastern California, below 3,300 feet.	Observed during Surveys

**Table 5.3-1. Occurring and Potentially Occurring Special Status Species  
within the Genesis Solar Energy Project**

Species	Status <sup>1</sup>			Habitat	Likelihood of Occurrence on the Project Site/Observed during Surveys
	Federal	State	CNPS <sup>2</sup> / Other		
Dwarf Germander ( <i>Teucrium cubense depressum</i> )			2	Sandy soils, washes, fields; below 1,300 feet	Possible/Not Observed
Flat-seeded Spurge ( <i>Chamaesyce platysperma</i> )	BLM Sensitive	---	1B	Sandy flats and dunes in Sonoran Desert Scrub; below 350 feet	Possible/Not Observed
Foxtail Cactus ( <i>Coryphantha alversonii</i> )	---	---	4	Primarily rocky substrates between 250 and 4,000 feet in Creosote Bush Scrub	Possible/Not Observed
Glandular Ditaxis ( <i>Ditaxis claryana</i> )	---	---	2	Sandy flats in Mojavean and Sonoran Creosote Bush Scrubs in Imperial, San Bernardino, and Riverside counties; below 1,500 feet	Possible/Not Observed
Harwood's Milkvetch ( <i>Astragalus insularis</i> var. <i>harwoodii</i> )	---	---	2	Dunes and windblown sands below 1,200 feet, east and south of approximately Desert Center	Observed during Surveys
Harwood's Phlox ( <i>Eriastrum harwoodii</i> )	---	---	1B	Desert slopes below 7,000 feet, eastern Riverside and San Bernardino Counties	Possibly Observed during Zone of Influence (ZOI) Surveys; however no flower to positively ID
Jackass Clover ( <i>Wislizenia refracta</i> var. <i>refracta</i> )	---	---	2	Sandy washes, roadsides, flats; 1,900 to 2,700 feet	Unlikely - elevations too low on the site/ Not Observed
Las Animas Colubrina ( <i>Colubrina californica</i> )	---	---	2	Sonoran Desert Creosote Bush Scrub, < 3,300 feet	Observed North of Project area during ZOI Surveys
Mesquite Neststraw ( <i>Stylocline sonorensis</i> )	---	---	1A	Open sandy drainages; known from one site near Hayfield Spring	Highly unlikely/Not Observed
Orocopia Sage ( <i>Saliva greatae</i> )	BLM Sensitive	---	1B	Mojavean and Sonoran Desert Scrubs; gravelly/ rocky bajadas, mostly near washes; below 3,000 feet	Unlikely/Not observed

**Table 5.3-1. Occurring and Potentially Occurring Special Status Species within the Genesis Solar Energy Project**

Species	Status <sup>1</sup>			Habitat	Likelihood of Occurrence on the Project Site/Observed during Surveys
	Federal	State	CNPS <sup>2</sup> /Other		
Pink Fairy Duster ( <i>Calliandra eriophylla</i> )	---	---	2	Sonoran Desert scrub; washes	Possible/Not observed
Sand Evening Primrose ( <i>Camissonia arenaria</i> )	---	---	2	Sandy washes and rocky slopes below 1,300 feet	Possible/Not observed
Slender Woolly-heads ( <i>Nemacaulis denudate</i> var. <i>gracilis</i> )	---	---	2	Dunes in coastal and Sonoran Desert scrubs, primarily in the Coachella Valley; below 1,500 feet	Possible/Not observed
Spearleaf ( <i>Matelea parvifolia</i> )	---	---	2	Rocky ledges and slopes, 1,000 to 6,000 feet, in Mojave and Sonoran Desert scrubs	Unlikely; no habitat/Not observed
Spiny Abrojo ( <i>Condalia globosa</i> var. <i>pubescens</i> )	---	---	4	Sonoran Creosote Bush Scrub; 500 to 3,300 feet	Possible/Not observed
Wiggins' Cholla ( <i>Cylindropuntia wigginsii</i> )	---	---	3	Sonoran Creosote Bush Scrub; 100 to 2,900 feet	Possibly observed during surveys
<b>Amphibians</b>					
Couch's Spadefoot ( <i>Scaphiopus couchii</i> )	BLM Sensitive	SC	---	Various arid communities in extreme southeastern California and east, south	Possible/Not observed
<b>Reptiles</b>					
Colorado Desert Fringe-toed Lizard ( <i>Uma notata</i> )	BLM Sensitive	SC	---	Restricted to aeolian sandy habitats in the Sonoran Desert	Possible hybrids with <i>U. scoparia</i> /Possibly observed
Desert Rosy Boa ( <i>Charina trivirgata gracia</i> )	BLM Sensitive	---	---	Rocky uplands and canyons; often near stream courses	Unlikely due to lack of habitat/Not observed
Mojave Fringe-toed Lizard ( <i>Uma scoparia</i> )	BLM Sensitive	SC	---	Restricted to aeolian sandy habitats in the Mojave and northern Sonoran deserts	Observed during surveys

**Table 5.3-1. Occurring and Potentially Occurring Special Status Species within the Genesis Solar Energy Project**

Species	Status <sup>1</sup>			Habitat	Likelihood of Occurrence on the Project Site/Observed during Surveys
	Federal	State	CNPS <sup>2</sup> /Other		
Desert Tortoise ( <i>Gopherus agassizii</i> )	T	T	---	Most desert habitats below approximately 5,000 feet in elevation	Carcass, carcass fragments, burrows, and tracks only observed during surveys
<b>Birds</b>					
American Peregrine Falcon ( <i>Falco peregrinus anatum</i> )	Delisted BCC	E, Fully Protected	MBTA	Dry, open country, including arid woodlands; nests in cliffs	Possible forager on site, may nest in adjacent mountains/Not observed
Bendire's Thrasher ( <i>Toxostoma bendirei</i> )	BLM Sensitive BCC	SC	MBTA	Arid to semi-arid brushy habitats, usually with yuccas, cholla, and trees	Unlikely/Not observed
Burrowing Owl ( <i>Athene cunicularia</i> )	BLM Sensitive BCC	SC	MBTA	Open, arid habitats	Observed during surveys
Crissal Thrasher ( <i>Toxostoma crissale</i> )	BCC	SC	MBTA	Dense mesquite and willows along desert streams and washes	Highly unlikely due to lack of habitat/Not observed
Ferruginous Hawk ( <i>Buteo regalis</i> )	BLM Sensitive	---	MBTA	Arid, open country	Observed incidentally
Golden Eagle ( <i>Aquila chrysaetos</i> )	BLM Sensitive BCC	SC, Fully Protected	MBTA	Open country; nests in large trees in open areas or cliffs	Possible forager on site, may nest in adjacent mountains/Not observed
Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	BCC	SC	MBTA	Arid habitats with perches	Observed during surveys
Mountain Plover ( <i>Charadrius montanus</i> )	BLM Sensitive BCC	SC	MBTA	Dry upland habitats, plains, bare fields	Highly unlikely, but possible winter visitor on Ford Dry Lake and adjacent shore

**Table 5.3-1. Occurring and Potentially Occurring Special Status Species  
within the Genesis Solar Energy Project**

Species	Status <sup>1</sup>			Habitat	Likelihood of Occurrence on the Project Site/Observed during Surveys
	Federal	State	CNPS <sup>2</sup> / Other		
Northern Harrier ( <i>Circus cyaneus</i> )	---	SC	MBTA	Open habitats; nests in shrubby pen land and marshes	Observed during surveys
Short-eared Owl ( <i>Asio flammeus</i> )	---	SC	MBTA	Open habitats: marshes, fields; nests on ground and roosts on ground, low poles	Observed during surveys
Yellow-breasted Chat ( <i>Icteria virens</i> )	---	SC	MBTA	Dense streamside thickets, willows; brushy hillsides and canyons	Highly unlikely due to lack of habitat, but possible transient/ Not observed
<b>Mammals</b>					
American Badger ( <i>Taxidea taxus</i> )	---	SC		Many habitats	Observed (burrow only)
Arizona Myotis ( <i>Myotis occultus</i> )	---	SC		Lowlands of the Colorado River and adjacent mountain ranges, up to ponderosa pine habitat; mines, buildings, bridges, riparian woodlands, often near water	Unlikely/Not observed*
Big Free-tailed Bat ( <i>Nyctinomops macrotis</i> )	---	SC		Cliffs and rugged rocky habitats in arid, country, also riparian woodlands	Possible forager on site, especially near mountains/Not observed*
Burro ( <i>Equus asinus</i> )	Protected	---		Various habitats near water	Unlikely/Not observed
Burro Deer ( <i>Odocoileus hemionus eremicus</i> )	---	Game Species		Arboreal and densely vegetated drainages	Possible
California Leaf-nosed Bat ( <i>Macrotus californicus</i> )	---	SC		Lowland desert associate, found in caves, mines, tunnels and old buildings	Unlikely/Not observed*
Colorado Valley Woodrat ( <i>Neotoma albigula venusta</i> )	---	---		Under mesquite in creosote bush scrub; southeastern California	Unlikely due to lack of habitat/Not observed

**Table 5.3-1. Occurring and Potentially Occurring Special Status Species within the Genesis Solar Energy Project**

Species	Status <sup>1</sup>			Habitat	Likelihood of Occurrence on the Project Site/Observed during Surveys
	Federal	State	CNPS <sup>2</sup> /Other		
Nelson's Bighorn Sheep ( <i>Ovis canadensis nelsoni</i> )	BLM Sensitive	---		In mountains and adjacent valleys in desert Scrub	Possible in Palen and McCoy Mountains/Not observed
Pallid Bat ( <i>Antrozous pallidus</i> )	BLM Sensitive	SC		Several desert habitats	Possible/Not observed
Pocketed Free-tailed Bat ( <i>Nyctinomops femorosaccus</i> )	---	SC		Variety of arid areas in pinyon-juniper woodland, desert scrubs, palm oases, drainages, rocky areas	Possible in the McCoy Mountains/Not observed*
Southwestern Cave Myotis ( <i>Myotis velifer brevis</i> )	BLM Sensitive	SC		Caves, mines and buildings in lower desert scrub habitats; also near streams and in woodlands, old agricultural fields	Unlikely/Not observed*
Spotted Bat ( <i>Euderma maculatum</i> )	BLM Sensitive	SC		Arid scrub and grasslands, to coniferous forests, roosts in cliffs. Forages along waterways	Unlikely/Not observed*
Townsend's Big-eared Bat ( <i>Corynorhinus townsendii</i> )	BLM Sensitive	SC		Broad habitat associations. Roosts in caves and manmade structures; feeds in trees	Possible/Not observed*
Western Mastiff Bat ( <i>Eumops perotis californicus</i> )	BLM Sensitive	SC		Cliffs, trees, tunnels, buildings in desert scrub	Possible/Not observed*
Yuma Myotis ( <i>Myotis yumanensis yumanensis</i> )	BLM Sensitive	---		Several habitat associations, but typically near open water; often roosts in manmade structures	Unlikely/Not observed*
Yuma Puma ( <i>Felis concolor browni</i> )	---	SC		Colorado River bottomlands	Possible/Not observed

\* No bats were observed; however, focused bat surveys were not conducted.

<sup>1</sup> California Department of Fish and Game Wildlife and Habitat Data Analysis Branch, 2009, <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPANimals.pdf>

E                      Endangered  
T                      Threatened  
BCC                  USFWS Bird of Conservation Concern

---

State SC	CDFG Species of Special Concern (species that appear to be vulnerable to extinction)
Fully Protected	Species that cannot be taken without authorization from the Fish and Game Commission
BLM Sensitive	Species under review, rare, with limited geographic range or habitat associations, or declining. BLM policy is to provide the same level of protection as USFWS candidate species
MBTA	Species protected under the Migratory Bird Treaty Act.

<sup>2</sup> California Native Plant Society (CNPS). 2009.

List 1A - Plants presumed extinct in California

List 1B - Plants rare and endangered in California and elsewhere

List 2 - Plants rare and endangered in California but more common elsewhere

List 3 - Plants about which CNPS needs more information

List 4 - Plants of limited distribution

(Note: CNPS lists 1 and 2 require CEQA consideration.)

### **5.3.6 Biological Investigations and Surveys**

Comprehensive biological resource surveys designed to meet all applicable CEC, CDFG, and USFWS requirements were conducted in March and April 2009 and are summarized in this section. At the time of the surveys, the Project area had not been finalized and therefore, surveys were conducted of the 4,640-acre ROW, plus zones of influence (ZOI) surveys. Two proposed linear facility routes and ZOIs were also surveyed. The linear facility routes proposed at the time of surveys have since changed. Lengths discussed are those of the currently proposed linear routes, portions of which have not yet been surveyed for biological resources, and will be surveyed in fall 2009.

The following survey methods were reviewed and agreed to by the CEC, BLM, USFWS, and CDFG prior to conducting surveys. Detailed survey methods can be found in the Biological Resources Technical Report (Appendix C). Copies of the CNDDDB field survey forms, as well as the names of the biologists conducting the surveys, can also be found in Appendix C.

The survey area was surveyed for all special status species potentially occurring in the Project vicinity using U.S. Fish and Wildlife Service (USFWS) desert tortoise protocol survey methods (USFWS, 1992). Due to the intensive nature of the desert tortoise survey methods (100 percent coverage at 30-foot intervals), all special status species were surveyed concurrently, including vegetation communities. Additional, focused surveys included burrowing owl surveys, avian point count surveys, and cactus/yucca/tree stratified sampling.

#### **5.3.6.1 Survey Methods**

In December 2007, a biological reconnaissance survey was completed to gain a better understanding of the vegetation communities present in the Project area and to aid in determining which plant and wildlife species could occur. Vegetation communities were loosely delineated and any special plant communities designated by NECO were mapped using a handheld Global Positioning System (GPS) unit (Figure 5.3-2). The results of the reconnaissance survey were taken into consideration by the Proponent when siting Project facilities in order to avoid sensitive vegetation communities and habitats (sand dune and playa) as much as possible. Survey results were also used to refine search methods for focused biological surveys.

#### **Vegetation and Habitat Surveys**

Botanical surveys were conducted on March 17 to 25 and April 6 to 13, 2009 to coincide with the growing season when optimum conditions for identification (generally blooms, fruits, and leaves) were present. Survey areas were chronologically prioritized within these survey dates to ensure the vegetative communities that could host special status plants were surveyed at the appropriate phenological time, when those species were available for identification. Winter rains in 2008/2009 resulted in slightly better than average germination and flowering of annual forbs, aiding in species identification. Surveys were conducted in accordance with CNPS (2001) and CDFG (2000) survey guidelines for rare plants and sensitive communities. Cacti, yucca, and trees protected by the California Desert Native Plants Act (CDNPA) were inventoried and counted using a stratified sampling technique to estimate total numbers of each species throughout the site. All invasive plant species were inventoried during the biological field surveys and concentrations of invasive species were mapped and described.

### **Jurisdictional Waters**

Field surveys to identify Waters of the US and state jurisdictional waters were conducted from June 30 through July 3, 2009. The total survey area delineated was approximately 3,123 acres and included the proposed disturbance area (1,890 acres), as well as a 500-foot buffer corridor for the linear facility routes. Two proposed routes for the transmission line were surveyed; however, the west transmission line route (alternate) is no longer considered the preferred route. High-resolution aerial photographs and the Ford Dry Lake and McCoy Spring United States Geological Survey 7.5-Minute Quadrangle Maps were used for preliminary identification of potential wetland and water resources in the Project area. Given the size of the Project area, the characterization and mapping of these drainages were accomplished by a combination of field surveys and mapping using high-resolution aerial photographs.

Using the field maps, pedestrian field surveys were conducted to evaluate the conveyance features (ephemeral washes). Data were recorded in the field at each point where an ephemeral wash intersected Project facilities. With the concurrence of the CDFG (Kimberly Nicol, pers. comm.), drainage features less than 3 feet in width (which also generally lacked well-defined banks) were not delineated. The location of each wash crossing was recorded using a GPS unit, and general characteristics of the drainage were noted (including average channel width, evidence of flow, and vegetation type).

Field data were then incorporated into a GIS database and data collection points were plotted on recent aerial photographs, with 2-foot resolution. Drainage features within the survey area were manually digitized using the field data as reference locations and incorporated into the GIS database. Based on the field data, each wash was then categorized by size, with Category 1 washes greater than 10 feet wide and Category 2 washes between 3 and 10 feet wide. The Category 1 features included single, large channels with well-defined bed and banks, as well as broad, but weakly expressed, assemblages of braided channels that collectively covered an area of at least 10 feet showing evidence of active flow. Smaller, Category 2 features ranged from well-defined single channels to shallow, braided channels.

### **Wildlife Surveys**

Comprehensive wildlife surveys were conducted concurrently with protocol desert tortoise surveys in March and April 2009. Wildlife surveys targeted most of the species listed in Table 5.3-1 that were identified as potentially occurring in the Project vicinity. All wildlife observations and signs of wildlife were recorded and special status species were mapped using handheld GPS units.

#### ***Desert Tortoise Surveys***

Desert tortoise surveys were conducted in accordance with USFWS protocols (USFWS, 1992) and CEC guidelines (CEC, 2007) by qualified field biologists (Appendix C-2) on March 17 to 25 and April 6 to 13, 2009. One hundred percent of the 4,640-acre requested ROW, including the proposed routes for the linear facilities, was surveyed using 30-foot-wide belt transects. A single 30-foot-wide ZOI transect was walked at 100, 300, 600 (see Burrowing Owl Surveys, below), 1,200, and 2,400 feet from the ROW boundary. Additionally, a ZOI transect was surveyed at 3,960 and 5,280 feet (from the ROW boundary only) to comply with CEC data requirements (CEC, 2007). Linear facility surveys assumed a 420-foot ROW width to allow for flexibility in siting facility components, and ZOI transects were conducted out to 2,400 feet (transect spacing was as described above). All tortoise signs (scat, burrows, tortoise, tracks, carcasses, etc.) and all sightings of common ravens, other known tortoise

predators, and other site features that could assist in the analysis of tortoise population impacts were recorded.

#### ***Mojave Fringe-Toed Lizard Surveys***

Surveys for the Mojave fringe-toed lizard (*Uma scoparia*) were conducted in suitable sandy habitats concurrently with desert tortoise surveys. Survey methods are identical to those outlined above for the desert tortoise. All fringe-toed lizards, including Colorado fringe-toed lizards (*U. notata*) and possible hybrids, were identified to species when possible and recorded.

#### ***Burrowing Owl Surveys***

California Burrowing Owl Consortium (CBOC) Guidelines (CBOC, 1993) include three survey phases, each following the previous one based on the latter's results. To assess the presence of burrowing owl within the Project area, a Phase I: Habitat Assessment was completed in December 2007 during a reconnaissance survey. Because burrowing owls were detected during the Phase I survey, a Phase II: Burrow Survey was conducted to locate burrows and owls in suitable burrowing owl habitat within the Project area. Subsequently, because the Project area contained burrows, Phase III: Owl Presence surveys were conducted during the breeding season (February 1 to August 31) to determine if, when, and how burrowing owls were utilizing the area. During all three phases, owl sightings and owl sign were recorded.

The Phase II surveys were conducted concurrently with desert tortoise surveys on March 17 to 25 and April 6 to 13, 2009. The CBOC guidelines suggest a buffer transect (functionally equivalent to the desert tortoise ZOI transect) every 100 feet out to 500 feet from the Project boundary for the Phase II surveys. These buffer transects at 100 and 300 feet coincided with Project ZOI transects for the desert tortoise at 100 and 300 feet. Two additional buffer transects were added at 200 and 400 feet. Normally, desert tortoise surveys are conducted at 600 feet; however, to meet the burrowing owl requirement for a buffer transect at 500 feet, the desert tortoise ZOI was moved to 500 feet with permission from the CEC, BLM, USFWS, and CDFG.

Phase III surveys were conducted from 1 hour before sunrise to 2 hours after sunrise on April 11, April 13, May 29, and May 30, 2009, and from 2 hours before sunset to 1 hour after sunset on April 10, April 11, May 28, and May 29, 2009. Survey locations were chosen using the locations of owl sightings and burrow locations identified during Phase I and II surveys.

#### ***Avian Surveys***

Avian point count surveys were conducted on March 21 to 24, 27, 29, 30 and April 4 to 7 and 11 to 13, 2009 according to a protocol set forth by the BLM. One point count transect was located in each square mile of the ROW for a total of seven transects (Figure 5.3-5). Specific transect locations were chosen based on habitat characteristics where the highest density of avian species was likely to occur. Each transect consisted of eight point count locations spaced 820 feet (250 meters) apart with a 328 feet (100 meters) survey radius. Point count surveys were conducted for each transect one day a week for four weeks between 0730 and 0950. The protocol called for point counts to be conducted between 0500 and 0900; however, due to logistics and poor access to transect locations, point counts were conducted between 0730 and 0950, except for two transects, which were conducted between 1045 and 1145. Additional point count surveys to identify wintering birds will be conducted using identical methodology between November 2009 and January 2010.

### **Other Wildlife Species Surveys**

Other special status wildlife surveys and wildlife inventories were conducted concurrent with tortoise surveys. All observations of special status wildlife species within 1 mile of the Project boundary and within 2,400 feet of the centerline of proposed linear facilities was included when compiling and mapping survey results. Surveys were also conducted for any artificial or temporary water catchments that could serve as breeding pools for Couch's spadefoot toad; surrounding natural and anthropogenic features (e.g., water bodies, cliffs) that could funnel migrants or serve as major avian roosting sites; wildlife corridors; and bat roosts and hibernacula. All non-game mammals are protected by CDFG; therefore, kit fox (*Vulpes macrotis*) complexes (natal dens or burrow complexes with three or more entrances) were recorded and mapped. To inventory nocturnal rodents and the raptor/burrowing owl prey base, small-mammal trapping (100 traps per night) was conducted on April 8, 11, and 12 and June 7, 8, and 9, 2009, in two locations on each side of the Project area.

### **5.3.6.2 Summary of Field Survey Observations**

#### **Vegetation and Special Status Plant Species**

General vegetation and habitat types for the Project area are identified in Figure 5.3-2. A list of all plant species observed within the survey area is in the Biological Resources Technical Report in Appendix C-1. Figure 5.3-6 illustrates the special status plant species observed during surveys.

#### **Sonoran Creosote Bush Scrub**

The shrub cover is low, approximately 10 to 15 percent within the surveyed area of Sonoran Creosote Bush Scrub community, and the shrub community varies due to hydrology and slope. Small drainages are more densely populated by creosote bush, white bursage, brittlebush, cheesebush, and white rhatany than immediately adjacent areas. Big galleta grass (*Pleuraphis* [= *Hilaria*] *rigida*) is also common in some areas within these drainages. Ironwood (*Olneya tesota*) and palo verde (*Cercidium floridum*) are scattered in the occasional well-defined washes and in the heavy sheet flow areas in the western portion of the ROW. Common under story species include plantain (*Plantago ovata*), pebble pincushion flower (*Chaenactis carphoclinia*), forget-me-not (*Cryptantha* spp.), desert sunflower (*Geraea canescens*), peppergrass (*Lepidium lasiocarpum*), and stiff-haired lotus (*Lotus strigosus*).

#### **Stabilized and Partially Stabilized Sand Dunes**

A heterogeneous mixture of Stabilized and Partially Stabilized Sand Dunes is located in the southeastern portion of the 4,640-acre ROW along portions of the linear facility route. There are also sandy areas present south of I-10 that overlap the surveyed linear route. These areas contain low dune formations of fine sand that contain widely spaced perennial shrubs. Dominant shrubs include creosote bush, white bursage, and galleta grass. Several sand-associated and other annuals are also abundant (e.g., sand verbena [*Abronia villosa*], birdcage primrose [*Oenothera deltoides*], desert marigold [*Baileya pauciradiata*], and narrow-leaved forget-me-not [*Cryptantha angustifolia*]). Although there are no coarse particles in the substrate of the dunes, the areas between the dunes that contain more shrubs may be partially stabilized by a light gravel layer.

Shrub cover decreases from 10 to 15 percent in the Sonoran Creosote Bush Scrub communities to 2 to 5 percent in the Stabilized and Partially Stabilized Sand Dunes. The shrub cover continues to decrease closer to Ford Dry Lake (playa). Between the Stabilized and Partially Stabilized Sand Dunes and Ford Dry Lake, there is a transition zone where there are intermittent sand drifts over the outer edges of the playa. Edges of the ROW, as well as portions of the linear facility route, overlap these areas where the sand layer is shallow and deposited over sinks.

### Special Status Plants

One hundred and thirty-one (131) plant species were observed within the survey area, none of which were federally or state-threatened, endangered, or candidate plant species. However, five CNPS-listed plants were found during surveys. Of the five CNPS-listed plants found, three were found within the Project area: desert unicorn plant (CNPS list 4, 75 seed pods, 1 individual), Harwood's milkvetch (CNPS list 2, 21 individuals), and Wiggins' cholla (CNPS list 3, *Cylindropuntia wigginsii*, 109 individuals) (Figure 5.3-6). One Harwood's phlox (CNPS list 1B, *Eriastrum harwoodii*) and one Las Animas colubrina (CNPS list 2, *Colubrina californica*) were found outside of the ROW during ZOI surveys, approximately 6 miles west and 1.5 miles north of the Project area, respectively.

Two of the species found, Wiggins' cholla and Harwood's phlox, could not be positively identified. Wiggins' cholla is a possible hybrid, and identification by physical characteristics and geographic range is unreliable. Harwood's phlox was unable to be positively identified because it was dried and lacked flowers.

### Non-Native Plant Species

Four non-native species were detected during surveys, including Saharan mustard (*Brassica tournefortii*), tamarisk (*Tamarix ramosissima*), Russian thistle (*Salsola tragus*), and Mediterranean grass (*Schismus* sp.). Saharan mustard was widespread throughout the survey area, and contributed to a relatively large portion of the plant biomass. It was located in both Sonoran Creosote Bush Scrub, as well as Stabilized and Partially Stabilized Sand Dunes, with patches of higher concentrations occurring within ephemeral drainages, along the existing two-track road on the west side of the ROW, and along the linear facility routes. Tamarisk was rare in the survey area, as only a single plant was found in the south of the Project area near the edge of the dry lake bed. Russian thistle is common within the Stabilized and Partially Stabilized Sand Dunes in the eastern portion of the survey area and along the linear facility route. Mediterranean grass was detected throughout the Project area in both vegetation communities.

### Jurisdictional Waters

No wetlands were observed during surveys; however, two ephemeral washes within the survey area were delineated as State jurisdiction waters (Figure 5.3-7, see Appendix C for Jurisdictional Waters and Wetlands technical report). The entire study area is crossed by numerous ephemeral washes ranging from small, weakly expressed erosional features to broad (over 10 feet wide) channels. The active flow channels are generally devoid of vegetation and typically have a sandy-gravel substrate, although some washes also contained cobble and scattered larger rocks.

Twenty-nine ephemeral washes were identified and mapped in the Project area, including 5 Category 1 washes, and 24 Category 2 washes (Table 5.3-2). One Category 2 wash (No. 28, Figure 5.3-7) was located along the alternate transmission line route that is no longer being considered for development. Small- to medium-sized washes are common and widespread throughout the entire Project area (Figure 5.3-7). The larger washes tend to dissipate into smaller, more braided channels as they progress down slope. The majority of the channels terminate prior to reaching Ford Dry Lake as well-defined conveyance features diminish and transition into broad, shallow surface flow. All of the ephemeral washes identified in the Project area flow only in response to storm events. Representative photographs of the drainage features are provided in the Jurisdictional Waters and Wetlands technical report (Appendix C).

Table 5.3-2. Ephemeral Wash Data

Map ID	Location <sup>1</sup>	Category <sup>2</sup>	Bed Width (ft.)	Bank Height (in.)	Length (ft.)	Well Defined	No. of Trees <sup>3</sup>			Avg. Height (ft.)	Notes
							IW	PV	ST		
1	PF	2	10	6	909	Yes	2	0	0	20	
2	PF	2	5	6	3,886	No	0	0	0	0	
3	PF	2	3	6	2,879	No	0	0	0	0	
4	PF	1	18	6	5,388	No	0	0	0	0	Old road
5	PF	2	7	6	214	No	0	0	0	0	Continues south of boundary
6	PF	2	8	6	451	Yes	0	0	0	0	
7	PF	2	4	6	436	Yes	0	0	0	0	
8	PF	1	24	6	1,076	Yes	1	1	0	13	
9	PF	2	3	6	1,412	No	0	0	0	0	
10	PF	2	3	6	334	No	0	0	0	0	
11	PF	2	3	6	1,238	No	0	0	0	0	
12	TL, AR	2	3	6	1,413	No	0	0	0	0	
13	TL, AR	2	3	6	1,475	No	0	0	0	0	
14	TL, AR	2	9	12	1,593	Yes	0	0	0	0	Aggrading sands within channel
15	TL, AR	2	9	12	1,473	Yes	1	0	0	20	
16	TL, AR	2	5	8	1461	Yes	0	0	0	0	
17	TL, AR	2	5	12	325	No	0	0	0	0	
18	TL, AR	2	5	12	262	Yes	0	0	0	0	
19	TL, AR	2	6	8	1,409	Yes	0	0	0	0	
20	TL, AR	2	5	8	344	Yes	0	0	0	0	
21	TL, AR	2	7	6	378	Yes	0	0	0	0	
22	TL, AR	2	5	6	512	Yes	0	0	0	0	
23	TL, AR	1	25	12	1,130	Yes	0	7	0	15	
24	TL, AR	2	8	8	1,153	Yes	0	76	0	15	
25	TL, AR	2	8	8	785	Yes	0	40	0	15	
26*	AR	1	140	24	7,872	Yes	0	596	0	15	Recommended State Jurisdictional
27*	TL, AR	1	20	18	807	Yes	0	28	0	15	Recommended State Jurisdictional

**Table 5.3-2. Ephemeral Wash Data**

Map ID	Location <sup>1</sup>	Category <sup>2</sup>	Bed Width (ft.)	Bank Height (in.)	Length (ft.)	Well Defined	No. of Trees <sup>3</sup>			Avg. Height (ft.)	Notes
							IW	PV	ST		
28	TL	2	6	8	2,725	Yes	1	11	9	15	Previously proposed transmission line route
29	TL	2	3	6	90	Yes	0	0	0	0	Culvert under Wiley's Well Rd.

<sup>(1)</sup>Type of location in the proposed Project

<sup>(2)</sup> Channel category

<sup>(3)</sup> Tree species found along length of wash, including 500 ft buffer on linear facilities

PF	Within the Project footprint <sup>1</sup>	Large (width > 10 ft.) IW	Ironwood
TL	Transmission line corridor <sup>2</sup>	Small (width ≤ 10 ft.) PV	Palo verde
AR	Access road	ST	Smoketree

The majority of washes identified throughout the study area are associated with creosote bush scrub habitat. Species such as white bursage are common in some medium- to large-sized washes, especially in braided channels that contain slightly elevated areas intermixed with the active flow channels. The larger washes (typically over 6 feet) that contain sandy, gravelly substrate and well-defined banks typically include scattered desert wash tree species such as ironwood, palo verde, and big galleta grass (Table 5.3-3).

It is anticipated that CDFG will take jurisdiction over the Category 1 ephemeral washes containing higher concentrations of palo verde trees that cross the linear facility route, specifically washes 26 and 27 (Figure 5.3-7). It is necessary to submit a Notification of Lake or Streambed Alteration to the local office of the CDFG to confirm that these drainages are jurisdictional. Depending upon the final facility design layout, if the CDFG intends to take jurisdiction over any of the drainages in the project area, a Streambed Alteration Agreement (SAA) will be prepared and submitted to the CDFG. The SAA will contain conditions to protect the affected resources.

#### **Wildlife and Special Status Animal Species**

Sixty-four (64) wildlife species were observed during surveys, none of which were federally listed, although sign (burrows, tracks, etc.) was found outside of the Project area for the state-threatened desert tortoise. Six California species of special concern were observed, including Mojave fringe-toed lizard, burrowing owl, loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), short-eared owl (*Asio flammeus*), and American badger (*Taxidea taxus*, burrow only). Other species observed were the ferruginous hawk (*Buteo regalis*, BLM sensitive) and burro deer (*Odocoileus hemionus eremicus*, game species [tracks only]).

#### **Desert Tortoise (Federally and State Threatened)**

No live tortoises or other sign of recent tortoise presence were found within the Project area during the 2009 field surveys. However, outside of the Project area, surveyors found three burrows within the western half of the ROW and one set of tracks north of the Project area during the 2,400-foot ZOI survey (Figure 5.3-8). The burrows were inactive on the date of the survey in 2009 (see Biological Resources Technical Report, Appendix C). No live tortoises or scat were found within the survey area.

Within the survey area, surveyors found two partially intact carcasses, 19 bone fragments estimated to be between 10 and 15 years old, and 50 bone fragments estimated to be 3,000 to 5,000 years old (W. Orr, pers. comm.). The two partially intact carcasses, both estimated to be 4 or more years old, were located outside the western portion of the ROW. Bone fragments were generally parts of single, disarticulated bones, averaging approximately 30 millimeters (mm) in diameter. Those estimated to be between 3,000 and 5,000 years old showed evidence of permineralization, a process in which minerals are deposited into cells of organisms, usually by way of water (W. Orr, pers. comm.). These fragments could be easily distinguished from the younger bone fragments found because they were heavier, more solid, and most had a slight orange/brown color as opposed to the younger fragments, which were whiter and lighter in color. For the most part, bone fragments were found singly and evenly distributed throughout the surveyed area, with the exception of a slightly higher concentration in the center of the ROW. These slightly higher concentrations are located in areas that could potentially receive increased water runoff from the Palen Mountains, and thus be attributed to distribution by surface flow.

The lack of live tortoises and recent tortoise sign detected during surveys, plus the size, older condition, and distribution of the bone fragments, suggest that tortoises do not currently occupy the Project area.

The lack of tortoises, scat, and active burrows indicates the current tortoise population within the survey area is very low to zero. Although two carcasses were found during surveys, both were located on ZOI transects, outside of the ROW and Project area. It is possible that tortoise densities are higher north of the Project area, or these carcasses were transported into the area by predators.

**Mojave Fringe-toed Lizard (BLM sensitive, California species of special concern)**

Thirty-nine fringe-toed lizards were found during surveys, six of which could be positively identified as Mojave fringe-toed lizard (Figure 5.3-9). Both the Mojave and Colorado fringe-toed lizards are found only in sand dunes, sand fields, hummocks, and other areas with sand deposits, between 300 and 3,000 feet in elevation. The Project is located in an area that is adjacent to known habitat for the Colorado fringe-toed lizard, also a California species of special concern (Zeiner et al., 1988-1990). Based on morphological characters seen in lizards that were caught and examined, it is possible the Colorado fringe-toed lizard could also occur in the Project area and the two species have hybridized.

**Burrowing Owl (BLM sensitive, BCC, California species of special concern)**

The field reconnaissance survey in December 2007 identified suitable burrowing owl habitat in the Project area; one burrowing owl was observed during that survey. During the 2009 biological field surveys two live birds were observed within the survey area, and burrowing owl sign (burrows, whitewash, feathers, and pellets) was observed at several locations throughout the survey area (Figure 5.3-10). Recent burrowing owl sign was observed at three locations within the survey area, although no active nests were found. Habitat for this species exists throughout the ROW, including the linear facility routes.

**Avian Point Count Surveys**

During the avian point count surveys in spring 2009, a total of 336 birds consisting of 17 identified and one unidentified species were recorded at the 120 points. The most commonly detected birds were the horned lark, black-throated sparrow, and cliff swallow. One special status species, the loggerhead shrike, was observed during point count surveys. An additional 18 identified species were observed incidentally (*i.e.*, flying outside of the 100 meter survey radius during point counts), including three special status species: loggerhead shrike, northern harrier, and short-eared owl. Observations of each special status bird species are summarized below.

***Loggerhead Shrike (BCC, California species of special concern)***

Loggerhead shrike was observed throughout the survey area during spring 2009 surveys as well as during avian point count surveys. The survey area is considered loggerhead shrike habitat because of the open and relatively low shrub vegetation that also contains taller structures. The latter are used for nesting and as lookout posts to spot potential predators and prey.

***Northern Harrier (California species of special concern [breeding only])***

Northern harrier is thought to be a wintering occupant of the area; however, it was observed during spring 2009 surveys and incidentally during avian point count surveys. Suitable habitat consists of open areas dominated by herbaceous cover, including deserts, coastal dunes, pasturelands/grasslands, estuaries, and salt- and freshwater marshes. Therefore, the entire survey area is considered wintering habitat for the northern harrier.

***Short-eared owl (California species of special concern [breeding only])***

The short-eared owl is considered a winter resident in southern California; however, it was observed as an incidental during spring avian point count surveys. Suitable habitat consists of open country

(typically prairie, grasslands, shrub-steppe, or agricultural lands), which is capable of supporting small mammal populations (Wiggins et al., 2006). The entire survey area is considered wintering habitat for the short-eared owl. The California species of special concern designation refers to breeding only.

#### **Other Special Status Wildlife Observed**

Several other wildlife species and their sign were found during surveys (Appendix C), three of which were special status (ferruginous hawk, American badger, and burro deer, described below). Over 65 kit fox burrow complexes, both active (fresh scat present) and inactive, were observed throughout the 4,640-acre ROW, but not along the southern portion of the linear facility routes (Figure 5.3-9), indicating habitat for kit fox overlaps portions of the Project area. Nocturnal rodents inventoried by trapping included desert pocket mouse (*Chaetodipus penicillatus*), little pocket mouse (*Perognathus longimembris*), and Merriam's kangaroo rat (*Dipodomys merriami*). No artificial or temporary water catchments that could serve as breeding pools for Couch's spadefoot toad, wildlife corridors, major avian migration routes or roosting sites, or bat roosting and hibernacula were identified during surveys.

#### ***Ferruginous Hawk (BLM sensitive, BCC)***

Although the ferruginous hawk is a winter resident of California, one bird was observed incidentally during spring 2009 surveys. The survey area is located within the ferruginous hawk's range and suitable wintering habitat exists within the Project area.

#### ***American Badger (California species of special concern)***

One American badger burrow was found in the western portion of the ROW (Figure 5.3-9). The badger is an uncommon resident of level, open areas in grasslands, agricultural areas, and open shrub habitats. The entire survey area is considered habitat for American badger.

#### ***Burro Deer (game species of recreational value)***

Tracks from a burro were found at the southern end of the transmission line route south of I-10 (Figure 5.3-9). Burro deer is a subspecies of mule deer found in the Colorado region of the Sonoran Desert near the Colorado River and within Desert Dry Wash Woodland communities. This species is known to migrate into desert areas looking for water and forage. Suitable habitat for the burro deer does not occur in the Project area, but is present to the east within the McCoy Mountains.

#### **Fish and Wildlife Species of Commercial or Recreational Value**

Areas of undeveloped open space in the Sonoran Desert, such as the Project vicinity, have the potential to support fish and wildlife species of commercial and/or recreational value to the general public. Examples may include lands used for legal hunting, fishing, collecting, and bird watching or wildlife viewing. Resources for sport fishing are not present within the Project area because the Project area lacks surface water. Additionally, the site lacks water, mesic areas, and riparian vegetation that might be of interest for bird and/or wildlife watching. Aside from the burro deer tracks, no large game species were observed in the vicinity of the Project site. Although species of recreational interest (e.g., mourning dove, burro deer [tracks]) and commercial interest (i.e., reptiles for which CDFG issues a collector's permit) were present in the Project area, due to lack of habitat, lack of access, and low probability of occurrence for species of interest, there is currently a low probability for recreational or commercial harvest of these species in the area. Therefore, the Project is not likely to affect fish and wildlife species of commercial and recreational value.

### **Wildlife Movement Corridors**

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. A wildlife corridor study was not conducted as part of the Project biological resource surveys since extensive, long-term species ecology, movement patterns, and dispersal behavior would be required to conclusively demonstrate if a particular site or feature of a site served as an important movement corridor. This type of data is unavailable for most of the species occurring or potentially occurring in the survey area. However, drainages, ridgelines, and other natural and man-made linear features and barriers often serve as areas that wildlife routinely use to access essential natural resources. It is assumed wildlife species would use such features for movement if they occurred within the survey area.

The Project is located south of the Palen Mountains and south and west of the McCoy mountains which could provide suitable bighorn sheep habitat. Although the CNDDDB does not contain records of bighorn sheep or any other special status species that are known to use migration corridors, it is possible that bighorn sheep occur in these mountain ranges and would migrate between them. However, because the Project area is located approximately three to five miles south and west of these mountain ranges, and because there are no resources within the Project area that would serve as an attractant (e.g. waters sources), it is unlikely bighorn sheep would utilize the Project area as a migration route. Additionally, I-10 is located to the south of the site and provides an existing barrier to wildlife movement to the south of the site. No other existing features occur within the plant site that would provide a corridor for wildlife movement.

### **5.3.7 Environmental Impacts**

Construction and operation of the Project would have both direct and indirect impacts on biological resources. These impacts may be permanent or temporary in nature, depending on whether or not the resources would be allowed to restore to preconstruction levels. These impact categories are defined below, followed by assumptions employed for the calculation of direct impacts to vegetation communities and special management areas. This section also includes a discussion of impacts to each biological resource due to construction and operation activities. When appropriate, direct and indirect impacts to biological resources are described separately. It is expected that impacts to biological resources would be minimized with the implementation of the measures proposed in Section 5.3.8.

**Direct:** Any alteration, disturbance or destruction of biological resources that would result from project-related activities would be considered a direct impact. Examples include vegetation clearing and loss of individual species or their habitats.

**Indirect:** As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Examples include elevated noise and dust levels, increased human activity, decreased water quality, and the introduction of invasive plants.

**Permanent:** All impacts that result in the irreversible removal of biological resources are considered permanent. Examples include habitat loss due to the construction of a building foundation, transmission pole foundation, or a permanent road.

**Temporary:** Any impact considered to have reversible effects on biological resources can be viewed as temporary. Examples include increased vehicle traffic and noise during construction activities and habitat loss from underground pipeline installation. In regards to temporary impacts to vegetation;

although some areas are allowed to revegetate and restore to preconstruction conditions, revegetation and restoration in desert habitats is slow, and disturbed areas may be affected by construction (i.e. unavailable for use by wildlife) for 30 years or more. The primary difference between temporary and permanent impacts in regards to vegetation in desert landscapes is whether or not disturbances would be allowed to revegetate.

#### 5.3.7.1 Significance Criteria

Significance criteria are defined in the general context of CEQA and the National Environmental Policy Act (NEPA). Potentially significant impacts to biological resources include, but are not limited to:

- Substantial adverse effects to plant species considered by the CNPS to be rare, threatened, or endangered in California (CNPS, 2007) or with strict habitat requirements and narrow distributions; substantial impact to a sensitive natural community (i.e., community that is especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies);
- Substantial adverse effects to wildlife species that are federally listed or state-listed or proposed to be listed; a substantial impact to wildlife species of special concern to CDFG, candidates for state listing, or animals fully protected in California;
- Substantial adverse effects on habitats that serve as breeding, foraging, nesting, or migrating grounds and are limited in availability or that serve as core habitats for regional plant and wildlife populations; and
- Substantial adverse effect on important riparian habitats or wetlands and any other “Waters of the U.S.” or state jurisdictional waters.

#### 5.3.7.2 Assumptions

The Project consists of a solar power generating facility, and linear features consisting of an overhead 230-kV transmission line suspended on poles with foundations, an underground natural gas pipeline, and a paved main access road. The solar facility would consist of the solar arrays and associated components, including a substation, an administration building, operation and maintenance facilities, and evaporation ponds. It is assumed the solar facility and associated components would permanently occupy 1,800 acres and the entirety of this area would be graded and soils would be compacted. Temporary laydown areas associated with construction of the solar facility would be located within the permanent impact footprint or within existing disturbed areas.

The transmission line, natural gas pipeline, and paved access road would originate at the solar facility and be co-located within the same ROW for the majority of the linear corridor, although each terminates in a different location. After leaving the facility, the transmission line, natural gas pipeline, and access road would extend approximately 7.6 miles, 6 miles, and 6.5 miles, respectively, and occupy approximately 90 acres, although not all disturbances would be permanent. There will be one temporary laydown area associated with construction of the linear facilities.

Permanently affected areas associated with the linear features would include the 30-foot-wide paved access road, the transmission line pole foundations, and the transmission line spur roads. Placement of the spur roads is not finalized at this time and for the purpose of impact analysis, the shortest route was assumed from the access road. Any discrepancy in acreage was reduced proportionally to meet the engineering design estimates. Detailed dimensions and quantity of temporary and permanent disturbance are shown in Table 5.3-3.

**Table 5.3-3. Estimated Acreage of Disturbance by Project Component**

Project Component	Dimensions	Quantity	Acres
<b>Temporary Disturbance</b>			
<b>Transmission Line</b>			
Construction laydown/assembly areas	100' X 200'	1	0.46
Conductor Pulling Area	50' X 140'	25	4.02
Crossing Structures	100' X 100'	4	1.84
Pole Pad Construction Areas	50' X 50' (Note 1)	60	2.91
<b>Gas Line</b>			
Construction Right of Way	50' X 6 miles (Note 2)	1	36.36
<b>Roads</b>			
Site Access Road Construction	50' X 6.5 miles (Note 3)	1	15.76
Total Temporary Disturbance			61.35
<b>Permanent Disturbance</b>			
Transmission Pole Pads	6' X 6'	60	0.05
Spur Roads	70' X 14'	60	1.90
Substation Expansion	75' X 240'	87499.45	0.41
Site Access Road	30' X 6.5 miles	1	23.64
Gas Line	N/A	N/A	N/A
Project Site	varies	1	1800.00
Total Permanent Disturbance			1826.00
<b>Total Temporary and Permanent Disturbance</b>			<b>1887.35</b>

## Notes:

1. The 50' X 50' Pole Pad Construction area does not include the 6' X 6' permanent pole pad disturbance or the portion of the spur road that is coincident with the 50'X50' pole pad construction area.
2. Approximately 20' of the gas line construction right of way will overlap the access road construction right of way; therefore, it has not been included in the temporary disturbance calculation.
3. The temporary disturbance shown excludes the permanent disturbance for the access road.

**5.3.7.3 Vegetation and Special Vegetation Communities**

Although there would be permanent and temporary impacts to vegetation and habitat from construction and operation of the proposed solar facility, the Project will be designed to minimize ground disturbance and resulting environmental effects wherever feasible. One hundred percent of the vegetation would be permanently cleared within the 1,800-acre solar facility. Outside of the solar facility, vegetation would be permanently cleared for the paved access road, transmission line pole foundations, and transmission line spur roads. Table 5.3-4 shows the acreage of impact by vegetation type found in the Project area. Calculations were based on the currently proposed facility design in conjunction with the vegetation map from field surveys. With the implementation of the mitigation measures outlined in Section 5.3.8, it is expected that impacts to vegetation would not result in significant affects.

<b>Table 5.3-4. Anticipated Permanent and Temporary Impacts to Vegetation Communities</b>			
<b>Vegetation Communities</b>	<b>Total Temporary Impact Acreage</b>	<b>Total Permanent Impact Acreage</b>	<b>Total Impact Acreage</b>
<b>Sonoran Creosote Bush Scrub</b>			
Project Site	n/a	1,758	1,758
Linear Facilities	29	12	41
<b>Stabilized and Partially Stabilized Sand Dunes</b>			
Project Site	n/a	28	28
Linear Facilities	20	8	29
Playa and Sand Drifts Over Playa			
Project Site	n/a	15	15
Linear Facilities	12	5	18
<b>Total Acres</b>	<b>61</b>	<b>1,826</b>	<b>1,887</b>

**Direct Impacts:** Construction of the Project would result in the permanent clearing of Sonoran Creosote Bush Scrub and Stabilized and Partially Stabilized Sand Dunes. These areas would be permanently affected by the construction of the solar facility, paved access road, transmission line pole foundations, and transmission line spur roads. Vegetation located along the underground natural gas pipeline would be temporarily affected as these areas would be allowed to naturally re-vegetate after construction completion; however, revegetation would likely take 30 years or more in these areas. In addition, individual plants could be trampled by workers or vehicles that stray outside of authorized areas during construction.

**Indirect Impacts:** Vegetation communities are likely to be temporarily affected by fugitive dust created by construction activities, off-ROW human and vehicle construction traffic, and offsite run-off and sedimentation. Fugitive dust settles on plant surfaces and inhibits metabolic processes such as photosynthesis and respiration. Run-off, sedimentation, soil compaction, and alteration of drainage patterns may affect plants by altering site conditions so that the location in which they are growing becomes unfavorable. It is also possible the introduction and spread of invasive species would result in permanent impacts.

#### **Special Vegetation Communities**

One NECO-designated sensitive vegetation community, Stabilized and Partially Stabilized Sand Dunes, was identified within the Project area (Figure 5.3-2, Table 5.3-4). This vegetation community provides habitat for sand-adapted, special status species (e.g., Mojave fringe-toed lizard) and would be avoided to the extent practicable. Potential direct and indirect impacts to this area are as outlined in the section above. The Stabilized and Partially Stabilized Sand Dune community that would be affected by Project development represents a small portion of this vegetation community, which extends to the northeast beyond the Project ROW. With the implementation of avoidance and mitigation measures outlined in Section 5.3.8, affects to this community would be reduced to a level of insignificance.

Three additional sensitive communities, Desert Dry Wash Woodland, Chenopod Scrub, and Playa, were identified outside the Project area to the east, west, and south, respectively; however, these communities are not within the Project area and would not be affected by Project development.

#### **5.3.7.4 Special Status Plant Species**

No federally listed or state-listed plants were identified within the survey area and are not considered likely to occur within the Project area; therefore, no direct or indirect impacts to listed plant species would result from Project construction or operation. Three CNPS listed plant species: Harwood's milkvetch, Wiggin's cholla (possible), and desert unicorn plant, were identified within the Project area and would be affected by Project development. Impacts to these species would be identical to those discussed in Section 5.3.7.3.

Permanent impacts to Wiggin's cholla and Harwood's milkvetch would result from the development of the solar facility; and permanent impacts to Harwood's milkvetch and desert unicorn plant would result from development of the linear facilities (Figure 5.3-6). Where Harwood's milkvetch and desert unicorn plant overlap the natural gas pipeline, impacts to individual plants would be direct and permanent, although these areas would be backfilled and allowed to re-vegetate after construction. With the implementation of the avoidance and mitigation measures (e.g., BIO-14) outlined in Section 5.3.8, permanent effects to these species would not result in significant effects.

#### **5.3.7.5 Cacti and Trees**

Two cacti species (beavertail cholla and Wiggins' cholla) and three tree species (palo verde, cat-claw acacia, and ironwood) were identified within the Project area. Higher concentrations of ironwood were observed in the northern portion of the Project area. With the implementation of the avoidance and mitigation measures outlined in Section 5.3.8 (e.g., BIO-3), permanent effects to these cactus and tree species would be reduced to a level of insignificance. No yuccas were observed during surveys and would not be affected by Project development.

**Direct:** Any tree or cacti overlapping the Project area would be directly and permanently affected by the removal of individuals.

**Indirect:** Impacts to these species would likely include those listed for vegetation in Section 5.3.7.3. Trees that are located in drainages to the south of the Project area (there are few) that require sufficient water accumulation are likely to be adversely affected by the alteration of natural drainage patterns by Project development. In addition, off road traffic could impact trees by damaging their root systems or above ground tissues, thereby reducing growth rates or resulting in plant mortality.

#### **5.3.7.6 Jurisdictional Waters**

There are no wetlands or surface waters present with the Project and therefore, the Project would have no impacts to wetlands or other surface water. There are two washes that are potentially state jurisdictional that would be crossed by the Project's linear facilities; however, it is anticipated that any impact to these washes would be off-set by adhering to the terms and conditions of the Streambed Alteration Agreement with the CDFG.

The closest spring to the Project area is McCoy Spring, which is located about 7.5 miles to the northeast in the McCoy Mountains. However, significant adverse impacts from groundwater withdrawal to this spring or any other spring due to Project construction and operation are not expected (see Section 5.4 Water Resources).

### 5.3.7.7 Wildlife Species

#### Desert Tortoise

Impacts to desert tortoise within the Project area are expected to be insignificant due to lack of current tortoise occupation in the Project area. The creosote bush scrub found within the Project is poor desert tortoise habitat and the sand dunes along the linear facilities route are not considered tortoise habitat, although tortoises may occupy the inter-dune spaces. It is possible tortoises are present upslope to the north and east of the ROW where higher quality creosote bush scrub and ephemeral washes are present. In the event that tortoises occupying these adjacent areas enter the Project area, direct and indirect impacts could occur.

**Direct:** If present, potential impacts to desert tortoise could include injury or mortality by crushing or entombment in their burrows during construction or increased potential for vehicle strikes if tortoises are attempting to cross the main access road. Tortoises may also experience disruption of behavior during construction or operation of facilities; disturbance by noise or vibrations from the heavy equipment; or collection or vandalism by project personnel.

**Indirect:** Indirect impacts are considered to be negligible due to (1) poor habitat that is currently unoccupied on site; and (2) lack of habitat south and southwest of the ROW. If tortoises are present and impacts occur, they would include habitat fragmentation (*i.e.*, restriction of movement and gene flow); loss of potential burrowing, breeding, and foraging habitat; and reduced habitat quality due to the introduction or spread of non-native plant species and compaction of soils. Increased levels of surface disturbing activities may compact the soils, as well as increase the abundance of non-native plants, which could replace native forage species and reduce the amount and diversity of forage available for tortoises. Additionally, if present, desert tortoises may be affected by an increase in tortoise predators drawn to the Project area as a result of increased human activities and the evaporation ponds.

#### Mojave Fringe-Toed Lizard

The Mojave fringe-toed lizard occupies the sandy habitats that overlap the proposed linear facility routes and would likely incur impacts as a result of Project development. It is possible the Colorado fringe-toed lizard occurs within the sandy areas associated with the Project. Both the Mojave and Colorado fringe-toed lizards are California species of special concern and are treated the same by the resource agencies. With the implementation of proposed mitigation measures in Section 5.3.8, impacts to the Mojave fringe-toed lizard are expected to be less than significant.

**Direct:** Permanent impacts to either fringe-toed lizard species would include injury or mortality from construction equipment and related traffic and habitat fragmentation as a result of the paved access road. These impacts would be elevated during construction due to increased traffic and temporary disturbance, but vehicle strikes would continue throughout the operation of the project or as long as the road was in place.

**Indirect:** Temporary impacts to these species due to construction activities would include temporary displacement due to noise and vibrations. Permanent impacts could include potential avoidance of paved roads by these species resulting in further fragmentation of populations, isolation of sub populations, and a potential reduction in individual home ranges. The transmission line could serve as perch sites for predatory and/or scavenger avian species, thereby increasing the predation rate on the fringe-toed lizard. In addition, the presence of the evaporation ponds as well as general human

disturbances could attract predators of the fringe-toed lizard to the Project area and its general vicinity.

### **Burrowing Owl**

Burrowing owls are present within the Project area and would likely be affected by Project development. No active nests were found during surveys; however, suitable habitat for this species exists throughout the Project area. Fewer signs of burrowing owl were detected along the linear facility route than were detected within the Project area; therefore, impacts are expected to be less along the linear facility route. With the implementation of the proposed mitigation measures outlined in Section 5.3.8, impacts to the burrowing owl will be reduced to a level of insignificance.

**Direct:** Permanent impacts to this species include removal of foraging and breeding habitat, destruction of burrows during construction activities, and mortality due to vehicular strikes during both construction and operation activities.

**Indirect:** Temporary impacts to these species may include dispersal from existing habitat to similar adjacent habitats. Permanent impacts to the burrowing owl could result if the transmission line serves as additional perch sites for predatory and/or scavenger avian species, thereby increasing the predation rate on this species. In addition, the presence of the evaporation ponds as well as human activity could attract some species which prey upon the owl to the Project area and its general vicinity (e.g., kit foxes, coyotes). Burrowing owls may also get tangled in loose fences and abandoned wire, thereby increasing their mortality rate near the Project area.

### **5.3.7.8 Other Special Status Avian and Wildlife Species**

Other special status wildlife species are expected to be directly and indirectly affected by Project development, mainly due to the loss of 1,800 acres of habitat cleared for the solar facility. However, the loss of the specific foraging habitat located in the Project area is unlikely to create a significant, permanent impact because the Project area hosts no special foraging habitat (e.g., water sources) and there is ample, identical foraging habitat immediately outside of the Project area. Impacts are expected to be elevated during construction, but wildlife is expected to re-occupy adjacent habitat following completion of construction and no adverse population-level impacts for general wildlife resources are expected. With implementation of the impact avoidance, minimization, and mitigation measures outlined in Section 5.3.8, the Project's direct impacts on wildlife would be reduced to a level of insignificance.

**Direct:** Permanent impacts include loss of foraging and breeding habitat, and mortality, injury, or harassment of individuals as a result of encounters with vehicles or heavy equipment during construction and operations.

**Indirect:** Temporary impacts could result from disruption of natural foraging behavior by increased ambient noise levels and unnatural lighting during dawn, dusk, or nighttime construction. Indirect effects could also include poisoning by drinking from evaporation ponds (primarily avian species as the ponds would be fenced), mortality due to an increase of predators (e.g., coyotes, ravens) attracted to the area by human activities and evaporation ponds, and isolation of subpopulations due to habitat fragmentation.

### **Bird Species**

**Direct:** Impacts to bird species could include disruption of nesting activities during construction, permanent habitat loss and fragmentation, and mortality by transmission line collisions and

electrocution. Wintering or migrating species that do not nest in the area (e.g., ferruginous hawk and northern harrier) may be affected by loss of foraging habitat. In addition, the accumulation of waste material in evaporation ponds can be detrimental to a variety of birds that inhabit or utilize the Project vicinity or are attracted to the evaporation ponds for resting, foraging, and nesting.

Evaporation ponds can contain high levels of trace elements from geochemical origins (e.g., selenium, arsenic) that cause death and deformity in birds. The evaporation ponds will be fenced off to prevent most wildlife from accessing this water source; however, avian species may still be able to access these ponds and could utilize them as stop over habitat during migrations. Resident bird and wildlife species obtain water from their food, and therefore it is unlikely resident birds and wildlife would ingest large amounts of water from the evaporation ponds. However, if ingested, discharge concentrations have been determined for the evaporation ponds and may contain levels of toxins that could potentially be harmful to wildlife.

High levels of selenium and arsenic in wastewater can be an issue for avian species as they bioaccumulate in the food chain; however, no selenium was detected in the waste constituent discharge concentrations for the evaporation ponds, but arsenic was (at a combine discharge of 0.089 mg/L; see Section 5.4 Water Resources Table 5.4-9.). Measuring the levels at which adverse effects are observable in birds is highly variable, and depends on several factors, such as species, body weight, length of exposure, type of exposure (ingestion vs. dermal contact), bioavailability of the compound, as well as the exposure concentration. Ongoing monitoring of the evaporation ponds, as described in Section 5.3.8, would track the waste constituent concentrations of any compounds of concern and any adverse affects to wildlife which may occur. Although no selenium was found within the ponds, if it is detected during semiannual and annual wastewater sampling, mitigation measures would be revised in order to prevent increased impacts to avian species.

**Indirect:** Temporary impacts could result from disruption of natural foraging behavior by increased ambient noise levels and unnatural lighting during dawn, dusk, or nighttime construction. In addition, mortality rates of avian species may increase due to the potential increase of predator populations that are attracted to the area by human activities.

### **Bats**

Impacts to bats would be insignificant as no roosting and foraging habitat exists on site. Also, foraging habitat such as agricultural fields and riparian areas are not present within the Project area and would not be affected. Nocturnal foraging near the Project area would not be disturbed by daytime project construction.

### **5.3.7.9 Impacts to Special Status Management Areas**

Portions of the Project area overlap BLM and USFWS special management areas. It is anticipated that mitigation will be required for the acres of land disturbed by Project construction and operation at the ratios described in Table 5.3-5. Additional discussions will take place with BLM, USFWS, and CDFG regarding the mitigation and compensation requirements for these areas and associated special status species.

Special Management Areas	Disturbance Acres	Compensation	
		Ratio	Acres
WHMA	885.5	n/a	0
Stabilized and Partially-Stabilized Sand Dunes	57	3:1	171
Chuckwalla DWMA	0.8	5:1	4
Desert Tortoise Critical Habitat	11.5	5:1	57.6
<b>Total Acres</b>	<b>954.8</b>		<b>232.6</b>

### 5.3.8 Mitigation Measures

#### 5.3.8.1 Construction Mitigation Measures

The following is a list of general impact avoidance and minimization measures that would apply to all Project construction activities. These measures are standard practices designed to prevent environmental degradation. The Project applicant will ensure implementation of these measures to avoid and minimize impacts to the greatest extent feasible.

- BIO-1:** A Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) will be created to comprehensively describe avoidance, minimization, and mitigation measures; document their implementation; and monitor their effectiveness. The BRMIMP shall identify the terms and conditions of any permits associated with the Project, including, but not limited to, the USFWS Section 7 Biological Opinion (BO), CDFG Section 2081 BO or Letter of Concurrence, federal Section 404 permit, and CDFG Streambed Alteration Agreement.
- BIO-2:** The construction contractor(s)/crew(s) will be informed about the biological constraints of the project. All construction personnel who work in the survey area will attend a contractor education program, developed and presented by a project biologist prior to the commencement of construction activity. This Worker Environmental Awareness Program (WEAP) will be included in the BRMIMP. The construction crews and contractor(s) will be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by the CEC and other agencies who must issue approvals for the Project.
- BIO-3:** Construction crews and contractors will be responsible for working around all shrubs and trees within the construction zone to the extent feasible. Shrubs and trees will be flagged during pre-construction surveys to indicate priority for avoidance.
- BIO-4:** The anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, will be delineated with stakes and flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone will be avoided.
- BIO-5:** Existing roads will be utilized wherever possible to avoid unnecessary impacts. New and existing roads that are planned for either construction or widening will not extend beyond the planned impact area. All vehicles passing or turning around will do so within the

planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route will be clearly marked (*i.e.*, flagged and/or staked) prior to the onset of construction.

- BIO-6:** Spoils should be stockpiled in disturbed areas presently lacking native vegetation. Stockpile areas should be marked to define the limits where stockpiling can occur.
- BIO-7:** Best Management Practices (BMPs) will be employed to prevent loss of habitat due to erosion caused by project-related impacts (*i.e.*, grading or clearing for new roads). All detected erosion will be remedied within two days of discovery.
- BIO-8:** Fueling of equipment will take place within existing paved roads and not within or adjacent to drainages or native desert habitats. Contractor equipment will be checked for leaks prior to operation and repaired as necessary.
- BIO-9:** Construction activity will be monitored by a qualified biologist to ensure compliance with avoidance and minimization measures.
- BIO-10:** Trash and food items will be removed from the Project area daily and disposed properly in order to avoid attracting ravens or other potential predators of the desert species.
- BIO-11:** Firearms and domestic pets will be prohibited from work sites.
- BIO-12:** The introduction of exotic plant species will be controlled by implementation of measures described in the BRMIMP.

The following mitigation measures would be used to mitigate for impacts to special status species. Incorporation of these measures would reduce potentially significant measures to below a significant level.

- BIO-13:** No mitigation is required to compensate for non-sensitive vegetation types that would be directly impacted by Project activities. However, impacts to sand dune habitat (57 acres) will require a compensation ratio of three acres of land for every one acre disturbed (3:1 ratio) during construction and operation (BLM, 2002). Additionally, the portion of the linear facility routes that overlap the DWMA (0.8 acre) and Critical Habitat (11.5 acres) will carry a compensation ratio of five acres of land for every one acre disturbed (5:1 ratio).
- BIO-14:** All temporary and permanent impact areas will be surveyed for sensitive species within 30 days prior to commencement of construction activities in the survey area. Rare plant species and special status wildlife species habitat will be identified and flagged for avoidance.
- BIO-15:** Employees and contractors will look under vehicles and equipment for the presence of protected species prior to movement. No equipment will be moved until the animal has left voluntarily or it is removed by a biologist authorized to do so.
- BIO-16:** A biological monitor will be on site during all construction activities in potential habitat for sensitive species.
- BIO-17:** Qualified biologists will monitor all work where prior surveys have documented the occurrence of one or more listed species. The biologist will have the authority to halt all non-emergency actions that might result in harm to a listed species, and will assist in the

overall implementation of protection measures for listed species during project operations.

**BIO-18:** If a listed species is located during construction, and a contingency for avoidance, removal, or transplant has not been approved by USFWS or appropriate agency, workers will not proceed with construction until specific consultation with CEC, USFWS, BLM or other appropriate agency is completed.

**BIO-19:** All encounters with listed species will be reported to the biologist, who will record the following information:

- Species name;
- Location (narrative and maps) and dates of observations;
- General condition and health, including injuries and state of healing;
- Diagnostic markings, including identification numbers or markers; and
- Locations moved from and to.

**BIO-20:** The appropriate agencies will be notified if a dead or injured protected species is located. Written notification must be made within 15 days of the date and time of the finding or incident (if known) and must include: Location of the carcass, a photograph, cause of death (if known), and other pertinent information.

**BIO-21:** During construction activities, monthly and final compliance reports will be provided to CEC and other applicable resource agencies documenting the effectiveness of mitigation measures and the level of take associated with the Project. Biological issues also will be covered in the ongoing compliance reporting required by the CEC.

**BIO-22:** No disturbance will occur within 160 feet of occupied burrowing owl burrows during the non-breeding season (September 1 – January 31) or within 250 feet of occupied burrows during the breeding season (February 1 – August 31), unless a qualified biologist approved by CDFG verifies through noninvasive methods either that the birds have not begun egg-laying and incubation, or that juveniles from the occupied burrow are foraging independently and capable of independent survival.

**BIO-23:** Burrowing owls within the temporary or permanent impact areas and a 160-foot buffer will be excluded from active burrows during the non-breeding season (September 1 – January 31) and encouraged to passively relocate to suitable, unoccupied habitat at least 160 feet outside of the exclusion area. After burrows are confirmed to no longer be in use (one week), the burrow will be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bag will be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. If burrowing owl activity is detected at a burrow during the breeding season (February 1 – August 31), a 250-foot buffer will be flagged surrounding the occupied burrow and all Project-related activity will remain outside of the flagged area. Burrowing owls will not be moved or excluded from burrows during the breeding season.

**BIO-24:** The CBOC's mitigation guidelines used by CDFG recommend mitigation for impacts to burrowing owls should be based on the number of pairs directly impacted. Mitigation ratios are based on whether suitable acquired habitat is occupied by the species or is contiguous to the impact area. The CBOC and CDFG mitigation guidelines recommend a

ratio of 6.5 to 19.5 acres per pair of burrowing owls (or single individual) impacted, depending on whether the replacement habitat is occupied and/or contiguous with the occupied area to be impacted, and also Project-specific negotiations with CDFG.

#### 5.3.8.2 Operational Mitigation Measures

**BIO-25:** All vehicles passing or turning around will do so within the planned impact area or in previously disturbed areas.

**BIO-26:** Fueling of equipment will take place within existing paved roads, and not within or adjacent to drainages or native desert habitats. Maintenance equipment will be checked for leaks prior to operation and repaired as necessary.

**BIO-27:** The Project's evaporation ponds will be monitored, and the evaporation pond water will be tested annually and semi-annually (e.g., for selenium) throughout the life of the solar plant. Should harmful constituents appear in toxic levels, a mitigation and monitoring plan may be implemented.

#### 5.3.9 Cumulative Impacts to Biological Resources

Past and current actions within a 30-mile radius of the Project area include I-10 (located 2 miles south of the solar facility), 2 state prisons (located approximately 9 miles southeast of the Project), multiple transmission lines, various private developments/agricultural areas and their associated access road, as well as the city of Blythe (located 25 miles east of the Project). However, for the most part, the region immediately around the Project area is remote and undeveloped, consisting of open desert lands and wilderness areas.

Currently, the Blythe Energy Project Transmission Line is being constructed 4.5 miles south of the Project area. Its construction takes place south of I-10 and generally follows I-10, resulting in limited disturbances that would not significantly add to those of the Project.

In addition to the Project, there are 16 solar facilities that are being considered for permitting by the CEC and/or BLM within 30 miles of the Project (see Section 5.1). The 16 projects, all located on BLM land, have a combined requested ROW acreage of 110,251. As these projects are still in the planning phases and have not been permitted, approved, or constructed, only limited information is available about their likely impacts. It is uncertain if all or any of these projects would be developed, but for the purposes of this cumulative impact assessment, these proposed projects will be considered reasonably foreseeable future actions.

Significant cumulative impacts to biological resources would occur if all proposed solar facilities were constructed. However, it is assumed not all 110,251 acres will be permanently impacted and this number represents a worst-case scenario. Impacts to various wildlife and plant species from development of these projects would result in large-scale habitat loss and fragmentation and could affect sensitive species such as the desert tortoise, Mojave fringe-toed lizard, and bighorn sheep. These cumulative impacts have the potential to cause significant cumulative effects at a regional scale.

Although the Project is not located within suitable desert tortoise habitat, many of these projects are located within the geographic range of the desert tortoise and could be located within suitable tortoise habitat. A substantial reduction of desert tortoise habitat would adversely affect the species due to habitat fragmentation, loss of foraging habitat, loss of potential breeding, foraging, and burrowing habitat, and reduced habitat quality due to the introduction or spread of non-native plant species and

compaction of soils. The cumulative loss of tortoise habitat could become significant if enough occupied habitat is lost.

In addition, if the construction periods for these proposed projects overlap, disturbances to wildlife from construction activities could result in significant cumulative impacts to wildlife. However, if the construction periods for each project are staggered, then disturbance impacts to wildlife would be less, but spread out over a longer period of time. Cumulative impacts to wildlife that could be exacerbated by simultaneous construction activities include displacement, mortality, an increase in number of scavengers/predators that prey upon special status species (e.g. desert tortoise), and an increase in non-native plant species.

**5.3.10 Applicable Laws, Ordinances, Regulations, and Standards (LORS)**

The Project would comply will all applicable federal, state and local Laws, Ordinances, Regulations, and Standards (LORS). The LORS which are potentially applicable to the Project are discussed below and listed within Table 5.3-6.

**Table 5.3-6. LORS Applicable to Genesis Solar Biological Resources**

LORS	Requirements	Administering Agency
<b>Federal</b>		
National Environmental Policy Act of 1969	Comply with the combined Application for Certification / Environmental Impact Statement process.	BLM
Endangered Species Act (ESA) of 1973 and implementing regulations, 16 USC § 1531 et seq.; 50 CFR § 17.1 et seq.	Designates and protects federally threatened and endangered plants and animals and their critical habitats.	USFWS
Clean Water Act (CWA) §404	Regulates discharge of pollutants into waters of the United States.	USACE
Migratory Bird Treaty Act (MBTA) 16 USC § 703-711	Prohibits take of protected migratory birds.	USFWS
Executive Order 11312	Prevent and Control Invasive Species.	BLM
<b>State</b>		
California Environmental Quality Act (CEQA) of 1970, Public Resources Code §§ 21000-21177	Comply with the combined Environmental Impact Report / Environmental Impact Statement process.	CEC
California Endangered Species Act (CESA) of 1984, Fish and Game Code §§ 2050-2098	Designates and protects state threatened and endangered species.	CDFG
Fish and Game Code §§1600-1607, Streambed Alteration Agreement (SAA)	Requires state agencies to review project impacts to State jurisdictional waters, including impacts to wildlife and vegetation from sediments, diversions, and other disturbances.	CDFG

**Table 5.3-6. LORS Applicable to Genesis Solar Biological Resources**

<b>LORS</b>	<b>Requirements</b>	<b>Administering Agency</b>
Fish and Game Code Fully Protected Species including: § 3511: birds § 4700: mammals § 5050: reptiles and amphibians § 5515: fishes	Prohibits the taking of listed plants and animals that are classified as “fully protected” in California.	CDFG
Fish and Game Code § 1900 et seq. Native Plant Protection Act (NPPA) of 1977	Provides specific protection measures for the identification of state rare and endangered plants.	CDFG
Fish and Game Code §§ 3503, 3503.5, and 3513.	Provides protection for avian species.	CDFG
Title 14 California Code of Regulations §§ 670.2 and 670.5	Listing of plants and animals of California designated as threatened and endangered.	CDFG
<b>Local</b>		
Riverside County General Plan	Protection and preservation of wildlife for the maintenance of the balance of nature.	Riverside County

### 5.3.10.1 Federal LORS

#### **National Environmental Policy Act of 1969 (NEPA)**

NEPA establishes a public and open framework to be used when considering federal actions which could have an impact on environmental or cultural resources. NEPA does not require protection of these resources, only that any potential impacts, and the process used to make the final decision, are disclosed to the public. For this Project, it is the necessity of a ROW permit from the BLM that serves as the federal nexus which triggers the need for the NEPA process. The BLM would therefore serve as the lead NEPA agency. The BLM follows the CEQ regulations of implementing NEPA (40 CFR Parts 1500 – 1508), the Federal Land Policy and Management Act of 1976, and the Energy Policy Act of 2005. Additionally, the BLM follows guidance in the BLM NEPA Handbook H-1790-1, which was updated in January 2008, and the BLM Land Use Planning Handbook H-17601-1, Guidance for Preparing NEPA Documents Associated with Land Use Plans and Resource Management Plans. An evaluation of the environmental effects of this Project will be conducted in accordance with NEPA.

#### **Endangered Species Act of 1973 (ESA)**

The ESA was designed to minimize impacts to imperiled plants and animals, as well as facilitate the recovery of said species. Take of a species listed under the ESA as threatened or endangered is prohibited except as authorized through an Incidental Take permit issued by the USFWS under Section 7 or Section 10 of the ESA. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.”

Under Section 7 of the ESA, the BLM must consult with the USFWS regarding a proposed action that may adversely affect listed species; in this case, the desert tortoise. Formal consultation will be requested via a biological assessment (BA), and once the USFWS has reviewed the formal request for consultation, they may issue a non-jeopardy biological opinion (BO) and an incidental take permit, or a jeopardy BO. Section 7 consultation would be conducted for effects to the designated critical habitat of the federally listed threatened desert tortoise.

### **Clean Water Act (CWA) (§404)**

Sections 404 of the CWA establishes requirements for dredge and fill activities within waters of the U.S., and requires a detailed project analysis to determine if wetland impacts may be avoided or, if unavoidable, can be minimized to the extent practicable. The Project will follow the appropriate permitting process to comply with the CWA if drainages associated with the Project are deemed by the USACE to be jurisdictional Waters of the U.S.

### **Migratory Bird Treaty Act (MBTA)**

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, prohibits “take” of migratory birds (16 USC 703-712). Under the MBTA it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product. All birds that are native to the United States and belong to a family, group, or species covered by at least one of the four migratory bird conventions to which the United States is party are covered under the MBTA. There is currently no permitting framework (*i.e.*, incidental take permits) that allow liability protection for developers. The Project is not expected to result in the deaths of birds or the destruction of any active nests; therefore, the Project will be in compliance with this law.

#### **5.3.10.2 State LORS**

### **California Environmental Quality Act of 1970 (CEQA)**

The CEQA requires review of any project that is undertaken, funded, or permitted by a State or local governmental agency. Typically, the state or local agency with overall project permitting authority takes the lead for CEQA compliance. The lead agency has the discretion to consider any non-listed species a *de facto* listed species by the statement that “a species not included in any listing in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b)” (CEQA Guidelines §15380, Subsection d). If significant project effects were identified, the lead agency would have the option of requiring mitigation for effects through changes in the project or deciding that overriding considerations make mitigation infeasible (CEQA Sec. 21002). The California Energy Commission (CEC) is the lead state agency for CEQA review for thermal generating facilities 50MW and larger in size; therefore, the CEC would serve as the lead agency for this Project. An evaluation of the environmental effects of this Project will be conducted in accordance with CEQA during the Certification process.

### **California Endangered Species Act of 1984 (CESA); Fish and Game Codes § 3511, § 4700, § 5050, and § 5515; Native Plant Protection Act of 1977**

The CESA and Fish and Game Code sections 2050 *et seq.* protect California’s rare, threatened, and endangered species. Fish and Game Code sections 3511, 4700, 5050, and 5515 prohibit take of animals that are fully protected in California. The CDFG Code Sections 1900 *et seq.* designates rare, threatened, and endangered plants under the Native Plant Protection Act of 1977. The Proponent must consult with CDFG regarding the possibility of “take” under CESA, similar to the federal consultation above. The CDFG can choose to find the federal BO consistent with state law (a 2080.1 consistency determination), or choose to require a separate state “take” permit (a 2081 permit) if species listed by CESA could be harmed or killed during construction or operation of the project. The Project does not anticipate any impacts to species listed under this act; however, the Proponent will consult with the CDFG regarding impacts to state-listed and will be in compliance with this law.

**Fish and Game Code §§1600-1607, Streambed Alteration Agreement (SAA)**

CDFG regulates all changes to the natural flow, bed, or bank, of any river, stream, or lake that supports fish or wildlife resources. A stream is defined broadly as a body of water that flows at least periodically, or intermittently, through a channel that has banks and supports fish or other aquatic biota. Such areas are referred to as State jurisdictional waters. Impacts to vegetation and wildlife from sediment, diversions, and other disturbances are included in the review. The Project will notify the CDFG of streambed alteration and obtain a Streambed Alteration Agreement, if required.

**California Department of Fish and Game Code § 3503, 3503.5, and 3513**

CDGF Code sections 3503, 3503.5 state it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, including birds of prey, except as otherwise provided by this code or any regulation made pursuant thereto. CDGF Code section 3513 prohibits any take or possession of birds designated by the MBTA as migratory non-game birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. The Project is not expected to result in the take of birds or the destruction of any active nests; therefore, the Project will be in compliance with this law.

**Title 14 California Code of Regulations §§ 670.2 and 670.5**

Under California Code of Regulations section 670.2 and 670.5, animals are designated as threatened or endangered in California. California species of special concern is a category conferred by CDFG on those species that are indicators of regional habitat changes or are considered potential future protected species. These species do not have any special legal status, but this designation is used by CDFG as a management tool for consideration when land use decisions are made concerning any land parcel. Because effects to species of special concern will be fully mitigated, the Project is in compliance with this law.

**5.3.10.3 Local Authorities and Administering Agencies****Riverside County General Plan**

Riverside County encourages the protection and preservation of wildlife for the maintenance of the balance of nature. The conservation of wildlife shall be carried out in conjunction with such actions necessary to protect sensitive, rare, endangered and threatened species of wildlife and their habitats. Programs to consolidate public land as a means of preserving natural habitats shall be encouraged and supported. An evaluation of the environmental effects of the Project will be conducted during the Certification process.

**5.3.11 Involved Agencies and Agency Contacts**

Agencies with jurisdiction to issue applicable permits related to biological resources are shown in Table 5.3-7.

**Table 5.3-7. Agencies and Agency Contacts**

<b>Agency Contact</b>	<b>Contact Information</b>	<b>Permit/Jurisdiction</b>
Tannika Englehard USFWS	6010 Hidden Valley Road, Suite 101 Carlsbad, CA 92011 760-431-9440	Section 7 consultation, Endangered Species Act, Biological Opinion (BO)
Kim Nicol CDFG	78-078 Country Club Drive, Suite 109 Bermuda Dunes, CA 92203 760-200-9358	1602 Streambed Alteration Agreement 2080.1 Concurrence with BO or 2081 Permit

**Table 5.3-7. Agencies and Agency Contacts**

Agency Contact	Contact Information	Permit/Jurisdiction
Jim Mace USACE	Prado Dam Field Office 2493 Pamona-Rincon Road Corona, CA 92880 951-818-6163	404 Nationwide 12 Utility Crossings of Waters of the US
John Carmona Colorado RWQCB	73-720 Fred Waring Drive, Suite 100 Palm Desert, CA 92260 760 340-4521	Clean Water Act, Section 401, Water Quality Certification

### 5.3.12 Permits Required and Permit Schedule

The Permits required for the Project are listed in Table 5.3-8.

**Table 5.3-8. Applicable Permits and Permit Schedule**

Authority	Permit/Approval	Schedule
USFWS	Federal Endangered Species Act, Section 7 Consultation/Incidental Take Statement	Prior to commencement of construction. Allow 30 days for USFWS to find BA complete, and 135 days to deliver BO.
CDFG	California Endangered Species Act, Section 2081 or 2080.1 Incidental Take Permit	Prior to construction. Requires completion of CEQA process to issue.
CDFG	CDFG Section 1602 Streambed Alteration Agreement (SAA)	Obtain an SAA prior to construction. CDFG will issue the draft SAA within 3-4 months of submittal after completing the CEQA process.
USACE	Clean Water Act Section 404, Nationwide 12 Permit, Utility Line Discharge	Obtain 404 permit or concurrence of non- jurisdiction prior to construction. Allow 2-3 for review and processing.

### 5.3.13 References

- Baldwin et al., 2002. The Jepson Desert Manual. Vascular plants of Southeastern California. University of California Press. Berkeley, California.
- BLM (Bureau of Land Management), 2007. Environmental Assessment; Converting Ford Dry Lake Allotment to a Purpose which Precludes Livestock Grazing. CA-660-06-54.
- BLM (United States Bureau of Land Management), 2004. Final Environmental Impact Report and Statement for the West Mojave Plan, A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment.
- BLM and CDFG (California Department of Fish and Game), 2002. Final Environmental Impact Statement. Proposed Northern & Eastern Colorado Desert Coordinated Management Plan (NECO). Bureau of Land Management, California Desert, Riverside, CA.
- Cal-IPC (California Invasive Plant Council Home), 2006. California Invasive Plant Inventory. Cal-IPC Publication 2006-02. California Invasive Plant Council: Berkeley, CA. Available: <http://www.cal-ipc.org/>, Accessed September 29, 2008.

- CBOC (California Burrowing Owl Consortium), 1993. Burrowing owl survey protocols and mitigation guidelines. Unpub. document. 13 pp.
- CDFG (California Department of Fish and Game), 1995. Staff Report on Burrowing Owl Mitigation. Memorandum dated October 17, 1995.
- CDFG (California Department of Fish and Game), 2000. Survey Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.
- CDFG and Habitat Data Analysis Branch, Biogeographic Data Branch, 2009.  
<http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf>. Updated July 2009.
- CNPS (California Native Plant Society), 2001. CNPS Botanical Survey Guidelines. December 9, 1983, revised June 2, 2001. 3 pp.
- CNPS, 2009. Electronic inventory of rare and endangered vascular plants of California.  
<http://www.cnps.org>. Accessed March 2009.
- CEC (California Energy Commission), 2007. Recommended biological resources field survey guidelines for large solar projects. Draft. 31 May 2007. 3pp.
- Engelhard, T., 2009. Personal Communication. Fish and Wildlife Biologist. Carlsbad Fish and Wildlife Office. 6010 Hidden Valley Road, Suite 101. Carlsbad, CA 92011. Office 760-431-9440, ext. 202, Fax 760-431-9624, Tannika\_Engelhard@fws.gov. March 18.
- Goebel, K. A., 2009. Reply to request for information on endangered and threatened species for Project Genesis, Riverside County. March 19 letter to Tricia Bernhardt, Tetra Tech EC, Inc., Denver, Colorado. Reference No. FWS-ERIV-08B0060-09SL8504. 3 pp. March 19.
- Gowen, D., 2008. New taxa following a reassessment of *Eriastrum sparsiflorum* (Polemoniaceae). *Madrono* 55(1): 82-87.
- Hickman, J. C., 1993. The Jepson manual: higher plants of California. Univ. of California Press, Berkeley and Los Angeles. 1400 pp.
- Holland, R.F., 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. The Resources Agency. California Department of Fish and Game. 156 pp.
- Holland, V. L. and D. J. Keil, 1995. California vegetation. Kendal/Hunt Publishing Company, Dubuque, IA.
- Karl, Alice E., 2002. Desert tortoise abundance in the Fort Irwin National Training Center Expansion Area. Unpub. rept. to Charis Corporation, Temecula CA. 55 pp plus appendices.
- Massar, M., 2007. Reply to request for information on endangered and threatened species for Project Genesis, Riverside County. October 25 letter to Dr. Penny Eckert, Tetra Tech EC, Inc., Bothell, Washington. Reference No. CACA-015562A. 5 pp.
- Munz, P. A. and D. D. Keck, 1968. A California flora and supplement. University of California Press, Berkeley and Los Angeles, CA. 1905 pp.

- Nicol, K., 2009. Personal communication via telephone and e-mail with Derrick Coleman, Tetra Tech EC. Bureau of Land Management, 78-078 Country Club Drive, Suite 109, Bermuda Dunes, CA 92203; 760-200-9158. June 29.
- O'Rourke, T., 2007. Reply to request for information on endangered and threatened species for Project Genesis, Riverside County. October 25 letter to Dr. Penny Eckert, Tetra Tech EC, Inc., Bothell, Washington. Reference No. FWS-ERIV-2008-B-0026/2008-SL-0035. 3 pp.
- Orr, William., 2009. Personal Communication via telephone and email with Emily Festger. Paleontologist. Dept of Geology. University of Oregon. Eugene, Oregon 97403-1272. rr\_bll@yahoo.com. May 15.
- Otahal, C., 2009. Personal Communication via email with Ray Romero, Tetra Tech, EC. Bureau of Land Management Barstow Field Office. 2601 Barstow Road, Barstow, CA 92311 Phone: (760) 252-6000. March 9 and March 24.
- Reiser, C., 1994. Rare Plants of San Diego County. Sierra Club. Available at: <http://sandiego.sierraclub.org/rareplants/>. Last updated on 10/6/01.
- Tetra Tech EC, Inc., 2009. Draft Delineation of Waters Report for the Genesis Solar Energy Project. Eastern Riverside County, California. July 2009.
- The Institute for Bird Populations, 2008. Breeding Burrowing Owl Survey for California. Spring 2008 Newsletter. [http://www.birdpop.org/DownloadDocuments/BUOW\\_ENEWSLETTER\\_spring\\_2008.pdf](http://www.birdpop.org/DownloadDocuments/BUOW_ENEWSLETTER_spring_2008.pdf).
- USACE (U.S. Army Corps of Engineers), 1987. Wetland Delineation Manual.
- USFWS (U.S. Fish and Wildlife Service), 1992. Field survey protocol for any non-federal action that may occur within the range of the desert tortoise. Unpub. doc. 22 pp.
- USFWS, 1994a. Desert Tortoise (Mojave population) Recovery Plan. Portland, Oregon. 73 pages plus appendices.
- USFWS, 1994b. Federal Register, Department of the Interior, Fish and Wildlife Services. Rules and Regulations. Determination of Critical Habitat for the Mojave Population of the Desert Tortoise; Final Rule. 50 CFR Part 17. 59 FR 5820-5866. February 8.
- WRCC (Western Regional Climate Center) Blythe, CA Airport. <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0927>. Accessed July 21, 2009.
- Wiggins, D. A., D. W. Holt, and S. M. Leasure, 2006. Short-eared Owl (*Asio flammeus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Available at: <http://bna.birds.cornell.edu/bna/species/062>.
- Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1998-1990. California's Wildlife. Vol. I-II. California Depart. Of Fish and Game, Sacramento, California. Updated 1997 J. Vindum.