4.5 BIOLOGICAL RESOURCES

As part of the Antelope Transmission Project, SCE plans to construct the following:

- Segment 2 – Antelope to Vincent T/L (20.0 miles of 500kV T/L and 0.5 mile of 220 kV T/L)
- Segment 3 – Antelope to Substation One (500 kV T/L; including transition bus work at Substation One for 500 kV towers and T/Ls to 220 kV) and Substation One to Substation Two (220 kV T/L, including new 220 kV Substation Two)

The USGS 7.5 min. topographic quads for these segments are: Tehachapi North, Tehachapi South, Monolith, Willow Springs, Little Buttes, Del Sur, Sleepy Valley, Lancaster West, Palmdale, Ritter Ridge, and Pacifico Mountain (refer to Figures 3-1, 3-2, and 3-3).

As part of the project's permitting and environmental assessment process, SCE conducted an evaluation of the likelihood of occurrence by any special-status plant or wildlife species in the project area and in association with any of the proposed project facilities.

The purpose of this assessment is to present the results of field surveys conducted over several years, and literature/database reviews, to document the likelihood of certain special-status plants and wildlife potentially being affected by the proposed project.

The project R-O-W study area for biological resources includes the centerline along the proposed and alternative T/L routes plus a buffer zone (i.e., 0.5 mile on either side of the R-O-W centerline). Within this linear route study area, biologists determined the potential or actual occurrence of selected special-status plant and wildlife species, or sensitive habitats.

4.5.1 Study Approach and Methods

The approach to the project involved completing two phases. In the first phase, background information was gathered and compiled in preparation for going into the field. The description of this phase appears in Section 4.5.1.1, below. Following this pre-field orientation, the second phase involved having qualified field biologists conduct field studies along the routes and other project facilities. Section 4.5.1.2, below, describes the methods used for the field survey phase of the project. A map atlas was prepared and it summarizes many of the findings presented in this report, including dominant vegetation types and California Natural Diversity Data Base (CNDDB) (CDFG, 2002) occurrences in the vicinity of Segments 2 (refer to Figure 4.5-1A) and 3 (refer to Figure 4.5-1B).

4.5.1.1 Pre-field Methods

Biologists contracted by SCE (BioResource Consultants: C. Thelander [Project Manager], D. Taylor, Ph.D., Scott Werner, Peter Bloom, Scott Thomas, William Vanherweg, James Castle, Charlene Burge, Christopher Bysshe, and Edward Johnson) compiled a list of candidate sensitive species (plants and wildlife), and areas of special concern, that are known or expected to occur in the project area. Standard database searches were performed (e.g., CNDDB: RareFind3, various botanical herbaria, etc.). All of the information compiled formed the basis for a project-specific database and resource mapping effort for the project area.

Special-status species are plants and animals that are either listed as endangered or threatened under the federal or state Endangered Species Acts (Section 670.2, Title 14, California Code of Regulations; Section 1900, Fish and Game Code: ESA Section 17.11, Title 50, Code of Federal Regulations), listed as rare under the California Native Plant Protection Act, or considered to be rare (but not formally listed, Section 15380 CEQA Guidelines) by resource agencies, professional organizations (e.g., Audubon Society, California Native Plant Society [CNPS], The Wildlife Society), and the scientific community.

Specific criteria were used to select species for inclusion in the project as a rare, sensitive, or listed species (see Appendix D-1). Collectively these are termed "special-status" species. Based on these criteria, a target list of special-status plants and wildlife with potential to occur in the project area was prepared. Sources of information used included the California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2001b), Angeles National Forest, Land and Resources Management Plan (1987), West Mojave Plan (BLM, 2005), and the CNDDB (RareFind3) maintained by the California Department of Fish and Game (CDFG, 2002).

To aid the fieldwork and data collection, a map atlas was compiled that depicted the proposed project facilities using USGS 7.5 minute topographic base maps. These maps were numbered sequentially and compiled in a three-ring binder format. A set of maps was provided to each of the field biologists for reference and to assist with data collection and navigation in the field. The maps included the pre-survey (known) locations of any sensitive species or their habitat, areas likely to require specific surveys in the project area, and any access roads.

4.5.1.2 Field Survey Methods

The proposed project has been under consideration for several years. As a result, field surveys have been conducted over this period along various portions of the routes. Most of the work was completed during the spring and summer months of 2001, 2002, and 2003.

The first fieldwork along the T/L routes was conducted in April 2001. The most recent surveys were completed in August 2005. During 2005 the entire Segment 2 and 3 T/L routes were surveyed using reconnaissance-level sampling methods aimed at possibly documenting "presence" but not detailed enough to confirm "absence". As deemed appropriate by the field biologists using their professional judgment, specific walking searches were conducted where deemed appropriate in attempts to document presence for species suspected of being in the area or where suitable habitat was thought to occur. In many instances, areas found prior to 2005 were resurveyed to obtain additional information on presence/absence. This was especially true for nesting raptors such as Swainson's hawks and burrowing owls and for plants given the extraordinary rainfall that preceded the 2005 flowering season.

Typically a two-person team of biologists traveled together conducting the field surveys and recording data. Additionally, individual specialists conducted their own focused surveys on an as-needed basis.

The field surveys were scheduled to coincide with the season of year when observations of sensitive plants or certain wildlife species were most likely to occur. For plants, several visits to the project area were required to address differing flowering seasons for each sensitive plant species. All vascular plant species observed during surveys of the routes were documented (Appendix D.2). Directed surveys for special status plant species potentially occurring in the project area were based on the California Native Plant Society's *Botanical Survey Guidelines* (CNPS, 2001a).

Surveys were conducted by inspection of the proposed and alternative routes, and substations, but the specific locations of towers and other project areas where impacts might occur were not identified prior to going into the field. Many unpaved access routes were inspected for special-status plant species and wildlife habitat. The survey area was modified at some locations where steep topography would preclude the ability to use the area for construction activities, such as canyons where the transmission line would span but not impact habitat.

At each survey site, dominant habitat characteristics and factors affecting local habitats, general soil characteristics, slope, aspect, and drainage were recorded onto field maps. Directed surveys were then focused on observed suitable habitats for special-status species potentially occurring in the project area (Tables 4.5-1A and 4.5-1B). Plant surveys were floristic in nature and were conducted during the blooming period for each special-status species having potential to occur in the project area.

Data collection was standardized for each site visited to the fullest extent possible. A field form designed specifically for the project was developed to record the results of field surveys. Digital photos were taken periodically for reference purposes. The field biologists

TABLE 4.5-1A
SUMMARY OF SENSITIVE PLANT SPECIES THAT MAY POTENTIALLY OCCUR IN THE PROJECT REGION [1]

Scientific Name	Common Name	CA Status	Federal Status	Segment (CNDDB)	CNPS List	CNPS Code	Feb	March	April	May	June	July	Aug	Sept
Calochortus clavatus var. *gracilis*	Slender mariposa lily	None	None		1B	323		■	■	■				
Calochortus palmeri var. *palmeri*	Palmer's mariposa lily	None	None		1B	223				■	■	■		
Calochortus plummerae	Plummer's mariposa lily	None	None		1B	223				■	■	■		
Calochortus striatus	Alkali mariposa lily	None	None	2	1B	222			■	■	■			
Dodecahema leptoceras	Slender-horned spineflower	Endangered	Endangered		1B	333			■	■	■			
Galium grande	San Gabriel bedstraw	None	None		1B	313	■	■	■	■	■	■		
Opuntia basilaris var. *brachyclada*	Short-joint beavertail cactus	None	None	2	1B	323			■	■	■			

[1] Shading denotes months in which flowering occurs and/or when species is most likely to be observed.

Note: The column 'Segment (CNDDB)' refers to route segments where CNDDB Occurrence Records appear for the species (2 = Antelope – Vincent; and, 3 = Antelope – Substations One and Two).

TABLE 4.5-1B
OTHER RARE PLANTS GENERALLY NOT MANDATED FOR CEQA MITIGATION REVIEW THAT MAY OCCUR IN THE PROJECT REGION[1]

Scientific Name	Common Name	CA Status	Federal Status	CNPS List	CNPS Code	Feb	March	April	May	June	July	Aug	Sep
Calystegia peirsonii	Pierson's morning-glory	None	None	4	123				■	■			
Canbya candida	White pygmy poppy	None	None	4	123		■	■	■	■			
Chamaesyce vallis-mortae	Death Valley spurge	None	None	4	123				■	■			
Chorizanthe spinosa	Mojave spineflower	None	None	4	122			■	■	■	■	■	
Goodmania luteola	Golden goodmania	None	None	4	111			■	■	■	■	■	
Juncus cooperi	Cooper's rush	None	None	4	221	■	■	■	■	■	■		
Loeflingia squarrosa var. *artemisiarum*	Sagebrush loeflingia	None	None	2						■	■	■	■
Mucronea californica	California spineflower	None	None	4	122		■	■	■	■	■	■	
Muilla coronata	Crowned muilla	None	None	4	113		■	■	■				
Phacelia mohavensis	Mojave phacelia	None	None	4	122		■	■	■	■	■	■	
Sclerocactus polyancistrus	Mojave fish-hook	None	None	4	113			■	■	■			
Syntrichopappus lemmonii	Lemmon's sunflower	None	None	4	221					■	■	■	■
Viola aurea	Golden violet	None	None	2	221			■	■	■			

[1] Shading denotes months in which flowering occurs and/or when species is most likely to be observed.

were equipped with handheld GPS units. Specific locations of sensitive resources found in the field were digitized for later mapping and reporting purposes. CNDDB Reporting Forms were submitted for all special-status species.

4.5.2 Environmental Setting

The mountains and foothills of southern California are inhabited by 18 amphibian, 61 reptile, 299 bird, 104 mammal, and about 2,900 vascular plant species (CDFG, 1996). Throughout the proposed project area, habitat is present for many of these species because of the diversity of topography and climate it traverses.

Major portions of the project area overlap with the planning area that was recently the subject of an intensive planning effort known as the West Mojave Plan (BLM, 2005). The Plan consists of two components: a Federal component that will amend the existing 1980 California Desert Conservation Area Plan, and a Habitat Conservation Plan that will cover development on private lands. It presents a comprehensive strategy to conserve and protect species such as the desert tortoise, the Mohave ground squirrel and some 100 additional special-status wildlife and plant species. It encompasses an area including some 3.2 million acres of public lands plus an additional 3.0 million areas under private ownership. The proposed project is located on the western edge of this planning area.

Although finalized, the West Mojave Plan has not yet been implemented. However, SCE has included sensitive species information from the Plan in this document, and is following the intent of the Plan when it comes to mitigation measures to protect these sensitive species.

The project area for Segments 2 and 3 includes the southern Antelope Valley. Segment 3 runs north across the mainly disturbed grasslands and scrublands of the Antelope Valley where it enters the Tehachapi Range, where biological influences associated with the southern Sierra Nevada are encountered.

Several dominant vegetation types typify the environmental setting for the overall project area. These include ruderal/disturbed areas undergoing development as residential or commercial facilities, several chaparral community types (predominately chamise), valley-foothill riparian and woodland, montane upland hardwoods, lower montane conifer/ hardwood, Joshua tree woodland, pinyon/juniper woodland, interior/desert scrub including creosote bush scrub, grasslands/wildflower fields, and several types of agriculture, including cattle grazing and dry or irrigated farming. Biologists recorded the distribution of these dominant vegetation types along the T/L routes based on field surveys and interpretations from aerial photographs taken in 2000.

Over much of the project area the habitat quality of native vegetation communities has been degraded because of various human activities and land conversions. Large areas of ruderal

vegetation occur that are dominated by weedy species that often establish themselves either because of previous agricultural activities, grazing, or because of weed-abatement plowing. These can eventually produce fields of non-native grasses or undesirable weeds such as star-thistle (*Centaurea melitensis*). Ruderal/degraded scrub and ruderal chaparral mosaic often results from agricultural/weed abatement activities or frequent fires that encourage the spread of non-native grasses. Fires usually spread more easily through non-native grasslands than through native, fire-adapted vegetation types. As a result, native shrub communities often gradually disappear. This process has been underway over much of the project area.

At various locations in the project region there are remnants of sensitive or declining habitat types. Many of these locations are recorded in the CNDDB RareFind3 system. They can include: Southern Coast Live Oak Riparian Forest, Southern Cottonwood Willow Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, Southern Willow Scrub, Joshua Tree Woodland, Valley Needlegrass Grassland, and Wildflower Field.

4.5.2.1 Segment 2: Antelope – Vincent

The Segment 2 T/L route extends 21.5 miles from the Antelope Substation west of Lancaster to the southeast and terminates at the Vincent Substation east of Acton. From Antelope Substation to MP 4.5, vegetation is primarily disturbed annual grassland and scrub. At approximately MP 4.5 the T/L route enters the foothills of the Castaic Ranges west of Quartz Hill. On Portal Ridge (MPs 4.5 to 7.8), vegetation is a mix of grassland and juniper woodland, with patches of Joshua tree-juniper woodland. Alternative AV1 deviates slightly from the proposed T/L route along the southern half of Portal Ridge, but Alternative AV1 is close enough to the proposed T/L route that the vegetation and landscape features are similar. In the lower Leona Valley, the proposed T/L route crosses Amargosa Creek, whose main branch and tributaries support sensitive riparian habitat such as Southern Cottonwood Willow Riparian Forest and recent records of sensitive species such as California red-legged frogs, southwestern pond turtles, and two-striped garter snakes.

From MPs 8.1 to 14.8, the proposed T/L route extends to the west through open space areas on Ritter Ranch and Anaverde developments, while Alternative AV2 continues southeast along the existing T/L corridor. South of Ritter Ranch, the proposed T/L route extends through the Sierra Pelona hills into Soledad Canyon to terminate at the Vincent Substation. Much of the northern portion of Ritter Ranch burned in the Leona fire of 2002, and portions of southern Ritter Ranch are still recovering from the Shannon fire of 1999. Ritter Ranch and the Sierra Pelona are predominately a mix of chamise chaparral, juniper woodland, montane hardwood chaparral, annual grassland, and ruderal/disturbed areas. These communities have substantial, recently burned, early successional zones in addition to mature, intact zones. Occasional minor stream crossings exist in the area that support riparian scrub habitat. On this southern portion of the T/L route, known occurrences or suitable habitat exists for short-

joint beavertail cactus, and suitable habitat exists for sensitive species such as coast horned lizards, burrowing owls, horned larks, Bell's sage sparrows, and southern California rufous-crowned sparrows. A rare plant, Peirson's morning-glory (*Calystegia peirsonii*) was documented along the Segment 2 T/L route; however, this species is on CNPS List 4 and is not considered to merit CEQA consideration (CNPS 2001).

4.5.2.2 Segment 3: Antelope – Substations One and Two

The Segment 3 T/L route extends from the Antelope Substation north for approximately 25.6 miles to a proposed substation (Substation One) near the Cal Cement plant west of Mojave, and then another 9.6 miles from Substation One to Substation Two. From the Antelope Substation north to near Willow Springs, the proposed T/L route and two alternatives T/L route (A, B) run nearly due north through what once was a mix of native annual grasses, interior/desert scrub comprised mainly of creosote bush scrub, saltbush, Joshua tree woodland, wildflower fields, pinyon/juniper woodland, and some sagebrush areas.

Today most of the lower elevational areas are comprised of ruderal, highly disturbed, non-native annual grasses mixed with mustard, star thistle, and Russian thistle. Several areas are under cultivation for a variety of dry farming and irrigated crops, including alfalfa. Swainson's hawks are known to nest in the area, as well as burrowing owls.

North of the Willow Springs area where the slope and elevation increases along the T/L route, creosote bush scrub and Joshua tree woodlands predominate. Le Conte's thrashers have recently been observed in this area, and other sensitive species as desert tortoises and Mohave ground squirrels may occur here as well. As the elevation increases going north, pinyon/juniper woodland appears in transition with creosote bush scrub, Joshua tree woodland, and sagebrush communities.

The terminus of the T/L route in the Tehachapi Wind Resource Area is a complex transition zone between southern Sierra Nevada, Mojave Desert, and coastal scrub provinces. Here several major vegetation communities merge and commingle. The general region is host to numerous special-status plants and wildlife species, including the Tehachapi pocket mouse, nesting and wintering golden eagles, prairie falcons, and other raptors. In general, the western Antelope Valley is widely recognized as an area that supports relatively large numbers of raptors during the fall and winter.

4.5.3 Special-status Species Occurrence

4.5.3.1 Sensitive Plants

Tables 4.5-1A and 4.5-1B summarize the 21 special-status plant species that may occur in or near the proposed project facilities, and could therefore possibly be affected by the project.

Based on field surveys during 2001-2005, an assessment of probable occurrence in the project area was formulated, and is presented in Table 4.5-2. For each plant, the probability of occurrence was derived from field experience at reference populations or from literature as compared to the habitat conditions encountered along the T/L routes. For plants judged as having moderate to high potential for occurrence along the T/L route, more specific discussions are provided below Table 4.5-2. For plants judged as having low potential, no further assessment is provided, because potential impacts to such plants are considered unlikely and hence not significant.

4.5.3.1.1 Slender Mariposa Lily *(Calochortus clavatus* var. *gracilis).* *Calochortus clavatus* var. *gracilis* is an uncommon bulb-forming herb limited to the Transverse Ranges of California, occurring only within Los Angeles County. *Calochortus clavatus* var. *gracilis* is on the California Native Plant Society List 1B and is considered by CNPS as endangered throughout its range. It is not formally listed by either the state or federal governments. Ownbey (1940), Fiedler and Ness (1993), and Fiedler and Zebell (2002) list it as occurring only in the San Gabriel Mountains, but the specimens cited by Ownbey were in the Castaic Range west of Segment 2. The habitat selected by *Calochortus clavatus* var. *gracilis* is described generally as coastal sage scrub or a mixed scrub. Field surveys near the wind energy facilities (Segment 3) failed to locate *Calochortus clavatus* var. *gracilis*. However, the closely-related *Calochortus clavatus* var. *pallidus* was located scattered along segments of the Segments 2 and 3 T/L routes.

Because mariposa lilies can remain dormant and not flower for years, *Calochortus clavatus* var. *gracilis* is judged to have moderate potential for occurrence along the Segment 2 T/L proposed and alternative routes.

4.5.3.1.2 Palmer's Mariposa Lily *(Calochortus palmeri* var. *palmeri).* *Calochortus palmeri* var. *palmeri* is an uncommon bulb-forming herb limited to the southerly mountains of west-central and south-central California. *Calochortus palmeri* var. *palmeri* is on the CNPS List 1B and is considered by CNPS as endangered throughout its range. It is not formally listed by either the state or federal governments.

CNPS (2001b) considers *Calochortus palmeri* var. *palmeri* to be "declining rapidly: occurs in wet meadows where seriously threatened by grazing". The habitat selected by *Calochortus palmeri* var. *palmeri*, described as the moist but not saturated portions of montane meadows, occurs in some areas of Segment 2 and the northern reaches of Segment 3. *Calochortus palmeri* var. *palmeri* was not documented during field surveys, but because mariposa lilies can go without flowering in years with unfavorable climate and growing conditions, *Calochortus palmeri* var. *palmeri* is judged to have moderate potential for occurrence along the project alignments.

TABLE 4.5-2
SUMMARY PROJECT ASSESSMENT FOR RARE, THREATENED, OR ENDANGERED PLANTS WITH SUITABLE HABITAT IN THE PROJECT REGION[1]

Scientific Name	Common Name	Habitat Requirements, Suitable Habitat Along Alignment, Observations	Probability of Occurrence, Segment 2	Probability of Occurrence, Segment 3	Preconstruction Surveys Recommended
Calochortus clavatus var. *gracilis*	Slender Mariposa Lily	Heavy soils in shrublands (chaparral or coastal sage scrub); not located in field surveys	Moderate	Moderate	Yes
Calochortus palmeri var. *palmeri*	Palmer's Mariposa Lily	Moist to vernally saturated, grassy or herb dominated openings in forest, glades; not located in field surveys	Moderate	Moderate	Yes
Calochortus plummerae	Plummer's Mariposa Lily	Rocky or stony shrublands (chaparral or coastal sage scrub); not located in field surveys	Moderate	None	Yes
Calochortus striatus	Alkali Mariposa Lily	Suitable subalkaline meadow habitat absent from Segments 2 and 3; meadows near Tehachapi judged non-habitat	Moderate	Moderate	Yes
Dodecahema leptoceras	Slender-horned Spineflower	Sandy washes, sandy openings in chaparral or coastal scrub, often after fires; not located in field surveys	Moderate	None	Yes
Galium grande	San Gabriel Bedstraw	Rocky, northerly facing ridges in chaparral, Big Cone fir or pine forests; not located in field surveys	Low	None	No
Opuntia basilaris var. *brachyclada*	Short-joint Beavertail	Chaparral or coastal scrub. Verified occurrence near Vincent Substation.	Observed	None	Yes

[1] Note: plants with moderate or high probability of project occurrence are discussed in text.

The areas with the highest probability of occurrence are on the northern-most portions of Segment 3 between proposed Substations One and Two, and on Segment 2.

4.5.3.1.3 Plummer's Mariposa Lily *(Calochortus plummerae)*. *Calochortus plummerae* is an uncommon bulb-forming herb limited to the Transverse Ranges of southern California. *Calochortus plummerae* is on CNPS List 1B and is considered endangered throughout its range. It is not formally listed by either the state or federal governments.

CNPS (2001b) considers *Calochortus plummerae* to be "Significantly reduced by development, and continues to decline". The habitat selected by *Calochortus plummerae* is described generally as rocky shallow soils, often on decomposed granitic deposits, within chaparral, woodland, or open forest communities. *Calochortus plummerae* was not documented in the project area during field surveys conducted in 2001-2005. Because mariposa lilies can go without flowering in years with unfavorable climate and growing conditions, *Calochortus plummerae* is judged to have moderate potential for occurrence along the project alignments even though it was not documented during field surveys.

This species has a moderate probability of occurrence in the area of Segment 2 where suitable habitat conditions exist.

4.5.3.1.4 Alkali Mariposa Lily *(Calochortus striatus)*. *Calochortus striatus* is an uncommon bulb-forming herb limited to the southern San Joaquin Valley, far western Mojave Desert, and inland parts of southern California; it is also found in Nevada (Ash Meadows, and formerly Las Vegas). *Calochortus striatus* is on the CNPS List 1B and is considered endangered throughout its range.

Calochortus striatus is limited to salty or alkaline soils about springs in desert lowlands, often where salt grass (*Distichlis spicata*) meadows are characteristic. Known records from the vicinity of Lancaster (e.g., Amargosa Creek floodplain area) and Rosamond on the Los Angeles-Kern County line occur east of the project alignments. *Calochortus striatus* was not documented at this location during field surveys conducted in 2001-2005. Because mariposa lily populations can go without flowering in years with unfavorable climate and growing conditions, *Calochortus striatus* is judged to have moderate potential for occurrence along the project alignments even though it was not documented during field surveys.

Although much of the formerly suitable habitat for *Calochortus striatus* on the floor of the Antelope Valley is developed for either agriculture or rural residential uses, its occurrence in this region cannot be entirely ruled out. Several sites near the existing Monolith Substation in Segment 3 have seasonally moist heavy-clay soils in sites dominated by rabbitbrush (*Chrysothamnus nauseosus*), sites that are similar to described habitat for *Calochortus striatus,* further supporting its potential occurrence.

This species has a moderate probability of occurrence in the area of Segments 2 and 3 where suitable habitat conditions, as described above, exist. Pre-construction clearance surveys within suitable habitat are recommended.

4.5.3.1.5 Slender-horned Spineflower *(Dodecahema leptoceras)*. *Dodecahema leptoceras* is a small annual herb restricted to southern California. It is listed as endangered by the state and federal governments. *Dodecahema leptoceras* is on the CNPS List 1B and is considered by that organization to be endangered throughout its range. It is found only in Los Angeles, Riverside, and San Bernardino counties.

Dodecahema leptoceras occurs in sandy washes and other sandy soil sites. CNPS (2001b) states that many historical occurrences have been lost to urbanization and stream channelization, and that *Dodecahema leptoceras* is currently threatened by development, sand and gravel mining, flood control, proposed reservoir construction, and other elements of urbanized development.

Dodecahema leptoceras is judged to have moderate potential for occurrence along the Project alignments even though it was not documented during field surveys: most of the suitable habitat for this species is in sites under existing transmission line spans across washes but not adjacent to existing towers or access roads.

This species has a moderate probability of occurrence in the area of Segment 2 within suitable habitat. Pre-construction clearance surveys in suitable habitat are recommended.

4.5.3.1.6 San Gabriel Bedstraw *(Galium grande)*. *Galium grande* is a tufted perennial herb restricted to the Transverse Ranges of southern California, documented only from Los Angeles County. *Galium grande* is on the CNPS List 1B and is considered by CNPS as endangered throughout its range. It is not formally listed by either the State of Federal governments.

Galium grande typically occurs in open chaparral, oak woodland, or similar woodland communities including stands of Big Cone Fir (*Pseudotsuga macrocarpa*), generally at high elevations (ca. 3,000 to 6,000 feet). CNPS (2001b) lists urbanization and associated impacts as primary threats, but also invokes mining, horticultural collecting, grazing, and off-road vehicles as secondary concerns. A sizable proportion of the approximately 30 known occurrences are on Angeles National Forest lands, where Species Management Guidelines (Soza et al., 2002) are in use. No occurrences of *Galium grande* were documented during field surveys in this region. Surveys conducted prior to the fires of 2002 may have not located all of the occurrences in this vicinity, since plants of *Galium grande* in dense chaparral would be more difficult to spot, and would be expected to grow vigorously after fire.

This species has a low probability of occurrence in the area of Segment 2. No pre-construction clearance surveys are recommended.

4.5.3.1.7 Short-joint Beavertail *(Opuntia basilaris* var. *brachyclada)*. *Opuntia basilaris* var. *brachyclada* is a cactus restricted to the Transverse Ranges of southern California, documented only from Los Angeles and San Bernardino Counties. *Opuntia basilaris* var. *brachyclada* is on the CNPS List 1B and is considered endangered throughout its range. It is not formally listed by either the state or federal governments. *Opuntia basilaris* var. *brachyclada* typically occurs in open chaparral, juniper woodland, or similar woodland communities, but not at high elevations. CNPS (2001b) lists urbanization and associated impacts as primary threats, but also invokes mining, horticultural collecting, grazing, and off-road vehicles as secondary concerns. A sizable proportion of the approximately 60 known occurrences are on Angeles National Forest lands, where Species Management Guidelines are being applied.

This species is known to occur at three locations along the alignment of Segment 2, and suitable habitat exists along the entire length of Segment 2. Field surveys in this region conducted prior to the fires of 2002 may have not located all of the occurrences in this vicinity, since plants of *Opuntia basilaris* var. *brachyclada* in dense chaparral would be more difficult to spot.

At one location, plants were located only where a previous fire (circa 2000) made them both more visible but also resulted in their abundant regrowth, making then more easily detected. For this reason, *Opuntia basilaris* var. *brachyclada* may occur along other project alignments in the region. Pre-construction clearance surveys in suitable habitat are recommended.

4.5.3.2 Sensitive Wildlife

Table 4.5-3 summarizes the sensitive wildlife species (n = 27) that occur regionally and that may be affected by the project. Additional information is provided below for selected sensitive wildlife species whose known distributions, plus habitat conditions observed in the project area, indicate that they may occur there, or potentially be impacted in some way by the project.

4.5.3.2.1 California Red-legged Frog (*Rana aurora draytonii*).

Status, Distribution, and Habitat Requirements

The California red-legged frog is a federally threatened species. It is the largest native frog in the western United States and inhabits ponds, marshes, streams, and reservoirs with year-round water greater at least 2-3 feet deep. Optimal habitat consists of sheltered pools with cattails and bordered by willows, but red-legged frogs have also been found in and near

TABLE 4.5-3
SUMMARY OF SENSITIVE WILDLIFE SPECIES THAT MAY POTENTIALLY OCCUR IN THE PROJECT REGION

Common Name	Scientific Name	Status	Probability of Project Occurrence[1]: Segment 2	Probability of Project Occurrence[1]: Segment 3	Preconstruction Survey Recommended
Amphibians					
California Red-legged Frog	*Rana aurora draytonii*	FT	Low	Low	No
Reptiles					
Silvery Legless Lizard	*Anniella pulchra pulchra*	CSC	Low	Low	No
Two-striped Garter Snake	*Thamnophis hammondii*	CSC	Low	Low	No
Coast Horned Lizard	*Phrynosoma coronatum blainvillii* *Phyrnosoma coronatum frontale*	CSC	High High	High High	Yes
Southwestern Pond Turtle	*Emys (=Clemmys) marmorata pallida*	CSC	Low	Low	No
Desert Tortoise	*Gopherus agassizii*	FT, CT	Low	Low	Yes
Birds					
Bald Eagle	*Haliaeetus leucocephalus*	CE, FT, FP	Moderate	Moderate	No
White-tailed Kite	*Elanus leucurus*	FP	Moderate	Moderate	Yes (nesting)
Sharp-shinned Hawk	*Accipiter striatus*	CSC	Moderate	Moderate	No
Cooper's Hawk	*Accipiter cooperi*	CSC	Moderate	Moderate	Yes (nesting}
Golden Eagle	*Aquila chrysaetos*	CSC, FP	Moderate	High	Yes (nesting)
Ferruginous Hawk	*Buteo regalis*	CSC, BLM	Moderate (wintering)	Moderate (wintering)	No
Swainson's Hawk	*Buteo swainsoni*	CT	Low	High	Yes (nesting)
Northern Harrier	*Circus cyaneus*	CSC	Moderate	Moderate	Yes (nesting)
Merlin	*Falco columbarius*	CSC	Moderate (wintering)	Moderate (wintering)	No

TABLE 4.5-3 (CONTINUED)
SUMMARY OF SENSITIVE WILDLIFE SPECIES THAT MAY POTENTIALLY OCCUR IN THE PROJECT REGION

Common Name	Scientific Name	Status	Probability of Project Occurrence[1]: Segment 2	Probability of Project Occurrence[1]: Segment 3	Preconstruction Survey Recommended
Peregrine Falcon	*Falco peregrinus anatum*	CE, FP	Moderate (wintering)	Moderate (wintering)	No
Prairie Falcon	*Falco mexicanus*	CSC	High	High	No
Mountain Plover	*Charadrius montanus*	CSC	Moderate (wintering)	Moderate (wintering)	No
Burrowing Owl	*Athene cunicularia*	CSC	High	High	Yes
Loggerhead Shrike	*Lanius ludovicianus*	CSC	High	High	Yes (nesting)
California Horned Lark	*Eremophila alpestris actia*	CSC	High	None[2]	Yes (nesting)
Le Conte's Thrasher	*Toxostoma lecontei*	CSC	Low	High	Yes (nesting)
Southern California Rufous-crowned Sparrow	*Aimophila ruficeps canescens*	CSC	High	None[3]	Yes (nesting)
Bell's Sage Sparrow	*Amphispiza belli belli*	CSC	High	None[4]	Yes (nesting)
Tricolored Blackbird	*Agelaius tricolor*	CSC	Low	Low	No
Mammals					
Tehachapi Pocket Mouse	*Perognathus alticola inexpectatus*	CSC	None	High	Yes
Mohave Ground Squirrel	*Spermophilus mohavensis*	CT	Low	Moderate	Yes

Status Codes:
FT – Federally Threatened
CE – California Endangered
CT – California Threatened
CSC – California Species of Concern
BLM – BLM-Sensitive
FP – Fully Protected

TABLE 4.5-3 (CONTINUED)
SUMMARY OF SENSITIVE WILDLIFE SPECIES THAT MAY POTENTIALLY OCCUR IN THE PROJECT REGION

Probability of Presence:
High – Project includes suitable habitat with confirmed presence of species.
Moderate – Project includes suitable habitat, but no confirmed presence, or outside known current distribution.
Low – Project includes marginal habitat, little potential presence of species, or outside known current distribution.
None – No suitable or potential habitat, or far from known distribution.

[1] Values in ( ) refer to route segment within which a CNDDB Occurrence Record, or field surveys for this project, verifies presence (2 = Antelope-Vincent; 3 = Antelope-Substations One and Two).

[2] A different, non-sensitive subspecies, *Eremophila alpestris ammophilus*, has a high probability of occurence along Segment 3.

[3] A different, non-sensitive subspecies, *Aimophila ruficeps ruficeps*, has a moderate probability of occurrence along Segment 3.

[4] A different, non-sensitive subspecies, *Amphispiza belli canescens*, has a high probability of occurrence along Segment 3.

intermittent streams and stock ponds with little adjacent vegetation. Breeding occurs from November through March, when they typically lay eggs during or shortly after winter and spring rainfall events.

Habitat Assessment and Occurrence in the Project Area

There are few if any deep, permanent sources of water in the project area. However, there is a CNDDB record from 1995 of four California red-legged frogs inhabiting a spring-fed pond on Ritter Ranch. This location is more than 1 mile from the proposed Segment 2 T/L route and will not be affected by the project. Along Segment 3, the only significant stream (Oak Creek) appears to contain the deep, ponded water preferred by California red-legged frogs. There are no CNDDB records for this species in Kern County.

Potential Project-Related Impacts

If this species still occurs in the project area, it is unlikely to be impacted by the proposed project since aquatic habitats will be avoided. The proposed T/L routes will span drainages and no new towers will be constructed within drainages. There is an existing access road that currently crosses Amargosa Creek. Some grading of this existing road may be required, however no new ground-disturbing impacts will take place at this location.

4.5.3.2.2 Silvery Legless Lizard *(Anniella pulchra pulchra)*.

Status, Distribution, and Habitat Requirements

Silvery legless lizards are a state species of special concern. Although found primarily at low elevations, they can range up to 5,700 feet in the Sierra Nevada foothills. Legless lizards are usually associated with sandy or loose loamy soils for burrowing, and in areas that are sparsely vegetated. It occurs in desert scrub areas in the Mojave Desert similar to areas found along portions of Segments 2 and 3.

Habitat Assessment and Occurrence in the Project Area

Little is known about the specific habitat requirements of this species. Suitable habitat likely occurs in the project area. A 1995 CNDDB record exists along Segment 2 in the Leona Valley, within 0.5 miles of the proposed Segment 2 T/L route. Two 1988 CNDDB occurrence records represent the first records for the desert floor of the Antelope Valley. These were recorded approximately 4 miles northeast of the proposed Segment 2 route in two separate localities. The observer noted that high moisture content of the soil was essential for this species. In addition, two silvery legless lizards were seen during June 2005 near Avenue K and 40th St. West in Lancaster, about 4 miles northeast of Segment 2 (Occurrence no. 34).

However, soils at this site were described as sandy and almost dune like, which raises questions about the moisture requirements of this species.

Potential Project-Related Impacts

Suitable habitat may occur for this species in portions of Segment 2 near the Antelope Substation, and in low-lying areas south of Ritter Ridge. Moister soils along Segment 3 north of Cal Cement presumably offer suitable habitat as well. However, it is difficult to assess whether the project would impact such a secretive and little-known species. Systematic pre-construction clearance surveys are not feasible because so little is known about specific habitat requirements; however, where suitable habitat conditions may be disturbed by construction, biological monitors and workers would be trained to identify this species. If any individuals are observed during construction they would be relocated to a safe site nearby.

4.5.3.2.3 Two-striped Garter Snake (*Thamnophis hammondii*).

Status, Distribution, and Habitat Requirements

The two-striped garter snake is a state species of special concern. They inhabit streams from the coast to about 7,000 feet in elevation throughout much of central and southern California, mainly from near Salinas to Baja California. They inhabit a broad range of stream types, from rocky intermittent and perennial streams bordered by willow thickets to large sandy rivers bordered by riparian vegetation. Stock pond and artificial water sources are also used. The life history of the two-striped garter snake is poorly known, despite the fact that the snake was once fairly common throughout its range.

Habitat Assessment and Occurrence in the Project Area

The large streams bisected by Segments 2 and 3 support few, if any, aquatic habitats that would be impacted by the proposed project. Amargosa Creek in the Leona Valley (Segment 2) provides potential habitat for two-striped garter snakes, and there are two CNDDB records within the project area. A 1999 observation was made in the creek near the Elizabeth Lake Pine Canyon Road bridge , and in 1995 a two-striped garter snake was seen less than 1 mile downstream in an area of Cotton-Willow Riparian Forest. Habitat similar to Amargosa Creek occurs on Ritter Ranch at Anaverde Creek at MP 12.3 of the proposed Segment 2 T/L route in an intermittent flow area dominated by arroyo willow (*Salix lasiolepis*). No snakes were observed here during 2005 surveys.

On Segment 3, suitable habitat for two-striped garter snakes occurs along Oak Creek, in a Cotton-Willow Riparian Forest west of Tehachapi-Willow Springs Road. East, or downstream of Tehachapi-Willow Springs Road, the creek has a perennial flow but

streamside vegetation was sparse during 2005 surveys after a fire burned through the area in 2004.

Potential Project-Related Impacts

It is unlikely that this species would be impacted by the proposed project since aquatic habitats would be avoided, however, pre-construction surveys for sensitive wildlife that may be impacted during construction should address potential impacts to this species or its habitat.

4.5.3.2.4 Coast Horned Lizards *(Phrynosoma coronatum blainvillii* and *P. c. frontale)*.

Status, Distribution, and Habitat Requirements

There are two forms of coast horned lizards that occur in the project area and both are state species of special concern. They are the coast (San Diego) horned lizard (*P. c. blainvillii*) and the coast (California) horned lizard (*P. c. frontale*). The ranges of these two subspecies overlap in the region. They are widely distributed throughout the project area, and throughout southern California. This ground-dwelling reptile has a distinctive flattened body that can reach up to four inches in length. Pointed scales line each side of their body, across their backs, and along the backside of their head where two larger, rigid, pointed scales stick out as well. Their cryptic coloration pattern begins with two dark patches behind their head, followed by three dark bands down their back with numerous patches along the tail. Their overall color consists of various shades of brown with light-brown accents.

Both races are typically found in areas of open vegetation such as coastal sage scrub, chaparral, and grassland habitats and typically associated with sandy substrates and nearby native anthills. They are insectivorous. The majority of their diet consists of native ants but they do consume other invertebrates such as beetles, grasshoppers, and caterpillars. Breeding season occurs from spring to early summer.

Habitat Assessment and Occurrence in the Project Area

Coast horned lizard habitat is expected to occur along much of Segments 2 and 3, especially in the southern portions south of Highway 138. It is likely that they will be encountered during construction.

Potential Project-Related Impacts

Construction may result in impacts to coast horned lizards. Construction vehicles may crush individuals or their local food resources. Pre-construction clearance surveys are

recommended where feasible; worker training programs will be conducted to minimize impacts to this species.

4.5.3.2.5 Southwestern Pond Turtle *(Emys marmorata pallida)*.

Status, Distribution, and Habitat Requirements

Southwestern pond turtles are a state species of special concern. The species ranges from San Luis Obispo County southward into San Diego County. South of the Santa Clara River, pond turtle populations have declined significantly. They inhabit a wide range of low-elevation aquatic habitats. They rarely occur above 4,000 feet in elevation. They are found in aquatic habitats such as rivers and streams that have persistent, deep pools. They are active year-round in most areas. Southwestern pond turtles have similar but narrower habitat requirements than two-striped garter snakes (see above). These turtles require a more permanent source of water, emergent rocks and/or logs for basking, intact upland areas with clay or silty soils for nesting, and areas of shallow water with dense vegetation to serve as shelter and foraging habitat for hatchlings.

Habitat Assessment and Occurrence in the Project Area

There are two CNDDB occurrences of southwestern pond turtles along Segment 2, in Amargosa Creek. These records were generated during the same surveys, at the same sites, as the two-striped garter snake records described above in the two-striped garter snake section. These sites are within 0.5 miles of the proposed Segment 2 T/L route. Anaverde Creek on Ritter Ranch may not provide a sufficient year-round supply of water, but Oak Creek west of Tehachapi Willow Springs Road (Segment 3) may provide suitable habitat for southwestern pond turtles.

Potential Project-Related Impacts

Though suitable habitat may occur in the project area, it is unlikely that this species would be affected by construction. Aquatic habitats, especially rivers and streams, are generally spanned by powerlines and no impacts to these habitats are anticipated. Pre-construction clearance surveys will be conducted if it is anticipated that construction will impact wetland areas with flowing water and habitat suitable for this species. These surveys will be conducted within 100 feet of any perennial water source.

4.5.3.2.6 Desert Tortoise *(Gopherus agassizii)*.

Status, Distribution, and Habitat Requirements

The desert tortoise is state and federally listed as threatened. It occurs throughout California's desert regions, with the highest densities reported in creosote bush scrub. They also occur occasionally in Joshua tree woodland habitats in the western Mojave Desert.

Habitat Assessment and Occurrence in the Project Area

Although there are no occurrence records in the CNDDB for desert tortoise in the project area it is highly likely that the species occurred there historically and it may still be present. A review of occurrence records suggest that no recent surveys for desert tortoises have been conducted in the area. Suitable habitat exists in the northern portions of Segment 3. Potential habitat was found during surveys of the routes, which is considered the western-most portion of the species' range. The approximate boundaries of habitat considered suitable for the species in the project area are depicted in Figure 4.5-1B. The West Mojave Plan includes four Desert Wildlife Management Area (DWMAs); none overlap with the proposed project area in either Segment 2 or Segment 3. Portions of the project area, mainly in Segment 3, occur within the 'Survey Areas' designated in the West Mojave Plan (BLM, 2005).

Potential Project-Related Impacts

Desert tortoises may be impacted by the project during construction. Worker training programs and biological monitoring can be used to effectively reduce the likelihood of impacts occurring. Pre-construction clearance surveys will be conducted consistent with the final West Mojave Plan or wherever suitable habitat exists in the project area.

4.5.3.2.7 Bald Eagle *(Haliaeetus leucocephalus)*.

Status, Distribution, and Habitat Requirements

Bald eagles are a federally threatened, state endangered, and state fully protected species. After many years of poor reproduction and loss of habitat, the species is recovering over much of its former range. This is largely attributable to the elimination of using DDE and other organochlorines as agricultural pesticides. Also, the creation of artificial reservoirs throughout the state has provided suitable habitat over much of their range. While on migration, bald eagles can be seen just about anywhere in the state. However, they are generally associated with large waterbodies such as lakes and reservoirs, or wildlife refuges where waterfowl congregate. Bald eagles typically eat fish, mammal, carrion, and waterbirds/waterfowl.

Habitat Assessment and Occurrence in the Project Area

No nesting by this species is known for the region. The nearest known nesting locations are associated with large reservoirs and lakes in the southern Sierra Nevada foothills and in the Owens Valley many miles from the project area. Occasional winter migrants are reported in the western Mojave Desert region but there are no known winter concentration areas in the region that reliably support bald eagles for extended periods of time or in large numbers.

Potential Project-Related Impacts

Bald eagles may encounter the proposed transmission lines during migration. There have been records of bald eagles striking transmission lines, especially when visibility is low. Conversely, transmission towers provide safe and suitable perching sites from which to hunt or loaf. No pre-construction clearance surveys are recommended.

4.5.3.2.8 White-tailed Kite *(Elanus leucurus)*.

Status, Distribution, and Habitat Requirements

White-tailed kites, a state fully protected species, typically are found in association with low rolling foothills or valley margins with scattered trees and river bottom areas, or marshes adjacent to deciduous woodlands. They hunt usually over open grasslands, meadows, or marshes. Dense tree stands are often preferred for nesting sites. Loss of habitat is the primary threat to the species.

Habitat Assessment and Occurrence in the Project Area

It is likely that white-tailed kites occur in isolated areas where suitable habitat exists. No nesting sites are known along the routes, but wintering and foraging habitat occurs in small, isolated areas. The species migrates throughout California between late Fall and Spring, so they may be seen in a variety of settings outside of the nesting season.

Potential Project-Related Impacts

No impacts to nesting habitat are expected to occur because of the proposed project. While some suitable foraging habitat may be temporarily disturbed, these impacts would be insignificant. Pre-construction clearance surveys for nesting sites within 500 feet of work locations are recommended.

4.5.3.2.9 Northern Harrier *(Circus cyaneus)*.

Status, Distribution, and Habitat Requirements

Northern harriers are a state species of special concern. They occur throughout the state and elsewhere wherever suitable habitat exists. They are mostly associated with meadows, marshes, and wetland areas where they nest and forage for small mammals and birds.

Habitat Assessment and Occurrence in the Project Area

Little suitable habitat for northern harriers exists along the route in Segment 2. Marginal habitat for wintering harriers occurs in portions of Segment 3 where there are agricultural fields (mainly alfalfa). It is not uncommon during fall and winter to encounter northern harriers in valleys with grasslands and meadows.

Potential Project-Related Impacts

No direct impacts to this species are expected because of the proposed project. In a regional context, a minimal amount of foraging habitat may be temporarily disturbed or modified. Specific habitat for nesting is not expected to be impacted by the project; however, pre-construction clearance surveys are recommended as part of any general raptor nesting surveys.

4.5.3.2.10 Sharp-shinned Hawk *(Accipiter striatus)*.

Status, Distribution, and Habitat Requirements

Sharp-shinned hawks are a state species of special concern. No nesting sites are known (or expected) for the project area. Numerous migrants can, however, be seen throughout southern California during the non-breeding season.

Habitat Assessment and Occurrence in the Project Area

Suitable habitat is present throughout the project area for migrating sharp-shinned hawks. There are no CNDDB occurrence records for this species nesting in the project region. It is likely that sharp-shinned hawks would be seen during construction in woodland areas. Typically these would be brief encounters with migrants.

Potential Project-Related Impacts

No impacts are expected to occur to the species because of the project. Since this species is not known to nest in this portion of California, no pre-construction clearance surveys are warranted.

4.5.3.2.11 Cooper's Hawk *(Accipiter cooperi)*.

Status, Distribution, and Habitat Requirements

Cooper's hawks are a state species of special concern. They breed throughout much of the mountainous areas in the project area and are typically associated with riparian communities, though not exclusively. In addition to the breeding population, large numbers of Cooper's hawks migrate through California during the winter.

Habitat Assessment and Occurrence in the Project Area

Breeding habitat in the project area occurs where riparian woodland habitat occurs, though some nesting may occur in more arid conditions. There are no CNDDB occurrence records for the species nesting in the project area, though it is likely that they nest in the region.

Potential Project-Related Impacts

Cooper's hawks are unlikely to be directly impacted by the proposed project. The greatest concern would be for the loss of a nesting site during the breeding season. The species is relatively susceptible to disturbance and human activity near their nests. They would abandon nesting territories early in the breeding cycle under some circumstances. Preconstruction surveys in suitable nesting habitat can locate any active nesting territories and impacts can be avoided by seasonal work restrictions in certain areas.

4.5.3.2.12 Swainson's Hawk *(Buteo swainsoni)*.

Status, Distribution, and Habitat Requirements

Swainson's hawks are a state threatened species. They have no federal listing designation. They nest mainly in northern and central California, but they are occasionally seen in southern California, including in the project area, during migration. Their selection of nesting sites varies greatly, but often nests are placed in trees that are situated in grasslands and agricultural areas, or in Great Basin sage and pinyon-juniper habitats.

Habitat Assessment and Occurrence in the Project Area

Two pairs of nesting Swainson's hawks were observed during 2005 along Segment 3 near the Los Angeles and Kern County line in the area around MP 9.0 of the proposed route. The closest nest is located approximately 0.7 miles from the proposed Segment 3 T/L route. One or both of these particular nesting territories have been occupied for several years and are adjacent to a series of alfalfa fields (CNDDB Occurrence numbers 802 and 803). Other

suitable habitat is present throughout Segment 2 within a 5-mile radius around the Antelope Substation.

Potential Project-Related Impacts

No impacts to Swainson's hawks or their habitat are expected because of the proposed project. Because nearby construction activities during the nesting season could cause abandonment of a nest, preconstruction surveys will be conducted to identify whether any active nesting territories are present. Seasonal work restrictions would be applied to avoid impacting any nests found near the R-O-W or other project facilities during construction.

4.5.3.2.13 Ferruginuous Hawk (*Buteo regalis*).

Status, Distribution, and Habitat Requirements

Ferruginous hawks are a state species of special concern. They breed north of California, but numerous individuals winter throughout the arid and agricultural areas of the state. They eat small rodents and are most commonly associated with flat, open terrain including agricultural areas such as alfalfa fields, fallow fields, and pastures.

Habitat Assessment and Occurrence in the Project Area

Suitable habitat for wintering ferruginous hawks is prevalent throughout the project area, mainly in Segment 2 and 3 north of Angeles National Forest and extending into the Antelope Valley to Rosamond. There are no CNDDB Occurrence Records for this species in the region, but they are observed frequently by birdwatchers.

Potential Project-Related Impacts

No impacts are expected to occur to this species because of the proposed project. Since this species does not breed in the region, no pre-construction clearance surveys are warranted.

4.5.3.2.14 Golden Eagle *(Aquila chrysaetos)*.

Status, Distribution, and Habitat Requirements

Golden eagles are a state species of special concern, state fully protected species, and they receive federal protection under the Bald and Golden Eagle Protection Act. Golden eagles hunt for rabbits and other small mammals in open habitats such as grasslands, oak savannahs, and scrub communities. They nest throughout California, but less so in southern California where habitat loss and urbanization has greatly reduced the amount of suitable nesting and foraging habitat. The species requires relatively large home ranges. Nesting territories probably overlap with the project area, but there are no known nesting sites within it. Nesting

habitat includes cliffs, and various tree species that provide suitable height and security. Non-breeding individuals may be seen foraging or loafing in the project area at any time of the year. They often use high perches such as transmission towers for foraging.

Habitat Assessment and Occurrence in the Project Area

CNDDB Occurrence Record No. 57 reports a nesting site in the area of Oil Canyon Creek, approximately 16 miles north of Mojave. A more recent 2004 CNDDB record (Occurrence number 87) reported a golden eagle nest in the Tehachapi Mountains 2 miles west of Quail Lake, which is about 26 miles west of the project area. Other nesting sites are present throughout the project area, but not all are active every year. Much of the project area provides suitable foraging habitat for golden eagles, especially those areas where agriculture, grassland, and scrub habitats dominate the landscape. Historical nesting locations are known for the Monolith area. Other nesting territories are known throughout the western Mojave Desert. It is likely that individuals from these and other nearby nesting territories, and winter migrants, frequently forage along the entire length of the proposed routes.

Potential Project-Related Impacts

No impacts to golden eagles are expected because of the project. Transmission towers provide excellent perch sites from which eagles often forage. In some instances, towers are used for nesting sites, although no nests were observed in transmission towers during surveys. All transmission and subtransmission lines would be built per Avian Power Line Interaction Committee guidelines to be raptor-safe. Since no significant amount of habitat loss is expected, use by golden eagles and other large raptors in the area should remain largely the same as it was prior to the project.

Suitable habitat for golden eagles occurs mainly in the Antelope Valley and Tehachapi Mountain areas of the routes in Segments 2 and 3, although individuals may be seen anywhere in the project area. Pre-construction clearance surveys are recommended for nesting sites on existing towers and in areas of suitable habitat within one mile of construction.

4.5.3.2.15 Merlin *(Falco columbarius)*.

Status, Distribution, and Habitat Requirements

Merlins are a state species of special concern. They are only known to occur in California as migrants, though there are persistent rumors in the bird-watching and falconry community of historical nesting sites near the Oregon border. It is common to see merlins nearly anywhere in the project area during the non-breeding months. Relatively large numbers of merlins pass through the region during migration each year. They are aerial predators, rarely landing on

the ground and rarely dependent upon specific habitat conditions. They are attracted to areas, natural or artificial, that attract flocks of small birds. They are seen foraging on flocks of meadowlarks in grasslands, on European starlings around feedlots, and in urban settings hunting sparrows and other passerines.

Habitat Assessment and Occurrence in the Project Area

The project area provides suitable habitat for merlins during their migration through California from northern latitudes to Central and South America. No specific habitat features predict their occurrence, other than the likely presence of small birds.

Potential Project-Related Impacts

No direct impacts to merlins are expected from this project because they are wide-ranging aerial predators whose occurrence is rarely associated with any particular habitat conditions or vegetation type. Since this species does not nest in the region, no pre-construction surveys are warranted.

4.5.3.2.16 Peregrine Falcon *(Falco peregrinus)*.

Status, Distribution, and Habitat Requirements

Peregrine falcons are state listed as a threatened species and are state fully protected. They were recently delisted in 1999 from federal endangered status following a nationwide population recovery. Peregrines nest throughout mountainous and coastal California, and in urban areas. They use coastline and interior cliffs and artificial structures such as bridges and buildings for nesting. No known nesting sites occur in the project area, or within 10 lateral miles at any point along the routes.

Habitat Assessment and Occurrence in the Project Area

No suitable nesting habitat for peregrines occurs along or near the routes. It is likely that peregrines may occasionally use the R-O-W as foraging habitat. No peregrines were observed during field surveys along the routes.

Potential Project-Related Impacts

No nesting habitat or critical foraging habitat would be disturbed or removed because of the project. There are no wetland habitats, or other habitat features present along the routes that might concentrate peregrine prey species, and thus attract peregrines.

Transmission towers often provide perching sites for loafing and foraging. Some peregrines are killed occasionally by striking transmission lines (Walton, 2003). As aerial predators,

they can hit line spans while flying or pursuing their favorite prey, small to mid-sized birds. These impacts are unavoidable and incidental. The R-O-W already supports transmission lines and there have been no reported instances of peregrines striking transmission lines in this area. No suitable nesting habitat for peregrines would be impacted; therefore, no pre-construction surveys are warranted.

4.5.3.2.17 Prairie Falcon *(Falco mexicanus)*.

Status, Distribution, and Habitat Requirements

Prairie falcons are a state species of concern. They occur throughout California, but rarely in close association with human activity or urbanization. They nest on cliffs in foothill and mountainous regions. Desert scrub, arid open areas, and grasslands are their preferred habitat (Garrett and Dunn, 1981). They are especially adaptable and have been recorded nesting in the Sierra Nevada from above 10,000 feet elevation to desert canyons near Death Valley.

Habitat Assessment and Occurrence in the Project Area

Historical nesting sites are known for the southern Sierra Nevada near Monolith and in some of the desert butte areas of the Antelope Valley and western Mojave Desert. Because prairie falcons nest exclusively on cliffs, no nesting sites are known or expected to occur in the project area. Individuals may be seen foraging in the R-O-W throughout its length. They often perch on transmission towers.

Potential Project-Related Impacts

No impacts to prairie falcons or their habitat are expected because of the proposed project. They most likely would be encountered in the Antelope Valley portions of the routes in Segments 2 and 3. Pre-construction surveys are not warranted, because no suitable nesting cliffs occur within one mile of the proposed project area.

4.5.3.2.18 Mountain Plover *(Charadrius montanus)*.

Status, Distribution, and Habitat Requirements

Mountain plovers are state species of special concern. They were proposed in 1999 for federal listing as a threatened species but the petition was denied by the U.S. Fish and Wildlife Service. They winter in sparsely vegetated fields and grasslands, including recently tilled fields. They are less common on the coastal side of mountain ranges than inland. They appear, at least in some areas, to prefer alkali flats and cultivated/plowed fields.

Habitat Assessment and Occurrence in the Project Area

Much of the Antelope Valley north of Angeles National Forest provides suitable wintering habitat for mountain plovers. This winter migrant moves from field to field and is unlikely to be disturbed by construction activities. No primary wintering areas are known in the region, meaning sites where the species resides for extended periods. CNDDB Occurrence Record No. 9 is an observation of 24 individuals seen on 12 March 1999 at 120th Street W. about 1 mile north of Avenue D; 3 miles and northwest of Antelope Acres in Segment 3. This type of sighting is consistent with the expected use of the area by groups migrating through the area.

Potential Project-Related Impacts

No impacts to mountain plovers are expected from the proposed project because ground disturbances will be small relative to the total amount of potential mountain plover foraging habitat throughout the Antelope Valley. Although mountain plovers could potentially forage on the freshly graded tower and substation sites, this species does not nest in the region. No pre-construction surveys are needed to protect this species.

4.5.3.2.19 Burrowing Owl *(Athene cunicularia)*.

Status, Distribution, and Habitat Requirements

Burrowing owls are a state species of special concern. Once a widespread species throughout California, their distribution is now fragmented and much reduced. Loss of habitat is considered the major cause of their decline. Burrowing owls typically frequent low foothill valleys including the Antelope Valley and the western Mojave Desert. They seem to prefer dry sparse grasslands, desert scrub, and agricultural areas. Burrows initiated by California ground squirrels are often used for nesting and roosting.

Habitat Assessment and Occurrence in the Project Area

Suitable habitat for burrowing owls occurs over most of the project area; however, the northern portions of Segment 3 provide the highest quality habitat. Observers searched throughout the project area, including during the appropriate nesting season for the species in the region, and focusing on CNDDB locations. Only one family group of owls was found, in 2005, east of the Cal Cement Plant at MP 24.4 of the proposed Segment 3 T/L route. No burrows were located.

There is only one record in the CNDDB database for Segment 2. CNDDB Occurence No. 353 was a nesting observation made in 1999 in the Anaverde Valley 0.6 miles east of MP 15.0 of the proposed Segment 2 T/L route. No burrowing owls were observed on Ritter Ranch during recent surveys (Chlup 2005).

There are three CNDDB records along Segment 3. CNDDB Occurence No. 586 was a nesting observation in 2003 along West Avenue I, about 1.6 miles west of MP 1.7 of the proposed Segment 3 T/L route. CNDDB Occurence No. 358 was a nesting observation made in 1999 along 110th St. West, between Avenues A and B, at MP 9.3 of the Alternative B route of Segment 3. CNDDB Occurence No. 349 was a juvenile bird seen in 1999 at Avenue B at 95th St. West, 0.5 miles east of MP 9.3 of the Alternative A route of Segment 3. There are at least six other CNDDB burrowing owl records from the Antelope Valley within 15 miles of the project area. These additional records, in combination with the relatively recent occurrences along the project route indicate that a remnant population of burrowing owls persists in the Antelope Valley.

Potential Project-Related Impacts

Based on preliminary survey results, no impacts to burrowing owls are expected to occur due to construction of the proposed project. Preconstruction surveys are recommended in suitable habitat to locate active nesting sites. If any are located within the area potentially affected by the project, then seasonal work restrictions would be applied so that the work is done in the non-breeding season (July – February). If construction cannot be delayed, SCE would arrange for any young owls present at any particular burrow to be relocated by a qualified raptor specialist possessing the appropriate permits.

4.5.3.2.20 Loggerhead Shrike *(Lanius ludovicianus)*.

Status, Distribution, and Habitat Requirements

The loggerhead shrike is a state species of special concern. It is widely distributed where habitat remains in California. Typically it is associated with low elevations (<5,000 feet) in dry, open areas with sparse shrubs or trees. Loggerhead shrikes are sit-and-wait predators and are often seen perched on trees, fences, telephone lines, and transmission towers. The species has declined in recent decades due largely to loss of habitat and conversion of native vegetation to agriculture. The conditions that predict suitable habitat are quite variable throughout the state making identification of specific, required habitat features difficult to determine.

Habitat Assessment and Occurrence in the Project Area

Habitat for loggerhead shrikes exists mainly in Segments 2 and 3 in low arid areas of the Antelope Valley. Shrikes were observed foraging throughout the project area in the Antelope Valley, although no nests were located. Densities were notably higher in the northern Antelope Valley where Joshua tree stands are common.

Potential Project-Related Impacts

Direct impacts to this species can be avoided by ensuring that no active nesting sites are disturbed. Some temporary habitat loss would likely occur as a result of the project. Pre-construction surveys for possible nesting sites should be conducted where suitable nesting habitat (i.e., trees or dense shrubs greater than 3 feet in height) exists.

4.5.3.2.21 California Horned Lark (*Eremophila alpestris actia*).

Status, Distribution, and Habitat Requirements

California horned lark is a state species of special concern. Two subspecies of horned larks occur in the project area. The California horned lark (*E. a. actia*), and the Mohave horned lark (*E. a. ammophilus*) (Grinnell and Miller, 1944). The California horned lark is found along the coastal ranges (including the Castaic Range, at the southern end of the project) from Humboldt County south to Baja California. They are year-round resident birds, with some local movements occurring in late summer and winter. The Mohave horned lark ranges from the southern San Joaquin Valley into the Antelope Valley and throughout the Mojave Desert into southern Nevada. Horned larks are an open prairie bird, typically found in grasslands, mountain meadows, and coastal plains with sparse trees or shrubs. Other subspecies are common throughout the western United States in grasslands, desert scrub, shrubsteppe, and short-grass prairie habitats.

Habitat Assessment and Occurrence in the Project Area

The distribution of California horned larks is limited to Segment 2. Horned larks were observed at Ritter Ranch and are likely prevalent throughout the grasslands and recently burned chamise chaparral of the Sierra Pelona south to the Vincent substation, which roughly corresponds to the area between MPs 5 and 21.5 of the proposed route.

Potential Project-Related Impacts

California horned larks are likely to be nesting along open, grassy areas of Segment 2, and impacts to horned larks may occur if construction is done during the nesting season. Pre-construction surveys, monitoring, and the proper timing of construction activities can significantly reduce the likelihood of impacts. Pre-construction clearance surveys for possible nesting sites will be conducted.

4.5.3.2.22 Le Conte's Thrasher (*Toxostoma lecontei*).

Status, Distribution, and Habitat Requirements

Le Conte's thrasher is a state species of special concern. They typically occur in Joshua tree woodlands and arid desert scrub in the Mojave Desert, and other arid valleys such as the Carrizo Plains. They are usually found in association with desert washes. Like most thrashers of the Southwest, they are a non-migratory, permanent resident.

Habitat Assessment and Occurrence in the Project Area

During 2005, individuals or pairs of Le Conte's Thrashers were observed at six separate locations along Segment 3. These observations were all in Joshua Tree/Creosote Woodland, between MPs 13.0 and 24.0 of the proposed Segment 3 T/L route. Suitable habitat exists throughout this stretch of the project route, roughly from Rosamond Boulevard north to Oak Creek Road, and it appears that there is a substantial extant population of Le Conte's thrashers along this R-O-W.

South of Rosamond Boulevard, most historic Joshua tree woodland and desert scrub has been severely degraded and converted into grassland, agriculture, and non-native herbaceous fields. Many former washes that historically contained habitat for Le Conte's thrashers are now devoid of woody vegetation and can no longer support this species.

Noteworthy nearby historical Le Conte's thrasher CNDDB records include: Occurrence Record No. 57 (a nest observed in 1980 about 4 miles west of MP 14.0 of the proposed Segment 3 route); Occurrence Record No. 1 (a 1920 museum specimen from what is now downtown Palmdale, about 3.5 miles northeast of MP 16.0 of the proposed Segment 2 route); and Occurrence Record No. 2 (a 1926 museum specimen from a location 2 miles northeast of MP 20.0 of the proposed Segment 2 route).

Potential Project-Related Impacts

Le Conte's thrashers are highly likely to be found nesting along the proposed Segment 3 T/L route in the Antelope Valley. Impacts to thrashers may occur if construction is done during the nesting season in the immediate area of their nests. The species is especially susceptible to impacts from vehicular traffic (BLM, 2005). Pre-construction surveys, monitoring, and the proper timing of construction activities can significantly reduce the likelihood of impacts. Seasonal work restrictions near active nesting sites, if any are found, would avoid impacts or disturbance to the species. A marginal amount of suitable nesting habitat for thrashers is expected to be lost because of the proposed project. Pre-construction clearance surveys for possible nesting sites within suitable habitat are recommended.

4.5.3.2.23 Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*).

Status, Distribution, and Habitat Requirements

The southern California rufous-crowned sparrow is a state species of concern. It is resident bird of the coast ranges, from Santa Barbara County south to Baja California. These birds typically inhabits arid, rocky hills and canyons with shrubby or grassy vegetation. Their population numbers have likely been significantly reduced in southern California because of habitat loss due to urban development, although few population trend data are available.

Habitat Assessment and Occurrence in the Project Area

Singing southern California rufous-crowned sparrows were found in two locations at Ritter Ranch, at MPs 9.7 and 13.8 of the proposed Segment 2 T/L route. Suitable habitat occurs throughout the Segment 2 T/L route south of Antelope Valley. Habitat is likely optimal for this species in the area from MPs 13.0 to 18.0 of the proposed Segment 2 T/L route.

Potential Project-Related Impacts

Southern California rufous-crowned sparrows are likely to be nesting along the proposed Segment 2 T/L route. Some temporary and permanent impacts in the form of habitat loss are likely to occur due to the placement of towers and potential roads along the route. Direct impacts to rufous-crowned sparrows could occur if construction takes place during the nesting season (March to August), but such impacts can be avoided if pre-construction nesting surveys are conducted, or if construction is done outside the nesting season. Pre-construction clearance surveys for possible nesting sites within suitable habitat are recommended.

4.5.3.2.24 Bell's Sage Sparrow (*Amphispiza belli belli*).

Status, Distribution, and Habitat Requirements

The Bell's sage sparrow is a state species of concern. It is a year-round resident in chaparral and coastal sage scrub habitats of coastal California, from the inner coast ranges of Shasta County south to Baja California. A different subspecies, *A. b. canescens*, inhabits desert and alkali scrub of the southern San Joaquin valley, higher elevations of the Antelope Valley, and areas northward to Mono County. Range limits of the Bell's sage sparrow in the project area are not clearly defined, but birds inhabiting chaparral communities of the Castaic Range (Segment 2) are considered to be *belli* (Grinnell and Miller, 1944, Chase and Carlson, 2002). Bell's sage sparrow populations in southern California have been reduced by urban

expansion and the conversion of shrublands to grasslands by increased fire frequency and invasion of exotic vegetation (Chase and Carlson, 2002).

Habitat Assessment and Occurrence in the Project Area

Bell's sage sparrows were observed at Ritter Ranch near MP 9.5 of the proposed Segment 2 T/L route. Although some of it burned in 2002, suitable habitat exists in this area from MPs 9.0 to 12.0.

Potential Project-Related Impacts

Bell's sage sparrows are likely to be nesting along the Proposed Segment 2 T/L route. Some temporary and permanent impacts in the form of habitat loss are likely to occur due to the placement of towers and potential roads along the route. Direct impacts to Bell's sage sparrows could occur if construction takes place during the nesting season (March to August) near nesting sites, but such impacts can be avoided if pre-construction nesting surveys are conducted and disturbance-free buffer zones around nesting sites are created, or if construction is done outside the nesting season. Pre-construction clearance surveys for possible nesting sites within suitable habitat are recommended.

4.5.3.2.25 Tricolored Blackbird (*Agelaius tricolor*).

Status, Distribution, and Habitat Requirements

The tricolored blackbird is state species of concern. It is a colonial resident breeder primarily limited to central and southern California. Tricolored blackbirds inhabit freshwater emergent wetlands, usually containing large amounts of cattails or bulrush. They need dense stands of cattails, bulrush, willows, or other mesic vegetation for colonial nesting. Foraging habitat consists of flooded areas or grasslands (Grinnell and Miller 1944).

Habitat Assessment and Occurrence in the Project Area

There are several CNDDB records of recent tricolored blackbird nesting colonies in the Antelope Valley, the closest being Occurrence number 401 at Lake Palmdale in 1994, which is about 2 miles northeast of MP 18.0 of the proposed Segment 2 route. However, there are no significant marshes along the project route. Amargosa Creek and Oak Creek, mentioned in several species accounts above, do not support suitable habitat for tricolored blackbirds.

Potential Project-Related Impacts

No impacts to tricolored blackbirds or their habitat are expected because of the proposed project. Pre-construction surveys are not warranted, because no suitable habitat exists within the proposed project area.

4.5.3.2.26 Tehachapi Pocket Mouse *(Perognathus alticolus inexpectatus)*.

Status, Distribution, and Habitat Requirements

The Tehachapi pocket mouse is a state species of special concern. This subspecies of pocket mouse is endemic to the Tehachapi Mountains (Segment 3) and the western Transverse Ranges (Best, 1994). The habitat requirements for pocket mice are not well defined. They can be found in arid grasslands, desert scrub habitats, pinyon/juniper woodlands, and in open desert conditions. Live-trapping specific sites is the only way to suitably determine presence/ absence.

Habitat Assessment and Occurrence in the Project Area

Since the habitat requirements for Tehachapi pocket mice are so varied and poorly defined or recognizable, we conclude that it is likely the species would be encountered during the project. This can only be verified by live-trapping efforts at areas where specific impacts are expected in suitable habitat for the species.

Potential Project-Related Impacts

Some temporary and permanent impacts in the form of habitat loss are likely to occur because of the proposed project. Permanent impacts may occur where facilities are constructed and where the species' occurrence is documented. A pre-construction clearance survey where suitable habitat is present would be conducted by a qualified expert on the species. Recommendations would identify where trapping should be conducted to help identify presence/absence. If trapping or other indications suggest the species' presence, a biological monitor would be present during ground-disturbing activities to minimize potential impacts to this species.

4.5.3.2.27 Mohave Ground Squirrel *(Spermophilus mohavensis)*.

Status, Distribution, and Habitat Requirements

Mohave ground squirrels are a state threatened species. They prefer open desert scrub, alkali scrub, and Joshua tree woodland habitats. They are sometimes found in grasslands, as well.

They are restricted to the Mojave Desert. The eastern limits of their known range border on the proposed project area east of Mojave, CA.

Habitat Assessment and Occurrence in the Project Area

The closest Mohave ground squirrel CNDDB Occurrence Records to the project area, since 1970, are six records approximately 8 to 10 miles east of the proposed Segment 3 T/L route. Number 26 is a 1920 collection site near Lancaster where 1984 trapping efforts reconfirmed the species' presence. Number 134 is a site near Palmdale where squirrels were trapped during 1973 to 1977. Number 271 is a site east of Air Force Plant 42 where squirrels were detected in 1973. Number 281 is a 1973 detection in Rosamond. Number 284 is a 1987 observation near the California aqueduct and Highway 58. No. 300 is a 1998 observation 2 miles north of Mojave Airport. Most sightings for this species are east of Highway 14. The West Mojave Plan includes a range map for the species within that planning area. That map indicates that it is unlikely that the species occurs in the proposed project area.

Potential Project-Related Impacts

The area south of Antelope Substation can be considered outside of the known current range of this species. Pre-construction clearance surveys are recommended where suitable habitat for the species remains in the Antelope Valley and where recent survey data suggests surveys are warranted.

4.5.3.2.28 Bat Species. Several bat species that are listed by state and federal agencies as rare, threatened, or endangered are known to occur in the region, and probably in the project area. These include: Yuma myotis bat (*Myotis yumanensis*) (BLM sensitive), spotted bat (*Euderma maculatum*) (BLM sensitive, California Special Concern), Townsend's big-eared bat (*Corynorhinus townsendii*) (BLM sensitive, California Special Concern, Forest Service Sensitive), pallid bat (*Antrozous pallidus*) (BLM sensitive, California Special Concern, Forest Service Sensitive), and western mastiff bat (*Eumops perotis*) (BLM sensitive, California Special Concern).

All are wide-ranging, migratory species that may be within the project area at some period in their life cycle. Some species may use cracks or niches on transmission towers for resting sites. All are aerial predators that fly over many diverse habitats and environmental conditions in search of insect prey.

No impacts to bats are expected because of the proposed project in terms of habitat loss or loss of maternity sites for bats. No trees are expected to be removed because of the proposed project. Therefore, no field surveys specifically intended to locate bats were conducted as part of this effort. No pre-construction clearance surveys are warranted to determine bat presence/absence.