

C.3 BIOLOGICAL RESOURCES

This chapter provides an update on the biological resource impacts from the information presented in the Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) for the California-Oregon Transmission Project and the Los Banos-Gates Transmission Project (TANC/WAPA, 1988). The biological setting of the project area does not differ significantly from that described in the 1988 FEIS/EIR. Updated aerial imagery confirms that the majority (75 percent) of the Proposed Western Corridor and Western Corridor Alternative Segments still consist of annual grassland. Conversely, 84 percent of the Eastern Corridor Alternative consists of agricultural land. The most noticeable change is that amount of agricultural land along the southern portion of the Western Corridor has increased, reducing the available habitat for native species of plants and wildlife.

The list of plant and animal species potentially affected by the project has changed substantially due to considerable changes to the legal status of many plant and animal species in the Project vicinity since the 1988 FEIS/EIR and updated information on these species from April 2001 field surveys. Some species that were previously federal candidates for endangered or threatened listing have since become either federal Species of Concern or have been elevated to threatened or endangered status. Similarly, some species previously listed as California Species of Concern have lost this status. Others, which had no legal status in 1988 have since become California Species of Concern.

The types and extent of potential effects from construction, operation, and maintenance of the Proposed transmission line remain similar to those described in the 1988 FEIS/EIR. No significant unmitigable impacts to biological resources were identified in the FEIS/EIR, but this SEIR identifies the potential for significant and unmitigable effects on special status plant and wildlife species. This impact cannot be further defined until specific locations of towers, access roads, and work areas are identified and biological surveys have been completed.

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The conclusion of the biological resources analysis is that the Eastern Corridor Alternative would have substantially fewer environmental impacts than the Proposed Western Corridor, due to the extent of agricultural land use in the Eastern Corridor Alternative. As stated by the U.S. Fish & Wildlife Service (USFWS, 2001), "The foothill and valley habitat west of Highway 5 is the only remaining natural habitat for several federally listed species associated with upland habitats of the San Joaquin Valley ... The degradation and loss of habitat resulting from the proposed transmission line can be avoided by locating the project east of Highway 5" in the Eastern Corridor Alternative.

C.3.1 ENVIRONMENTAL BASELINE

This section describes the existing biological resources in the Proposed Project region, specific biological resources within the project corridor area, and the regulations applicable to biological resources. Details on species are presented in Appendix 6; that information is summarized in this section. The project corridor area for biological resources includes the Applicant's proposed

transmission line corridor (Western Corridor), several Western Corridor Alternative Segments, and an alternative corridor (Eastern Corridor Alternative), which together total some 214 miles in length. This description of existing biological resources is presented first in terms of a regional overview of the geographic sub-region and the setting of the proposed and alternative corridors. The specific environmental setting of each of the Western Corridor Alternative Segments and the Eastern Corridor Alternative is then presented in Sections C.3.3 and C.3.4, respectively.

The project area has a variety of physical features that offer a diversity of habitat types, represented by a characteristic assemblage of plant species. The large size of the area, together with its geology, soils, climate, and anthropogenic influences have combined to produce a mosaic of floristic components and associated wildlife species. The climate of the project area is dry and shares many characteristics with the desert provinces in California. Precipitation averages approximately 10 to 12 inches annually and occurs primarily during the winter months. For most of the region, the availability of water or soil moisture is the critical factor that determines the broad distribution of vegetation types and associated wildlife species.

C.3.1.1 Methodology and Data Limitations

During 1986, CH2M Hill biologists surveyed a ¼-mile wide corridor, centered on the Proposed Western Corridor, several Western Corridor Alternative Segments, and the Eastern Corridor Alternative to evaluate plant and wildlife communities and special status species (CH2M Hill, 1986). Jones and Stokes biologists conducted special status plant and wildlife surveys along a ¼-mile wide corridor, centered on the Proposed Western Corridor in Spring 2001 in order to update the 1986 information (Jones and Stokes, 2001). No surveys of the Western Corridor Alternative Segments or the Eastern Corridor Alternative were conducted in 2001. Consequently, for these alternatives, the information on biological resources and results of the 1986 surveys were adapted and extensively utilized.

C.3.1.2 Regional Overview

The project is located at the interface of the eastern Diablo Range of the California Coast Range Mountains and the western margin of the San Joaquin Valley in Merced and Fresno Counties. Most of the Proposed Western Corridor and Alternative Segments are in the foothills portion of the Diablo Mountains. Sections of the Western Corridor, at both its northern and southern ends, cross relatively flat valley topography. The Eastern Corridor Alternative is primarily in the San Joaquin Valley, but passes into the foothills, from approximately milepost (MP) 10 to MP 18.

Vegetation Overview

The vegetation communities that occur in the region are largely influenced by prevailing environmental variation and disturbance history. Individual plant communities generally separate themselves along environmental gradients (Whittaker, 1967). Gradients in soil moisture, soil fertility, temperature, slope, and other physical parameters affect the distribution of individual species and, in turn, the type of plant community that develops at a given location. Since plants generally act as individuals along these environmental gradients (Sawyer and Keeler-Wolf, 1995), it is often difficult to separate the continuum into ecologically discrete plant communities. Plant community classification, despite its

limitations, nonetheless serves an important role in grouping vegetation into relatively homogeneous units, which facilitate study and management.

The project area occurs in the broad zone between the San Joaquin Valley and Central Coast floristic provinces (Hickman, 1993). Vegetation from both provinces is present and is reflected by a transitional zone. As the escarpment rises in the hills along the Diablo Range, the San Joaquin Valley elements of the flora give way to Inner Coast Range species. Vegetation in the region primarily consists of annual grasses and croplands with low and intermediate mixed shrubs in the higher elevations. Trees are generally absent in the region, although some riparian species are present along portions of intermittent stream channels and along the margins of reservoirs. Agricultural lands occur throughout most of the San Joaquin Valley, where native plant cover has been converted to crop and grazing land.

Wildlife Overview

Individuals of many wildlife species often use multiple habitat types throughout their life cycle. Movement among habitat types or between patches of similar vegetation occurs within corridors of vegetative cover acceptable to these species. These corridors can be critical for certain wildlife species to find adequate food, water, nesting or denning sites, and breeding opportunities, or to allow seasonal movements. Where native plant cover has been converted to crop and grazing land, as is the case for most of the San Joaquin Valley, a corresponding decrease usually occurs in habitat that provides the necessary life requisites for many species. Historically, the San Joaquin Valley contained a variety of natural communities and habitats that supported numerous wildlife species. Since the turn of the century, however, much of the original natural habitat within the Valley has been converted to suburban or agricultural land uses. The remaining natural areas represent less than five percent of the total area of the San Joaquin Valley (USFWS, 1998). This loss of habitat has resulted in the elimination of many historical wildlife populations and/or the reduction of population sizes of many species. In this context, the weedy edges of fields and irrigation channels, as well as poorly maintained fields within agricultural areas, have become the only suitable habitat for many wildlife species in the Valley.

There is a corresponding increase in wildlife species diversity with vegetation diversity near the Valley margins and into the foothills of the Diablo Range. Here annual grasslands predominate on flatter areas and rolling foothills. Many wildlife species use annual grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or woody plants for breeding, resting, or cover. Mammals typically found in this habitat include the black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), badger (*Taxidea taxus*), and coyote (*Canis latrans*). Common birds known to breed in the region include the western burrowing owl (*Anthena cucularia hypugea*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*). The area also provides important foraging habitat for raptors such as the golden eagle (*Aquila chrysaetos*), turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), and prairie falcon (*Falco mexicanus*).

Insert **Figure C.3-1** from the Draft SEIR.

Special Habitat Management Areas

Within the San Joaquin Valley, a number of areas have been designated as special habitat management areas by the California Department of Fish and Game (CDFG). The areas within this project region are depicted in Figure C.3-1 and include:

- Los Banos Wildlife Area
- O'Neill Forebay Wildlife Area
- San Luis Reservoir Wildlife Area
- Upper Cottonwood Creek Wildlife Area
- Panoche Valley.

The Los Banos Wildlife Area, under the jurisdiction of CDFG, is a 5,586-acre mosaic of seasonal and permanent wetlands, grasslands, and riparian areas. It was established in 1929 and is the oldest State-protected wildlife area in California. Many species of ducks and geese congregate here in the winter, as well as raptors and shorebirds. The Los Banos Wildlife Area is approximately 10 miles east of the Eastern Corridor Alternative and 14 miles east of the Western Corridor.

The O'Neill Forebay Wildlife Area is owned by the U.S. Bureau of Reclamation (BOR) and the California Department of Water Resources (CDWR), and operated by the California Department of Fish & Game (CDFG). This 700-acre area consists of ten miles of meandering riparian habitat, with four small ponds intermixed with shrub-grassland and some cultivated crops. Many species of waterfowl are found here, as well as raptors, shorebirds, and songbirds. The O'Neill Forebay Wildlife Area is 0.75 miles north of the Los Banos Substation.

The San Luis Reservoir Wildlife Area is an 870-acre parcel located south of State Route 152 (SR-152) in the Pacheco Pass area. It is owned by the BOR and the CDWR, and operated by the CDFG. The habitat is primarily steep oak-grassland. The San Luis Reservoir Wildlife Area is 6 miles northwest of the Los Banos Substation.

The Cottonwood Creek Wildlife Area is a 6,315-acre parcel of steep oak woodland-grassland habitat typical of higher elevation areas in the interior Coast Range. Mule deer, raptors, and numerous species of upland game birds are common here. The Cottonwood Creek Wildlife Area is 2.5 miles west of Los Banos Substation.

The Little Panoche Wildlife Area is a 780-acre parcel operated by the CDFG and provides refuge for waterfowl, swallows, and swifts. The 30-acre detention reservoir supports populations of crappie, red-eared sun-fish and black bass. The rest of the valley surrounding the reservoir is grassland habitat where common birds such as sparrows, gnatcatchers, thrashers, bluebirds, and raptors are found.

The North Grasslands Wildlife Area is under the jurisdiction of CDFG and consists of a 7,069-acre parcel of wetlands, riparian habitat, and uplands. These restored and created wetlands provide habitat for Swainson's Hawk and Sandhill Crane. The North Grasslands Wildlife Area is located 8 miles east-northeast of the junction between I-5 and State Route 165 (SR-165).

The Volta Wildlife Area is under the jurisdiction of CDFG and is a 2,891-acre parcel 6.5 miles northwest of the City of Los Banos. It is located 4.5 miles east of I-5 and 5 miles southeast of Santa Nella.

According to the landowner, there is a Kit Fox Corridor on the private land just south of the Los Banos Substation. This land was purchased by CalTrans and PG&E to fulfill U.S. Fish & Wildlife Service requirements for endangered species habitat take related to nearby construction projects. Further discussion is provided by the landowner in Comment Letter 4 (Final SEIR Appendix 1).

C.3.1.3 Environmental Setting: Proposed Project

Most of the Western Corridor occurs in the foothills portion of the Diablo Mountains. Sections of the Western Corridor, at both the northern and southern termini, cross relatively flat valley topography. There are no perennial streams draining the west slope of the Diablo Range within the Western Corridor. The ephemeral streams generally flow during late winter and early spring, and except for temporary flows immediately after a storm event, dry up by mid-summer.

C.3.1.3.1 Vegetation

A minimum ¼-mile wide survey corridor was used to provide regional context to evaluate plant species and communities found within the Western Corridor and right-of-way (ROW). Unless otherwise noted, the information discussed in this section is adapted and summarized from the results of 1986 biological surveys conducted by CH2M Hill. Plant communities were described according to methodologies and nomenclature developed by Holland (1986). In addition, rare plant surveys conducted in Spring 2001 by Jones and Stokes Associates are included to supplement previous information on rare plant species from 1986.

Within the Western Corridor, seven major vegetation types were identified, which include:

- Alkaline Areas
- Grasslands
- Wetlands
- Riparian Communities
- Scrub
- Barrens
- Agricultural Lands.

Table C.3-1 lists the acreage of each vegetation type by segment. Within the Western Corridor, grasslands represent the largest acreage at 75 percent (11,327 acres), followed by agricultural lands at about 22 percent (3,367 acres). Riparian (151 acres) and scrub (155 acres) communities respectively contribute to approximately one percent of the total, while marshland, alkaline, and barren areas account for approximately 0.3 percent (52 acres). These general vegetation types can be further broken down into various natural community types based on existing descriptions developed by Holland (1986), which are typically used to provide consistency for vegetation community descriptions and floristic surveys. The 11 plant community types identified in the Western Corridor are described in Appendix 6, and the locations of specific natural communities are depicted in Figures C.3-2a through C.3-2e (these figures are presented at the end of this section). Table C.3-2 relates the vegetation community classifications used in this document to those commonly used.

Table C.3-1 Distribution of Vegetation by Segment

CORRIDOR SEGMENT			VEGETATION TYPE (ACRES)						
Segment #	Length (Miles)	Total (Acres)	Grasslands	Scrub	Riparian Communities	Wetlands	Alkaline Areas	Barrens	Agricultural/Other Lands
Western Corridor									
Segment 1	1.9	365	260	0	0	0	0	0	105
Segment 2	12.7	2,425	2,258	107	19	10	28	0	0
Segment 3	5.3	1,300	1,300	0	0	0	0	0	0
Segment 4	8.5	1,545	1,472	48	0	2	0	0	23
Segment 5	41	6,020	5,104	0	12	0	0	12	904
Segment 6	10.5	2,756	933	0	107	0	0	0	1,716
Segment 7	4	632	0	0	13	0	0	0	619
TOTAL	83.9	15,043	11,327	155	151	12	28	12	3,367
Western Corridor Alternative Segments									
Segment 2A	12.9	2350	2195	0	10	110	28	0	0
Segment 4A	9	1636	1500	60	48	28	0	0	0
Segment 6A	10.3	1588	135	0	71	0	0	0	1382
Segment 6B	11.7	3191	2831	0	82	0	0	0	275
TOTAL	43.9	8765	6661	60	211	138	28	0	1657
Eastern Corridor Alternative									
All Segments	85.7	15,296	2,390	0	209	0	0	0	12,907

Table C.3-2 Comparison of Vegetation Type Classifications

EIS Vegetation Type CH2M Hill and PG&E (1986)	Terrestrial Natural Community ¹ (R. Holland, 1986)	CNDDDB Natural Community ² (1999)	CNPS Habitat Type ³ (Skinner & Pavlik, 1994)	WHR ⁴ (1988)
Alkaline Areas				
Iodine Bush Scrub	Alkaline Meadow (45310)	Great Valley Iodine Bush Scrub (<i>Allenrolfea occidentalis</i> ; 36.110.00)	N/A	Alkali Desert Scrub (ASC)
Alkali Playa	Alkali Playa (46000)	Alkali Playa (46.000.00)	Playas (Plyas)	Alkali Desert Scrub (ASC)
Grasslands				
Cismontane Non-Native Grassland	Non-native Grassland (42200)	Red Brome dominated, Non-Native Grassland (42.025.00)	Valley & Foothill Grassland (VFGr)	Annual Grassland (AGS)
Cismontane Native Bunchgrass	Valley Needlegrass Grassland (42110)	Purple Needlegrass (<i>Nassella pulchra</i> ; 41.150.00); One-sided bluegrass (<i>Poa secunda</i> ; 41.180.00); Nodding needlegrass (<i>Nassella cernua</i> , 41.140.00)	Valley & Foothill Grassland (VFGr)	Perennial Grassland (PGS)
Wetlands				
Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh (52410)	Bulrush – Cattail Freshwater Marsh (<i>Scirpus</i> spp. - <i>Typha</i> spp.) 52.102.01	Marshes and Swamps (MshSw)	Fresh Emergent Wetland (FEW)
Cismontane Alkali Marsh	Cismontane Alkali Marsh (52310)	Cismontane Alkali Marsh (52.203.00)	Marshes and Swamps (MshSw)	Fresh Emergent Wetland (FEW)
Riparian Communities				
Central Coast Riparian Woodland	Great Valley Cottonwood Riparian Forest (61410)	Fremont cottonwood riparian forest and woodland (61.130.00);	Riparian Forest (RpFrs)	Valley Foothill Riparian (VRI)
	Sycamore Alluvial Woodland (62100)	Central California sycamore alluvial woodland (61.311.00)	Riparian Woodland (RpWld)	
Alluvial and Riparian Scrub	Mulefat Scrub (63310)	Mulefat Scrub (<i>Baccharis salicifolia</i> ; 63.510.00)	Riparian Scrub (RpScr)	Valley Foothill Riparian (VRI)
	Valley Saltbush Scrub (36220)	Valley Saltbush Scrub (<i>Atriplex</i> spp. ; 36.302.00)	Chenopod Scrub (ChScr)	
	Tamarisk Scrub (63810)	Shrub Tamarisk (<i>Tamarix</i> spp. ; 63.810.02)		
Scrub				
Salt Bush Scrub	Valley Saltbush Scrub (36220)	Great Valley Allscale scrub (36.340.00) Valley Saltbush Scrub (36.600.00)	Chenopod Scrub (ChScr)	Alkali Desert Scrub (ASC)
Barrens				
Serpentine Barrens	N/A	N/A	N/A	N/A
Shale Barrens	N/A	N/A	N/A	N/A
Agricultural				
Agricultural Lands	N/A	N/A	N/A	Cropland (CRP) Pasture (PAS)

- Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Nongame-Heritage Prog., Dep. Fish and Game, Sacramento, Calif. 156pp.
- CDFG, 1999. List of California Terrestrial Natural Communities Recognized by the Natural Diversity Database. CA Department of Fish & Game, Natural Heritage Division, Natural Diversity Database. 65 pp.
- Skinner, M.W. and B.M. Pavlik, 1994. California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California. 337 pp.
- Mayer, K.E. and W.F. Laudenslayer (eds.), 1988. A Guide to Wildlife Habitats of California. 166 pp.

Special Status Plants

Special status plants are defined as species listed under the Federal/California Endangered Species Acts (FESA/CESA), and the Native Plant Protection Act (NPPA) §1901, candidates for such listing, or species that would meet the criteria for listing but have not yet been formally listed, such as plants included in Lists 1A, 1B, and 2 of the California Native Plant Society's (CNPS) Inventory (Skinner and Pavlik, 1994). Plant species on CNPS Lists 3 and 4 generally do not qualify for protection under CESA and NPPA.

Many special status plant species occur within the San Joaquin Valley. Thirty-seven species with the potential to occur in the study area have been identified from recent (2001) field surveys, database records, preliminary reports, and by professional botanists familiar with the area (Table C.3-3). Nine special-status plant species were observed within the study area during April 2001 field surveys. These are listed in Table C.3-4 and include: forked fiddleneck (*Amsinckia vernicosa* var. *furcata*), crownscale (*Atriplex coronata* var. *coronata*), Lost Hills crownscale (*Atriplex vallicola*), recurved larkspur (*Delphinium recurvatum*), gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *gypsophilum*), protruding buckwheat (*Eriogonum nudum* var. *indictum*), cottony buckwheat (*Eriogonum gossypinum*), Idrea buckwheat (*Eriogonum vestitum*), and San Benito poppy (*Eschscholzia hypocoides*). None of these species has a Federal or State listing status. Because precipitation in the 2000-2001 rainy season was below normal, several species that might have been present in years with normal or above-normal rainfall would not have been evident in the study area during 2001 spring surveys. Thus, although these species were not evident at known reference locations, their absence from the study area cannot be confirmed. Consequently, Table C.3-3 lists the 37 special status plant species that were not observed, but have potential to occur in the study area. Appendix 6 describes in detail the special status plants observed in the study corridor, as well as those with the potential to occur in the study area.

C.3.1.3.2 Wildlife

Wildlife occurs throughout the study area in suitable habitat. Species occurrence along the Western Corridor is also influenced by climate and season. Species observed along the Proposed Western Corridor are presented in Table C.3-5 and discussed below with respect the habitat types and location in which they occur.

Eight primary wildlife habitats are associated with the Proposed Project. These habitat types correspond with the vegetation types and other landscape features previously identified (and discussed in detail in Appendix 6) and comprise five upland and three general wetland/aquatic types. These include:

- Scrub
- Barrens
- Agricultural lands
- Grasslands
- Alkaline areas
- Wetlands
- Riparian
- Reservoirs and ponds.

Table C.3-3 Special Status Plant Species Occurring or Potentially Occurring in the Proposed Western Corridor (Jones and Stokes, 2001)

Common Name Scientific Name	Legal Status ^a Federal/State/CNPS	California Distribution	Habitat Requirements	Blooming Period	Likelihood to Occur within Project Area ^b
San Benito thornmint <i>Acanthomintha obovata</i> ssp. <i>Obovata</i>	SC/E/A	Inner South Coast Ranges, including portions of Fresno, Monterey, San Benito, and San Luis Obispo Counties	Chaparral, oak woodland, valley and foothill grassland on heavy clay, alkaline, or serpentinite soils below 5,000 feet	Apr–Jun	Moderate
Forked fiddleneck <i>Amsinckia vernicosa</i> var. <i>furcata</i>	SC/–/–	Southern San Joaquin Valley and adjacent inner south Coast Ranges including portions of Fresno, Kings, Kern, San Benito, and San Luis Obispo Counties	Annual grassland, cismontane woodland, on loose, shaly slopes, between 160 and 3,300 feet	Mar–May	Observed
Oval-leaved snapdragon <i>Antirrhinum ovatum</i>	–/–/4	Southern San Joaquin Valley; southern south inner Coast Ranges; Kern, Monterey, Santa Barbara, San Benito, San Luis Obispo, and Ventura Counties	Often alkaline, clay or gypsum substrates of chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland, between 650 and 3,300 feet	May–Nov	Low
Salinas milk-vetch <i>Astragalus macrodon</i>	–/–/4	Central south Coast Ranges; Kern, Monterey, San Benito, and San Luis Obispo Counties	Chaparral openings, cismontane woodland, valley and foothill grassland on sandstone, shale, or serpentinite	Apr–Jun	Low
Heartscale <i>Atriplex cordulata</i>	SC/–/1B	Western Central Valley and valleys of adjacent foothills	Alkali grassland, alkali meadow, alkali scrub, below 660 feet	May–Oct	Low
Crownscale <i>Atriplex coronata</i> var. <i>coronata</i>	–/–/4	Southern Sacramento Valley; San Joaquin Valley; eastern south inner Coast Ranges; Alameda, Contra Costa, Fresno, Kings, Kern, Glenn, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, and Stanislaus Counties	Chenopod scrub, valley and foothill grassland, vernal pools, on fine alkaline soils below 660 feet	Apr–Oct	Observed
San Joaquin spearscale <i>Atriplex joaquiniana</i>	SC/–/1B	West edge of Central Valley from Glenn County to Tulare County	Alkali grassland, alkali scrub, alkali meadows, saltbush scrub, below 1,000 feet	Apr–Sept	Low
Lost Hills crownscale <i>Atriplex vallicola</i>	SC/–/1B	Lost Hills, vicinity of McKittrick in Kern County, scattered locations in Fresno and Merced Counties	Alkali sink, alkaline vernal pool, saltbush scrub	May–Aug	Observed
Chaparral harebell <i>Campanula exigua</i>	–/–/1B	San Francisco Bay region; northern inner south Coast Ranges; Alameda, Contra Costa, San Benito, Santa Clara, and Stanislaus Counties	Rocky areas in chaparral, usually on serpentinite	May–Jun	Low
California jewelflower <i>Caulanthus californicus</i>	E/E/1B	Historically common in western San Joaquin Valley and interior foothills; currently at scattered locations in Fresno, Kern, San Luis Obispo, and Santa Barbara Counties	Sandy or loamy soils in annual grassland, chenopod scrub, pinyon-juniper woodland	Feb–May	Low
Brewer feets clarkia <i>Clarkia breweri</i>	–/–/4	Inner south Coast Ranges; southeast San Francisco Bay; Mt Hamilton Range; Alameda, Fresno, Merced, Monterey, San Benito, Santa Clara, and Stanislaus Counties	Chaparral and cismontane woodland, coastal scrub, on talus or dry slopes, often serpentinite, below 4,000 feet	April–May	Low
Small-flowered morning-glory <i>Convolvulus simulans</i>	–/–/4	San Joaquin Valley; central western and southwestern California; southern Channel Islands; Contra Costa, Kern, Los Angeles, Riverside, San Benito, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, and Stanislaus Counties; San Clemente, Santa Catalina, and Santa Cruz Islands; Baja California	Chaparral openings, coastal scrub, valley and foothill grassland, on clay soils in serpentinite seeps, between 100 and 2,300 feet	Mar–Jul	Moderate
Hispid bird feets-beak <i>Cordylanthus mollis</i> ssp. <i>Hispidus</i>	SC/–/1B	Central Valley; Alameda, Kern, Merced, Placer, and Solano Counties	Meadow, grassland, playa, on alkaline soils, below 500 feet	Jun–Sep	Low
Palmate bird feets-beak <i>Cordylanthus palmatus</i>	E/E/1B	Livermore Valley and scattered locations in the Central Valley from Colusa County to Fresno County	Alkaline grassland, alkali meadow, chenopod scrub	May–Oct	Low
Gypsum-loving larkspur <i>Delphinium gypsophilum</i> ssp. <i>gypsophilum</i>	–/–/4	Fresno, Kings, Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, and Stanislaus Counties	Atriplex scrub, cismontane woodland, grassland	Apr–May	Observed

Common Name Scientific Name	Legal Status ^a Federal/State/CNPS	California Distribution	Habitat Requirements	Blooming Period	Likelihood to Occur within Project Area ^b
Recurved larkspur <i>Delphinium recurvatum</i>	SCI-/1B	San Joaquin Valley and Central Valley of the south Coast Ranges, Contra Costa County to Kern County	Subalkaline soils in annual grassland, saltbush scrub, cismontane woodland, vernal pools, between 100 and 2,000 feet	Mar–May	Observed
Hoover feets eriastrum <i>Eriastrum hooveri</i>	T-/I4	Fresno, Kings, Kern, Santa Barbara, San Benito, San Luis Obispo, and Tulare Counties	Chenopod scrub, valley and foothill grassland, sparsely vegetated alkaline alluvial fans	Apr–Jul	Moderate
Kern mallow <i>Eremalche kernensis</i>	E-/1B	Vicinity of Lokern, Kern County	Valley sink scrub, saltbush scrub, on sandy clay-loam soils, between 600 and 900 feet	Apr–May	Low
Clay-loving buckwheat <i>Eriogonum argillosum</i>	-/I4	Monterey, San Benito, and Santa Clara Counties	Cismontane woodland on serpentinite or clay soils	Mar–Jun	Low
Cottony buckwheat <i>Eriogonum gossypinum</i>	SCI-/I4	Fresno, Kings, Kern, and San Luis Obispo Counties	Clay soils in chenopod scrub, valley and foothill grassland	Mar–Sep	Observed
Protruding buckwheat <i>Eriogonum nudum</i> var. <i>indictum</i>	-/I4	Fresno, Kern, Merced, Monterey, San Benito, and San Luis Obispo Counties	Chaparral, chenopod scrub, cismontane woodland on clay, serpentinite substrates	May–Dec	Observed
Idria buckwheat <i>Eriogonum vestitum</i>	-/I4	Fresno, Merced, and San Benito Counties	Valley and foothill grassland	May–Aug	Observed
Jepson feets woolly sunflower <i>Eriophyllum jepsonii</i>	-/I4	Alameda, Contra Costa, Kern, San Benito, Santa Clara, Stanislaus, and Ventura Counties	Chaparral, cismontane woodland, coastal scrub, sometimes serpentinite, on dry, rocky slopes, between 1,000 and 3,500 feet	Apr–Jun	Low
San Benito poppy <i>Eschscholzia hypocoides</i>	-/I4	Fresno, Imperial, Mendocino, Monterey, San Benito, and San Luis Obispo Counties	Chaparral, cismontane woodland, valley and foothill grassland on serpentinite clay substrates	Mar–Jun	Observed
Stink Bells <i>Fritillaria agrestis</i>	SCI-/I4	Alameda, Contra Costa, Fresno, Kern, Mendocino, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, San Luis Obispo, San Mateo, Stanislaus, and Tuolumne Counties	Chaparral, cismontane woodland; valley and foothill grassland, on clay, sometimes serpentinite substrate	Mar–May	Moderate
Hall's feet tarweed <i>Deinandra halliana</i>	-/I1B	Fresno, Monterey, San Benito, and San Luis Obispo Counties	Chenopod scrub, oak woodland, grasslands on clay soils on floodplains	Apr–May	Moderate
Pale-yellow layia <i>Layia heterotricha</i>	SCI-/1B	Interior foothills of the south Coast Ranges, Transverse Ranges, and Tehachapi Mountains; Fresno, Kings*, Kern*, Monterey*, Santa Barbara, San Luis Obispo*, Ventura, and possibly San Benito Counties	Cismontane woodland, pinyon- juniper woodland, grassland in open areas on alkaline or clay soils below 5,250 feet	Mar–Jun	Moderate
Munz feets tidy-tips <i>Layia munzii</i>	-/I1B	Western San Joaquin Valley and interior foothills valleys from Fresno County to San Luis Obispo County	Chenopod scrub, grasslands, flats and hillsides in alkaline clay soils, between 170 and 2,500 feet	Mar–Apr	Low
San Joaquin woolly-threads <i>Monolopia congdonii</i>	E-/1B	Carrizo Plain and western San Joaquin Valley from San Benito County to Kern County	Saltbush scrub, grassland, on flats in alkaline or loamy soils	Mar–May	Moderate
Panoche peppergrass <i>Lepidium jaredii</i> ssp. <i>Album</i>	SCI-/1B	Fresno, San Benito, and San Luis Obispo Counties	Grassland in alluvial fans, washes	Feb–Jun	Moderate
Benitoa <i>Lessingia occidentalis</i>	-/I4	Fresno, Monterey, and San Benito Counties	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland on serpentinite	May–Nov	Low
Showy madia <i>Madia radiata</i>	-/I1B	Scattered populations in the interior foothills of the south Coast Ranges; Contra Costa, Fresno, Kings, Kern, Monterey, Santa Barbara, San Benito, San Joaquin, and San Luis Obispo Counties	Oak woodland, grassland, slopes below 3,000 feet	Mar–May	Moderate

Common Name <i>Scientific Name</i>	Legal Status ^a Federal/State/CNPS	California Distribution	Habitat Requirements	Blooming Period	Likelihood to Occur within Project Area ^b
Hall's feet bush mallow <i>Malacothamnus hallii</i>	-/-1B	Alameda, Contra Costa, Merced, and Santa Clara Counties	Chaparral between 30 and 2,500 feet	May-Sep	Low
Slender nemacladus <i>Nemacladus gracilis</i>	-/-1A	Fresno, Kings, Kern, Los Angeles, and Merced Counties	Cismontane woodland, valley and foothill grassland on sandy or gravelly substrate	Mar-May	Low
Arburua Ranch jewel-flower <i>Streptanthus insignis</i> ssp. <i>Lyonii</i>	SC/-1B	Merced County	Coastal scrub, sometimes on serpentinite	Mar-May	Low
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	SC/-1A	Historically known from the northwest San Joaquin Valley and adjacent Coast Ranges foothills	Grasslands in alkaline hills below 1,500 feet	Mar-Apr	Low
Kings Gold <i>Twisselmannia californica</i>	-/-1B	Known from one occurrence near Kettleman City, Kings County	Subalkaline, sandy clay soil in spinyscale scrub	Mar-Apr	Low

Notes: ^a Status explanations:

Federal

E= Listed as endangered under the Federal Endangered Species Act.

T= Listed as threatened under the Federal Endangered Species Act.

PE= Proposed for federal listing as endangered under the Federal Endangered Species Act.

PT= Proposed for federal listing as threatened under the Federal Endangered Species Act.

C = Species for which U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list.

SC= Species of Concern.

--= No listing.

State

E= Listed as endangered under the California Endangered Species Act.

T= Listed as threatened under the California Endangered Species Act.

R= Listed as rare under the California Native Plant Protection Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.

C= Candidate species for listing under the California Endangered Species Act.

SSC= Species of special concern in California.

--= No listing.

California Native Plant Society

1A= List 1A species: presumed extinct in California.

1B= List 1B species: rare, threatened, or endangered in California and elsewhere.

2= List 2 species: rare, threatened, or endangered in California but more common elsewhere.

3= List 3 species: plants about which more information is needed to determine their status.

4= List 4 species: plants of limited distribution.

--= No listing.

*= Known populations believed extirpated from that County.

? = Population location within County uncertain.

^b Definitions of levels of occurrence likelihood:

High: Known occurrence of plant in region from Natural Diversity Data Base, or other documents in the vicinity of the project; or presence of suitable habitat conditions and suitable microhabitat conditions.

Moderate: Known occurrence of plant in region from Natural Diversity Data Base, or other documents in the vicinity of the project; or presence of suitable habitat conditions but suitable microhabitat conditions are not present.

Low: Plant not known to occur in the region from the Natural Diversity Data Base, or other documents in the vicinity of the project; or habitat conditions of poor quality.

None: Plant not known to occur in the region from the Natural Diversity Data Base, or other documents in the vicinity of the project; or suitable habitat not present in any condition.

Table C.3-4 Special Status Plant Species Identified in the Western Corridor (April 2001 Jones and Stokes, 2001)

Segment Number	Milepost	Species (Latin Name)	Species (Common Name)
2	3.9, 4.0, 6.6, 7.8, 9.7, 9.9, 11.5, 11.6, 11.8	Delphinium gypsophilum	Gypsum-loving larkspur
3	16.3, 17.3, 17.9, 18.1, 18.9, 19.2		
4	21.9, 24.6, 28.6		
5	45.4, 47.7, 49.0, 49.2, 49.3, 49.5, 50.0, 50.5, 51.3, 51.6, 51.8, 51.9, 52.3, 52.4, 52.5, 52.8, 52.9, 53.1, 53.3, 53.7, 53.8, 54.0, 54.2, 56.1, 57.3, 57.7, 59.3, 59.9, 60.4, 61.1, 61.4, 62.3, 62.4, 63.3, 63.6, 63.9, 64.0, 64.1, 64.2, 64.7, 65.5		
4	25.7	Eriogonum gossypinum	Cottony buckwheat
5	38.9, 52.7, 55.9	Eriogonum vestitum	Idrea buckwheat
4	26.2		
5	37.2, 37.5, 37.7, 37.9, 38.2, 42.7, 43.1, 44.0, 47.3, 49.9, 52.6, 52.7, 52.8, 53.0, 53.2, 53.5, 53.6, 53.7, 53.8, 54.0, 54.3, 54.5, 54.6, 54.7, 54.8, 55.0, 55.1, 56.1, 56.4	Atriplex vallicola	Lost Hills crownscale
5	44.5, 45.1, 65.7, 66.0, 66.1, 66.2, 66.3, 66.6, 66.8, 66.9	Delphinium recurvatum	Recurved larkspur
5	46.0, 46.4, 47.0, 48.5, 48.8	Eriogonum nudum var. indictum	Protruding buckwheat
5	47.0, 47.1, 49.0, 53.5, 53.6, 53.7, 54.2	Amsinckia vernicosa ssp. furcata	Forked fiddleneck
5	49.7	Eschscholzia hypocoides	San Benito poppy
5	50.0, 51.0, 66.2, 66.3	Atriplex coronata	Crownscale

These communities provide habitat for a variety of rodents, small- and medium-sized mammals and songbirds that are common and abundant throughout this portion of the Central Valley. Small- and medium sized mammals commonly associated with these habitats include: the California ground squirrel, black-tailed jackrabbit, western harvest mouse, California vole, and coyote. Common songbirds include: the horned lark, savannah sparrow (*Passerculus sandwichensis*), western meadowlark, and American robin (*Turdus migratorius*). Riparian and wetland habitats provide the highest intrinsic value to wildlife because they are associated with available water and provide denser vegetative cover. While riparian and wetland habitats cover only a small percentage of the area along the proposed corridor, they provide habitat for up to 80 percent of all vertebrate species recorded in the area. Table C.3-5 lists the wildlife species recorded or with moderate to high potential to occur in the study area.

General Wildlife Presence and Distribution

California mule deer (*Odocoileus hemionus californicus*) are the principal big game species found along the Proposed Project Corridor. The population centers (areas of highest concentration) of these resident deer generally occur to the west of the study area, where the animals tend to congregate in higher elevation juniper habitats. Correspondingly, the distribution of mule deer in the Valley project area is extremely limited. In this context, native scrub and riparian communities in the project area are important habitats, as they provide a good source of available cover and browse for these deer.

Table C.3-5 Wildlife Species Observed or with the Potential to Occur within the Western Alignment During 1986 (CH2M Hill, 1986) and 2001 (Jones and Stokes, 2001) Field Surveys

WILDLIFE		HABITATS						
		Marshland	Alkaline Areas	Grassland	Riparian	Scrub	Dune	Reservoirs & Ponds
Common Name	Scientific Name							
Mammals								
Opossum	<i>Didelphis virginia</i>				X			
Desert cottontail	<i>Sylvilagus audubonii</i>			X	X			
Black-tailed jackrabbit	<i>Lepus californicus</i>			X				
California ground squirrel	<i>Spermophilus beecheyi</i>		X	X	X			
Botta's pocket gopher	<i>Thomomys bottae</i>			X	X			
San Joaquin antelope squirrel	<i>Ammospermophilus nelsoni</i>		X	X	X			
Giant kangaroo rat	<i>Dipodomys ingens</i>						X	
Short-nosed kangaroo rat	<i>Dipodomys nitratoides brevinasus</i>						X	
Kangaroo rats (general)	<i>Dipodomys sp.</i>		X	X	X	X		
Coyote	<i>Canis latrans</i>			X	X	X		
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>			X	X			
Raccoon	<i>Procyon lotor</i>	X			X			
Western spotted skunk	<i>Spilogale gracilis</i>			X				
Bobcat	<i>Felis rufus</i>				X			
Birds								
Pied-billed grebe	<i>Podiceps podiceps</i>							X
Eared grebe	<i>Podiceps nigricollis</i>							X
Western grebe	<i>Aechmophorus occidentalis</i>							X
Snowy egret	<i>Egretta thula</i>							X
Cattle egret	<i>Bubulcus ibis</i>							X
Mallard	<i>Anas platyrhynchos</i>							X
Northern pintail	<i>Anua acuta</i>							X
Cinnamon teal	<i>Anas crecca</i>					X		X
Northern shoveler	<i>Anas clypeata</i>							X
Ruddy duck	<i>Oxyura jamaicensis</i>							X
Turkey vulture	<i>Cathartes aura</i>			X				
Black-skoulered kite	<i>Elanus caeruleus</i>			X				
Northern harrier	<i>Circus cyaneus</i>			X				X
Swainson's hawk	<i>Buteo swainsoni</i>			X				X
Red-tailed hawk	<i>Buteo jamaicensis</i>			X	X	X		

WILDLIFE		HABITATS						
Common Name	Scientific Name	Marshland	Alkaline Areas	Grassland	Riparian	Scrub	Dune	Reservoirs & Ponds
Golden eagle	<i>Aquila chrysaetos</i>			X	X			
American kestrel	<i>Falco sparverius</i>				X			
Western burrowing owl	<i>Anthene cucularia hypugea</i>			X		X		
California quail	<i>Callipepla californica</i>			X	X			
American coot	<i>Fulica americana</i>							X
Killdeer	<i>Charadrius vociferus</i>		X	X	X			X
Black-necked stilt	<i>Himantopus mexicanus</i>							X
American avocet	<i>Recurvirostra americana</i>							X
Greater yellow legs	<i>Tringa melanoleuca</i>							X
Western sandpiper	<i>Calidris mauri</i>							X
Morning dove	<i>Zenaida macroura</i>			X	X			
Strigid owl					X			
Coasta hummingbird	<i>Calypte costae</i>				X			
Western kingbird	<i>Tyrannus verticalis</i>				X			
Horned lark	<i>Eremophila alpestris</i>			X				
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	X			X			
Cliff swallow	<i>Hirundo pyrrhonota</i>	X			X			
Barn swallow	<i>Hirundo rustica</i>				X			X
Common crow	<i>Corvus brachyrhynchos</i>			X				
Common raven	<i>Corvus corax</i>			X				
Rock wren	<i>Salpinctes obsoletus</i>			X				
American robin	<i>Turdus migratorius</i>			X				
Northern mockingbird	<i>Mimus polyglottos</i>			X				
Loggerhead shrike	<i>Lanius ludovicianus</i>			X		X		
European starling	<i>Sturnus vulgaris</i>				X			
Lark sparrow	<i>Chondestes grammacus</i>			X				
Savannah sparrow	<i>Passerculus sandwichensis</i>			X				
White crowned sparrow	<i>Zonotrichia leucophrys</i>				X			
Tricolored blackbird	<i>Agelaius tricolor</i>	X			X			
Western meadowlark	<i>Sturnella neglecta</i>			X	X	X	X	
Brewer's blackbird	<i>Euphagus cyanocephalus</i>			X				

WILDLIFE		HABITATS						
		Marshland	Alkaline Areas	Grassland	Riparian	Scrub	Dune	Reservoirs & Ponds
Common Name	Scientific Name							
Northern oriole	<i>Icterus galbula</i>				X			
House finch	<i>Carpodacus mexicanus</i>			X	X			
House sparrow	<i>Passer domesticus</i>				X			
Reptiles								
Blunt-nosed leopard lizard	<i>Wislizenii silus</i>			X				
Western fence lizard	<i>Sceloporus occidentalis</i>				X			
Desert spiny lizard	<i>Sceloporus magister</i>				X			
Side-blotched lizard	<i>Uta stansburiana</i>			X		X		
Coachwhip	<i>Masticophis flagellum</i>			X				
Gopher snake	<i>Pituophis melanoleucus</i>			X				
Garter snake	<i>Thamnophis sp.</i>	X						
San Joaquin whipsnake	<i>Masticophis flagellum ruddocki</i>			X				
Western rattlesnake	<i>Crotalus viridis</i>			X		X		
Western pond turtle	<i>Clemmys marmorata pallida</i>	X						X
Amphibians								
Western toad	<i>Bufo boreas</i>	X			X			
Pacific treefrog	<i>Hyla regilla</i>	X			X			
California red-legged frog	<i>Rana aurora draytoni</i>	X			X			X
Foothill yellow-legged frog	<i>Rana boylei</i>	X			X			X
California tiger salamander	<i>Ambystoma tigrinum californienus</i>	X			X			X

The Proposed Western Corridor crosses the administrative boundaries of two deer herds (administrative boundaries are determined by CDFG).

1. The Pacheco Deer Herd contains resident California mule deer and Columbian black-tailed deer (*Odocoileus hemionus columbianus*). The population objective for this deer herd is to maintain the carrying capacity needed to support 3,000 or more animals. The Merced County portion of the deer range is almost entirely in private ownership. Public lands include state park lands as well as the San Luis and Cottonwood Creek State Wildlife Areas.
2. The Coalinga sub-unit of Avenal Deer Herd also crosses the Proposed Western Corridor, while the Temblor sub-unit occurs outside the proposed corridor. The Avenal herd has been steadily decreasing since the 1980's – from about 2,900 animals in 1980 to only 1,400 animals in 1999. The higher-elevation portions of this range are the most favorable deer habitat, and like the Pacheco Deer Herd, most of the range occurs on private property.

Three species of upland game birds were observed or have the potential to occur within the Proposed Western Corridor. These include California quail (*Callipepla californica*), chuckar (*Alectoris chuckar*), and morning dove (*Zenidea macroura*). California quail are found around residential developments and along riparian corridors at higher, foothill elevations. Morning doves are common in shrub and riparian habitats. Chuckar habitat is marginal throughout most of the proposed corridor. The best habitat is associated with steeper drainage areas in Segment 1, the northernmost portion of Segment 2 and along the middle portion of Segment 5.

Waterfowl are abundant winter residents of the project area, and are found at reservoirs, ponds, and wetland habitats along the proposed corridor. Important waterfowl areas include:

- Little Panoche Reservoir and Creek, (MP 23.0)
- Los Banos Reservoir (MP 6.0)
- Various water storage ponds (MP 72.0 to MP 73.0) near the southernmost terminus of the proposed corridor.

Large numbers of mallards (*Anas platyrhynchos*), northern pintails (*Anua acuta*), and other ducks winter in northern San Joaquin Valley wetlands, east of the project area. While these wetlands would not be directly affected by project construction, the presence of these waterfowl concentrations is important because of local movements between valley wetlands and reservoirs within and directly adjacent to the project area.

The open terrain of the valley and foothills generally supports modest populations of rodents, lagomorphs, and small birds that are the prey base for many raptor species. While the proposed transmission corridor traverses important raptor foraging habitat, the limited amount and distribution of vegetative cover offers few nesting sites. Raptors known to occur within the western corridor and in the vicinity include: turkey vulture (*Cathartes aura*), black-shouldered kite, (*Elanus caeruleus*), northern harrier (*Circus cyaneus*), Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), prairie falcon (*Falco mexicanus*), and western burrowing owl (*Anthene cunicularia*).

Western burrowing owls were encountered most frequently in the study area with a total of four adults and 10 active burrows identified along the Western Corridor between MP 14.6 and MP 17.8 in Segment 3 and along Segment 5 between MP 52.6 and MP 70. The northern harrier, Swainson's hawk, and golden eagle were observed foraging in predominantly grassland areas within Segment 5, although no nests from these species were located. More detailed information and locations for these species are presented in Table C.3-6.

Special Status Wildlife Species

Special status wildlife species are defined as species listed under the Federal/California Endangered Species Acts (FESA/CESA), as well as birds listed in the Migratory Bird Treaty Act.

Field surveys conducted in April of 2001 identified eight special-status wildlife species within the study area: the loggerhead shrike (*Lanius ludovicianus*), California horned lark (*Eremophila alpestris*), tricolored blackbird (*Agelaius tricolor*), western burrowing owl, golden eagle, northern harrier, San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), and blunt-nosed leopard lizard (*Gambelia silus*) (Jones and Stokes, 2001). In addition to the special-status species directly observed at the site, active burrows of American badger (*Taxidea taxus*), San Joaquin kit fox (*Vulpes macrotis*), and giant (*Dipodomys ingens*) and short-nosed (*Dipodomys nitratooides brevinasus*) kangaroo rats were recorded within the proposed corridor.

In addition, several ponds and pools associated with drainages located in the study area are considered potential breeding habitat for California tiger salamander (*Ambystoma tigrinum californiense*), California red-legged frog (*Rana aurora draytoni*), and southwestern pond turtle (*Clemmys marmorata pallida*) (Jones and Stokes, 2001). Potential foothill yellow-legged frog (*Rana boylei*) habitat is present at Panoche Creek within the study area. An old mine located in the survey area may serve as potential roosting habitat for Yuma myotis (*Myotis yumanensis*). Appendix 6 presents descriptions of each of these species.

C.3.1.4 Environmental Setting: Western Corridor Alternative Segments

Alternative Segments 2A and 4A of the Western Corridor are situated in relatively steep terrain located in the foothills portion of the Diablo Mountains. In contrast, Segments 6A and 6B cross relatively flat grassland and agricultural land within the San Joaquin Valley. All of the ephemeral creeks and reservoirs within these alternative corridors are located within Segment 2A and 4A. Annual grassland is the predominant vegetation at most sites.

As for the Western Corridor, information discussed in this section is adapted and summarized from the results of 1986 biological surveys conducted by PG&E's consultants. In addition, rare plant and animal surveys conducted in spring 2001 by PG&E consultants are included to supplement the 1986 information on rare plant species.

**Table C.3-6 Special Status Wildlife Species Occurring or Potentially Occurring
in the Proposed Corridor Area (CH2M Hill, 1986; Jones and Stokes, 2001)**

Common Name Scientific Name	Status ^a Federal/ State	California Distribution	Habitat Requirements	Potential to Occur in Project Area	Milepost (MP)	Comments
Loggerhead shrike <i>Lanius ludovicianus</i>	SC/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north to Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Observed	MP 48.75 MP 36.75	Numerous birds, no nests
California horned lark <i>Eremophila alpestris actia</i>	-/SSC	Found throughout much of the state, less common in mountainous areas of the north coast and in coniferous or chaparral habitats	Common, abundant resident in a variety of open habitats, usually where large trees and shrubs are absent; grasslands and deserts to dwarf shrub habitats above tree line	Observed	MP 49.30	Numerous birds, no nests
Tricolored blackbird <i>Agelaius tricolor</i>	SC/SSC	Largely endemic to California; permanent residents in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant	Observed	MP 4.35	Flock of ~100 birds, not nesting
Western burrowing owl <i>Athene cunicularia hypugea</i>	SC/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Rodent burrows in sparse grassland, desert, and agricultural habitats	Observed	MP 70.00 MP 69.17 MP 65.20 MP 65.05 MP 64.75 MP 64.80 MP 64.22 MP 61.52 MP 52.40 MP 52.60 MP 17.80 MP 17.90 MP 18.95 MP 14.65	4 birds, 10 active burrows
Golden eagle <i>Aquila chrysaetos</i>	P/SSC, FP	Foothills and mountains throughout California; uncommon nonbreeding visitor to lowlands such as the Central Valley	Cliffs and escarpments or tall trees for nesting; annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals for prey	Observed	UNKNOWN	1 adult bird, 1 juvenile bird, no nests
Northern harrier <i>Circus cyaneus</i>	-/SSC	Throughout lowland California; has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands providing tall cover	Observed	MP 32.28 MP 66.52	Several birds, no nests
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	Moderate to high		Numerous potential burrows, potential habitat along entire study area. No sign observed.

Common Name Scientific Name	Status ^a Federal/ State	California Distribution	Habitat Requirements	Potential to Occur in Project Area	Milepost (MP)	Comments
San Joaquin antelope squirrel <i>Ammospermophilus nelsoni</i>	SC/T	Western side of the San Joaquin Valley from southern Merced County south to Kern and Tulare Counties; also found on the Carrizo Plain in San Luis Obispo County and the Cuyama Valley in San Luis Obispo and Santa Barbara Counties	Arid grasslands from 200 to 1,200 feet, with loamy soils and moderate shrub cover of atriplex and other shrub species	Observed	MP 52.47	1 adult squirrel
American badger <i>Taxidea taxus</i>	--/--	Occurs statewide except for the northwestern corner in Del Norte County and parts of Humboldt and Siskiyou Counties	Uses open areas with scattered shrubs and trees for cover and loose soil for digging	Moderate to high		Numerous potential burrows, potential habitat along entire study area
Giant kangaroo rat <i>Dipodomys ingens</i>	E/E	Occurs at high densities in only 12 square miles of habitat along the western side of the San Joaquin Valley, in five separate localities on Elkhorn Plain, Carrizo Plain, McKittrick Valley, and Cuyama Valley in Kern and San Luis Obispo Counties	Restricted to flat, sparsely vegetated areas with native annual grassland and shrubland habitats; requires uncultivated soils consisting of dry, fine, sandy loams for burrowing	Moderate to high	MP 51.12 MP 40.46 MP 40.95 MP 62.70	Possible scat found, potential habitat in study area
Short-nosed kangaroo rat <i>Dipodomys nitratoides brevinasus</i>	SC/SSC	Western side of the San Joaquin Valley from Merced County to Kern County; isolated populations also in San Benito, San Luis Obispo, and Santa Barbara Counties	Arid grassland and desert scrub communities on flat or gently sloping terrain with friable soils	Moderate to high	MP 49.90 MP 44.80 MP 44.40 MP 70.35 MP 69.72 MP 69.52 MP 68.90 MP 66.95 MP 66.60 MP 39.40 MP 50.45 MP 58.65 MP 32.35 MP 37.35	Possible scat found, potential habitat in study area
Yuma myotis <i>Myotis yumanensis</i>	SC/--	Considered common and widespread in northern California; colonies known from Marin and San Francisco Counties	Roosts colonially in a variety of natural and human-made sites, including caves, mines, buildings, bridges, and trees; in northern California, maternity colonies are usually in fire- scarred redwoods, pines, or oaks; forages for insects over water bodies	Moderate to high	UNKNOWN	Potential roosting habitat in abandoned mine
California tiger salamander <i>Ambystoma tigrinum californiense</i>	C/SSC, P	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to Santa Barbara County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	Moderate to high	MP 4.35 MP 57.30 MP 65.15 MP 64.15	Potential habitat in stock ponds and pools in drainages
California red-legged frog <i>Rana aurora draytoni</i>	T/SSC, P	Found along the coast and coastal mountain ranges of California from Humboldt County to San Diego County; Sierra Nevada (mid-elevations [above 1,000 feet] from Butte County to Fresno County)	Permanent and semipermanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation and riparian species along the edges; may estivate in rodent burrows or cracks during dry periods	Moderate to high	MP 4.35 MP 57.30 MP 65.15 MP 64.15	Potential habitat in stock ponds and pools in drainages

Common Name Scientific Name	Status ^a Federal/ State	California Distribution	Habitat Requirements	Potential to Occur in Project Area	Milepost (MP)	Comments
Foothill yellow-legged frog <i>Rana boylei</i>	SC/SSC, P	Occurs in the Klamath, Cascade, north Coast, south Coast, and Transverse Ranges; through the Sierra Nevada foothills up to approximately 6,000 feet (1,800 meters) south to Kern County	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby	Moderate to high	MP 36.70	Potential habitat in Panoche Creek
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	SC/SSC, P	Occurs along the central coast of California east to the Sierra Nevada and along the southern California coast inland to the Mojave and Sonora Deserts; range overlaps with that of the northwestern pond turtle throughout the Delta and in the Central Valley from Sacramento County to Tulare County	Woodlands, grasslands, and open forests; aquatic habitats, such as ponds, marshes, or streams, with rocky or muddy bottoms and vegetation for cover and food	Moderate to high	MP 4.35 MP 57.30 MP 65.15 MP 64.15	Potential habitat in stock ponds and pools in drainages
Blunt-nosed leopard lizard <i>Gambelia (=Crotaphytus) silus</i>	T/E, FP	San Joaquin Valley from Stanislaus County through Kern County and along the eastern edges of San Luis Obispo and San Benito Counties	Open habitats with scattered low bushes on alkali flats, and low foothills, canyon floors, plains, washes, and arroyos; substrates may range from sandy or gravelly soils to hardpan	Observed	MP 59.65 MP 33.0	2 Juvenile lizards
San Joaquin whipsnake <i>Masticophis flagellum ruddocki</i>	SC/SSC, P	From Colusa County in the Sacramento Valley southward to the grapevine in the San Joaquin Valley and westward into the inner coast ranges; an isolated population occurs at Sutter Buttes; known elevational range from 20 to 900 meters	Occurs in open, dry, vegetative associations with little or no tree cover; in valley grassland and saltbush scrub associations; often in association with mammal burrows	Moderate to high		Potential habitat along entire study area

^a Status explanations

Federal

- T = listed as threatened under federal Endangered Species Act
- C = candidate for listing as threatened or endangered under federal Endangered Species Act
- SC = species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking
- = no status definition
- FPD = federally proposed for de-listing

State

- E = listed as endangered under state Endangered Species Act
- T = listed as threatened under state Endangered Species Act
- SSC = species of special concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking
- P = protected
- FP = fully protected
- = no status definition

C.3.1.4.1 Vegetation

Three to four major vegetation types were identified within each of the Western Corridor Alternative Segments. Table C.3-1 lists the acreage of each vegetation type by Alternative Segment within the project area. Detailed descriptions of each vegetation type and associated plant communities are presented in Appendix 6. Within the four proposed Western Corridor Alternative Segments, grasslands represent the largest acreage at 76 percent (6,661 acres), followed by agricultural lands at 19 percent

(1,657 acres). Riparian (211 acres) and wetland (138 acres) communities contribute to approximately four percent of the total, while scrub and alkaline areas (88 acres) account for the balance.

Grasslands are the predominant vegetation type within Segments 2A, 4A, and 6B. Alkaline areas are limited to the Salt Creek Drainage (MP 8.5) within Segment 2A, while riparian scrub communities only occur along Little Panoche Creek (MP 22.5) within Segment 4A. Riparian communities occur along ephemeral drainages within all segments, while wetlands are primarily associated with the Los Banos Reservoir (MP 6.0) and the Little Panoche Reservoir (MP 23.0) in Segments 2A and 4A, respectively. Agricultural lands are the predominant vegetation type found within Segment 6A.

Special Status Plant Species

The special status species associated with the Western Corridor Alternative Segments include many of those associated with the Western Corridor itself.

C.3.1.4.2 Wildlife

Wildlife habitat types associated with the Western Corridor Alternative Segments are generally the same as those previously described for the proposed Corridor and correspond with the vegetative types previously discussed in C.3.1.4.1 above. These communities provide habitat for many of the same rodents, small- and medium-sized mammals, and songbirds that are common and abundant in the proposed transmission Corridor.

As with the proposed corridor, the distribution of mule deer within the Western Corridor Alternative Segments is extremely limited. Population centers of these resident herds occur to the west of the Alternative Segments, where the majority of deer tend to congregate in higher elevation Juniper habitats.

The open terrain in Segments 2A, 4A, 6A, and 6B provides important foraging opportunities for raptors and limited nesting sites are located within the riparian community along Los Banos Creek (MP 6.0) and Ortigalita Creek (MP 14.0) in Segment 2A. Several cliffs located along the southwest side of Little Panoche Valley showed signs of use by raptors as reported in the 1986 survey. The riparian community along Little Panoche Creek within Segment 4A provides good nesting habitat for raptors such as Swainson's and red-tailed hawks, although none were observed in the area during 1986 field surveys.

Special Status Wildlife Species

A number of the sensitive wildlife species discussed for the Western Corridor are also expected to occur in many of the vegetation communities within the Western Corridor Alternative Segments. Although limited wildlife information was collected for these alternatives during 2001 surveys, data from 1986 suggest that the area does provide at least marginal to good habitat for a number of raptor species, tri-colored blackbird, San Joaquin kit fox, blunt-nosed leopard lizard, and California tiger salamander.

During 1986 surveys, several small flocks of tricolored blackbirds were observed in emergent wetlands associated with a number of manmade ponds in Segment 6B, and several (golden eagle and prairie falcon) were observed near the Los Banos Reservoir in Segment 2A. Potential San Joaquin kit fox habitat was observed from MPs 11 to 15, 22 to 23, and 68 to 69. Blunt-nosed leopard lizard habitat is located near MP 11 and from MP 68 to 69. Habitat for the California tiger salamander exists in association with a number of small man-made ponds located in Segment 6B between MP 70.0 and MP 71.0 and near MP 76.

C.3.1.5 Environmental Setting: Eastern Corridor Alternative

The Eastern Corridor Alternative occurs primarily within the San Joaquin Valley, but passes into the foothills of the Coast Range from approximately EMP 10 to EMP 18. Elevations along this corridor range from a low of 298 feet (91 m), near the Los Banos Substation, to a high of approximately 456 feet (139 m) along portions of Segment 3. There are no perennial streams within the Eastern Corridor Alternative and the ephemeral streams generally flow during late winter and early spring, and except for temporary flows immediately after a storm event, dry up by mid-summer.

C.3.1.5.1 Vegetation

A minimum of a ¼-mile wide survey corridor was used to provide an adequate regional context to evaluate plant species and communities found within the Eastern Corridor Alternative and ROW. Information discussed in this section is adapted and summarized from the results of 1986 biological surveys conducted by PG&E's consultants (CH2M Hill, 1986). Rare plant surveys in spring 2001 were conducted only for the Western Corridor and Western Corridor Alternative Segments (Jones and Stokes, 2001). There is no recent information on rare plant species for the Eastern Corridor Alternative.

General vegetation types in the Eastern Corridor Alternative, as mapped in 1986, consist of: (1) Grasslands, (2) Riparian Communities, and (3) Agricultural Lands. Table C.3-1 lists the acreage of each vegetation type within the Eastern Corridor Alternative. Agricultural lands represent the largest acreage at 84 percent (12,907 acres), with grasslands at 15 percent (2,390 acres), followed by riparian communities at one percent (209 acres). Many of the riparian communities within the Eastern Corridor Alternative have been degraded by channelization and agricultural encroachment. Riparian habitat occurs along Los Banos Creek (EMP 6.5), Panoche Creek (EMP 35), and Cantua Creek (EMP 56.5). A well-developed and more extensive riparian community occurs along Los Gatos Creek (EMP 79). The streambed is wide and open and is bordered on both sides by a nearly continuous band of Fremont cottonwood and, to a lesser extent, tamarisk.

Special Status Plant Species

There are no known occurrences of sensitive plants within this corridor, and areas of potential habitat for sensitive plant species lie outside the Eastern Corridor Alternative in the alkali areas nearer the dam pool.

C.3.1.5.2 Wildlife

There are few significant natural wildlife habitat types associated with this corridor, as this portion of the project area is nearly completely converted to agricultural use. The limited remnants of natural vegetation remaining within this corridor generally provide the only suitable habitat for a limited number of rodents, small- and medium-sized mammals, and songbirds.

Riparian habitat along Little Panoche Creek (EMP 23.0) and Los Gatos Creek (EMP 76.0) provides potential nesting habitat for raptors. During 1986 surveys, golden eagles were observed near EMP 14 and 15. Golden eagles were observed nesting on existing transmission line towers near EMP 43, however, no active nests were observed in the Eastern Corridor Alternative (CH2M Hill, 1986).

Special Status Wildlife Species

Potential habitat for the blunt-nosed leopard lizard occurs between EMP 12.0 and EMP 14.0, while potential for both the blunt-nosed leopard lizard and giant kangaroo rat occur along Laguna Seca Creek near EMP 16.0 and Little Panoche Creek near EMP 23.0 (CH2M Hill, 1986).

C.3.2 APPLICABLE REGULATIONS, PLANS, AND STANDARDS

Applicable regulations include federal, state, and local regulations that address the protection of sensitive species, wetlands, streams, riparian plant communities, and heritage trees. While the regulations governing project impacts on biological resources have not changed since preparation of the 1988 FEIS/EIR, there have been changes to a number of listed species. Some species that were previously federal candidates for endangered or threatened listing have since become either Federal Species of Concern or have been elevated to threatened or endangered status. Similarly, some species previously listed as California Species of Concern have lost this status. Others, which had no legal status in 1988 have since become California Species of Concern. Table C.3-7 lists each species whose status has changed since the FEIS/EIR and explains the change.

Table C.3-7 Special Status Updates for Plant and Wildlife Species Occurring or Potentially Occurring in the Proposed Corridor Area

Common Name	Scientific Name	Current Legal Status Federal/State/CNPS (Plant listings only)	1986 Legal Status Federal/State/CNPS (Plant listings only)
De-listed Plant Species			
Santa Clara thornmint	<i>Acanthomintha lanceolata</i>		-/C/4
San Joaquin saltbush	<i>Atriplex patula ssp. spicata</i>		C2*/-/5*
Sloth thistle	<i>Cirsium crassicaule</i>		C2*/C/1B
Rattan's cryptantha	<i>Cryptantha rattanii</i>		-/C/4
Congdon's eatonella	<i>Eatonella congdonii</i>		-/-/4
Rock daisy	<i>Erigeron petrophilus</i>		-/C/5*
Delta Cyote-thistle	<i>Eryngium racemosum</i>		C/E/1B
Delta tule-pea	<i>Lathyrus jepsonii var. jepsonii</i>		C2*/-/1B
Indian Valley bush mallow	<i>Malacothamnus aboriginum</i>		-/C/4
Colusa grass	<i>Neostapfia colusana</i>		C2*/E/1B
San Joaquin Valley orcuttia	<i>Orcuttia inaequalia</i>		C/E/1B
Bearded allocarya	<i>Plagiobothrys hystriculus</i>		C2*/-/1B
Sanford's arrowhead	<i>Sagittaria sanfordii</i>		C2*/-/3
Green's tuctoria	<i>Tuctoria greenii</i>		C/CR*/1B
Newly Listed Plant Species			
San Benito thornmint	<i>Acanthomintha obovata ssp. Obovata</i>	SC/E/A	
Oval-leaved snapdragon	<i>Antirrhinum ovatum</i>	-/-/4	
Salinas milk-vetch	<i>Astragalus macrodon</i>	-/-/4	
Heartscale	<i>Atriplex cordulata</i>	SC/-/1B	
Crownscale	<i>Atriplex coronata var. coronata</i>	-/-/4	
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	SC/-/1B	
Small-flowered morning-glory	<i>Convolvulus simulans</i>	-/-/4	
Recurved larkspur	<i>Delphinium recurvatum</i>	SC/-/1B	
Protruding buckwheat	<i>Eriogonum nudum var. indictum</i>	-/-/4	
San Benito poppy	<i>Eschscholzia hypocoides</i>	-/-/4	
Hall's feet tarweed	<i>Deinandra halliana</i>	-/-/1B	
Pale-yellow layia	<i>Layia heterotricha</i>	SC/-/1B	
Munz feets tidy-tips	<i>Layia munzii</i>	-/-/1B	
San Joaquin woolly-threads	<i>Monolopia congdonii</i>	E/-/1B	
Panoche peppergrass	<i>Lepidium jaredii ssp. Album</i>	SC/-/1B	
Showy madia	<i>Madia radiata</i>	-/-/1B	
Kings Gold	<i>Twisselmannia californica</i>	-/-/1B	
Updated Plant Species Listings			
Forked fiddleneck	<i>Amsinckia vernicosa var. furcata</i>	SC/-/-	C2*/C/1B
Lost Hills crownscale	<i>Atriplex vallicola</i>	SC/-/1B	C2*/-/1B
Chaparral harebell	<i>Campanula exigua</i>	-/-/1B	-/C/4
California jewelflower	<i>Caulanthus californicus</i>	E/E/1B	C2*/C/3
Brewer feets clarkia	<i>Clarkia breweri</i>	-/-/4	-/C/4
Hispid bird feets-beak	<i>Cordylanthus mollis ssp. Hispidus</i>	SC/-/1B	C2*/C/1B
Palmate bird feets-beak	<i>Cordylanthus palmatus</i>	E/E/1B	PE/E/1B
Gypsum-loving larkspur	<i>Delphinium gypsophilum ssp. Gypsophilum</i>	-/-/4	-/C/4
Hoover feets eriastrum	<i>Eriastrum hooverii</i>	T/-/4	C2*/-/4
Kern mallow	<i>Eremalche kernensis</i>	E/-/1B	C2*/-/1B
Cottony buckwheat	<i>Eriogonum gossypinum</i>	SC/-/4	C2*/-/4
Idria buckwheat	<i>Eriogonum vestitum</i>	-/-/4	C3c*/C/4
Jepson feets woolly sunflower	<i>Eriophyllum jepsonii</i>	-/-/4	-/C/4
Stink Bells	<i>Fritillaria agrestis</i>	SC/-/4	C2*/C/4

Common Name	Scientific Name	Current Legal Status Federal/State/CNPS (Plant listings only)	1986 Legal Status Federal/State/CNPS (Plant listings only)
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Benitoa	<i>Lessingia occidentalis</i>	-/I4	C3c*/I4
Arburua Ranch jewel-flower	<i>Streptanthus insignis</i> ssp. <i>Lyonii</i>	SC/-I1B	C2*/I3
Caper-fruited tropidocarpum	<i>Tropidocarpum capparideum</i>	SC/-I1A	C2*/I1B
De-listed Wildlife Species			
Giant garter snake	<i>Thamnophis couchi gigas</i>		C2*/I
Bald eagle	<i>Haliaeetus leucocephalus</i>		E/E
Swainson's hawk	<i>Buteo swainsoni</i>		C2*/I
White-faced ibis	<i>Plegadis chihi</i>		C2*/-
San Joaquin pocket mouse	<i>Perognathus inornatus inornatus</i>		C2*/-
Newly Listed Wildlife Species			
Loggerhead shrike	<i>Lanius ludovicianus</i>	SC/SSC	
California horned lark	<i>Eremophila alpestris actia</i>	-/SSC	
Western burrowing owl	<i>Athene cunicularia hypugea</i>	SC/SSC	
Golden eagle	<i>Aquila chrysaetos</i>	P/SSC, FP	
Northern harrier	<i>Circus cyaneus</i>	-/SSC	
American badger	<i>Taxidae taxus</i>	-/-	
Yuma myotis	<i>Myotis yumanensis</i>	SC/-	
California red-legged frog	<i>Rana aurora draytoni</i>	T/SSC, P	
Foothill yellow-legged frog	<i>Rana boylei</i>	SC/SSC, P	
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>	SC/SSC, P	
San Joaquin whipsnake	<i>Masticophis flagellum ruddocki</i>	SC/SSC, P	
Updated Wildlife Species Listings			
Giant garter snake	<i>Thamnophis couchi gigas</i>	T/I	C2*/I
Bald eagle	<i>Haliaeetus leucocephalus</i>	T/E	E/E
Swainson's hawk	<i>Buteo swainsoni</i>	-/I	C2*/I
White-faced ibis	<i>Plegadis chihi</i>	SC/-SSC	C2*/-
San Joaquin pocket mouse	<i>Perognathus inornatus inornatus</i>	SC/-	C2*/-
Tri-colored blackbird	<i>Agelaius tricolor</i>	SC/SSC	C2*/-
San Joaquin antelope squirrel	<i>Ammospermophilus nelsoni</i>	SC/I	C2*/I
Giant kangaroo rat	<i>Dipodomys ingens</i>	E/E	PE/E
Short-nosed kangaroo rat	<i>Dipodomys nitratoides brevinasus</i>	SC/SSC	C2*/-
California tiger salamander	<i>Ambystoma tigrinum californiense</i>	C/SSC, P	C2*/-
Blunt-nosed leopard lizard	<i>Gambelia (=Crotaphytus) silus</i>	T/E, FP	E/E

Notes: * Status explanations:

Federal

- E Listed as endangered under the Federal Endangered Species Act.
- T Listed as threatened under the Federal Endangered Species Act.
- PE Proposed for federal listing as endangered under the Federal Endangered Species Act.
- PT Proposed for federal listing as threatened under the Federal Endangered Species Act.
- C Species for which U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list.
- C2*, C3c* July 1995, USFWS issued a new policy which excepted C2 and C3 candidate species listings under the ESA. Former C2 candidates are referred to as species at risk, while C3 species as too wide spread and/or not threatened retain no legal status.
- CR* Believed to be a typo in the 1986 EIS Report Listing.
- SC Species of Concern.
- No listing.

State

- E Listed as endangered under the California Endangered Species Act.
- T Listed as threatened under the California Endangered Species Act.

- R Listed as rare under the California Native Plant Protection Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
- C Candidate species for listing under the California Endangered Species Act.
- SSC Species of special concern in California.
- FP California Department of Fish and Game Fully Protected Species
- P California Department of Fish and Game Protected Species
- No listing.

California Native Plant Society

- 1A List 1A species: presumed extinct in California.
- 1B List 1B species: rare, threatened, or endangered in California and elsewhere.
- 2 List 2 species: rare, threatened, or endangered in California but more common elsewhere.
- 3 List 3 species: plants about which more information is needed to determine their status.
- 4 List 4 species: plants of limited distribution.
- 5* Plants too widespread for listing.
- No listing.
- * Known populations believed extirpated from that County.
- ? Population location within County uncertain.
- ^b Definitions of levels of occurrence likelihood:
- High: Known occurrence of plant in region from Natural Diversity Data Base, or other documents in the vicinity of the project; or presence of suitable habitat conditions and suitable microhabitat conditions.
- Moderate: Known occurrence of plant in region from Natural Diversity Data Base, or other documents in the vicinity of the project; or presence of suitable habitat conditions but suitable microhabitat conditions are not present.
- Low: Plant not known to occur in the region from the Natural Diversity Data Base, or other documents in the vicinity of the project; or habitat conditions of poor quality.
- None: Plant not known to occur in the region from the Natural Diversity Data Base, or other documents in the vicinity of the project; or suitable habitat not present in any condition.

C.3.2.1 Federal Laws and Regulations

Federal Endangered Species Act. The Federal Endangered Species Act of 1973 and Title 16 (implementing regulations) of the United States Code of Regulations (CFR) 17.1 et seq., designate and provide for protection of threatened and endangered plants and animals and their critical habitat. Procedures for addressing federal-listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the Act for all terrestrial species. The first pathway (FESA, Section 10(a) Incidental Take Permit) is set up for situations where a non-federal government entity (or where no federal nexus exists) must resolve potential adverse impacts to species protected under the Act. The second pathway ~~is spelled out under~~ (FESA, Section 7 Consultation) ~~of the Act~~ and involves projects with a federal connection or requirement; typically these are projects where a federal lead agency is sponsoring or permitting the Proposed Project. For example, a permit from the U.S. Army Corp of Engineers (USACE) may be required if a project will result in wetland impacts. In these instances, the Federal lead agency (e.g., the USACE) initiates and coordinates the following steps:

- Informal consultation with USFWS to establish a list of target species
- Preparation of biological assessment assessing potential for the project to adversely affect listed species
- Coordination between state and federal biological resource agencies to assess impacts/proposed mitigation
- Development of appropriate mitigation for all significant impacts on federally listed species.

The USFWS ultimately issues a final Biological Opinion on whether the project will affect the federally listed species. A Section 10(a) Endangered Species Incidental Take Permit may be necessary when the “taking” of a species is incidental to the lawful operation of a project.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the Fish and Game Code. Enforcement of the Act is carried out by USFWS law enforcement officials, while California Fish and Game Codes are enforced by CDFG game wardens.

Bald Eagle Act. All raptors and their nests are protected from take or disturbance under the Migratory Bird Treaty Act (16 USC, § 703 et seq.) and California statute (FGC § 3503.5). The golden eagle is also afforded additional protection under the Bald Eagle Act, amended in 1973 (16 USC, § 669 et seq.).

Federal Clean Water Act. As also described in Sections C.6 (Hydrology and Water Resources), Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into “waters of the United States” without a permit from the USACE. The definition of waters of the United States includes wetland areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b). The U.S. Environmental Protection Agency (USEPA) also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may be eligible for one of the Nationwide Permits that require less review than an individual permit.

Executive Order 11990, Section 1(a) established a policy of “no net loss” of wetlands. Compensation for wetland impacts may include restoration and/or off-site replacement or enhancement. However, the characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands.

C.3.2.2 State Laws and Regulations

California Endangered Species Act. Sections 2050 through 2098 of the California Fish and Game Code outline the protection provided to California’s rare, endangered, and threatened species. Section 2080 of the California Fish and Game Code prohibits the taking of plants and animals listed under the authority of the California Endangered Species Act of 1984. Individual animal species declared to be threatened or endangered by the California Fish and Game Commission are listed in Title 14 of the California Code of Regulations (CCR) under Section 670.5. In addition, the Native Plant Protection Act of 1977 (Fish and Game Code Section 1900 et seq.) gives the CDFG authority to designate state Endangered, Threatened, and Rare plants and provides specific protection measures for identified populations.

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. The CEQA Guidelines, Section 15065 (“Mandatory Findings of Significance”) requires that a reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (“Rare or endangered species”) provides for assessment of unlisted species as

rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society's Lists 1A, 1B, and 2 would typically be considered under CEQA.

California Streambed Alteration Notification/Agreement. Sections 1601-1606 of the California Fish and Game Code require that a Streambed Alteration Application be submitted to the CDFG for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFG reviews the proposed actions and, if necessary, submits to the Applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the Department and the Applicant is the Streambed Alteration Agreement. Often, projects that require a Streambed Alteration Agreement also require a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap.

California Fish and Game Codes. Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code outline protection for fully-protected species of mammals, birds, reptiles and amphibians, and fish. Species that are fully protected by these Sections may not be taken or possessed at any time. The Department cannot issue permits or licenses that authorize the "take" of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Specific Sections of the California Fish and Game Code pertinent to the current project include:

- Section 3503 (which prohibits the taking, possession, or needless destruction of the nest or eggs of any bird),
- Section 3503.5 (which prohibits the taking, possession, or destruction of any bird in the order Falconiformes or Strigiformes [birds-of-prey] or the taking, possession, or destruction of the nest or eggs of any such bird), and
- Section 3513 (which prohibits the taking or possession of any migratory non-game bird as designated in the Migratory Act).

C.3.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR THE PROPOSED PROJECT

In assessing environmental impacts and proposing mitigation measures for the Proposed Project and Alternatives related to biological resources, we first provide an overview of the definition and use of significance criteria related to biological resources. Subsequently, we discuss impact assessment methodology and ultimately, identify impacts, assign a level of significance to each, and propose specific measures that should be taken to avoid or minimize significant impacts on vegetation and wildlife resources.

C.3.3.1 Impacts Significance Criteria

General Significance Criteria

Significance criteria for impacts to biological resources are taken from § 15065 and Appendix G of the CEQA Guidelines, and § 21083 of the Public Resources Code.

Vegetation Impacts Significance Criteria

The following significance criteria were used to assess the significance of potential project impacts to affected vegetation resources. All impacts that are defined as significant in § 15065 of the CEQA Appendix G Guidelines have been designated as significant in this SEIR. Significant impacts are those that would result in:

- Substantial disturbance of a special status species or its habitat
- Substantial reduction in the numbers of a special status plant species
- Indirect loss of a special status plant species or its habitat
- Filling or degradation of wetlands and waters subject to the jurisdiction of the USACE pursuant to the Federal Clean Water Act (no net loss of wetlands)
- Creation of substantial barriers for dispersal of plant species
- Compaction of soils, clearing of vegetation, or other activities that substantially increase erosion and sedimentation
- Introduction of non-native plant species or facilitating the dispersal of existing populations of non-native plants.

Wildlife Impacts Significance Criteria

Evaluation of impacts to wildlife resources considers the magnitude of impact, the rarity of the resource, and susceptibility of the resource to impacts. All impacts that are defined in § 15065 of the CEQA Appendix G Guidelines as significant have been designated as significant in this SEIR. A project is considered to have potentially significant biological impacts if it would:

- Substantially diminish habitat for fish or wildlife species
- Cause a fish or wildlife population to drop below self-sustaining levels
- Interfere substantially with the movement of any resident or migratory fish or wildlife species
- Reduce the number or restrict the range of a rare or endangered species
- Adversely affect species under the protection of the Migratory Bird Treaty Act (burrowing owls, nesting raptors, passerines)
- Threaten to eliminate an animal community
- Filling or degradation of wetlands and waters subject to the jurisdiction of the USACE pursuant to the Federal Clean Water Act (no net loss of wetlands)
- Substantially affect a rare or endangered species or the habitat of that species.

Significant impacts to biological resources are not limited to projects affecting only State or Federally listed endangered species. A species that is federally- or state-listed will also be considered rare or endangered if it can be shown to meet the following criteria (CEQA Guidelines, § 15380):

- When its survival and reproduction in the wild are in immediate jeopardy from one or more causes
- It is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens
- It is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

C.3.3.2 Impact Assessment Methodology

Impacts on Vegetation Resources

Vegetation resources were surveyed in 1986 and in 2001 within a ¼mile wide corridor, extending along the length of the proposed transmission line's Western Corridor, as well as several Western Corridor Alternative Segments. Vegetation resources for the Eastern Corridor Alternative were surveyed only during 1986. Proposed locations and impact parameters (i.e., anticipated project activities/facilities) were compared with the locations of identified biological resources to determine the following:

- Type of resource affected
- Area, population, and status of the resource affected
- Nature of the potential impact (e.g., construction vs. maintenance, short-term vs. long-term, and direct vs. indirect).

All potential impacts to vegetation resources were related to the significance threshold criteria in Section C.3.1.2.1, above.

Since specific access road, tower footing, and conductor tensioning and splicing locations have not been designated at the time of this evaluation, it is assumed for purposes of analysis in this document that tower locations are uniformly distributed at 1,300 foot intervals and that one mile of new access roads will need to be constructed for every mile of transmission line (see Section B, Project Description). Special status plant populations were reviewed and designated for avoidance based on species rarity, magnitude of the potential impacts, and sensitivity of the species to disturbance. Mitigation for all potentially significant impacts, including those that could result from access roads, is also proposed.

Impacts on Wildlife Resources

Significance criteria were applied to wildlife species populations and habitats within the proposed transmission line corridor to evaluate potential impacts associated with the construction and operation of the Proposed Project. An example of a significant impact is substantial disturbance to or removal of a special status species nest or burrow (e.g., burrowing owl, California tiger salamander, and loggerhead shrike). Impacts to less sensitive wildlife species or habitat (i.e., habitat that does not contain wildlife concentration areas or critical resources) would be considered adverse but less than significant. Examples include most annual grassland areas and agricultural lands that may be used by some species for foraging.

C.3.3.3 Impacts and Mitigation Measures from 1988 FEIS/EIR

Table C.3-8 summarizes the impacts from the 1988 FEIS/EIR, and compares them to the impacts presented in this SEIR. In one case (Impact 3-11), this SEIR determined that the potential impact on special status plant and animal species could be more severe than the 1988 FEIS/EIR. Each impact is described in more detail in the next section.

Table C.3-8 Impacts from 1988 FEIS/EIR Compared to Impacts Identified in This SEIR

Final EIS/EIR Impact	Significance	SEIR Impact	Significance
Temporary removal of vegetation	Less than significant after mitigation	Impact 3-1: Temporary and/or permanent loss of sensitive vegetation communities Impact 3-2: Temporary and/or permanent loss of special status plant species and their habitats Impact 3-3: Disturbance of plant communities Impact 3-4: Disturbance of special status plant species and their habitats Impact 3-5: Erosion and sedimentation.	Less than significant after mitigation
Permanent loss of vegetation	Less than significant after mitigation		
Surface clearing of wildlife habitat	Less than significant after mitigation	Impact 3-6: Removal of wildlife habitat Impact 3-7: Wildlife mortality Impact 3-8: Wildlife disturbance from increased human presence	Less than significant after mitigation
Temporary wildlife displacement during construction	Less than significant after mitigation		
Increased predation or competition	Less than significant	Impact 3-9: Increased predation and/or competition	Less than significant
Avian collisions with transmission lines	Less than significant after mitigation	Impact 3-10: Bird electrocution and tower/line collisions	Less than significant after mitigation
Clearing of wildlife habitat; displacement during construction	Less than significant after mitigation	Impact 3-11: Habitat removal or disturbance of special status wildlife species	Potentially significant

Table C.3-9 lists the mitigation measures recommended in the 1988 FEIS/EIR and shows how those measures have been incorporated into this SEIR. The full text of mitigation measures is presented in the next section, and the locations at which each measure is recommended are identified by segment.

Table C.3-9 Disposition of Mitigation Measures from 1988 FEIS/EIR

Mitigation Measure from 1988 FEIS/EIR	Disposition in this SEIR
Conduct site-specific scoping sessions as required under Section 7 (Endangered Species Act, 1973, as amended) consultation procedures to focus field studies, impact analysis, and potential mitigation assessments.	Incorporated into Mitigation Measure B-12.
Conduct ground surveys of potential sensitive plant habitat during the appropriate period, prior to selection of final alignments.	Incorporated into Mitigation Measures B-1 and B-6a/b.
Detailed mitigation plans would be developed that define the extent and types of additional field studies, and how the results of these studies could be coordinated with detailed engineering surveys. As part of the siting process, numerous construction and siting details will be developed and presented to the regulatory agencies for review and comment. Where mitigation measures are specified in the plan, field monitoring schedules and progress reports will be prepared and submitted to the agencies. Biologists could accompany crews during the site selection and construction phases to ensure sensitive resources are identified and avoided. The results of the siting and mitigation efforts for the Lost Banos-Gates project would also be presented in a report of findings to the CPUC and other appropriate agencies.	Components incorporated into Mitigation Measures B-2, B-7, B-8, and B-11.
Technical specialists, including biologists, will survey the preliminary alignment in the field to determine any site-specific conditions that can be avoided. For biological resources, these will include San Joaquin kit fox burrows and denning areas, areas where blunt-nosed leopard lizard occur, giant kangaroo rat burrows, raptor nesting areas, and productive wetlands areas.	Incorporated into Mitigation Measures B-1 and B-11.
Replant temporarily disturbed areas with a mixture of perennial grasses, forbs, brush, shrubs, and tree species that will provide effective erosion control. Prepare a firm, rough seedbed on fill or cut slopes and apply appropriate types and amounts of fertilizers and seed mixtures. Consider reseeding with native plants only in sensitive areas not subject to grazing.	Incorporated into Mitigation Measure B-3.
Perform contour discharge or ripping operations at the conclusion of construction. This would loosen compacted soil and develop the seedbed for revegetation.	Deleted because this mitigation measure is discussed under Hydrology and Water Quality (Mitigation Measure H-1)
Where possible, avoid road construction on very steep slopes to minimize surface erosion and slumping.	Incorporated into Mitigation Measure B-2.
Recontour, prepare the surface, and seed all roads, construction sites, and other disturbed areas not required for project operation and maintenance.	Incorporated into Mitigation Measure B-3.

Mitigation Measure from 1988 FEIS/EIR	Disposition in this SEIR
As much as possible, avoid construction activities and land surface disturbance in the immediate vicinity of unique plant communities and habitat features, such as remnant sand dunes, rock outcrops, riparian zones, alkali areas, other wetlands, kit fox natal dens, and raptor nesting cliffs. These unique features will be determined in consultation with the resource agencies.	Components incorporated into Mitigation Measures B-2, B-6, B-7, B-8, and B-11.
Avoid construction activities in watercourses and wetlands since these areas are both infrequent and sensitive in the generally arid project area.	Incorporated into Mitigation Measures B-2 and B-7.
Avoid work on unstable slopes and rock outcrops.	Deleted because this mitigation measure is discussed under Hydrology and Water Quality (Mitigation Measure H-1)
Minimize surface disturbing activities such as grubbing, grading, ditching, and filling to the extent possible.	Incorporated into Mitigation Measure B-2.
Provide fire protection measures and avoid releases of fuels, soils, and other hazardous substances to the ground and water.	Incorporated into Mitigation Measure B-2.
Schedule activities to minimize construction in the specific vicinity of golden eagle nests or kit fox natal dens during the periods of the greatest sensitivity (i.e., February through the end of the nesting or denning period).	Incorporated into Mitigation Measures B-2 and B-11.
Attach raptor nesting platforms to towers at intervals greater than one mile in raptor use areas. Place these on the towers in positions least likely to cause operation and maintenance problems. The number of nesting platforms would be determined during the transmission line alignment analysis.	Deleted because this mitigation measure increases the likelihood of impacts under Impact 3-9.
Avoid permanent access road clearing to the extent possible, allowing the short annual grasses to cover the ground surface.	Incorporated into Mitigation Measure B-2.

C.3.3.4 General Biological Impacts Within the Proposed Transmission Line Corridor

The following discussion presents an overview of the general types of anticipated impacts, followed by detailed discussions of each on vegetation and wildlife resources with measures proposed to mitigate significant impacts.

C.3.3.4.1 Vegetation

Potential impacts to special status plants and vegetation communities are stated in terms of the five categories below:

- **Impact 3-1:** Temporary and/or permanent loss of sensitive vegetation communities
- **Impact 3-2:** Temporary and/or permanent loss of special status plant species and their habitats
- **Impact 3-3:** Disturbance of plant communities
- **Impact 3-4:** Disturbance of special status plant species and their habitats
- **Impact 3-5:** Erosion and sedimentation.

Impact 3-1 and 3-2: Temporary and/or Permanent Loss of Sensitive Vegetation Communities

The Proposed Project can result in permanent loss and/or temporary disturbance to sensitive plant communities and associated wildlife habitat. Temporary disturbance includes short-term impacts during construction. Permanent loss involves long-term impact associated with permanent project features that will remain throughout the life of the project. Tower work areas would occupy from 912 to 1,656 square feet per structure and structure foundations would occupy an estimated 56 square feet per structure. Examples of these impacts are:

- Construction access roads (temporary)
- Construction yards (temporary)
- Tower site clearance (temporary)
- Conductor tensioning and splicing sites (temporary)
- Tower foundations (permanent)
- Operational access roads (permanent).

Each of these activities would cause the removal of existing vegetation and disturbance of surface soils.

Impact 3-3 and 3-4: Disturbance of Sensitive Vegetation Communities and/or Special Status Plant Species

Surface disturbance occurs during construction, operation, and maintenance of the Proposed Project especially when vehicles are driven over existing vegetation, but that vegetation is not intentionally cleared. Impacts would be related to the following activities:

- Movement of equipment and project personnel during line-stringing, where ground clearance not required
- Movement of equipment and project personnel for annual project maintenance, including tree trimming
- Access by general public during life of project.

Each of these activities could cause temporary damage to existing vegetation, but would not likely involve removal or substantial disruption of surface soils. The most common type of surface disturbance is associated with rubber-tired or steel-tracked vehicles used to string the line and transport personnel and materials along the project corridor.

Impact 3-5: Erosion and Sedimentation

Erosion and sedimentation have the potential to occur during and after construction and are routinely related to the following activities:

- Exposure of surface soils from removal of vegetation
- Compaction of soils and disturbance of soil profile from vehicle movement.

Erosion and sedimentation can temporarily or permanently damage vegetation communities by removing or substantially disrupting surface soil layers. Drainages and marshland and riparian areas could be substantially degraded by the accumulation of sediments and alteration of natural hydrologic characteristics. Specific impacts and mitigation measures are described below, as well as in Sections C.5 (Geology and Soils) and C.7 (Hydrology and Water Quality). Impacts from movement of equipment and project personnel can vary in magnitude from minor to severe, depending on variables such as vegetation type, soil morphology, topography, volume of construction traffic, and specific types of vehicles used. Efforts to restore areas that have not been severely affected by these impacts may cause more damage than the original impact. The proposed mitigation for these impacts accounts for agency discretion to identify areas where restoration efforts would be beneficial.

C.3.3.4.2 Wildlife

Impacts to terrestrial wildlife resources as a result of the Proposed Project are separated into those likely to occur from construction (both short-term and long-term impacts) and those that could occur as a result of transmission line operation and maintenance. Potential impacts to federal- and state-listed species, candidate species, and species of special concern are also discussed.

General impact categories to terrestrial wildlife include:

- **Impact 3-6:** Removal of wildlife habitat
- **Impact 3-7:** Wildlife mortality
- **Impact 3-8:** Wildlife disturbance from increased human presence
- **Impact 3-9:** Increased predation and/or competition
- **Impact 3-10:** Bird electrocution and tower/line collisions
- **Impact 3-11:** Habitat removal or disturbance of special status wildlife species.

These impact categories are described below. Project-related disturbance in each category includes all activities that might occur during the life of the project, including construction, operation and scheduled maintenance activities.

Impact 3-6: Wildlife Habitat Removal

Wildlife habitat removal includes activities such as: (1) ground surface grading and blading, (2) tree or shrub removal, (3) tree trimming, or (4) scraping of road surfaces that disturbs surface and subsurface soils. Each of these activities could effectively remove existing habitat, thereby reducing its availability to local wildlife populations. Habitat removal could occur primarily during project construction, when vehicles require access to structure locations. In some areas, access would require construction of new roads or upgrading of existing roads. Blading of previously undisturbed surfaces may also occur to access structure locations. Blading would remove rocks, large shrubs, and other objects from the soil surface, leaving a relatively clear pathway for construction vehicles. In addition, habitat could be removed at many structure locations, conductor tensioning and splicing locations, and at construction yards. Construction yards may not be graded in all cases; however, it is anticipated that these areas could be substantially damaged by vehicle parking and materials storage activities during construction.

Impact 3-7: Direct Wildlife Mortality

This involves the direct loss of small mammals, reptiles, and other less mobile species that could result, primarily, from the access by construction vehicles. Direct mortality may also be associated with increased human activity, particularly involving animal/vehicle collisions.

Impact 3-8: Wildlife Disturbance from Increased Human Presence

Indirect impacts resulting from human disturbance during project construction, maintenance, or the reclamation efforts (due to heavy vehicle operation, or helicopter flights, nighttime lighting, noise, etc.)

could cause displacement of some wildlife to other habitats, which may or may not be able to support additional individuals. Impacts as a result of increased human disturbance may also include avoidance of preferred habitat areas and reduced reproductive success in local wildlife populations, including songbirds, small mammals, reptiles, and special status species.

Impact 3-9: Increased Predation and Competition

The Proposed Project would introduce structures to areas that currently do not have trees or other tall structures that would allow predator perching. As a result, some wildlife species in the vicinity of the proposed transmission line corridor (i.e., raptors) would be given a competitive advantage. The introduction of tall structures that can be used as perches during hunting would benefit some raptor populations by providing a secure vantage point from which to survey large areas of habitat. In addition, habitats that raptors had previously used only occasionally could become routine hunting areas due to the increase in available perches and potential nest sites. Wildlife displaced from construction areas could be forced into already occupied habitat, thus placing them at a competitive disadvantage from resident individuals of the same species or those of different species with similar requirements.

Impact 3-10: Bird Electrocution and Tower/Line Collision

Raptors and large waterfowl are most susceptible to electrocution because of their size, distribution, and behavior (Olendorff et al., 1981). They often perch on tall structures that offer optimal views of potential prey. Bird electrocutions occur when the wingspan of the bird is greater than the spacing between any two conductors on a power pole or when a bird bridges the gap between a conductor and a ground wire. The high-voltage (500 kV) transmission lines for the Proposed Project will be constructed with a greater distance between conductors (44 feet) and between conductors and static lines (15 feet) than the wingspans of the largest North American raptor or waterfowl (i.e., 80 inches for bald eagles and sandhill cranes) in the project area and therefore will present little to no risk of bird electrocution. Bird electrocution could occur at the Los Banos or Gates Substations or with any low voltage power lines (less than 69 kV) associated with ~~the~~ these substations, where conductors are closer together than 80 inches (the wingspan of the largest North American raptor or waterfowl).

Bird collisions with power lines generally occur when: (1) a power line or other aerial structure transects a daily flight path used by a concentration of birds, and (2) migrants are traveling at reduced altitudes and encounter tall structures in their path (Brown, et al., 1993). Collision rates generally increase in low light conditions, during inclement weather, such as rain or snow, during strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger. Collisions are more probable near wetlands, valleys that are bisected by power lines, and within narrow passes where power lines run perpendicular to flight paths. The potential for bird collisions with power lines or substation facilities associated with this project is greatest in the vicinity of the:

- Los Banos Substation – near the O’Neill Forebay and Cottonwood Creek Wildlife Areas;
- Los Banos Reservoir – from MP 4 to 8 in the western corridor or from MP 5-8 in the Eastern Corridor Alternative; and

- Little Panoche Wildlife Area – between Segment 4 (MP 22 to 24) or Alternative Segment 4A (AMP 22 to 24) in the Western Corridor.

Impact 3-11: Habitat Removal or Disturbance of Special Status Wildlife Species

In general, construction and operational impacts of the Proposed Project on special status wildlife species and their habitats would be similar to those discussed in the sections for vegetation and general wildlife. However, similar impacts can have greater effects on special status wildlife species, since the distribution and abundance of many of these species are limited.

C.3.3.5 Biological Impacts and Mitigation Measures for the Proposed Project

Proposed Project impacts are presented according to the impact categories described in Section C.1. Significant impacts could be identified as either **Class I** (significant and unmitigable) or **Class II** (potentially significant but mitigable to less than significant). Specific, proposed mitigation measures are numbered and cross-referenced where they apply to more than one impact. Not all vegetation communities, special status plants, general or special status wildlife identified in the biological baseline (Section C.3.1) will be addressed in this section. Only biological resources potentially affected by the project will be addressed, using information obtained through field surveys and published and unpublished data from resource agencies. Mitigation Measures **B-1 through B-12** below place emphasis on avoidance as the primary means of mitigating potential impacts to natural plant communities, wetlands, and special status species. Factors considered in evaluating priority for avoidance include:

- Regulatory status (state and federal legal protection)
- Known distribution
- Resource concentration/dispersal
- Potential for natural recovery or restoration.

Biological resources that have high sensitivities to impacts are identified and given the highest priority for avoidance. Other forms of mitigation are recommended where avoidance was not possible. Off-site compensation should be used to mitigate for loss and for the recovery lag time inherent in restoration and natural recovery of plant communities and habitats.

C.3.3.5.1 Vegetation Impacts

Impact 3-1: Temporary and Permanent Loss of Sensitive Vegetation Communities

Annual Grassland/Scrub and Agricultural Areas. ~~Approximately~~ An estimated 186 acres of natural grassland/scrub vegetation will be temporarily affected within Segments 1–6, while forty-nine (49) acres of agricultural land will be temporarily affected within Segments 1, 5, 6, and 7. Table C.3-10 presents a summary of disturbed areas by vegetation type for each segment within the Proposed Western Corridor and Alternatives. During construction, approximately 119 acres of grassland/scrub vegetation and 31 acres of agricultural lands along the western corridor will be permanently replaced by tower bases and access roads. However, the actual amount of vegetation lost may be less, if new access roads are not required along the entire ROW, and existing roads can be upgraded as necessary. Some non-native annual grassland and agricultural land may also be temporarily affected by the

movement of construction vehicles along the ROW to deliver supplies and equipment during construction activities.

Table C.3-10 Temporary and Permanent Disturbance Acreages for Plant Communities

Summary of Vegetation Temporarily Disturbed ^a					
Corridor Alternative	Segment Length (Miles)	Total Land Required ^a (Acres)	Vegetation Type		
			Grassland & Scrub (Acres)	Agricultural (Acres)	Other Land ^b (Acres)
Proposed Western Corridor					
Segment 1	1.9	5.3	3.7	1.5	0.0
Segment 2	12.7	36.3	35.6	0.0	0.7
Segment 3	5.3	15.2	15.2	0.0	0.0
Segment 4	8.5	24.2	22.9	0.5	0.8
Segment 5	41.0	117.5	99.6	17.8	0.3
Segment 6	10.5	30.1	10.7	18.2	1.2
Segment 7	4.0	11.4	0.0	11.4	0.0
TOTAL	83.9	240.0	187.7	49.4	3.0
Western Corridor Alternative Segments					
Segment 2A	12.9	36.9	34.7	0.0	2.2
Segment 4A	9.0	25.7	24.1	0.0	1.6
Segment 6A	10.3	29.5	2.6	26.0	1.3
Segment 6B	11.7	33.4	30.2	2.7	0.4
TOTAL	43.9	125.5	91.6	28.7	5.5
Eastern Corridor Alternative					
All Segments	85.7	240.8	37.7	203.8	0.0
Summary of Vegetation Permanently Disturbed^{c,d}					
Proposed Western Corridor					
Segment 1	1.9	3.4	2.4	1.0	0.0
Segment 2	12.7	23.1	22.6	0.0	0.5
Segment 3	5.3	9.6	9.6	0.0	0.0
Segment 4	8.5	15.5	14.7	0.3	0.5
Segment 5	41.0	74.6	63.2	11.2	0.2
Segment 6	10.5	19.2	6.8	11.6	0.8
Segment 7	4.0	7.3	0.0	7.3	0.0
TOTAL	83.9	152.7	119.3	31.4	2.0
Western Corridor Alternative Segments					
Segment 2A	12.9	23.5	22.0	0.0	1.5
Segment 4A	9.0	16.1	16.1	15.0	1.1
Segment 6A	10.3	19.2	1.7	16.7	0.8
Segment 6B	11.7	21.4	19.2	1.9	0.3
TOTAL	43.9	80.2	59.0	33.6	3.7
Eastern Corridor Alternative					
All Segments	85.7	156.0	24.0	132.0	0.0
^a Excludes construction yards and work camp (21.1 acres). ^b Includes alkali, wetland, and riparian vegetation. ^c Assumes one mile of new road per mile of transmission line and an average road width of 14 feet. Also assumes maximum impact that all roads would be maintained. Some access roads not required for maintenance or desired for use by landowner will be returned to a natural condition. ^d Assumes four towers per mile of transmission line and 20 feet x 60 feet dimensions (0.03 acres).					

Due to the already disturbed nature of much of the non-native annual grassland and agricultural land in the project area, temporary and permanent impacts to these plant communities are considered **Class III** impacts – adverse but less than significant. As described in Section C.7, Land Use, there is more agricultural land now along the Western Corridor than there was at the time of the 1986 Draft EIS/EIR, so some grassland has already been lost. No specific mitigation measures are therefore proposed for impacts to these non-native annual grassland or agricultural areas.

Alkali, Wetland, and Riparian Vegetation. Approximately three acres of alkali, wetland, and riparian vegetation would be temporarily impacted from blading for construction access within Segments 2, 4, 5, and 6. Approximately two (2) acres of these vegetation types would be permanently lost. These include alkali grass vegetation in Segment 2, alkali and wetland vegetation in Segment 4, and riparian vegetation within Segments 5 and 6. Temporary loss of these plant communities will result from movement of construction vehicles between towers. Although tower placement will generally avoid these plant communities, permanent impacts to these communities could result from construction of access roads and work areas around each tower. Due to the sensitivity of these plant communities, potential impacts to alkali, wetland, or riparian vegetation are considered **Class II** impacts that are significant, but mitigable by avoidance, restoration, and/or off-site compensation as described by Mitigation Measure **B-1** below.

Mitigation Measures for Impact 3-1, Temporary and Permanent Vegetation Losses in Alkali, Wetland, and Riparian Vegetation Communities

The objective of the following mitigation measures (**B-1 through B-5**) is to reduce potential impacts to significant natural plant communities within and adjacent to the proposed transmission corridor to a less than significant level by either avoiding these communities, restoring affected areas on-site, or enhancing similar areas at off-site locations. Permanent and temporary loss of wetland, alkali, and riparian plant communities will therefore be mitigated by a combination of avoidance, restoration, and off-site compensation.

- B-1** A jurisdictional delineation of wetlands within the proposed transmission line corridor shall be performed by PG&E and verified by the U.S. Army Corps of Engineers before specific avoidance measures can be developed. Similarly, a formal mapping and assessment of alkali and riparian habitat will be required to satisfy CDFG 1601 (Streambed Alteration Agreement) requirements, if project activities (i.e., construction roads) cross the beds or banks of jurisdictional streams. Surveys, mapping and assessment shall be performed at least 60 days before start of construction and results of these surveys (identification of wetlands, alkali, and riparian habitat) shall be utilized to define areas that are to be avoided in tower siting and location of access roads and other project components. The Project Biologist (defined in Mitigation Measure **B-12**) shall evaluate all proposed tower sites and identify those that are located within 200 feet of identified wetlands, alkali, and riparian habitat. A report summarizing habitat findings with respect to tower locations, along with copies of all maps and assessments shall be submitted to the CPUC for review and approval.
- B-2** Pre-construction surveys shall be performed for identification of all special status plant and animal species within 200 feet of project construction activities (including towers, access roads, and work areas). Special status species, as well as jurisdictional wetlands and riparian habitat (as determined from Mitigation Measures **B-1** and **B-6**, and as identified during 1986 and 2001 field surveys), shall be flagged prior to the start of construction of any project components. The CPUC shall be notified prior to the start of flagging activities so a CPUC-designated biologist may observe these activities. Maps and reports identifying locations of special status plants and animals found in pre-construction surveys, as well as proposed exclusion-fence locations, shall be provided to the CPUC's approved biological monitor for review and approval prior to the start of construction. If feasible, construction activities within significant plant communities shall be avoided by placing towers so as to span these areas, maximizing the use of existing

access roads, minimizing the construction of new access roads, and using temporary spur roads. Prior to confirming final transmission corridor design, the locations of all project components (towers, roads, temporary work areas, etc.) shall be defined on a map that also illustrates locations of wetlands, riparian habitat, and special status plants and wildlife, and this shall be provided to the CPUC for review and approval. If it is determined that special status plant or wildlife habitat cannot be avoided, Mitigation Measure **B-11** shall be implemented.

- B-3** Under conditions where impacts to wetlands, alkali, and riparian habitats cannot be avoided, PG&E shall either restore temporarily disturbed areas to pre-construction conditions following construction or provide off-site compensation for permanent vegetation losses.

Where on-site restoration is planned for mitigation of temporary impacts, the Applicant shall develop a Habitat Restoration Plan, which will be submitted to the CPUC and the U.S. Army Corps of Engineers (for wetlands), the California Department of Fish and Game (CDFG) (for riparian habitat), and the Regional Water Quality Control Board (RWQCB) at least 60 days prior to the start of any construction for their review and approval. The plan shall contain information for natural community mitigation, including specifying the location of habitat type to be created, details on soil preparation, seed collection, planting, maintenance, and monitoring for on-site restoration efforts. Quantitative success criteria will also be presented. The mitigation objective for affected significant natural plant communities will be restoration to pre-construction conditions as measured by species cover, species composition, and species diversity. Success criteria will be established by comparison with reference sites approved by the appropriate agencies.

Creation or restoration of habitat shall be monitored for five years after mitigation site construction to assess progress and identify problems. Remedial actions will be taken during the five-year period if necessary to ensure the success of the restoration effort.

- B-4** If the CPUC-approved Project Biologist (defined in Mitigation Measure **B-12**), in consultation with project engineers, determines that restoration of temporary impacts is not feasible or where permanent impacts (i.e., loss of habitat) to significant plant communities occur from access road or tower installation, off-site mitigation shall be negotiated at agency-approved mitigation banks or otherwise, to a level acceptable by the CPUC, USFWS, CDFG, or USACE.
- B-5** A Worker Environmental Awareness Program (WEAP) shall be implemented for construction crews by a qualified biologist(s) provided by PG&E and approved by the CPUC prior to the commencement of construction activities. Training materials and briefings shall include but not be limited to, discussion of the Federal and State Endangered Species Acts, the consequences on noncompliance with these acts, identification and values of sensitive species and significant natural plant community habitats, fire protection measures, hazardous substance spill prevention and containment measures, and review of mitigation requirements. This training program shall also incorporate the provisions of Mitigation Measure **H-3** (Hydrology and Water Resources). Training materials and a course outline shall be provided to the CPUC for review and approval at least 30 days prior to the start of construction. PG&E shall provide to the CPUC a list of construction personnel who have completed training, and this list shall be updated by PG&E as required when new personnel start work. No construction worker may work in the field for more than 5 days without receiving the WEAP.

Impact 3-2: Temporary and Permanent Loss of Special Status Plants or Their Habitat

The following special status plant species could be affected by project construction and operation.

- **Forked Fiddleneck.** Temporary loss of potential forked fiddleneck habitat would be approximately 4.6 acres, while permanent habitat loss would be approximately 6.1 acres. Potential impacts would be concentrated in the Ceirvo Hills area of Segment 5 between MP 47.0 and 49.5 and between MP 52.0 and 54.5. Because forked fiddleneck is a CNPS List 4 species (relatively widespread in oak woodland and annual grassland habitats from San Benito to Kern County), potential impacts to this species and its habitat is considered **Class III**, adverse but less than significant. No mitigation is proposed.
- **Crownscale.** Temporary loss of potential crownscale habitat would be approximately 1.9 acres. Permanent habitat loss would be approximately 2.3 acres. Potential impacts to habitat for this species would be concentrated on low terraces associated with intermittent streams and in soils with high levels of salt, within Segment 5 – between MP 50.0 and 51.0 and between MP 66.0 and 67.0. Because crownscale is a CNPS List 4 species (relatively widespread in saltbush scrub and annual grassland habitats with alkaline soils), potential impacts to this species and its habitat is considered **Class III**, adverse but less than significant. No mitigation is proposed.
- **Lost Hills Crownscale.** Temporary loss of suitable habitat for Lost Hills crownscale would be approximately 8.3 acres, while permanent habitat loss would be approximately 11.8 acres. Potential impacts to this species habitat would be limited to the Tumey Hills, Ciervo Hills, and Monocline Ridge areas in Segment 5 – at numerous locations between MP 37.5 and 56.5, where blading is required for construction access and tower construction. Lost Hills Crownscale is a CNPS List 1B species that is presently known in the inner South Coast Ranges, from Merced County to Kern County. On the basis of existing information, the species occupies a limited geographic range, specialized habitat requirements, and frequently integrates morphologically with crownscale. Therefore, the potential clearing of habitat for this species is considered a potentially significant (**Class II**) impact, mitigable by restoration, as described in Mitigation Measures **B-2** (above) and **B-6** (below).
- **Recurved Larkspur.** Temporary loss of recurved larkspur habitat would be approximately 1.8 acres. Permanent habitat loss would be approximately 2.3 acres. Potential impacts to this species habitat from blading for construction access and tower construction may occur on low terraces associated with intermittent streams and in soils with high levels of salt within Segment 5 – between MP 44.5 and 45.0 and between MP 66.0 and 67.0. Recurved larkspur is a CNPS List 1B species that is presently in and around the San Joaquin and Sacramento Valleys in annual grasslands or in association with saltbush scrub or valley sink scrub. On the basis of its status in California, the potential clearing of habitat for this species is considered a potentially significant (**Class II**) impact, mitigable by restoration as described in Mitigation Measures **B-3** and **B-4**.
- **Cottony Buckwheat.** Temporary and permanent loss of cottony buckwheat habitat would be approximately 0.9 and 1.4 acres, respectively. Potential impacts to suitable habitat for this species will occur in the Panoche Hills area of Segment 4 – near MP 27.5, the Tumey Hills area of Segment 5 – near MP 39.0, and in the Ciervo Hills area in Segment 5 – between MP 53.5 and 55.5. Because cottony buckwheat is a CNPS List 4 species (widely distributed in the inner South Coast Ranges, the southwest San Joaquin Valley, and the southern Sierra Nevada foothills from Fresno to Kern Counties), potential clearing of this species habitat is considered a **Class III** impact, adverse but less than significant. No mitigation is proposed.

Mitigation Measure for Impact 3-2, Loss of Special Status Plant Species and Their Habitats

Mitigation Measure **B-6a** presents a plan to avoid impacts to special status plants during construction and operation. Mitigation Measure **B-6b** presents another method of reducing habitat loss: use of Tubular Steel Poles (TSPs) rather than lattice structures to support the conductors. TSPs would be constructed with only two footings (rather than the four required for the lattice towers), and the footings would be closer together. As a result, the ground disturbance would be reduced by at least half. It is

noted that this mitigation measure has the potential to create a significant visual impact in some parts of the project area; that impact is acknowledged in Section C.11.3.7, Visual Resources.

B-6a Prior to construction, comprehensive rare plant surveys shall be conducted (or compiled from previous surveys) for all plants that have been identified within the study area and those plants with the potential to occur in the study area (as defined in Tables C.3-3 and C.3-4). Surveys shall be conducted within appropriate areas along the selected construction ROW and in areas susceptible to surface disturbance by construction vehicles or personnel. Surveys of the selected alignment (if not covered in 2001 spring survey) shall be appropriately timed to cover the blooming periods of the nine special status plant species known to occur in the area (April, May, and July). Maps depicting the results of these surveys will be prepared and will include other recently mapped special status plant occurrences in the area to ensure that the full scope of rare plant habitat in the project corridor vicinity is delineated.

Locations of ~~these~~ special status plant populations will be provided to construction personnel. Any special status plant occurrences located within 200 feet of the approved project construction corridor will be fenced prior to the start of any construction, and if feasible, towers or other project components shall not be placed in areas where these plant populations have been identified. Maps and reports, as well as proposed fence locations, shall be provided to the CPUC's approved biological monitor for review and approval prior to the start of construction. Gypsum-loving larkspur, while a CNPS List 4 (watch list) species, has no special status under FESA, CESA or the NPPA. It occurs at numerous locations along the proposed ROW and because of its prevalence and abundance within the project area, this species is exempted from the above fencing requirement.

B-6b PG&E shall present to the CPUC within 30 days of project approval a report evaluating use of Tubular Steel Poles (TSPs) rather than lattice towers for the transmission line. The report shall evaluate the technical feasibility of using TSPs for this project, and shall present diagrams illustrating the poles, their footing requirements, and the approximate ground disturbance required. The report shall also present visual photosimulations of the TSPs from three locations, approved by the CPUC. A comparison of all of these factors with the proposed lattice towers shall also be provided.

Impact 3-3: Impacts to Plant Communities by Disturbance from Vehicles or Project Personnel

Potential impacts to plant communities could be caused by movement of construction/maintenance vehicles and equipment within a single lane, up to a 15-foot wide corridor roughly parallel to the transmission line centerline. Impacts could include soil compaction, crushing of vegetation, and disruption of microphytic crusts¹. Not all plant communities are equally sensitive to surface disturbance, not all of these impacts would occur in every plant community, and such disturbance would be limited to areas where other existing surface roads are not available. Quantification of these impacts is not possible at this time because site-specific data are lacking. However, plant communities that would be the most affected by disturbance from vehicles, equipment or project personnel include annual grassland, scrub, and riparian communities. Surface disturbance to annual grassland plant communities are considered **Class III** impacts that are adverse but less than significant, whereas surface

¹ A thin layer of mosses, lichens, and other non-flowering organisms found at the soil surface that serve as an important link in the soil nutrient cycle.

disturbance to wetland, scrub, and riparian communities would be considered a **Class II** impact that is significant, but mitigable by avoidance measures described in Mitigation Measures **B-2** and **B-7**.

Mitigation Measure for Impact 3-3, Disturbance to Plant Communities

B-7 PG&E shall map and flag or fence overland travel routes and project access areas prior to construction or periodic maintenance during operation and shall ensure that vehicles or project personnel do not disturb identified areas. Areas flagged shall include wetland, alkaline areas, riparian, and reservoirs and ponds. The mapping/flagging shall be reviewed by a CPUC-approved biologist prior to use of these routes for construction to ensure adequate protection for sensitive plant communities. No project components shall be constructed within these sensitive areas.

Impact 3-4: Disturbance of Special Status Plants

All of the special status plant species previously discussed under Impact 3-2 also have the potential to be affected by vehicles or project personnel. Since sensitivity to such disturbance would vary by individual species and circumstance, quantification of these impacts is not possible at this time with existing data. Impacts from surface disturbance would likely be greatest along the southern half of Segment 5 between MP 45.0 and MP 65.0, because this area contains the highest concentration and diversity of special status plant species within the western corridor. Lost Hills crownscale and forked fiddleneck have a wider distribution throughout this area, therefore the magnitude of impacts to suitable habitat for these species are likely to be greater than for other species with a narrower distribution, such as cottony buckwheat, whose habitats can be more easily avoided. Potential impacts to special status plant species and their habitats as a result of surface disturbance would be a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance as described in Mitigation Measure **B-6**.

Impact 3-5: Erosion and Sedimentation

Grading, excavation, and similar activities during construction, and permanent re-contouring of slopes for access roads and pole sites, could increase the potential for erosion of disturbed surfaces prior to reclamation. Short-term water erosion of soils on slopes greater than approximately 15 percent would occur during heavy storms, which could affect downslope vegetation. Erosion and sedimentation could adversely affect drainages and wetlands within and adjacent to the project area and might delay or prevent suitable recovery of disturbed surfaces. Erosion and sedimentation is considered a potentially significant (**Class II**) impact, requiring mitigation. Mitigation Measure **H-1** (Section C.6, Hydrology and Water Quality) requires preparation and implementation of a comprehensive Erosion Control Plan.

C.3.3.5.2 Wildlife

Impact 3-6: Wildlife Habitat Removal

Approximately 241 acres of general wildlife habitat would be temporarily disturbed and 151 acres would be permanently removed during construction of access roads and placement of towers along the proposed transmission line corridor, thereby reducing the amount of habitat available to local wildlife

populations. Habitat removal would occur primarily during project construction when vehicles require access to structure or substation locations. In addition, habitat would be removed at many structure locations, at substation locations, and at construction staging areas. Staging areas may not be graded in all cases; however, it is anticipated that these areas could be substantially affected by vehicle parking and materials storage activities during construction.

Permanent and temporary loss of habitat within the ROW could affect some small mammal, reptile and/or amphibian species with very limited home ranges and mobility. For these species, the clearing for access roads and staging areas could represent a slight reduction in the carrying capacity of a portion of their home range until a productive vegetation cover is re-established. However, most of these species are common and widely distributed throughout the area and the loss of some individuals as a result of habitat removal would have a negligible impact on populations of the species throughout the region. Therefore, the potential clearing of habitat for most of the smaller wildlife species along the proposed alignment is considered a **Class III** impact, adverse but less than significant. Consequently, no mitigation is proposed.

Potential impacts to specific wildlife species are described below.

- **Mule Deer.** Construction of the proposed alignment would temporarily disturb an estimated 190 acres of habitat that serves as permanent range of resident mule deer. An estimated 151 acres of mule deer habitat would be permanently disturbed. Because, however, of the limited value of most of this habitat to mule deer, and the scattered distribution of deer within and adjacent to the project area, impacts to resident deer using the area would be minor and non-significant. Therefore, the potential clearing of habitat for mule deer is considered a **Class III** impact, adverse but less than significant, and no mitigation is proposed.
- **Game Birds.** The majority of the proposed transmission line corridor provides limited habitat for California quail and chuckars. Morning doves are relatively common throughout the region and construction of the proposed alignment would only remove a very small percentage of available habitat for this species. Therefore, the potential clearing of habitat for game bird species is considered a **Class III** impact, and no mitigation is proposed.
- **Raptors.** Several species of raptors were observed foraging along the proposed transmission corridor, including the northern harrier, golden eagle, and red-tailed hawk. Though several appropriate nesting sites for these species were identified in riparian areas along the proposed ROW, no nesting by these species was observed. Although construction activities could occur near these riparian corridors, all mature trees that could potentially be used by nesting raptors can be avoided during construction with implementation of Mitigation Measure B-2 (in which exclusion flagging or fencing would protect riparian habitat), resulting in less than significant (**Class II**) impacts.
- **Burrowing Owls.** Much of the habitat along the proposed ROW alignment is suitable for nesting by burrowing owls. Temporary loss of potential burrowing owl habitat could be up to 19.0 acres, while permanent habitat loss could be as high as 28.6 acres, depending on the availability of existing access roads. Potential impacts to this species will be concentrated between MP 14.6 and 17.8 in Segment 3 and between MP 52.6 and MP 70.0 in Segment 5. Disturbance to burrowing owl nesting habitat would be considered a potentially significant (**Class II**) impact, mitigable by implementation of Mitigation Measure **B-9** below.

Impact 3-7: Direct Wildlife Mortality

Direct loss of small mammals, reptiles, and other less mobile species would result primarily from the use of construction vehicles during stringing of the line, and use of other construction or maintenance

vehicles within the 160-foot ROW. Surface disturbance during construction and maintenance of the Proposed Project could result in a potential loss of less mobile individual animals and/or ground nests. Clearing, grading, excavating and/or burying habitats could also lead to mortality of small mammals, reptiles, and nesting birds with eggs or young, resulting in an adverse but less than significant impact (**Class III**).

Direct mortality could also occur as a result of animal-vehicle collisions. During construction, equipment and other vehicles could collide with wildlife on construction sites or during travel to and from sites. Most mortality, if it occurred, would probably be on paved highways such as I-5, Highway 152, and State Routes 145 and 198, where project-related vehicles would be traveling at higher speeds than on dirt or gravel roads. Wildlife that are particularly vulnerable to collisions with vehicles are species that are inconspicuous, slow moving, and/or nocturnal. Potential wildlife mortality related to vehicle collisions with most common mammal, bird, and reptile species (i.e., non-sensitive species) would be considered a potentially significant (**Class II**) impact, mitigable with implementation of Mitigation Measure **B-8**.

Mitigation Measure for Impact 3-7, Direct Wildlife Mortality

The purpose of this measure is to provide specific directions and descriptions of actions that would reduce human contact related mortality among wildlife in the vicinity of the project during construction. Effective application of this mitigation measure would result in little mortality among wildlife in the vicinity of the Proposed Project during construction, thereby reducing impacts to wildlife to a less than significant level (**Class II**).

B-8 In order to reduce direct mortality impacts during construction, PG&E shall impose the following conditions on all construction personnel, and these requirements shall be addressed in the WEAP (Mitigation Measure **B-5**):

- Vehicles shall not exceed 10 mph on the entire ROW or along designated portions of access roads where blunt-nosed leopard lizards are known to occur~~unpaved access roads or in the ROW. These locations will be determined during pre-construction surveys and These roads shall be identified on project maps and speed limits shall be identified on maps~~ prior to the onset of construction. All other areas along dirt access roads outside the limits of known blunt-nosed leopard lizard habitat shall have a 15 mph speed limit, consistent with Air Quality Mitigation Measure A-1.
- Litter or other debris that may attract animals shall be removed from the project area; organic waste shall be stored in enclosed receptacles, removed from the project site daily, and disposed of at a suitable waste facility
- No pets will be allowed in the construction area, including access roads and staging areas
- Construction crews will be educated regarding sensitive wildlife that could be encountered on highways and how to safely avoid them. Crew behavior shall be monitored by a qualified biologist approved by CPUC.

Impact 3-8: Wildlife Disturbance from Human Presence

Indirect impacts on wildlife could occur as a result of noise and increased human presence throughout the project area, with heaviest concentrations occurring during construction at tower and substation

locations, during stringing of the line, and at construction staging areas. These activities are likely to temporarily displace a variety of wildlife from adjacent habitats, lowering the overall habitat availability and effectiveness of these areas. These zones are not likely to be completely abandoned by wildlife, but the effective use of these areas could be reduced during construction, depending on a number of factors such as the particular wildlife species, time of year, presence of topographic features, and amount of foliage and vegetation present. Since this effect could potentially be detrimental to some wildlife during their critical life stages and could increase competitive pressures among adjacent populations and habitats, the impact could be significant. Indirect impacts resulting from human disturbance during project construction, maintenance, or the reclamation process (due to heavy vehicle operation, or helicopter flights, etc.) could therefore cause some wildlife displacement to other habitats, which may or may not be able to support additional animals. Impacts as a result of increased human disturbance may also include reduced reproductive success in local wildlife populations, including songbirds, small mammals, reptiles, and special status species. The following species could be affected. Mitigation Measure **B-9** is presented following the species descriptions.

- **Loggerhead Shrike.** Suitable habitat in annual grassland and riparian areas for the loggerhead shrike is found at a number of locations along the proposed corridor. Numerous individual loggerhead shrikes and several pairs displaying territorial behavior were observed in riparian areas within the study area near MP 36.75 and MP48.7 in Section 5. Construction activities may result in the: (1) direct loss of nest sites by removal of nesting shrubs or (2) indirect impacts to nesting and fledgling activities of loggerhead shrikes from noise and general construction activities within the range of ¼- to ½-mile, depending on a number of factors. Potential construction disturbance during the breeding season of the loggerhead shrike is considered a **Class II** impact that is significant, but mitigable by pre-construction surveys and avoidance measures described in Mitigation Measure **B-9**.
- **California Horned Lark.** Suitable habitat in annual grassland and sparsely vegetated ground for the California horned lark is found at a number of locations along the proposed corridor, within:
 - Segment 2, between MP 8.5 and MP 10.0
 - Segment 5 between MP 48.5 and 49.5, and between MP 57.0 and MP 57.5.

Construction of the proposed alignment would temporarily disturb an estimated 1.86 acres of habitat that serves as nesting habitat for this species. An estimated 3.1 acres of nesting habitat for the California horned lark would be permanently disturbed. Additional impacts to this species could occur from surface disturbance, which could result in crushed vegetation and potential loss of individual nests, eggs, or young. Indirect impacts to nesting and fledgling activities of California horned larks from noise and general construction activities could also occur within the range of ¼- to ½-mile depending on a number of factors. Potential construction disturbance during the breeding season of the California horned lark is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

- **Tricolored Blackbird.** Along the proposed transmission line corridor, suitable habitat for the tricolored blackbird is found in annual grassland and wetlands along the proposed transmission line corridor, with a colony of birds observed between MP 4.0 and MP 4.5 in Segment 2. The tricolored blackbird could be impacted if construction of the line occurred within 250 feet of a breeding colony and caused an interruption of this species breeding season. Construction disturbance during the breeding season of the tricolored blackbird is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.
- **Western Burrowing Owl.** Burrowing owls have been observed nesting in a variety of areas along the western corridor – between MP 14.6 and MP 17.8 in Segment 3, and between MP 52.6 and MP 70.0 along Segment 5. Construction of the proposed alignment would temporarily disturb an estimated 19.0 acres of habitat that

serves as nesting habitat for this species. An estimated 28.6 acres of nesting habitat for the burrowing owl could be permanently disturbed. Indirect impacts to nesting and fledging activities of burrowing owls from noise and general construction activities could also occur within the range of 250-feet of an active nest. Likewise, if burrowing owls move into a construction zone prior to the start of construction, or during construction, there is a potential for individual owls, their young, and their eggs to be destroyed. Loss of foraging and nesting habitat, or construction disturbance during the breeding season are considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

- **Golden Eagle.** No nesting golden eagles were observed along the proposed alignment and no large stick nests were identified along the corridor during the field surveys, however, the potential for the species to nest within, and/or directly adjacent to the study area cannot be discounted. One adult bird and one juvenile bird were recorded soaring within the study area during field surveys; however, the specific location of this observation was not reported. Noise and activity associated with transmission tower construction could disturb foraging activities of the golden eagle, and cause it to temporarily avoid the construction area. This would be considered a less than significant impact because non-breeding golden eagles, which have a large foraging range, would be able to temporarily disperse to similar adjacent habitat during construction.

Although construction activities would occur near potential nest sites for the golden eagle, all mature trees and cliff areas that could potentially be used by nesting birds will be avoided during construction. Disturbance to potential nesting sites for raptors is considered a potentially significant (**Class II**) impact, mitigable with implementation of recommended Mitigation Measures **B-2** and **B-9**.

- **Northern Harrier.** Several northern harriers were observed foraging in annual grasslands within Segment 5, near MP 32.3 and MP 66.5. Although no nests or nesting activity was observed, this species likely nests within suitable grassland habitat in the study area. Like the golden eagle, noise and activity associated with transmission tower construction during the non-nesting season could disturb the northern harrier, and cause it to temporarily avoid the construction area. This would be considered a less than significant (**Class III**) impact because non-breeding northern harriers would be able to temporarily disperse to similar adjacent habitat during construction.

Harriers are ground-nesting raptors that are sensitive to human disturbance. This species could abandon nesting attempts if disturbed during the breeding season. Additional impacts to this species could occur from surface disturbance, which could result in crushed vegetation and potential loss of individual nests, eggs, or young. Indirect impacts to nesting and fledging activities of northern harriers from noise and general construction activities could also occur within the range of ¼- to ½-mile depending on a number of factors. Potential construction disturbance during the breeding season of the northern harrier is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

- **San Joaquin Kit Fox.** Although no direct observations of San Joaquin kit fox were made within the project area, sign in the form of burrows, tracks, and scat suggest its occurrence is likely. While direct impacts to the San Joaquin kit fox can generally be avoided, construction-related disturbances could have a negative impact upon its habitat. A permanent loss of denning and feeding habitat could occur as a result of the construction of access roads and the permanent placement of tower footings. The anticipated permanent loss of grasslands throughout the project area is approximately 120 acres. This loss is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

Increased human presence and increased traffic in the area could also adversely impact the kit fox. Indirect impacts to denning and feeding kit foxes from noise and general construction activities could also occur within the range of ¼- to ½-mile depending on topographic conditions, and light and noise associated with nighttime traffic and construction can be especially hazardous to nocturnal species such as the San Joaquin kit fox. Potential disturbance related impacts to the San Joaquin kit fox is considered a potentially significant (**Class II**) impact, mitigable with implementation of Mitigation Measure **B-9**, while vehicle-related collisions

with kit fox would be considered a **Class II** impact that is potentially significant, but mitigable with implementation of recommended Mitigation Measure **B-8**.

- **San Joaquin Antelope Squirrel.** Although suitable habitat for the San Joaquin antelope squirrel is present throughout the study area, only one antelope squirrel was observed in the entrance to a burrow within Segment 5, near MP 52.5. Permanent habitat loss for this species could occur as a result of construction of access roads and the permanent placement of tower footings. Additional impacts to this species could occur from surface disturbance, which could result in crushed burrows and potential loss of individuals or young. Indirect impacts breeding San Joaquin antelope squirrels from noise and general construction activities could also occur within the range of 300 feet from an active burrow. Potential construction disturbance during the breeding season of the San Joaquin antelope squirrel is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.
- **American Badger.** While direct impacts to the American badger can generally be avoided, construction-related disturbances could have a negative impact upon its habitat. A permanent loss of denning and feeding habitat could occur as a result of the construction of access roads and the permanent placement of tower footings. The anticipated permanent loss of grasslands throughout the project area is approximately 120 acres. This loss is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

Increased human presence and increased traffic in the area could also adversely impact the badger. Indirect impacts to denning and feeding sites from noise and general construction activities could also occur within the range of ¼-mile depending on topographic conditions. Potential disturbance related impacts to the American badger is considered a potentially significant (**Class II**) impact, mitigable by avoidance measures as described in Mitigation Measure **B-9**.

- **Giant Kangaroo Rat.** Although no individuals were directly observed along the proposed western corridor, possible giant kangaroo rat tracks and burrows were observed throughout Segment 5, at a number of locations between MP 38.0 and MP 68.5. Potential habitat of varying quality occurs along portions of Segment 5, near MP 40.5, 40.9, 51.1, and 62.7. If present, a permanent loss habitat for this species could occur as a result of construction of access roads and the permanent placement of tower footings. Additional impacts to this species could occur from surface disturbance, which could result in crushed burrows and potential loss of individuals or young. Indirect impacts to breeding individuals from noise and general construction activities could also occur within the range of 300 feet from an active burrow. Potential construction disturbance during the breeding season of the giant kangaroo rat is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.
- **Short-nosed Kangaroo Rat.** Like the giant kangaroo rat, the short-nosed kangaroo rat is generally associated with woodland habitat. Possible short-nosed kangaroo rat sign was observed within Segment 6, between MP 70.0 and MP70.5, and potential habitat occurs along the proposed corridor from the Merced and Fresno County line south to the Gates Substation. If present, impacts to this species could occur from permanent loss habitat and surface disturbance, resulting in crushed burrows and potential loss of individual adults or young. Indirect impacts from noise and general construction activities could also occur within the range of 300 feet from an active burrow. Potential construction disturbance during the breeding season of the short-nosed kangaroo rat is considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.
- **Yuma Myotis (Bat).** The Yuma myotis is likely to occur in the project area, where it may forage on insects. Impacts to day roosts, maternity roosts, and night roosts are not anticipated because no impact to the abandoned mine where these bats roost will occur. The project will not significantly impact the Yuma myotis and no mitigation is proposed (**Class III**).
- **California Tiger Salamander.** Potential habitat for California tiger salamanders is associated with stock ponds and pool areas in drainages in: Segment 2, near MP 4.3; and Segment 5, at MP 57.3, 64.1, and 65.1. Construction activities in these areas may disturb or remove occupied or potentially occupied breeding and

estivation² habitat for this salamander. The permanent loss of estivation habitat as a result of construction of access roads and towers could occur in numerous grassland habitats with wetlands in close proximity. The temporary loss of estivation habitat could occur at laydown areas and pull sites. Removal or disturbance of small drainages, stock ponds, and estivation and breeding habitat would be considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

- **California Red-legged Frog.** Though the project area is not proposed as critical habitat for this species, suitable breeding, estivation (mammal burrows, riparian thickets), and dispersal habitat for the California red-legged frog is present along ponds and pool areas in drainages in: Segment 2, near MP 4.3; and Segment 5, at MP 57.3, 64.1, and 65.1. Construction activities in the vicinity of stock ponds, permanent seeps, drainage crossings, dispersal corridors and estivation habitat could potentially disturb or remove habitat occupied or potentially occupied by this frog. Construction activities for access roads could result in the loss of eggs, tadpoles, juveniles, and adults. The permanent loss of estivation habitat could occur in numerous locations in the project area as a result of construction of access roads and towers. Temporary loss of estivation habitat could occur at laydown areas and pull sites. Removal or disturbance of small drainages, stock ponds, and estivation and breeding habitat would be considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.
- **Foothill Yellow-legged Frog.** Like the California red-legged frog, suitable breeding, estivation, and dispersal habitat for the foothill yellow-legged frog is present along ponds and pool areas in drainages in: Segment 2, near MP 4.3; and Segment 5, at MP 57.3, 64.1, and 65.1. Construction activities in the vicinity of these areas could potentially disturb or remove habitat occupied or potentially occupied by this frog resulting in the loss of eggs, tadpoles, juveniles, and adults. Removal or disturbance of small drainages, stock ponds, and estivation and breeding habitat would be considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.
- **Southwestern Pond Turtle.** Though there were no direct observations of southwestern pond turtles within the proposed corridor, potential habitat (e.g. stock ponds and pool areas in drainages) occurs in: Segment 2, near MP 4.3; and Segment 5, at MP 57.3, 64.1, and 65.1. Construction activities near stock ponds and drainage crossings may disturb or remove suitable habitat or potentially suitable habitat for this species, if present. Construction activities for access roads near streams could result in the loss of nests, hatchlings, and/or adults. The western pond turtle is a CDFG Species of Special Concern; therefore, removal of potential aquatic turtle habitat would be considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.
- **Blunt-nosed Leopard Lizard.** Two juvenile blunt-nosed leopard lizards were observed within Segment 5, near MP 33.0 and MP 59.6. Potential habitat of varying quality for the blunt-nosed leopard lizard is present throughout the much of the proposed corridor. Portions of the proposed corridor that overlap potential blunt-nosed leopard lizard habitat include:
 - MP 15.0 to MP 20.0 in Segment 3
 - MP 20.5 to MP 24.0 in Segment 4
 - MP 29.0 to 33.0, MP 38.0 to 46.0
 - MP 58.0 to 59.0 in Segment 5.

Construction of the proposed corridor could temporarily disturb an estimated 20.2 acres of potential habitat for this species. An estimated 32.7 acres of potential habitat for the blunt-nosed leopard lizard could be permanently disturbed. Indirect impacts to blunt-nosed leopard lizards from noise and general construction activities could also occur within the range of 250-feet of an active burrow. Likewise, if lizards move into a construction zone prior to the start of construction, or during construction, there is a potential for individuals, their young, and/or their eggs to be destroyed. Loss of potential blunt-nosed leopard lizard habitat, or

² Estivation is the dormancy of some animals during the dry season.

construction disturbance during the breeding season are considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

- **San Joaquin Whipsnake.** No San Joaquin whipsnakes were observed during the field surveys. However, there is a single CNDDB record within 1,000 feet of the survey area near MP 15.0, and potential habitat in the form of valley grassland and saltbush scrub is present within much of the project area. Construction activities near suitable habitat or potentially suitable habitat for this species could therefore result in the loss of nests, young, and/or adults. Removal or disturbance of potential habitat for this species would be considered a potentially significant (**Class II**) impact, mitigable by pre-construction surveys and avoidance measures as described in Mitigation Measure **B-9**.

Mitigation of indirect impacts through avoidance during critical seasons (Mitigation Measure **B-9** below) would reduce this potentially significant impact to less than significant levels (**Class II**).

Mitigation Measure for Impact 3-8, Wildlife Disturbance from Human Presence

The primary mitigation measures to reduce potential impacts to wildlife resulting from increased human presence during construction are avoidance by pre-construction surveys to determine wildlife presence or absence and appropriate construction timing to avoid.

B-9 Pre-construction wildlife surveys (following appropriate survey protocol, as applicable) shall be performed by qualified biologists to locate active raptor nests, owl/harrier burrows and blunt-nosed leopard lizard burrows and other resources defined in Table C.3-11 in/or adjacent to the ROW and access road areas. Maps and reports, as well as proposed fence locations, shall be provided to the CPUC's approved biological monitor for review and approval prior to the start of construction.

Based on survey results, construction and operation activities shall be scheduled to avoid critical breeding, nesting and rearing seasons for sensitive wildlife species occupying a given area, as defined in Table C.3-11 below. Specific identified habitats (nests, riparian habitat, burrows, etc.) shall be avoided during specific seasons throughout the construction, operation, and maintenance of the approved project. Travel routes for vehicles, equipment and personnel will be along existing roads. If such roads are not present, routes will be flagged or fenced and no activities would be permitted outside these areas. If active nests, burrows or other habitat are observed, the avoidance period and buffer distances shown in Table C.3-11 will be implemented.

Specific distances from resources (see Table C.3-11) shall be maintained during construction, operation and maintenance of the transmission line. Travel areas shall be flagged prior to construction (see Mitigation Measure **B-2**), and biological monitors as specified by CPUC will be present during construction to verify that no vehicular travel occurs outside flagged areas. However, an exemption (variance) to a mitigative measure may be approved by CDFG or USFWS on a case-by-case basis. When a particular species (i.e. blunt-nosed leopard lizard) for which a specific mitigation measure has been proposed cannot be avoided by construction activities, a variance will be requested from the appropriate resource agency by the designated Project Biologist. Biological monitors will also have the authority to terminate construction activities if any significant adverse effect on special status species is observed.

Table C.3-11 Avoidance and Buffer Requirements for Reducing Impacts to Special Status Wildlife Species

Special Status Species	Habitat ¹	Potential Impact	Critical Season	Buffer Distance (radius)	Buffer for over-flights
Loggerhead shrike	nest site	construction	2/1 - 9/1	250 feet	500 feet
California horned lark	nest site	construction	2/1 - 9/1	250 feet	500 feet
Tricolored blackbird	nest site	construction	2/1 - 9/1	250 feet	500 feet
Western burrowing owl	wintering burrow nest site	construction	9/1 - 1/31 2/1 - 8/31	160 feet 250 feet	500 feet 500 feet
Golden eagle	nest site	construction	2/1 - 9/1	0.25 mile	500 feet
Northern harrier	nest site	construction	2/1 - 9/1	0.25 mile	500 feet
San Joaquin kit fox	known dens potential dens	construction	None	300 feet 400 feet	500 feet
San Joaquin antelope squirrel	Potential known burrows	construction	3/1 - 9/1	300 feet	none
American badger	potential known dens	construction	3/1 - 9/1	300 feet	none
Giant kangaroo rat	potential known burrows	construction	3/1 - 9/1	300 feet	none
Short-nosed kangaroo rat	potential known burrows	construction	3/1 - 9/1	300 feet	none
Yuma myotis	roost sites in abandoned mine	construction	None	none	none
California tiger salamander	breeding pools aquatic habitat	construction	5/1 - 10/31 11/1 - 4/30	30 feet 200 feet	none none
California red-legged frog	proposed critical habitat aquatic breeding habitat	construction	5/1 - 10/31 11/1 - 4/30	30 feet 200 feet	none
California yellow-legged frog	aquatic breeding habitat	construction	11/1 - 4/30	200 feet	none
Southwestern pond turtle	aquatic <u>breeding</u> habitat	construction	5/1 - 10/31 11/1 - 4/30	30 feet 200 feet	none none
Blunt-nosed leopard lizard	<u>known</u> breeding habitat	construction	3/1 - 9/1	300 200 feet	none
San Joaquin whipsnake	mammal burrows	construction	all year	none	none

¹ Avoidance areas will be identified by coordinate or MP and will be provided to construction management before project construction begins.

² Subject to modification upon approval by CDFG.

Impact 3-9: Increased Predation and Competition

New transmission towers in this area with few existing trees or other perching sites could increase the opportunity for raptors to prey on wildlife in general along the Western Corridor. This is potentially a project-specific impact and a cumulative impact, given that there already are perching opportunities on the existing 500 kV and other transmission towers in the project area. There is a potential for raptors to perch on new towers and prey on sensitive species such as the San Joaquin antelope squirrel. Although neither the numbers of San Joaquin antelope squirrels nor raptors is large along the Proposed Western Corridor, a decrease in the antelope squirrel population could be a significant impact. Likewise, predation on tricolored blackbirds, giant kangaroo rats, short-nosed kangaroo rats, California horned larks, and/or western burrowing owls or their young could be a significant impact. However, raptors can already hunt in the project area by flying through it and hovering on the thermal updrafts along the foothills. Therefore, the small incremental increase in predation that could result from this project is considered to be less than significant (**Class III**).

Impact 3-10: Bird Electrocution and Tower/Line Collisions

Electrocution only occurs when a bird simultaneously contacts two conductors of different phases or a conductor and a ground. This happens most frequently when a bird attempts to perch on a structure with insufficient clearance between these elements. On a 500 kV transmission line, all clearances

between conductors or between conductors and ground are sufficient to protect even the largest birds and no impacts are expected (APLIC, 1996).

Operational impacts of the proposed transmission line include the potential for bird mortality from collisions with wires and tower structures. Passerines (i.e., songbirds) are known to collide with wires (APLIC, 1994), particularly during nocturnal migrations or poor weather conditions (Avery et al., 1978). However, passerines have a lower potential for collisions than larger birds, such as swans and cranes. Some behavioral factors contribute to a lower collision mortality rate for these birds. Passerines tend to fly under powerlines, as opposed to larger species, which generally fly over the lines and risk colliding with the higher static lines, and many smaller birds tend to reduce their flight activity during poor weather conditions (Avery et al., 1978).

One of the primary factors in determining the potential for birds collisions with transmission lines is the number of birds flying through the area. For instance, a Mare Island study (Hartman et al., 1992) found that both bird flights and collision mortality were much greater on a section of a 115 kV pole line that paralleled a tidally influenced salt pond than on a section that passed through a hayfield. High use of the salt pond by migratory waterfowl and shorebirds resulted in more collisions than a hayfield that is generally used by fewer birds. Other factors that influence the rate of bird collision are species, age, flocking behavior, weather conditions, land use, topography, and line placement and configuration (APLIC, 1994).

It is difficult to predict the magnitude of collision-caused bird mortality without extensive information on bird species and movements in the project vicinity. These data are not available for the proposed transmission line corridor. However, it is possible to make some qualitative predictions based on previous studies in other areas. It is generally expected that collision mortality will be greatest where the movements of susceptible species are the greatest (e.g. wetlands, water bodies, etc.). In addition, the placement and visibility of the line will influence collision mortality.

The potential for bird mortality from collisions with transmission lines is greatest with waterfowl, because of the local movements of relatively large numbers of waterfowl that occur between San Joaquin Valley wetlands east of the project area, and reservoirs, ponds, and wetland habitats within and adjacent to the project area.

Raptor mortality from collisions should not be a concern along this transmission line. Raptor collisions with wires are generally uncommon, as they have better visual acuity and are able to avoid the wires. No bird electrocution impacts are expected from the main 500 kV transmission line or the 230 kV lines associated with the Gates Substation, therefore no mitigation is necessary at that location.

All waterfowl species are vulnerable to collisions to some degree, but large-bodied birds are more vulnerable (Anderson, 1978; Faanes, 1987). Collisions with power lines have been documented as a problem for waterfowl and cranes during flights between foraging and roosting areas in large waterfowl staging areas in North Dakota, Colorado, and Nebraska (Faanes, 1987; Morkill and Anderson, 1993; Brown and Drewien, 1995). The potential for collisions increases during periods of low visibility, such

as low cloud ceiling, fog, precipitation, and darkness. Waterfowl flight activity often increases during inclement weather and in the early morning and early evening, which increases their risk of collision. Other factors that affect waterfowl collision rates include flocking behavior; the proximity of staging or feeding areas to power lines; panic flushes from disturbance; and preoccupation with other activities, such as courtship, territory defense, and predator avoidance (APLIC, 1994). The potential for collision mortality of waterfowl and other birds (Mitigation Measure **B-10**, below) is a potentially significant (**Class II**) impact. However, due to the lack of site-specific information in the project area related to the direction of bird flight, frequency of corridor crossing, and weather conditions, the mitigation measure is presented with an option for a bird collision study as a first step toward confirming the impact potential.

Mitigation Measure for Impact 3-10, Bird Collision Impacts

B-10 Prior to installation of conductors, PG&E shall either (a) perform a study to determine the potential for bird strikes in the areas identified below and then, depending on study results, (b) implement bird strike diverters as defined below. The study shall evaluate the actual bird strike incidents at existing transmission lines in the vicinity of the approved project corridor. If this study determines that bird strikes would not constitute a significant impact, compliance with the remainder of this measure would not be required; if PG&E does not complete this study or if study results confirm the potential benefits of bird flight diverters, the remainder of this measure shall be implemented. The protocol for this study (including the time period, survey intervals, and impact significance criteria) shall be approved by the CPUC, the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG).

If PG&E does not perform the study defined above or if study results determine that flight diverters would likely be beneficial, PG&E shall install bird flight diverters in the areas defined below to reduce bird collision impacts along the proposed or alternative transmission line corridors:

- At the Los Banos Substations on any new ~~equipment and~~ transmission lines
- On static lines in the vicinity of the Los Banos Reservoir, from MP 4 to 8 in the Western Corridor or from MP 5 to 8 in the Eastern Corridor Alternative; and
- On static lines in the vicinity of the Little Panoche Wildlife Area, between Segment 4 (MP 22 to 24) and Alternative Segment 4A (AMP 22 to 24) in the Western Corridor.

Prior to installation of conductors, PG&E shall submit its recommendation for the type(s) and spacing of bird flight diverters in the identified areas to the CPUC, the USFWS, and the CDFG for review and approval. Conductors shall not be installed until the CPUC, in conjunction with USFWS and CDFG, has approved an agreement between PG&E, USFWS, and CDFG regarding the type and spacing of bird flight diverters required; diverters shall be installed within 30 days of installation of conductors.

Following installation of all bird flight diverters (line markers), PG&E shall begin a three-year monitoring program in the areas identified above to determine the extent of bird collisions in the project area. Existing unmarked transmission lines in similar high bird-use areas shall be monitored during the same period to allow comparisons for determining line marking effectiveness. The protocol for the study (including identification of unmarked lines to be monitored) shall be submitted to the resource agencies for review and approval prior to

installation of conductors on new towers. As part of the design of this monitoring program, PG&E shall submit to the CPUC and the U.S. Fish and Wildlife Service information regarding types of bird collision detection systems, their potential for improving study results, and their cost and feasibility in this area. Based on this information, the CPUC will decide whether such a system will be required for the monitoring study. Annual reports providing bird strike data for the new marked lines and for the existing unmarked lines shall be provided to the CPUC, the USFWS, and the CDFG, and a summary report shall be submitted at the end of the three-year monitoring program. The annual reports shall include a discussion of the apparent effectiveness of the line marking techniques selected, and recommendations regarding modification of the type of line markers used if bird collisions are determined to be frequent. PG&E, after review and input by CPUC, USFWS, and CDFG, shall implement the findings of the annual reports by modifying line markers as needed to minimize collisions.

C.3.3.5.3 *Special Status Plant and Wildlife Species*

Impact 3-11: Habitat Removal or Disturbance of Special Status Plant and Wildlife Species

In general, construction and operational impacts of the Proposed Project on special status plant and wildlife species and their habitats would be similar to those discussed in the sections for vegetation and general wildlife, as discussed under Impacts 3-1 through 3-10 above. However, these impacts can be more severe for special status plant and wildlife species, since the distribution and abundance of many of these species are limited.

The major components of the Proposed Project that would cause impacts to biological resources are the transmission towers, construction access roads, and staging areas. These project features can generally be sited to avoid direct impacts to special status species, and mitigation measures have been proposed with the intent that such avoidance occurs. However, site-specific surveys have not been completed within the Western Corridor because the precise location of project components has not yet been defined. As a result, it is difficult to determine the magnitude of impacts that will result from the project as proposed, and whether mitigation measures previously presented would fully eliminate the impacts by ensuring avoidance. If engineering concerns, topographic constraints, or other issues result in the unavoidable siting of a project component in a location where loss of special status plant species or wildlife habitat would occur, project impacts could be significant. If this occurs, Mitigation Measure **B-11** requires consultation with the CDFG and USFWS to determine additional protective or compensatory measures. If these additional measures were successful in eliminating or otherwise offsetting the identified impact, the residual impact would be less than significant; however, since there is no assurance of this, the conclusion of this SEIR is that the impact on special status plant and wildlife species will be significant (**Class I**).

Mitigation Measure for Impact 3-11, Impacts on Special Status Plant and Wildlife Species

B-11 If, after applying Mitigation Measures **B-2**, **B-4**, **B-6**, **B-8** and **B-9**, the CPUC-approved Project Biologist determines that all impacts on special status plant and wildlife species cannot be avoided, PG&E shall initiate FESA Section 7 Consultation with the U.S. Fish & Wildlife Service for Federally-listed species and/or CESA 2080 Consultation will be initiated with the California Department of Fish and Game for State-listed species. These consultations shall

determine requirements for obtaining a (FWS) Biological Opinion and/or (CDFG) Incidental Take Permit. PG&E shall obtain any such required Biological Opinion or Incidental Take Permit and, in that process, shall work cooperatively with the appropriate agency or agencies to develop appropriate mitigation measures to offset impacts to the affected species. PG&E shall thereafter implement all mitigation recommendations of the FWS and/or CDFG that result from these consultations.

Depending on the specific location of the transmission line within the corridor, the Proposed Project Segment 6 and Western Corridor Alternative Segment 6B could potentially traverse land identified as Habitat Mitigation Bank land under the City of Coalinga's Habitat Conservation Plan. The Habitat Mitigation Bank was created in response to the requirements of the Federal Endangered Species Act and the California Endangered Species Act. The following parcels could potentially be traversed by the project:

- Sec 8-Twp 20S-R16E, 160 acres in the southwest region of the parcel;
- Sec 16-Twp 20S-R16E, 320 acres in the western half of the parcel; and
- Sec 32-Twp 20S-R16E, 155 acres.

Section 16 would be traversed by the Proposed Project (Segment 6) and Sections 8 and 32 would be traversed by Western Corridor Alternative Segment 6B. Loss of this mitigation bank land would be a potentially significant impact (Class II). Implementation of Mitigation Measure B-11a would ensure that impacts would be less than significant.

B-11a PG&E shall provide land of equal or better habitat value to the City of Coalinga to compensate for any acreage lost within the City of Coalinga's Habitat Mitigation Bank.

C.3.3.5 Reconfiguration South of Gates Substation

If reconductoring of the Gates-Arco-Midway 230 kV line is required, PG&E has stated that it is unlikely that existing towers will need to be replaced or moved. In that case, impacts of reconductoring would be less than significant (Class III). However, if ground disturbance is required, potential impacts to biological resources could occur and Mitigation Measures B-1 through B-12 should be implemented, as applicable, to ensure that impacts are less than significant (Class II).

C.3.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR WESTERN CORRIDOR ALTERNATIVE SEGMENTS

The Western Corridor Alternative Segments would result in similar types of impacts to biological resources as the proposed transmission line corridor. However, Segments 2A and 4A would have greater potential for impact than the equivalent Proposed Project segments due to the greater extent of riparian vegetation near these alternatives.

Approximately 92 acres of grassland/scrub vegetation and 29 acres of agricultural land could at least be temporarily affected within the Western Corridor Alternative Segments – approximately 59 acres of grassland/scrub vegetation and 34 acres of agricultural land could be permanently replaced by tower

bases and access roads (see Table C.3-11). However, the actual amount of vegetation lost would likely be less, since it is assumed that new access roads would be required for the entire project corridor. Due to the disturbed nature of, and human modifications to, non-native annual grassland and agricultural areas, temporary and permanent impacts to these plant communities are considered **Class III** impacts that are adverse, but not significant. Consequently, no specific mitigation is proposed for impacts to non-native annual grassland or agricultural areas.

Approximately 5.5 acres of alkali, wetland, and riparian vegetation would be temporarily impacted from blading for construction access, while permanent loss of these vegetation types would be approximately 3.7 acres. Temporary loss of these plant communities will result from surface disturbance by construction vehicles, equipment and personnel. Although tower placement will generally avoid these plant communities, permanent impacts could result from access roads and possibly the work area around each tower. Due to the sensitivity of these plant communities, potential impacts to alkali, wetland, or riparian vegetation are considered **Class II** impacts that are potentially significant, but mitigable by avoidance, restoration, and off-site compensation as described by Mitigation Measures **B-1 through B-7**.

Construction impacts to special status plant species within the Western Corridor Alternative Segments would be the same as those described for the proposed transmission line corridor. Proposed Mitigation Measure **B-6** for impacts related to the proposed transmission line corridor would adequately reduce these impacts to less than significant levels (**Class II**).

The open terrain in Segments 2A, 4A, 6A, and 6B provides important foraging opportunities for raptors and potential nesting sites are located within the riparian communities along Los Banos Creek (MP 6.0) and, Ortigalita Creek (MP 14.0) in Segment 2A, and along Little Panoche Creek within Segment 4A. Habitat and/or breeding impacts to several special status species associated with these areas, including the golden eagle, northern harrier, tricolored blackbird, San Joaquin kit fox, blunt-nosed leopard lizard, and California tiger salamander, could occur if the Western Corridor Alternative Segments are implemented. However, proposed Mitigation Measure **B-9** should be implemented to reduce these impacts to less than significant levels (**Class II**).

C.3.5 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR THE EASTERN CORRIDOR ALTERNATIVE

The Eastern Corridor Alternative would be located along predominantly agricultural lands and would avoid nearly all sensitive biological resources of the Proposed Western Corridor. Eighty-five percent of both temporary and permanent impacts to plant communities would occur within agricultural land. There would be limited temporary or permanent impacts to natural alkaline, wetland, or riparian under this alternative, however, quantification of these losses is not possible due to limited information on this area. Placement of towers along the Eastern Corridor Alternative would eliminate impacts from erosion and reduce impact due to bird collisions and increased predation.

This alternative would eliminate impacts to most special status plant and animal species. The potential for impact remains for the blunt-nosed leopard lizard, giant kangaroo rat, and San Joaquin kit fox. Kit fox occur in agricultural land where uncultivated land is maintained, allowing for denning sites and a suitable prey base (Hanson, 1988). This is particularly true in areas within the Eastern Corridor Alternative where little natural habitat remains. Therefore, the Eastern Corridor Alternative represents potential habitat for the San Joaquin kit fox, blunt-nosed leopard lizard, and giant kangaroo rat and this alternative would result in same types and magnitude of impact as those described for the proposed transmission line corridor. Proposed Mitigation Measure **B-9** would adequately reduce these impacts to less than significant levels (**Class II**).

C.3.6 MITIGATION MONITORING PROGRAM

Mitigation for significant impacts to biological resources includes avoidance, minimization, restoration, compensation, and education. Specific mitigation for affected resources will be developed in consultation with the California Public Utilities Commission, Bureau of Land Management, the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and associated resource management agencies and individuals, utilizing the general mitigation guidelines adopted by those agencies. Table C.3-12 summarizes the mitigation monitoring program for the impacts discussed in Sections C.3.3 through C.3.4.

The following additional mitigation measure will ensure that biological resource monitoring conducted by PG&E will be conducted by individuals with specific qualifications relevant to the resources that will be monitored.

B-12 PG&E shall submit to the CPUC for review and approval the resumes and qualifications of a Project Biologist, who will represent PG&E in the field and be responsible for field decisions on biological issues. In addition, resumes of all other environmental field personnel proposed by PG&E for field enforcement of mitigation measures shall be provided to the CPUC for review and approval. Types of qualifications that will be considered for selecting qualified field personnel include:

- Emphasis of undergraduate/graduate degree(s)
- Related experience
- Special skills such as statistical analysis, experimental design, species identification, vegetation sampling, dependent upon the assignment.

Depending on the monitoring objective, individuals will have suitable experience in soil science, botany, ecology, restoration, wildlife observation, and wetland delineation. The objective will be to utilize monitors who can collect and analyze the data required to document mitigation success, problems, and, if necessary, suggest remedial action.

Table C.3-12 Mitigation Monitoring Program

Impact (Class)	Mitigation Measures	Location	Responsible Agency	Monitoring/ Reporting Action	Effectiveness Criteria	Timing
Proposed Project and Alternatives						
<p>3-1: Temporary and/or permanent loss of sensitive vegetation communities (Class II)</p>	<p>B-1 A jurisdictional delineation of wetlands within the proposed transmission line corridor shall be performed by PG&E and verified by the U.S. Army Corps of Engineers before specific avoidance measures can be developed. Similarly, a formal mapping and assessment of alkali and riparian habitat will be required to satisfy CDFG 1601 (Streambed Alteration Agreement) requirements, if project activities (i.e., construction roads) cross the beds or banks of jurisdictional streams. Surveys, mapping and assessment shall be performed at least 60 days before start of construction and results of these surveys (identification of wetlands, alkali, and riparian habitat) shall be utilized to define areas that are to be avoided in tower siting and location of access roads and other project components. The Project Biologist (defined in Mitigation Measure B-12) shall evaluate all proposed tower sites and identify those that are located within 200 feet of identified wetlands, alkali, and riparian habitat. A report summarizing habitat findings with respect to tower locations, along with copies of all maps and assessments shall be submitted to the CPUC for review and approval.</p> <p>B-2 Pre-construction surveys shall be performed for identification of all special status plant and animal species within 200 feet of project construction activities (including towers, access roads, and work areas). Special status species, as well as jurisdictional wetlands and riparian habitat (as determined from Mitigation Measures B-1 and B-6, and as identified during 1986 and 2001 field surveys), shall be flagged prior to the start of construction of any project components. The CPUC shall be notified prior to the start of flagging activities so a CPUC-designated biologist may observe these activities. Maps and reports identifying locations of special status plants and animals found in pre-construction surveys, as well as proposed exclusion-fence locations, shall be provided to the CPUC's approved biological monitor for review and approval prior to the start of construction. To the extent possible, construction activities within significant plant communities will be avoided by placing towers so as to span these areas, and maximizing the use of existing access roads, and minimizing the construction of new access roads, using temporary spur roads. Prior to confirming final transmission corridor design, the locations of all project components (towers, roads, temporary work areas, etc.) shall be defined on a map that also illustrates locations of wetlands, riparian habitat, and special status plants and wildlife, and this shall be provided to the CPUC for review and approval.</p> <p>B-3 Under conditions where impacts to wetlands, alkali, and riparian habitats cannot be avoided, PG&E shall either restore temporarily disturbed areas to pre-construction conditions following construction</p>	<p>All wetland, alkali, and riparian habitats in the proposed and alternate corridors</p>	<p>CDFG, CPUC</p>	<p>Biological monitor present; photodocumentation; report submitted for review and approval within 30 days of construction</p>	<p>Planting survival rate designated in restoration plan (percent cover, height, species composition)</p>	<p>Throughout project construction Restoration plan - 60 days prior to construction. Annual report to be submitted to CPUC during 5-year monitoring period</p>

Impact (Class)	Mitigation Measures	Location	Responsible Agency	Monitoring/ Reporting Action	Effectiveness Criteria	Timing
Proposed Project and Alternatives						
	<p>or provide off-site compensation for permanent vegetation losses.</p> <p>Where on-site restoration is planned for mitigation of temporary impacts, the Applicant shall develop a Habitat Restoration Plan, which will be submitted to the CPUC and the U.S. Army Corps of Engineers (for wetlands), the California Department of Fish & Game (CDFG) (for riparian habitat), and the Regional Water Quality Control Board (RWQCB) at least 60 days prior to the start of any construction for their review and approval. The plan shall contain information for natural community mitigation, including specifying the location of habitat type to be created, details on soil preparation, seed collection, planting, maintenance, and monitoring for on-site restoration efforts. Quantitative success criteria will also be presented. The mitigation objective for affected significant natural plant communities will be restoration to pre-construction conditions as measured by species cover, species composition, and species diversity. Success criteria will be established by comparison with reference sites approved by the appropriate agencies.</p> <p>Creation or restoration of habitat shall be monitored for five years after mitigation site construction to assess progress and identify problems. Remedial actions will be taken during the five-year period if necessary to ensure the success of the restoration effort.</p> <p>B-4 If the CPUC-approved project biologist (defined in Mitigation Measure B-12), in consultation with project engineers, determines that restoration of temporary impacts is not feasible or where permanent impacts (i.e., loss of habitat) to significant plant communities occur from access road or tower installation, off-site mitigation shall be negotiated at agency-approved mitigation banks or otherwise, to a level acceptable by the USFWS, CDFG, or USACE.</p> <p>B-5 A Worker Environmental Awareness Program (WEAP) shall be implemented for construction crews by a qualified biologist(s) provided by PG&E and approved by the CPUC prior to the commencement of construction activities. Training materials and briefings shall include but not be limited to, discussion of the Federal and State Endangered Species Acts, the consequences on noncompliance with these acts, identification and values of sensitive species and significant natural plant community habitats, fire protection measures, hazardous substance spill prevention and containment measures, and review of mitigation requirements. This training program shall also incorporate the provisions of Mitigation Measure H-3 (Hydrology and Water Resources). Training materials and a course outline shall be provided to the CPUC for review and approval at least 30 days prior to the start of construction. PG&E shall provide to the CPUC a list of construction personnel who have completed training, and this list shall be updated by PG&E as required when new personnel start work. No construction worker</p>					

Impact (Class)	Mitigation Measures	Location	Responsible Agency	Monitoring/ Reporting Action	Effectiveness Criteria	Timing
Proposed Project and Alternatives						
	may work in the field for more than 5 days without receiving the WEAP.					
<p>3-2: Temporary and/or permanent loss of special status plant species and their habitats (Class II)</p> <p>3-4: Disturbance of special status plant species and their habitats (Class II)</p>	<p>B-6a Prior to construction, comprehensive rare plant surveys shall be conducted (or compiled from previous surveys) for all plants that have been identified within the study area and those plants with the potential to occur in the study area (as defined in Tables C.3-3 and C.3-4). Surveys shall be conducted within appropriate areas along the selected construction ROW and in areas susceptible to surface disturbance by construction vehicles or personnel. Surveys of the selected alignment (if not covered in 2001 spring survey) shall be appropriately timed to cover the blooming periods of the nine special status plant species known to occur in the area (April, May, and July). Maps depicting the results of these surveys will be prepared and will include other recently mapped special status plant occurrences in the area to ensure that the full scope of rare plant habitat in the project corridor vicinity is delineated.</p> <p>Locations of these special status plant populations will be provided to construction personnel. Any special status plant occurrences located within 200 feet of the approved project construction corridor will be fenced prior to the start of any construction. Maps and reports, as well as proposed fence locations, shall be provided to the CPUC's approved biological monitor for review and approval prior to the start of construction. <u>An exception to the fencing requirement would be the gypsum-loving larkspur. Because of the widespread distribution of this plant throughout the project area, it would not be feasible to fence off all of these plant communities. Instead fencing would be placed in the most concentrated areas of gypsum-loving larkspur at the direction of the CPUC approved Biological Monitor.</u></p> <p>B-6b PG&E shall present to the CPUC within 30 days of project approval a report evaluating use of Tubular Steel Poles (TSPs) rather than lattice towers for the transmission line. The report shall evaluate the technical feasibility of using TSPs for this project, and shall present diagrams illustrating the poles, their footing requirements, and the approximate ground disturbance required. A comparison of all of these factors with the proposed lattice towers shall also be provided.</p>	All areas with potential habitat for sensitive plant species in the proposed and alternate corridors	CDFG, CPUC	Biological monitor present; photo-documentation; report submitted for review and approval to responsible agencies within 30 days of construction	No loss of special status plants	Throughout project construction
<p>3-3: Disturbance of plant communities (Class II)</p>	<p>B-2 (above)</p> <p>B-7 PG&E shall map and flag or fence overland travel routes and project access areas prior to construction or periodic maintenance during operation and shall ensure that vehicles or project personnel do not disturb identified areas. Areas flagged shall include wetland, alkaline areas, riparian, and reservoirs and ponds. The mapping/flagging shall be reviewed by a CPUC-approved</p>	All undeveloped portions of proposed and alternate corridors	CDFG, CPUC	Biological monitor present; report to be submitted to responsible agencies for review prior to construction	No activity outside of designated areas	Throughout project construction and periodic maintenance

Impact (Class)	Mitigation Measures	Location	Responsible Agency	Monitoring/ Reporting Action	Effectiveness Criteria	Timing
Proposed Project and Alternatives						
	biologist prior to use of these routes for construction to ensure adequate protection for sensitive plant communities.					
3-5: Erosion and sedimentation (Class II)	H-1 Erosion Control Plan (see Section C.6, Hydrology and Water Quality)	(see H-1)				
3-7: Wildlife mortality (Class II)	<p>B-8 In order to reduce direct mortality impacts during construction, PG&E shall impose the following conditions on all construction personnel, and these requirements shall be addressed in the WEAP (Mitigation Measure B-5, above):</p> <ul style="list-style-type: none"> Vehicles shall not exceed 10 mph on <u>the entire ROW or along designated portions of access roads where blunt-nosed leopard lizards are known to occur unpaved access roads or in the ROW. These locations will be determined during pre-construction surveys and these roads shall be identified on project maps and speed limits shall be identified on maps prior to the onset of construction. All other areas along dirt access roads outside the limits of known blunt-nosed leopard lizard habitat shall have a 15 mph speed limit, consistent with Air Quality Mitigation Measure A-1.</u> Litter or other debris that may attract animals shall be removed from the project area; organic waste shall be stored in enclosed receptacles, removed from the project site daily, and disposed of at a suitable waste facility No pets will be allowed in the construction area, including access roads and staging areas Construction crews will be educated regarding sensitive wildlife that could be encountered on highways and how to safely avoid them. Crew behavior shall be monitored by a qualified biologist approved by CPUC. 	All undeveloped portions of proposed and alternate corridors and adjacent roadways	CDFG, CPUC	Biological monitor present; report to be submitted to responsible agencies for review within 30 days of construction	No loss of special status wildlife	Throughout project construction
3-8: Wildlife disturbance from increased human presence (Class II)	<p>B-9 Pre-construction wildlife surveys (following appropriate survey protocol, as applicable) shall be performed by qualified biologists to locate raptor nests, owl/harrier burrows and other resources defined in Table C.3-10 in/or adjacent to the ROW and access road areas. Maps and reports, as well as proposed fence locations, shall be provided to the CPUC's approved biological monitor for review and approval prior to the start of construction.</p> <p>Based on survey results, construction and operation activities shall be scheduled to avoid critical seasons for sensitive wildlife species, as defined in Table C.3-11 below. Specific identified habitats (nests, riparian habitat, burrows, etc.) shall be avoided during specific seasons throughout the construction, operation, and maintenance of the approved project. Travel routes for</p>	All potential nest trees for raptors and burrowing owl burrows	CDFG, CPUC	Specific monitoring/ reporting determined by CDFG; documentation also provided to CPUC for review.	No loss of habitat components	Throughout project construction

Impact (Class)	Mitigation Measures	Location	Responsible Agency	Monitoring/ Reporting Action	Effectiveness Criteria	Timing
Proposed Project and Alternatives						
	<p>vehicles, equipment and personnel will be along existing roads. If such roads are not present, routes will be flagged or fenced and no activities would be permitted outside these areas. If nests, burrows or other habitat are observed, the avoidance period and buffer distances shown in Table C.3-11 will be implemented.</p> <p>Specific distances from resources (see Table C.3-11) shall be maintained during construction, operation and maintenance of the transmission line. Travel areas shall be flagged prior to construction (see Mitigation Measure B-2), and biological monitors as specified by CPUC will be present during construction to verify that no vehicular travel occurs outside flagged areas. <u>An exemption to a mitigative measure may be approved on a case-by-case basis when deemed appropriate by the designated Project Biologist, CDFG, or USFWS. An exemption would be approved only after a thorough, site-specific analysis determined that a particular species for which the measure was put in place is not present or would not be significantly impacted.</u> Biological monitors will also have the authority to terminate construction activities if any significant adverse effect on special status species is observed.</p>					
<p>3-10: Bird electrocution and tower/line collisions (Class II)</p>	<p>B-10 Prior to installation of conductors, PG&E shall either (a) perform a study to determine the potential for bird strikes in the areas identified below and then, depending on study results, (b) implement bird strike diverters as defined below. The study shall evaluate the actual bird strike incidents at existing transmission lines in the vicinity of the approved project route. If this study determines that bird strikes would not constitute a significant impact, compliance with the remainder of this measure would not be required; if PG&E does not complete this study or if study results confirm the potential benefits of bird flight diverters, the remainder of this measure shall be implemented. The protocol for this study (including the time period, survey intervals, and impact significance criteria) shall be approved by the CPUC, the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG).</p> <p>If PG&E does not perform the study defined above or if study results determine that flight diverters would likely be beneficial, PG&E shall install bird flight diverters in the areas defined below to reduce bird collision impacts along the proposed or alternative transmission line corridors:</p> <ul style="list-style-type: none"> • At the Los Banos Substations on any new equipment and transmission lines • On static lines in the vicinity of the Los Banos Reservoir, from MP 4 	<p>Select portions of proposed and alternate corridors</p>	<p>USFWS, CPUC, CDFG</p>	<p>Biological monitor present; photo-documentation; report to responsible agencies within 90 days of construction/periodic maintenance</p>	<p>Established mortality thresholds</p>	<p>Throughout project construction and periodic maintenance</p>

Impact (Class)	Mitigation Measures	Location	Responsible Agency	Monitoring/ Reporting Action	Effectiveness Criteria	Timing
Proposed Project and Alternatives						
	<p>to 8 in the Western Corridor or from MP 5 to 8 in the Eastern Corridor Alternative; and</p> <ul style="list-style-type: none"> On static lines in the vicinity of the Little Panoche Wildlife Area, between Segment 4 (MP 22 to 24) and Alternative Segment 4A (AMP 22 to 24) in the Western Corridor. <p>Prior to installation of conductors, PG&E shall submit its recommendation for the type(s) and spacing of bird flight diverters in the identified areas to the CPUC, the USFWS, and the CDFG for review and approval. Conductors shall not be installed until the CPUC, in conjunction with USFWS and CDFG, has approved an agreement between PG&E, USFWS, and CDFG regarding the type and spacing of bird flight diverters required; diverters shall be installed within 30 days of installation of conductors.</p> <p>Following installation of all bird flight diverters (line markers), PG&E shall begin a three-year monitoring program in the areas identified above to determine the extent of bird collisions in the project area. Existing unmarked transmission lines in similar high bird-use areas shall be monitored during the same period to allow comparisons for determining line marking effectiveness. The protocol for the study (including identification of unmarked lines to be monitored) shall be submitted to the resource agencies for review and approval prior to installation of conductors on new towers. As part of the design of this monitoring program, PG&E shall submit to the CPUC and the U.S. Fish and Wildlife Service information regarding types of bird collision detection systems, their potential for improving study results, and their cost and feasibility in this area. Based on this information, the CPUC will decide whether such a system will be required for the monitoring study. Annual reports providing bird strike data for the new marked lines and for the existing unmarked lines shall be provided to the CPUC, the USFWS, and the CDFG, and a summary report shall be submitted at the end of the three-year monitoring program. The annual reports shall include a discussion of the apparent effectiveness of the line marking techniques selected, and recommendations regarding modification of the type of line markers used if bird collisions are determined to be frequent. PG&E, after review and input by CPUC, USFWS, and CDFG, shall implement the findings of the annual reports by modifying line markers as needed to minimize collisions.</p>					
<p>3-11: Habitat removal or disturbance of special status wildlife species (Class I or II)</p>	<p>B-11 If, after applying Mitigation Measures B-2, B-4, B-6, B-8 and B-9, the CPUC-approved Project Biologist determines that all impacts on special status plant and wildlife species cannot be avoided, PG&E shall initiate FESA Section 7 Consultation with the U.S. Fish & Wildlife Service for Federally-listed species and/or CESA 2080 Consultation will be initiated with the California Department of Fish and Game for State-listed species. These consultations shall determine requirements for obtaining a (FWS) Biological Opinion</p>	<p>Various locations along proposed and alternate corridors</p>	<p>USFWS, CPUC, CDFG</p>	<p>Biological monitor present; photo-documentation; report to responsible agencies within 90 days of construction/period</p>	<p>No loss of special status wildlife or suitable habitat</p>	<p>Throughout project construction and periodic maintenance</p>

Impact (Class)	Mitigation Measures	Location	Responsible Agency	Monitoring/ Reporting Action	Effectiveness Criteria	Timing
Proposed Project and Alternatives						
	<p>and/or (CDFG) Incidental Take Permit. PG&E shall obtain any such required Biological Opinion or Incidental Take Permit and, in that process, shall work cooperatively with the appropriate agency or agencies to develop appropriate mitigation measures to offset impacts to the affected species. PG&E shall thereafter implement all mitigation recommendations of the FWS and/or CDFG that result from these consultations.</p> <p>B-11a <u>PG&E shall provide land of equal or better habitat value to the City of Coalinga to compensate for any acreage lost within the City of Coalinga's Habitat Mitigation Bank.</u></p>			dic maintenance		
All impacts	<p>B-12 PG&E shall submit to the CPUC for review and approval the resumes and qualifications of a Project Biologist, who will represent PG&E in the field and be responsible for field decisions on biological issues. In addition, resumes of all other environmental field personnel proposed by PG&E for field enforcement of mitigation measures shall be provided to the CPUC for review and approval. Types of qualifications that will be considered for selecting qualified field personnel include:</p> <ul style="list-style-type: none"> • Emphasis of undergraduate/graduate degree(s) • Related experience • Special skills such as statistical analysis, experimental design, species identification, vegetation sampling, dependent upon the assignment. <p>Depending on the monitoring objective, individuals will have suitable experience in soil science, botany, ecology, restoration, wildlife observation, and wetland delineation. The objective will be to utilize monitors who can collect and analyze the data required to document mitigation success, problems, and, if necessary, suggest remedial action.</p>	Entire project	CPUC with input from CDFG and USFWS	CPUC to review and approve resumes	Qualified environmental field personnel enforce measures thoroughly and correctly	30 days before start of construction

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