5.2 Biological Resources

This section describes biological resources near the Mariposa Energy Project (MEP) site, and the potential effects of the project on them. Section 5.2.1 discusses the affected environment, including a regional overview of biological resources, vegetation, sensitive plant communities, wetlands, wildlife, and special-status species. Section 5.2.1 also discusses methods and results of biological field surveys at the MEP site and along the project's linear features. Section 5.2.2 discusses the effects that construction and subsequent operation of new facilities may have on special-status plant and wildlife species and sensitive habitats and evaluates any potential cumulative effects on biological resources in the project vicinity. Section 5.2.3 evaluates any potential cumulative effects to biological resources in the project vicinity. Section 5.2.4 addresses proposed mitigation measures that would avoid, minimize, or compensate for adverse impacts. Section 5.2.5 presents applicable laws, ordinances, regulations, and standards (LORS). Section 5.2.6 presents agency contacts, and Section 5.2.7 presents permit requirements. Section 5.2.8 presents references consulted in the preparation of this section.

5.2.1 Affected Environment

The following sections describe the biological conditions of the proposed MEP area, beginning with a regional overview, the vegetation types and habitat present in the project area, a description of wildlife typical to the area, and a discussion of specific special-status species known to occur, or that could potentially occur, in the general region.

5.2.1.1 Regional Overview

MEP is located east of the Altamont Hills in northeastern Alameda County on 10 acres of a 158-acre parcel known as the Lee Property. Ten acres will be designated as the permanent facility site, and an additional 5 acres will be used as a temporary laydown and parking area during project construction. The project site is located at the northwest corner of Section 1, Township 2 South, Range 3 East (Assessor's Parcel Number 099B-7050-001-10). The site is approximately 125 feet above mean sea level and is found on the U.S. Geological Survey (USGS) Clifton Court Forebay, California 7.5-minute series topographic quadrangle. The property is located south of Kelso Road and east of Bruns Road; I-580 is located approximately 3.5 miles to the south and the closest segment of the Byron Highway is approximately 2 miles to the northeast. Figure 5.2-1 depicts the regional context of the MEP site.

The Central Valley Project (CVP) and California State Water Project (SWP) are in the project vicinity (Figures 5.2-1 and 5.2-2). The CVP and SWP are large-scale water and power conveyance projects consisting of aqueducts, forebays, and pumping and power stations. CVP's Delta-Mendota Canal, located less than 1 mile east of the site, travels more than 100 miles within California's Central Valley; the associated Clifton Court Forebay is located less than 2 miles north of the Lee Property. The SWP manages and operates the California Aqueduct, located less than 1 mile west of the project site. This aqueduct is more than 400 miles long and typically concrete-lined; it originates in the Delta, which supports numerous fish that are important to sport fishermen and considered special-status by the resource agencies. The Bethany Reservoir, located less than 1 mile southwest of the Lee

Property, functions as a forebay for the CVP conveyance system, and represents the northern terminus of the California Aqueduct. Bethany Reservoir is designated as a State Recreation Area and is a popular location for fishing and windsurfing.

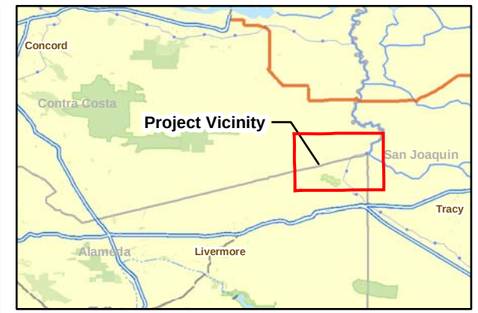
Other infrastructure in the area includes Pacific Gas and Electric Company's (PG&E's) Bethany Compressor Station and Kelso Electrical Substation located across Bruns Road from the project site, the Western Area Power Administration Tracy Substation with significant transmission line infrastructure located due east. Finally, a significant wind resource area is located in the Altamont Pass with numerous wind turbine generators.

Of particular biological interest in the project vicinity is the Byron Conservation Bank (Figure 5.2-1). Conservation Banks are permanently protected lands that are managed for endangered, threatened, or at-risk species. The bank owner has habitat or species credits to sell to development projects. The 140-acre property is owned by the California Department of Fish and Game (CDFG) and managed by the Alameda County Resource Conservation District. The bank is approximately 0.5 miles from the MEP site and formerly sold (i.e., sold out) mitigation credits for California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), western pond turtle (*Clemmys mamoratta*), San Joaquin kit fox (*Vulpes macrotis mutica*), and western burrowing owl (*Athene cunicularia*). It is preserved in perpetuity under a conservation easement as habitat for these species.

Northeast of the proposed MEP site is the 6.5-megawatt (MW) Byron Power Cogen Plant owned and operated by the Altamont Cogen Corporation. This facility is accessed by an existing gravel road from Bruns Road and occupies approximately 2 acres within the Lee Property. A portion of the graveled access road will be improved and used during construction and operation of MEP. The existing cogeneration plant will not be decommissioned or otherwise modified as part of MEP. A buried PG&E natural gas pipeline and remnants of a former wind farm, including concrete foundations, wood poles, and dismantled wind turbine housings, also exist on the property.

As part of MEP, a new 580-foot-long, 4-inch-diameter underground pipeline will be constructed to deliver natural gas to MEP from PG&E's existing Line 2. Equipment and supplies related to gas pipeline work will be stored at the MEP laydown area. A new 0.7-mile, 230-kilovolt (kV) electrical transmission line will interconnect with PG&E's existing 230-kV Kelso Substation. Equipment and supplies related to transmission line work will be stored in a temporary laydown area located immediately adjacent to PG&E's gas compressor station and along the work corridor as determined feasible. A new 6-inch-diameter, 1.8-mile water supply pipeline will convey service water from Byron Bethany Irrigation District's (BBID's) Canal 45 to the new power plant. The pipeline will be buried in BBID's agricultural field and within or adjacent to Bruns Road and the Lee Property access road. The water supply line will include a new pump house and intake structure at Canal 45. Equipment and supplies related to water line work will be stored in a previously disturbed area owned by BBID. Figure 5.2-2 shows all elements of MEP.

VICINITY MAP



LEGEND

- ACCESS ROAD
- NATURAL GAS PIPELINE ROUTE
- TRANSMISSION LINE ROUTE
- WATER SUPPLY PIPELINE ROUTE
- PROJECT SITE
- COUNTY BOUNDARIES
- BYRON CONSERVATION BANK

PROPOSED CRITICAL HABITAT

- CALIFORNIA RED-LEGGED FROG[1]

Notes:

1. Source: U.S. Fish and Wildlife Service Federal Register / Vol. 73, No. 180, September 16, 2008

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

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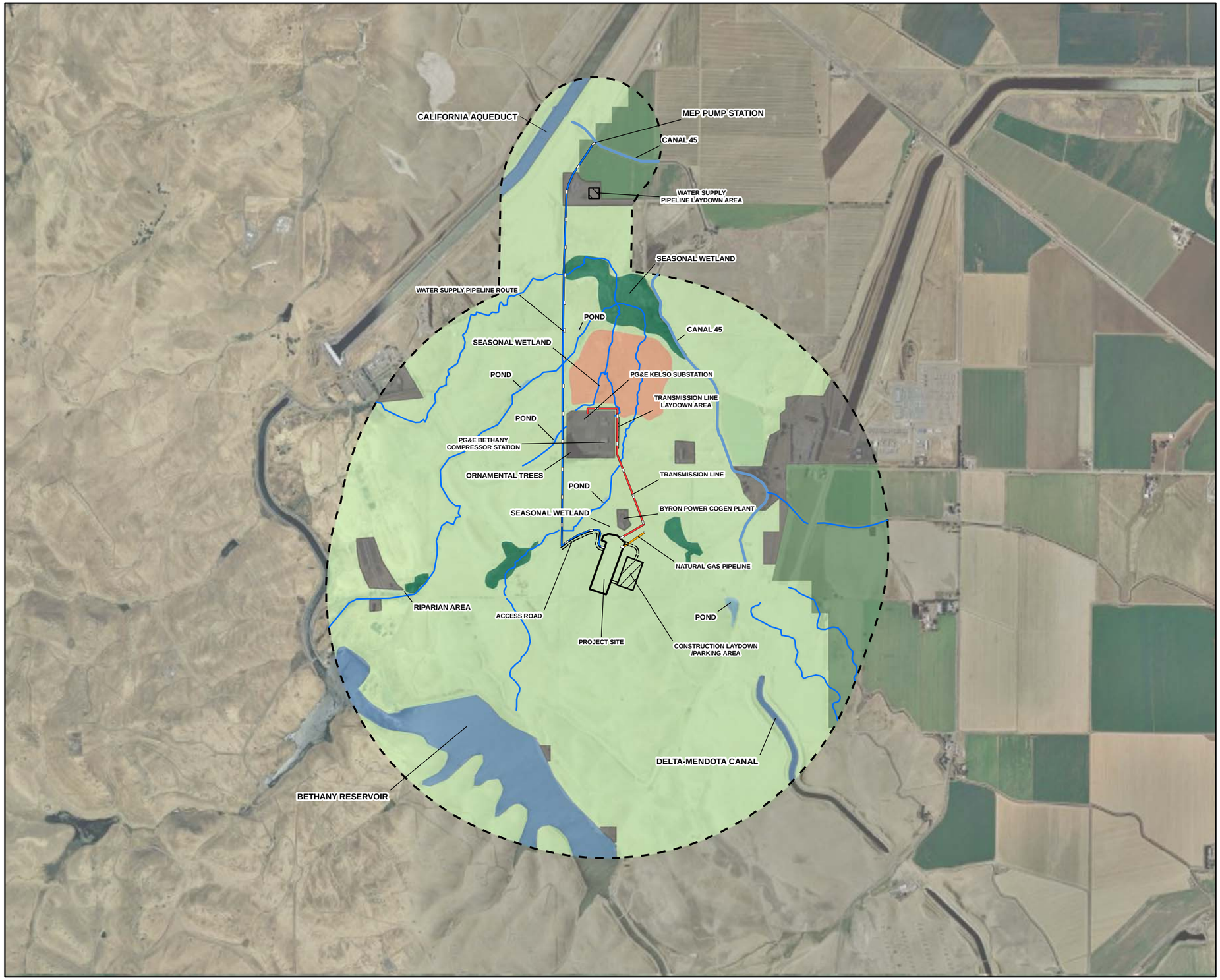
Feet

FIGURE 5.2-1
REGIONAL BIOLOGICAL RESOURCES
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA



LEGEND

- ACCESS ROAD
- NATURAL GAS PIPELINE ROUTE
- TRANSMISSION LINE ROUTE
- WATER SUPPLY PIPELINE ROUTE
- CONSTRUCTION LAYDOWN/PARKING AREA
- TRANSMISSION LINE LAYDOWN AREA
- WATER SUPPLY PIPELINE LAYDOWN AREA
- PROJECT SITE
- BUFFER

HABITAT COMMUNITIES

- AGRICULTURAL
- ALKALINE MEADOW
- GRASSLAND
- INDUSTRIAL, LANDSCAPE, URBAN

POTENTIAL WATERS OF THE U.S.

- CANALS AND AQUEDUCTS
- POND
- WETLANDS

Note:
1. 1 Mile Buffer around Project Site, 1/4 Mile Buffer around waterline.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

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Feet

FIGURE 5.2-2
BIOLOGICAL RESOURCES IN THE PROJECT AREA
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA

5.2.1.2 Habitat and Vegetation Communities

The MEP site is located just above the Central Valley floor in a region of low-lying foothills to the Altamont Hills. Figure 5.2-2 shows the vegetation communities within a 1-mile radius of the MEP site and temporary laydown area, and from 1,000 feet of either side of each linear project. Non-native annual grassland characterizes the MEP site and laydown area, gas pipeline corridor, and transmission line corridor. Currently, the Lee Property is actively managed for cattle grazing. At the MEP site, California ground squirrel (*Spermophilus beecheyi*) burrows are abundant on the adjacent hillslopes. Small mammal burrows such as these provide potential refuge sites for California red-legged frog and California tiger salamander, or potential breeding habitat for western burrowing owl, San Joaquin kit fox, and American badger (*Taxidea taxus*).

Cattle stock ponds and seasonal wetlands exist in the vicinity of MEP (Figure 5.2-2). These areas may provide breeding opportunities for the special-status aquatic species known to occur in the project area, including California red-legged frog, California tiger salamander, vernal pool branchiopods, and western pond turtle (*Actinemys marmorata*). The MEP site is treeless; however, riparian habitat and landscaping trees found on adjacent properties within 1 mile may provide nesting opportunities for avian species, including Swainson's hawk (*Buteo swainsonii*).

Intermittent and ephemeral drainages occur in the project area. An unnamed ephemeral drainage located northwest of the MEP site is shown as a blue line on a USGS topographic map, indicating a waterway. On the Lee Property, it supports a defined bed and bank and drains to a cattle stock pond; the creek continues to the north offsite (Figure 5.2-2). Two unnamed intermittent streams intersect the project's water supply pipeline route. The first stream crosses under Bruns Road through a concrete box culvert. Immediately upstream of the crossing (west) is the Byron Conservation Bank. Apparently (shown on satellite imagery) a stream restoration effort occurred on the bank's property at one time. The emergent wetlands resulting from the stream restoration efforts provides habitat for special-status species known to occur on the mitigation bank's property. No elements of MEP will impact the Byron Conservation Bank.

Another intermittent stream located near the Contra Costa County line crosses under Bruns Road through a corrugated pipe culvert. The stream channel to the east (downstream) of the crossing broadens and supports an expanse of emergent and seasonal wetlands. Approximately 0.5 miles upstream of the road crossing is the Byron Conservation Bank. A similar stream restoration effort as previously described is evident here.

Land developments in the MEP area are common and include agriculture to the north and east, and scattered industry and residences throughout the area. The larger developments are associated with the CVP and SWP, including the Harvey O. Banks Pumping Plant and Tracy Pumping Plant. West of the Bethany Reservoir is the Altamont Pass Wind Farm development. Finally, cattle industry, including various stockyards and general rangeland grazing, is also present. In summary, habitat types potentially affected in the project area comprise annual grassland, wetlands and irrigation canals, agricultural, and urban (roadways).

Table 5.2-1 provides a summary of vegetation communities impacted by the project. A detailed description of all habitats in the project area and vicinity is provided below.

TABLE 5.2-1
Summary of Vegetation Communities Impacted by MEP

Habitat Type		Approximate Area of Impact
Non-Native Annual Grassland	Temporary:	15.8 acres
	Permanent:	10.5 acres
Wetlands (seasonal and perennial)	Temporary:	0.06 acres
	Permanent:	0.01 acres
Agricultural (irrigated alfalfa)	Temporary:	0.69 acres
	Permanent:	0.0015 acres
Urban (roadways)	Temporary:	5.2 acres
	Permanent:	0 acres

These estimates correlate to a preliminary project design and assume the maximum area of effect. The actual area of impact will likely be much less once design plans are finalized and the exact locations of sensitive habitats to be avoided are verified by the regulating agencies.

5.2.1.2.1 Annual Grassland

The project area is dominated by annual grassland, from a relatively high level of disturbance within the Bruns Road right of way, to low to moderate levels within the MEP site and along the project's linear features. Currently, cattle grazing is the dominant land use within the annual grasslands of the project area. Annual grasslands are still relatively widespread and common throughout the Central Valley foothills; they are characterized by introduced Mediterranean grasses such as brome (*Bromus diandrus, B. hordeaceous),* wild oat (*Avena fatua),* and barley (*Hordeum murinum*). Dominant forbs also tend to be introduced species such as storksbill (*Erodium cicutarium*), wild radish (*Raphanus sativa*), and mustard (*Brassica nigra*). Other species identified during the December 2008 reconnaissance survey include Italian thistle (*Carduus pycnocephalus*), yellow star-thistle (*Centaurea solstitialis*), Great valley gumweed (*Grindelia camporum*), black mustard (*Brassica nigra*), filarees (*Erodium botrys, E. cicutarium*), horehound (*Marrubium vulgare*), soft chess (*Bromus hordeaceus*), and foxtail barley (*Hordeum murinum* ssp. *leporinum*).

5.2.1.2.2 Waters of the United States (Including Wetlands)

Ephemeral and intermittent drainages, and seasonal wetlands and perennial marshes will be affected during project construction. A formal wetland delineation was conducted in April 2009 using the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and Arid West Regional Supplement to identify all potentially jurisdictional wetlands and other waters. The survey area includes the MEP site and adjacent temporary laydown area, and the project linears including their respective temporary laydown areas. The wetland delineation also identified any isolated wetlands subject to regulation under Section 401 of the Clean Water Act. The results of the jurisdictional delineation will be summarized in a subsequent wetland delineation report. Based on a preliminary review of

the project area, wetlands and other waters potentially affected by the project have a hydrological nexus with navigable waterways regulated by the USACE.

A summary of potential onsite waters of the United States (including wetlands) based on reconnaissance-level surveys follows.

The water supply pipeline intersects four intermittent and ephemeral drainages along Bruns Road. These aquatic features are shown on a topographic map as blue lines and support a defined bed and bank (Figures 5.2-1 and 5.2-2). The CDFG typically regulates drainages with bed and bank. Although riparian vegetation is lacking in the project area, emergent wetland vegetation, including cattail (*Typha* sp.) and sedge (*Carex* sp.), exists along the intermittent drainages. Italian ryegrass (*Lolium multiflorum*) and meadow barley (*Hordeum brachyantherum*) dominate the ephemeral drainages. These drainages provide suitable habitat for California red-legged frog and California tiger salamander. Construction of the new water supply pipeline may have a temporary effect on wetlands at these drainage crossings during construction (See Sections 5.2.2.4.1).

The new pump station will be sited on the south side of Canal 45 immediately adjacent to an existing BBID pump house and agricultural field (Figure 5.2-2). The canal at this location is heavily disturbed. Concrete and asphalt rip-rap and routine maintenance preclude wetland conditions. The south bank of the canal will be affected during installation of the project's pump house intake structure. Work activities include excavation for and installation of concrete forms and pouring concrete inside the canal. Irrigation canals such as Canal 45, excavated entirely within uplands, typically do not qualify as a USACE-regulated waterbody. Similarly, CDFG does not regulate Canal 45 because it is not a naturally occurring drainage.

Adjacent to the main access road serving the cogeneration plant site is a small seasonal wetland (Figure 5.2-2). The preliminary results of the wetland delineation indicate the presence of wetland conditions at this location and a hydrological connection with a nearby ephemeral drainage. The wetland occurs as a result of seasonal inundation on either side of an existing obstructed corrugated pipe culvert. Wetland vegetation including popcorn flower (*Plagiobothrys* sp.) grows here. During a February 12, 2009 site visit, an unidentified freshwater crustacean (*Branchinecta* sp.) was observed in this small pool. Additional details on this field observation and a description of the potential indirect effects on branchiopod habitat are provided in Section 5.2.1.4.2.

Other wetland areas occur in the project area vicinity. A seasonal alkali wetland exists east of the proposed gas pipeline route (Figure 5.2-2). The northern portion of this wetland supports playa pool conditions: it is largely unvegetated, has salt encrustations, and is fringed by halophytes including salt grass (*Distichlis spicata*). The wetland is hydrologically connected to an offsite ephemeral drainage and cattle stock pond. Similar playa conditions exist in an alkali meadow (Figure 5.2-2) (described below) found just north of PG&E's Kelso Substation. All alkali wetland areas were recognized early in the design process as potentially sensitive habitat, and Mariposa Energy has specifically designed the transmission line and gas pipeline to avoid an effect on them.

5.2.1.2.3 Alkaline Meadow

Alkaline meadow as described by Holland (1986) occurs sporadically in the Central Valley where shallow water tables, hardpan clay soils, or saline waters intrude on surface growth. It looks superficially like annual grassland, but has more sparse vegetation, often showing

barren earth or small amounts of salt encrustation. A large area of alkaline meadow habitat occurs northeast of the intersection of Bruns and Kelso roads, adjacent to the proposed water supply pipeline to the east and just north of the electrical transmission line (Figure 5.2-2). These meadows are often habitat for a community of uniquely adapted plant species that are native and potentially rare. Recurved larkspur (*Delphinium recurvatum*), a California Native Plant Society (CNPS) 1B species, is known to occur in this meadow (California Natural Diversity Data Base [CNDDB], 2009). The low-growing and sparse plant cover is also attractive to some wildlife such as burrowing owls. This area was recognized early in the design process as potentially sensitive habitat, and Mariposa Energy has specifically designed the transmission line features to avoid a direct effect on alkali meadow habitat.

5.2.1.2.4 Agricultural

Agricultural uses predominant near the north end of the proposed water supply pipeline. In the region, agriculture comprises a mixture of irrigated crops including oat, hay, alfalfa, and tomatoes (depending on the season). Typically, the edge zones of croplands support weeds and ruderal grassland species. BBID owns the agricultural area where the project's water supply pipeline will be installed. This field has been in agricultural production for a number of years and is currently irrigated and planted with alfalfa. BBID also owns and operates a network of irrigation canals and agricultural developments found in the project vicinity. As mentioned earlier, large-scale agricultural infrastructure associated with the CVP and SWP exists nearby.

There are other agricultural uses in the project vicinity. On the parcel to the west of the Lee Property is a 10-acre cattle ranching development that includes a ranch house and stock yard. Just east of the PG&E's Kelso Substation is another cattle operation. In general, the grasslands occupied by these cattle developments are heavily grazed, including a portion of the proposed MEP transmission line route.

5.2.1.2.5 Industrial, Landscape, and Urban

The 6.5-MW Byron Power Cogen Plant is located on the Lee Property immediately adjacent to the proposed MEP site. The plant site is underlain with approximately 1 acre of asphalt and gravel and served by the existing graveled access road from Bruns Road. No landscaping exists on or adjacent to the property. As previously noted, non-native annual grassland characterizes the surrounding landscape.

At the northeast corner of Kelso Road and Bruns Road are PG&E's Bethany Gas Compressor Station and 230-kV Kelso Substation (Figure 5.2-2). Both facilities occupy one site totaling approximately 17 acres of hardscape. Landscaping comprised of ornamental pine (*Pinus* sp.) and patches of coyote brush (*Baccharis pilularis*) border the property along Kelso Road and Bruns Road. Numerous existing transmission lines crisscross the landscape in the project area and vicinity. Wood pole lines occur on the Lee Property and are associated with the 6.5-MW Byron Power Cogen Plant. Taller lattice towers along Bruns Road within the Lee Property and in other areas of the project vicinity and are associated with PG&E's nearby substation.

5.2.1.3 Wildlife Use in the Project Area

Non-native annual grassland characterizes the MEP area. These grasslands can support a variety of small mammals and provide foraging or nesting habitat for raptors and other

birds. Birds commonly found foraging in annual grasslands include red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and turkey vulture (*Cathartes aura*). Common seed eaters, including California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), and western meadowlark (*Sturnella neglecta*) will nest on the ground in grasslands. Other common species, such as western scrub-jay (*Aphelocoma californica*), barn swallow (*Hirundo rustica*), and northern mockingbird (*Mimus polyglottos*), will disperse through and forage within grassland habitats.

Common mammals of annual grasslands include California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), western harvest mouse (*Reithrodontomys megalotis*), and black-tailed jackrabbit (*Lepus californicus*). These small mammals utilize open grassland for both foraging and breeding. Larger mammals such as California mule deer (*Odocoileus hemionus*) will browse on grassland plants and rest here at night. Burrows of California ground squirrels can also provide important refuge sites for other species, including some of the special-status species found in the project area. Grassland wildflowers provide important nectar sources for butterflies, bees, and other insects.

Table 5.2-2 lists the wildlife species observed during reconnaissance surveys of the project area.

TABLE 5.2-2
Wildlife Species Observed during MEP Biological Surveys (December 31, 2008; February 19, 2009; February 23, 2009; April 7, 2009; and April 8, 2009)

Common Name	Scientific Name	Location and Activity Observed
Insects		
None		
Birds		
Mallard	*Anas playtryhynchos*	Water supply pipeline, foraging
Unidentified gull	*Larus* sp.	Power plant site, migrating through
Black-necked stilt	*Himantopus mexicanus*	Water supply pipeline, foraging
Long-billed curlew	*Numenius americanus*	Power plant site, migrating through
Red-tailed hawk	*Buteo jamaincensis*	Power plant site, foraging
Golden eagle	*Aquila chrysaetos*	Offsite near power plant site, foraging
Turkey vulture	*Cathartes aura*	Power plant site, foraging
American kestrel	*Falco sparverius*	Water supply pipeline, foraging
Northern harrier	*Buteo regilla*	Water supply pipeline, foraging
Western burrowing owl	*Athene cunicularia*	MEP temporary laydown area, roosting
Mourning dove	*Zenaida macroura*	Power plant site, migrating through
Rock dove	*Columba livia*	Power plant site, all linears, migrating through
American pipit	*Anthus rubescens*	Power plant site, foraging
American crow	*Corvus brachyrhynchos*	Water supply pipeline, foraging
Marsh wren	*Cistothorus palustris*	Water supply pipeline, foraging
Northern mockingbird	*Mimus polyglottos*	Vicinity of power plant site, foraging
Loggerhead shrike	*Lanius ludovicianus*	Water supply pipeline, foraging

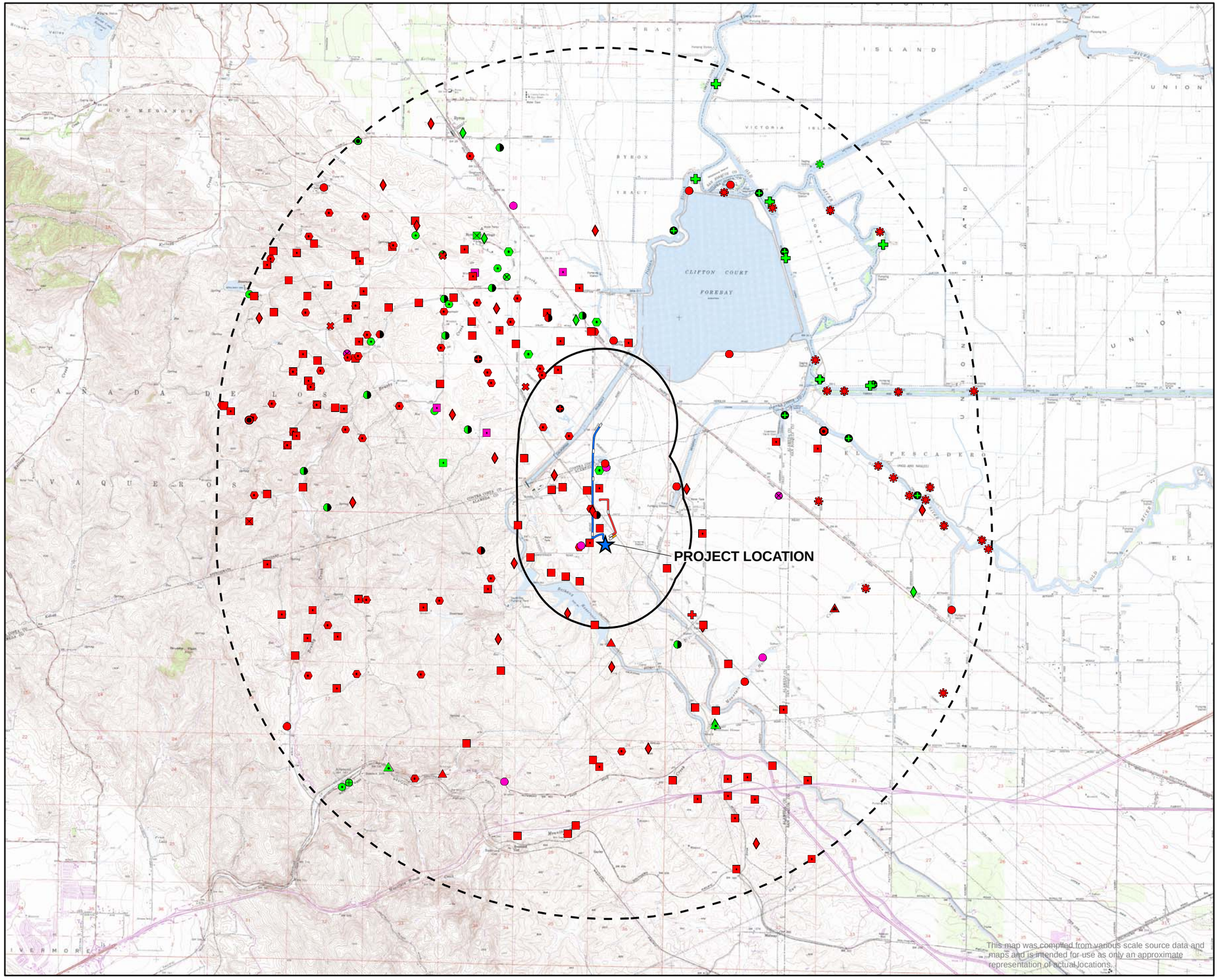
TABLE 5.2-2
Wildlife Species Observed during MEP Biological Surveys (December 31, 2008; February 19, 2009; February 23, 2009; April 7, 2009; and April 8, 2009)

Common Name	Scientific Name	Location and Activity Observed
Yellow-rumped warbler	*Dendroica coronata*	Water supply pipeline, foraging
European starling	*Sturnus vulgaris*	All project areas, migrating through
Red-winged blackbird	*Agelaius phoeniceus*	Water supply pipeline, potential nesting
Western meadowlark	*Sturnella neglecta*	Power plant site, foraging
White-crowned sparrow	*Zonotrichia leucophrys*	Power plant site, foraging
Lark sparrow	*Chondestes grammacus*	Power plant site, foraging
Crustaceans		
Fairy shrimp	*Branchinecta* sp.	Power plant site (near main access road)
Reptiles and Amphibians		
Western fence lizard	*Sceloporus occidentalis*	Transmission line route, basking
Pacific tree frog	*Hyla regilla*	Water supply pipeline route, resting
California toad	*Bufo boreas halophilus*	Transmission line route, resting
Mammals		
California ground squirrel	*Spermophilus beecheyi*	Power plant site, foraging and denning
Black-tailed jackrabbit	*Lepus californicus*	Power plant site, foraging
House cat (tracks)	*Felix catus*	Gas pipeline route
Coyote (scat)	*Canis latrans*	Power plant site

5.2.1.4 Special-status Species

A list of federal and state special-status plant and wildlife species was compiled for the project area using the following sources: the CNDDB(2009); CNPS's Electronic Inventory (CNPS, 2009); a U.S. Fish and Wildlife Service (USFWS) species list (USFWS, 2009); East Contra Costa Habitat Conservation Plan (ECCHCP) (Contra Costa County, 2006); East Alameda County Conservation Strategy (EACCS) (Alameda County, 2008); and a field reconnaissance survey conducted December 31, 2008. Additional site reconnaissance surveys conducted by the CH2M HILL biologist occurred on February 19 and February 23, 2009. Early spring rare plant surveys for the project occurred on April 7 and April 8, 2009. More information regarding the rare plant surveys is provided separately later in this section.

The reference information is based on known occurrences, historical records, or the presence of suitable habitat for any given life stage of a particular species. The known locations of special-status species identified in the CNDDB records for the associated Clifton Court Forebay, Brentwood, Woodward Island, Holt, Union Island, Tracy, Midway, Altamont, and Byron Hot Springs 7.5-minute USGS quadrangles are shown on Figure 5.2-3. This mapping is further refined for record occurrences within 1 mile of the MEP site, as shown on Figure 5.2-4.



LEGEND

PROJECT LOCATION

CNDDB DATA MARCH 2009

PLANTS

- brittlescale
- diamond-petaled California poppy
- round-leaved filaree
- recurved larkspur
- caper-fruited tropidocarpum
- Delta mudwort
- woolly rose-mallow
- San Joaquin spearscale
- bent-flowered fiddleneck
- alkali milk-vetch
- Mason's lilaeopsis
- big tarplant
- chaparral ragwort

ANIMALS

- western pond turtle
- tricolored blackbird
- burrowing owl
- California red-legged frog
- San Joaquin kit fox
- Swainson's hawk
- white-tailed kite
- American badger
- midvalley fairy shrimp
- longhorn fairy shrimp
- California tiger salamander
- golden eagle
- loggerhead shrike
- vernal pool fairy shrimp
- northern harrier

TERRESTRIAL COMMUNITIES

- Valley Sink Scrub
- Alkali Meadow
- Northern Claypan Vernal Pool

NATURAL GAS PIPELINE ROUTE
TRANSMISSION LINE ROUTE
WATER SUPPLY PIPELINE ROUTE
ONE MILE BUFFER
FIVE MILE BUFFER

Note:
1. Source - California Dept. of Fish and Game, Californa Natural Diversity Database (CNDDB) March, 2009.

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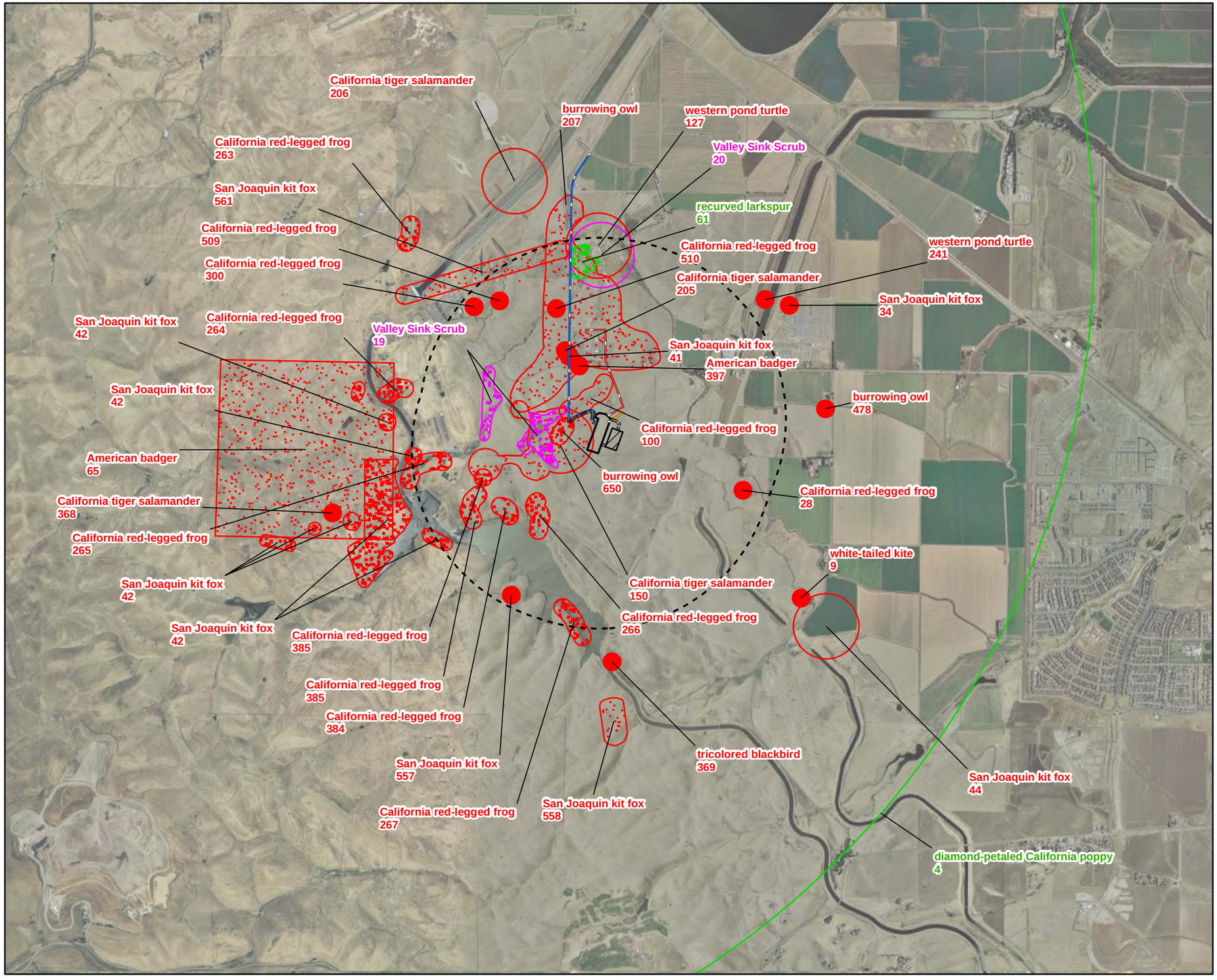
0 3,500 7,000
Feet

FIGURE 5.2-3
SPECIAL STATUS SPECIES RECORDED WITHIN FIVE MILES
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA



LEGEND

- ACCESS ROAD
- NATURAL GAS PIPELINE ROUTE
- TRANSMISSION LINE ROUTE
- WATER SUPPLY PIPELINE ROUTE
- CONSTRUCTION LAYDOWN/PARKING AREA
- PROJECT SITE
- ONE MILE BUFFER

CNDDB RECORDS

- PLANT (80M)
- PLANT (SPECIFIC)
- PLANT (NON-SPECIFIC)
- PLANT (CIRCULAR)
- ANIMAL (80M)
- ANIMAL (SPECIFIC)
- ANIMAL (NON-SPECIFIC)
- ANIMAL (CIRCULAR)
- TERR. COMM. (80M)
- TERR. COMM. (SPECIFIC)
- TERR. COMM. (NON-SPECIFIC)
- TERR. COMM. (CIRCULAR)

Note:
1. Source - California Dept. of Fish and Game, Califorina Natural Diversity Database (CNDDB) March, 2009.
2. The number next to each occurrence name corresponds to the CNDDB online datasheet.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 1,500 3,000
Feet

FIGURE 5.2-4
SPECIAL-STATUS SPECIES RECORDED IN THE PROJECT AREA
MARIPOSA ENERGY PROJECT
ALAMEDA COUNTY, CALIFORNIA

The special-status species reference search results are provided in Table 5.2-3 (because of its size, Table 5.2-3 is provided at the end of this section). The list includes species listed as threatened or endangered that have special requirements under the federal Endangered Species Act (ESA) and California Endangered Species Act (CESA) and other unlisted special-status species that could become listed in the future. The list also includes covered species from the ECCHCP and EACCS (see Sections 5.2.2.5 and 5.2.4.3.2 for additional information on these plans). The table includes the habitat types that could support these species as well as the potential for occurrence in the project area. Any special-status species whose habitat(s) or known distribution are within the project area were evaluated for potential impacts from MEP construction and operation. Other special-status species that were included on the USFWS, CDFG, and CNPS lists, and those listed as Covered Species, whose habitats or known distribution do not occur within the project area were still included in Table 5.2-3, but not evaluated further.

There is no USFWS-designated critical habitat for listed species in the project area. However, the MEP site and linears fall inside the newly proposed critical habitat unit CCS-2 (Mount Diablo) for California red-legged frog. The revision in critical habitat for this species was published in the Federal Register on September 16, 2008. The USFWS proposed the revision to the critical habitat boundary to better reflect the lands that contain the essential features of the species (http://edocket.access.gpo.gov/2008/pdf/E8-20473.pdf).

The MEP site and linears fall inside the South and East San Francisco Bay California red-legged frog recovery unit and therein, the East San Francisco Bay Core Area. The objective of the recovery plan is to ultimately de-list the California red-legged frog. In general for this recovery unit, red-legged frog populations are widespread and numerous, and habitat suitability is high. Nevertheless, during consultation with Mariposa Energy, the USFWS will require demonstration that any adverse effects of MEP on the species do not threaten existing populations, and suitable habitat is either created or restored, and/or protected and managed in perpetuity.

5.2.1.4.1 Special-status Plants

Information acquired from the CNDDB (species listed as endangered, threatened, or California Species of Special Concern species), CNPS (Lists 1 and 2), and USFWS species list resulted in 34 special-status plant species that either are known to occur, or could potentially occur, within the nine quad search area (Clifton Court Forebay, Brentwood, Woodward Island, Holt, Union Island, Tracy, Midway, Altamont, and Byron Hot Springs 7.5-minute USGS quadrangles) (Table 5.2-3. This list also indicates plants designated as Covered Species in the ECCHCP and EACCS. These conservation plans have covered these species due to their rarity, state or federal status, and significance to their overall land management goals.

The MEP site is located entirely within non-native annual grassland (see Section 5.2.1.2); therefore, 10 special-status species suitable for other habitats were considered to have no potential of occurrence here. The Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*) and chaparral ragwort (*Senecio aphanactis*) are species associated with chaparral habitats. Another seven special-status species considered unlikely for occurrence are endemic to freshwater marsh habitats of the Delta: brown fox sedge (*Carex vulpinoidea*), wooly rose-mallow (*Hibiscus lasiocarpus*), Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), Delta mugwort (*Limosella subulata*) and Suisun marsh

aster (*Symphyotrichum lentum*). Finally, the Delta button-celery (*Eryngium racemosum*) is a riparian scrub species and, therefore, is not considered potentially present at the MEP site.

The remaining 24 special-status plant species in Table 5.2-3 have a low to moderate potential for occurrence on the MEP site, within the temporary laydown areas, and along the linear features because of their association with annual grassland habitat. Previously, this section described the Lee Property as disturbed by cattle grazing, a cogeneration facility, and activities associated with a former wind farm. To a greater degree, the Bruns Road right of way is disturbed, which may include periodic mowing or herbicidal weed control by the county. Although these types of disturbances may diminish the likelihood of special-status plants occurrence, they do not necessarily preclude rare plants. Research has shown that native grassland plants actually benefit from an appropriate level of rangeland disturbance such as grazing: the exotic grasses are grazed, allowing native herbaceous species – with generally diminished grazing value – to flourish.

No special-status plant species were observed during the initial reconnaissance-level surveys. However, these initial surveys occurred before the optimal blooming period for the grassland species listed in Table 5.2-3. A list of plant species compiled during reconnaissance surveys of the project area is provided in Table 5.2-4. The project will minimize or avoid adverse effects on habitat determined to potentially support special-status plants by performing protocol-level botanical surveys of all proposed project impact areas. These surveys using the established protocols will occur during the appropriate blooming periods for the targeted grassland species. Early spring rare plant surveys occurred on April 7 and April 8, 2009 for all proposed MEP impact areas. Two additional surveys will occur during late spring and summer 2009 for the mid- to late season flowering plants, respectively. The results of all three survey events will be summarized in a rare plant report.

TABLE 5.2-4
Plant Species Observed around the MEP Site during the December 31, 2008 Reconnaissance Survey

Scientific Name	Common Name	Location
Anacardiaceae		
Schinus molle	Peruvian pepper	In vicinity of the water supply pipeline and electrical transmission line
Asteraceae		
Baccharis pilularis	Coyote brush	In vicinity of the water supply pipeline
Carduus pycnocephalus	Italian thistle	Grassland – scattered locations throughout the Lee Property
Centaurea solstitialis	Yellow star-thistle	Grassland – scattered locations throughout the Lee Property
Grindelia camporum	Great valley gumweed	Grassland – scattered throughout; abundant in the northern part throughout the Lee Property
Boraginaceae		
Heliotropium curassavicum	Salt heliotrope	Few scattered plants around the margin of the cattle stock pond and ephemeral “blue line” creek on the Lee Property
Plagiobothrys sp.	Popcornflower	Seedlings noted in a few depressional areas found on the Lee Property, including along the access road to the cogen plant site

TABLE 5.2-4
Plant Species Observed around the MEP Site during the December 31, 2008 Reconnaissance Survey

Scientific Name	Common Name	Location
Brassicaceae		
Brassica nigra	Black mustard	Grassland – scattered locations throughout the Lee Property
Euphorbiaceae		
Croton setigerus	Turkey mullein	Few scattered plants around the margin of the stock pond and "blue line" creek on the Lee Property
Frankeniaceae		
Frankenia salina	Alkali heath	In grassland area in the southeast corner of the Lee Property and the large alkali playa area along the western part of the property; associated with alkaline soils
Geraniaceae		
Erodium botrys	Broadleaf filaree	Grassland – common throughout the Lee Property
Erodium cicutarium	Red-stemmed filaree	Grassland – common throughout the Lee Property
Lamiaceae		
Marrubium vulgare	Horehound	Grassland – scattered locations in the southeast part of the Lee Property
Myrtaceae		
Eucalyptus sp.	Eucalyptus	In vicinity of the water supply pipeline
Oleaceae		
Olea sp.	Olive	Water supply pipeline
Pinaceae		
Pinus sp.	Ornamental pine	In vicinity of the water supply pipeline
Poaceae		
Bromus diandrus	Ripgut brome	Grassland – common throughout the Lee Property
Bromus hordeaceus	Soft chess	Grassland – common throughout the Lee Property
Distichlis spicata	Saltgrass	Generally found in drainages and swales and alkali playa areas on the property
Glyceria occidentalis	Western mannagrass	Noted in a few depressional areas within an onsite drainage
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	Grassland – scattered throughout the Lee Property
Hordeum murinum ssp. *leporinum*	Foxtail barley	Grassland – scattered throughout the Lee Property
Polygonaceae		
Rumex crispus	Curly dock	Grassland – sparse throughout the Lee Property
Salicacea		
Salix sp.	Willow	In the vicinity of the water supply pipeline

The following special-status plants have a moderate potential to occur in the project area.

Brittlescale (*Atriplex depressa*) (CNPS 1B). Brittlescale occurs along the western side of the Central Valley from Glenn County south to Merced County and in the small valleys of the inner Coast Ranges, including the Livermore Valley. It occurs in the broad flood basins of the valley floor and on alluvial fans associated with the major streams draining from the inner Coast Range foothills. It is generally found from about 3 feet up to 1,055 feet above sea level.

Brittlescale is a very small annual herb that generally grows prostrate and rarely exceeds about 8 inches in height (Hickman, 1993). Brittlescale occurs on alkali soils of the Pescadero and Solano series. It typically occurs in barren areas within alkali grassland, alkali meadow, and alkali scrub and is found occasionally on the margins of alkali vernal pools. Brittlescale is known from only a limited number of occurrences and is endangered in a portion of its range (CNPS, 2009).

There are no known CNDDB records of brittlescale in the project area. However, this species in known in several locations as close as approximately 3 miles northwest of the MEP site (CNDDB, 2009). The known occurrences of this species (CNDDB, 2009) are associated with alkali habitats, including saline meadows and alkali vernal pools. Potentially suitable habitat for this species occurs in the vicinity of the MEP water supply pipeline and transmission line in an alkaline meadow (Figure 5.2-2). Potentially suitable alkali conditions also exist near the pipeline drainage crossing at the Contra Costa County line. This species was not detected during the early spring 2009 protocol-level rare plant survey. Additional rare plant surveys will occur during late spring and summer 2009, as this species' blooming period extends into October.

San Joaquin Spearscale (*Atriplex joaquiniana*) (CNPS 1B). San Joaquin spearscale has been historically found in grasslands from Glenn County south to Tulare County, and in the west from Monterey County to Tulare County in the east. San Joaquin spearscale is an annual herb between 1 and 3 feet tall (Hickman, 1993). San Joaquin spearscale grows in seasonal alkali wetlands and alkali sinks in chenopod scrub, meadows, playas, and valley and foothill grassland, with Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), alkali mallow (*Malvella leprosa*), and other alkali-associated plants. It has been found growing with rare plants such as Contra Costa goldfields (*Lasthenia conjugens*), alkali milkvetch (*Astragalus tener* var. *tener*), and crownscale (*Atriplex coronata*). *Atriplex* species are relatively tolerant of disturbance. San Joaquin spearscale blooms April through October, depending environmental conditions (CNPS, 2009). It is generally found from 10 to about 2,700 feet above sea level.

There are no known CNDDB records of San Joaquin spearscale in the project area. However, this species in known in several locations as close as approximately 2 miles south of the MEP site (CNDDB, 2009). The known occurrences of this species (CNDDB, 2009) are associated with alkali habitats including saline meadows and grasslands. Potentially suitable habitat for this species occurs in the vicinity of the MEP water supply pipeline and transmission line in an alkaline meadow (Figure 5.2-2). Potentially suitable alkali conditions also exist near the pipeline drainage crossing at the Contra Costa County line. This species was not detected during the early spring 2009 protocol-level rare plant survey. Additional

rare plant surveys will occur during late spring and summer 2009, as this species' blooming period extends into October.

Recurved Larkspur (*Delphinium recurvatum*) (CNPS 1B). Historically, recurved larkspur was widely distributed in California's Central Valley, ranging from Butte County south to Kern County. Most of the known occurrences are in Kern, Tulare, and San Luis Obispo counties. The species now appears to be very rare outside the southern San Joaquin Valley (CNDDB, 2009).

Recurved larkspur is a perennial herb and a member of the buttercup family (Ranunculaceae). Recurved larkspur is distinguished from other larkspur species by its pale blue, recurved sepals (Hickman, 1993). The flowering period for recurved larkspur is generally from March through May (CNPS, 2009). Recurved larkspur occurs on sandy or clay alkaline soils, generally in annual grasslands or in association with saltbush scrub or valley sink scrub habitats, ranging in elevation from 100 to 2,000 feet above sea level (CNDDB, 2009).

There are no known CNDDB records of recurved larkspur in the project area. However, this species in known in several locations in the project vicinity, including one record within approximately 1,000 feet east of the water supply pipeline. This record (dated 1991) describes a population in the alkali meadow shown on Figure 5.2-2. Potentially suitable habitat for this species occurs in the vicinity of the MEP water supply pipeline and transmission line in an alkaline meadow (Figure 5.2-2). This species was not detected during the early spring 2009 protocol-level rare plant survey.

The early 2009 spring survey event did not detect any special-status plants in the project area. The target list included the only two federally listed species potentially occurring in the project area: Contra Costa goldfields and large-flowered fiddleneck (*Amsinckia grandiflora*). Both species would have been detected during the early spring survey because closely related non-listed species were in bloom: California goldfields and common fiddleneck. In the event that any of the CNPS plants species are detected during the remaining scheduled surveys, Mariposa Energy will either design the project feature to avoid the sensitive habitat (if feasible), or in an amendment of this Application for Certification (AFC), propose mitigation to minimize and/or offset any unavoidable adverse effects.

5.2.1.4.2 Special-status Wildlife

Information acquired from the CNDDB (species listed as endangered or threatened, or California Species of Special Concern), USFWS, and other sources resulted in a list of 34 special-status wildlife species that could occur within the nine quad search area (Table 5.2-3 at the end of this section). Based on the results of the reconnaissance-level field surveys and an analysis of habitat suitability (coupled with known species' ranges), the comprehensive list of special-status wildlife was refined into a list of 17 species potentially affected by project construction. This focused list is shown in Table 5.2-5. Of these, 10 special-status wildlife species are known to occur (CNDDB, 2009) within the 1-mile radius survey areas of the MEP site (Figure 5.2-4).

TABLE 5.2-5
Special-status Species Potentially Affected during MEP Construction

Common Name	Scientific Name	Status[a]	Within 1 Mile of MEP (Y/N)
Crustacea			
Mid-valley fairy shrimp	*Branchinecta mesovallensis*	--/--	Y
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT/--	Y
Amphibians			
California tiger salamander, central population	*Ambystoma californiense*	FT/CSC	Y
California red-legged frog	*Rana draytonii*	FT/CSC	Y
Reptiles			
Western pond turtle	*Actinemys marmorata*	--/CSC	Y
Birds			
Tricolored blackbird	*Agelaius tricolor*	--/CSC	N
Loggerhead shrike	*Lanius ludovicianus*	--/CSC	Y[b]
Western burrowing owl	*Athene cunicularia*	--/CSC	Y[b]
Swainson's hawk	*Buteo swainsoni*	--/CT	Y[b]
Grasshopper sparrow	*Ammodramus savannarum*	--/CSC	N
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	--/CSC	N
Mammals			
San Joaquin kit fox	*Vulpes macrotis mutica*	FE/CT	Y
American badger	*Taxidea taxus*	--/CSC	Y

[a]Status.

Federal Status
FE = federally listed as endangered
FT = federally listed as threatened

State Status
CT = state listed as threatened
CFP = state fully protected
CSC = state species of concern

[b] Species observed during the 2009 MEP reconnaissance survey; others recorded in project vicinity by CNDDB or other sources.

The proposed project area, including construction laydown area(s) and linear routes, contain suitable habitat that may support the following special-status wildlife species.

Invertebrates

Vernal pool crustacean species include vernal pool fairy shrimp (*Branchinecta lynchi*) (federal threatened) and mid-valley fairy shrimp (*Branchinecta mesovallensis*) (ECCHCP covered species). These species typically inhabit small pools with clear, tea-colored, or muddy water, most commonly in grass- or mud-bottomed swales, or basalt flow depression pools in unplowed grasslands, but sometimes in sandstone rock outcrops and alkaline vernal pools (58 Federal Register 48136). Vernal pool crustaceans are sporadically distributed within vernal pool complexes (58 [180] Federal Register 48136), where some or many of the pools in a complex may not be inhabited during any one year. Historically, vernal pool crustaceans might have dispersed via large-scale flood events that allowed the species to colonize different individual pools or pool complexes. Urban development and the construction of

dams, levees, and other flood-control measures have limited this dispersal method. Waterfowl and shorebirds can transport vernal pool crustaceans by ingesting diapaused eggs without compromising the eggs' capacity to hatch once they've passed through the bird's digestive system. Birds can also transport eggs to new habitats while attached to their feet, legs, or feathers. Eggs may also be dispersed and transported on the legs and hooves of cattle and on other grazing livestock (Eriksen and Belk, 1999).

During a February 2009 reconnaissance survey, an unknown *Branchinecta* sp. was observed in a shallow 0.01-acre seasonal wetland located near the entrance to the 6.5-MW Cogen Plant (Figure 5.2-2). This wetland area will be avoided during project construction. There are other known occurrences of listed branchiopods within 5 miles of the project area (Figure 5.2-3) including a record of *B. lynchi* less than 1 mile from MEP at the nearby Byron Conservation Bank (USFWS, 2007). Other seasonal wetland areas found in the project vicinity (Figure 5.2-2) provide suitable habitat for vernal pool fairy shrimp and mid-valley fairy shrimp.

MEP may result in an indirect effect on listed branchiopod habitat because disturbance occurs within 250 feet of occupied habitat. At a minimum, the 0.01-acre wetland located near the MEP site is subject to this potential effect. Other seasonal wetlands found in the vicinity of the 230-kV transmission line route may also support listed fairy shrimp. Additional wet season surveys would be required to determine if these other habitats support fairy shrimp. Any additional wetlands within 250-feet of the project are also subject to an indirect effect.

A biological assessment (BA) will be prepared in support of consultation with the USFWS under Section 7 of the federal ESA. The BA will include a proposal to assume the presence of federally listed vernal pool fairy shrimp in lieu of conducting presence/absence surveys. Additionally, the BA will identify proposed mitigation measures to minimize, avoid, and/or offset indirect effects on fairy shrimp habitat. Proposed protection measures for fairy shrimp habitat are included in Section 5.2.3. Typically, compensatory mitigation for indirect effects on vernal pool habitat includes creating, preserving, or restoring suitable vernal pool habitat at an approved offsite vernal pool mitigation bank. The actual mitigation measures for MEP will be finalized during Section 7 consultation.

Amphibians

California tiger salamander (*Ambystoma californiense*) (CTS) (federal threatened, California Species of Special Concern). The CTS belongs to the family Ambystomatidae. It is a large, stocky, terrestrial salamander with a broad, rounded snout. This species breeds in natural seasonal (vernal) pools or ponds that mimic them such as stock ponds that are allowed to go dry. During summer months, the CTS uses subterranean refuge sites, usually small mammal burrows, but also crevices in the soil typically referred to as aestivation (similar to hibernation) sites. Aestivation habitat is generally constructed by fossorial mammals such as ground squirrels and Botta's pocket gophers. After winter rains have moistened the ground, the salamanders emerge from their refugia and migrate to breeding pools. Females deposit eggs singly or in small groups in the water, and attach them to submerged vegetation or debris. The CTS typically returns to natal breeding sites during late fall and early winter rain events (USFWS, 2009).

Recent CNDDB records of this species in 2008 document CTS presence in the immediate vicinity of the project area (Figures 5.2-3 and 5.2-4). There are also other CNDDB occurrences within 1 mile of the project area. Construction of the water supply pipeline will temporarily affect potential CTS breeding habitat. The onsite annual grassland areas and intermittent and ephemeral drainages provide good quality upland and aquatic dispersal habitats for this species. The CTS may aestivate in the project area in California ground squirrel burrows. Potential aestivation habitat can be found in the MEP site and adjacent laydown area, and in the grassland areas along the project linears. These project areas occur within the known dispersal range of this species (1.24 miles from breeding sites).

A BA will be prepared in support of consultation with the USFWS under Section 7 of the federal ESA regarding potential project effects on this species. The BA will include a proposal to infer presence because of the proximity of known breeding populations and suitability of onsite habitat. Small mammal burrows that may be occupied by aestivating CTS will be graded (e.g., collapsed) during MEP construction. Salamanders dispersing from adjacent habitats could enter the active construction site where they might be run over or entrapped in open trenches. The marsh wetlands affected during water supply pipeline construction provide suitable breeding habitat for CTS. The BA will also include proposed mitigation measures to minimize, avoid, and/or offset project impacts on CTS dispersal and aestivation habitat. Habitat compensation for temporary and permanent losses to CTS may include purchasing credits at a USFWS-approved mitigation bank. Additionally, the protection measures listed in Section 5.2.3 may be required during project construction; the actual mitigation measures for MEP will be finalized during Section 7 consultation.

California red-legged frog (*Rana draytonii*) (CRLF) (federal threatened, California Species of Special Concern). The CRLF typically occupies dense, shrubby, or emergent riparian or wetland vegetation closely associated with ponds or deep, slow-moving water. Well-vegetated terrestrial areas within riparian corridors provide important sheltering habitat during winter. The CRLF breeds in ponds or slow-moving pools in streams. Habitats that contain the highest densities of CRLF are associated with deep-water pools (at least 2.3 feet deep) with stands of overhanging willows and an intermixed fringe of cattails, tules, or sedges (USFWS, 2001). However, the CRLF also has been observed in stock ponds, sewage treatment ponds, and artificial (concrete) pools completely devoid of vegetation (Storer, 1925). The CRLF may move away from breeding sites to forage in other aquatic habitats during summer, although if habitat is suitable at breeding ponds, individuals may remain there year-round (USFWS, 2001).

Several CNDDB occurrences document this species within 1 mile of the project area (Figure 5.2-4). The CNDDB records indicate that the ephemeral and intermittent drainages that intersect the water supply pipeline support known breeding habitat for the CRLF. Additionally, adjacent grasslands and small mammal burrows in the project area provide suitable dispersal and aestivation habitat for this species. Water pipeline construction through the intermittent drainages will impact suitable CRLF breeding habitat. Ground disturbance in upland areas adjacent to aquatic sites will affect suitable upland dispersal habitat.

A BA will be prepared in support of consultation with the USFWS under Section 7 of the federal ESA regarding potential project effects on this species. The BA will include a proposal to infer presence because of the proximity of known breeding populations and

suitability of onsite habitat. Habitat compensation for temporary and permanent losses to the CRLF may include purchasing credits at a USFWS-approved mitigation bank. Additionally, the protection measures listed in Section 5.2.3 may be required during project construction; the actual mitigation measures for MEP will be finalized during Section 7 consultation.

Reptiles

Western pond turtle (*Actinemys marmorata*) (California Species of Special Concern). Western pond turtles range throughout the state of California, from southern coastal California and the Central Valley, east to the Cascade Range and Sierra Nevada. The two subspecies, northwestern and southwestern, are believed to integrate over a broad range in the Central Valley (Jennings and Hayes, 1994). Western pond turtles occur in a variety of permanent and intermittent aquatic habitats, such as ponds, marshes, rivers, streams, and ephemeral pools. Pond turtles require suitable basking and haul-out sites, such as emergent rocks or floating logs, which they use to regulate their temperature throughout the day (Holland 1994). In addition to appropriate aquatic habitat, these turtles require an upland oviposition site in the vicinity of the aquatic habitat, often within 656 feet. Nests are typically created in grassy, open fields with soils that are high in clay or silt fraction. Egg laying usually takes place between March and August (California Department of Fish and Game, California Wildlife Habitat Relationships Program [CWHR], 2009).

The CNDDB documents this species within 1 mile of the project area (Figure 5.2-4). The emergent wetlands (associated with the intermittent drainages) located along the water supply pipeline (Figure 5.2-2) provide suitable aquatic habitat for this species. Any pond turtles that may breed in this marsh habitat could be adversely affected during pipeline activities. Additionally, turtles displaced from this habitat, or other offsite ponds (Figure 5.2-2) could disperse through the pipeline work corridor and become entrapped in open trenches or run over by construction machinery. In consultation with CDFG, Mariposa Energy will implement mitigation measures to avoid or minimize an adverse effect on this species. These measures (see Section 5.2.3) will include preconstruction surveys, and may include relocation of western pond turtles observed within the pipeline construction site. A qualified biologist will routinely monitor the construction site for any displaced pond turtles.

Birds

Western burrowing owl (*Athene cunicularia hypugaea*) (California Species of Special Concern). The burrowing owl could potentially nest in a variety of substrates observed within the project area, including grasslands with California ground squirrel (*Spermophilus beecheyi*) burrows that provide shelter. Burrowing owls are often found in close association with these burrows, which provide them with year-round shelter and seasonal nesting habitat (CWHR, 2009). Burrowing owls also may use human-made structures observed within the project area, including culverts, debris piles, or openings beneath pavement or concrete foundations, as shelter and nesting habitat.

The CNDDB documents this species within 1 mile of the project area (Figure 5.2-4). Additionally, on April 8, 2009, a single owl was detected during the rare plant survey. During the observation, a single owl exited a burrow located within MEP's proposed 5-acre temporary laydown area. Upon further inspection, white wash was observed at the burrow opening. Breeding activity was not observed. Although focused surveys for this species

have not occurred thus far, small mammals burrows found within the project area provide breeding opportunities for this species. The annual grasslands found on the Lee Property provide foraging habitat for this species.

Protocol-level preconstruction survey following the California Burrowing Owl Consortium (CBOC, 1993) survey guidelines will be conducted to determine whether onsite habitat is occupied by this species. If the surveys determine presence, Mariposa Energy will provide the results of the survey to CDFG in a memorandum of understanding (MOU) within 30 days of completing the survey. The MOU will include proposed measures (see Section 5.2.3) to minimize, avoid, and/or offset project-related impacts on burrowing owl habitat. The actual mitigation measures for MEP will be finalized during formal consultation with CDFG.

Swainson's hawk (*Buteo swainsoni*) (state threatened). The Swainson's hawk is a migratory raptor that commonly utilizes the upper canopy of medium to large trees in the Central Valley and other regions of northern California for seasonal breeding activities (CWHR, 2009). Although this species is known to nest within 5 miles of the project (Figure 5.2-3), the project area lacks trees that could provide nest sites. The grassland habitats and agricultural fields found in the project area provide suitable foraging habitat for this species. The ornamental trees found along the west and south sides of PG&E's Kelso Substation provide potential nest sites for this species. These trees occur within 300 feet of the MEP transmission line work corridor.

Loggerhead shrike (*Lanius ludovicianus*) (California Species of Special Concern). This species is found in lowlands and foothills throughout California. This species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. The loggerhead shrike feeds mostly on large insects, but it also eats small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. It is known to catch prey by skewering it on thorns, sharp twigs, and barbed wire fencing (CWHR, 2009).

Although there are no documented CNDDB occurrences of loggerhead shrike nesting within 5 miles of the project area (Figure 5.2-3), this species was observed flying through the project area during a February 2009 site visit and the April, 8, 2009 rare plant survey. Although the project area lacks suitable nesting habitat (e.g., trees and shrubs) for this species, project construction will result in the loss of suitable foraging habitat. The ornamental trees found adjacent to PG&E property provide suitable nest sites for this species.

White-tailed kite (*Elanus leucurus*) (California fully protected). The white-tailed kite is a medium-sized bird of prey. This species is known for hovering in low elevation flights over the ground in search of prey. Rodents provide a main component of their diet. The white-tailed kite is known to breed in a variety of habitat types including oak woodland and open stages of riparian forest and scrub, generally in the tops of trees near open areas (CWHR, 2009). This species is known to nest within 5 miles of the project (Figure 5.2-3). The ornamental trees found adjacent to PG&E property provide suitable nest sites for this species.

Grasshopper sparrow (*Ammodramus savannarum*) (California Species of Special Concern). The grasshopper sparrow builds a small cup nest of grasses in slight depressions on the ground. The grasshopper sparrow will use the cover of overhanging grasses and forbs to avoid detection. This species is semi-colonial, and may occur in nesting groups of 3 to

12 pairs. Nesting grasslands should be dry or well-drained and support adequate insect prey populations (CWHR, 2009). Although there are no documented CNDDB occurrences of this species within 5 miles of the project area (Figure 5.2-3), the grassland habitat found in the project area provides breeding and foraging opportunities for this species.

Tricolored blackbird (*Agelaius tricolor*) (California Species of Special Concern). The tricolored blackbird is a highly colonial species reported to breed in groups of up to 100,000 and 200,000 nests. Tricolored blackbird historically nested throughout the Central Valley and along the coast from Sonoma County to Mexico. During the winter, tricolored blackbirds generally withdraw from the southern San Joaquin Valley and north Sacramento Valley and concentrate around the Sacramento-San Joaquin River Delta and coastal areas, including Monterey and Marin counties. This species historically nested almost exclusively in freshwater marshes dominated by cattails or bulrushes (*Scirpus* spp.) with smaller numbers nesting in willow, blackberry (*Rubus* sp.), thistle (*Cirsium* and *Centaurea* spp.), and nettles (*Urtica* spp.). In recent decades, many colonies have been observed in areas of dense Himalayan blackberry (*Rubus discolor*). In the San Joaquin Valley, large flocks have been observed nesting in silage and grain fields. Other observed nesting substrates include giant reed (*Arundo donax*); safflower (*Carthamus tinctorius*), black mustard (*Brassica nigra*), tamarisk (*Tamarix* sp.), Fremont's cottonwood (*Populus fremontii*), California ash (*Fraxinus latifolia*), barley (*Hordeum* sp.), mule fat (*Baccharis salicifolia*), wheat (*Triticum* sp.), a desert olive (*Forestiera neomexicana*) grove, and a lemon (*Citrus limon*) orchard (Beedy and Hamilton, 1999).

Although there are no documented CNDDB occurrences of this species within 1 mile of the project area, a marsh wetland (associated with an intermittent drainage) supporting cattails located along the water supply pipeline (Figure 5.2-2) supports suitable breeding habitat. Breeding activity by red-winged blackbird (*Agelaius phoeniceus*) was observed in this marsh during the rare plant survey on April 8, 2009. The adjacent upland habitat to this wetland area provides foraging opportunities for tricolored blackbird. Potential breeding habitat for this species occurs only along the MEP water supply pipeline.

Yellow-headed blackbird (*Xanthocephalus xanthocephalus*) (California Species of Special Concern). The yellow-headed blackbird breeds in freshwater emergent wetlands with dense cover. The yellow-headed blackbird is highly colonial, and males are known to form large flocks separate from females and juveniles. This species may join with other mixed blackbird species flocks during winter (CWHR, 2009). Although there are no documented CNDDB occurrences of this species within 5 miles of the project area (Figure 5.2-3), the marsh wetland located along the water supply pipeline (Figure 5.2-2) provides potential nesting habitat for this species.

Northern harrier (*Circus cyaneus*) (California Species of Special Concern). This species is a widespread, year-round resident of California and is known to breed in annual grassland habitats in the Central Valley. The harrier's nests, consisting of sticks in wet areas and grasses in dry areas, are built on the ground, usually near wetlands. It uses tall grasses and forbs for cover. The harrier feeds on small mammals, reptiles, birds, frogs, crustaceans, insects, and fish. The harrier breeds April through September (CWHR, 2009).

There are documented CNDDB occurrences of northern harrier within 5 miles of the project area (Figure 5.2-3). During the December 2008 reconnaissance survey, this species was observed foraging just west of the Lee Property in open grassland habitat. The project area

grasslands provide suitable foraging habitat for this species. Although marsh wetlands occur along the water supply pipeline, existing vehicle traffic adjacent to the proposed work corridor likely preclude nesting by this species in the project area.

Golden eagle (*Aquila chrysaetos)* (California fully protected). This species is a very large bird of prey. The golden eagle builds nests on cliff ledges and in relatively big trees and snags. The golden eagle mostly preys on small mammals and will occasionally take domestic calves and lamb. This species forages in rolling grassland and foothill habitats (CWHR, 2009). During the April 8, 2009 rare plant survey, a foraging golden eagle was detected in the immediate vicinity to the south of the MEP site. There is also one documented CNDDB occurrence of golden eagle within 1 mile of the project area (Figure 5.2-4). The project area lacks suitable nesting habitat for this species.

Mammals

San Joaquin kit fox (*Vulpes macrotis mutica*) (SJKF) (federal endangered, state threatened). This fox is relatively small and is characterized by large ears and a distinctive black-tipped tail. The wide-ranging SJKF inhabits valley and foothill grasslands, as well as sparsely vegetated shrubby habitats. The SJKF generally uses a complex of multiple dens for shelter and protection and may move numerous times throughout the year. Most kit fox dens are located in flat terrain or the lower slopes of hills. Kit fox dens don't always exhibit obvious sign of use. Common locations for dens include washes, drainages, and roadside berms. The SJKF also commonly dens along canals, levees, small-diameter culverts, and highways, as long as there is an adequate prey base. The SJKF also can den in agricultural and cattle grazing fields, as long as the frequency of ground disturbance is not too high. Kit foxes are usually found in areas with loose-textured, friable soil (Williams et al., 1998).

The CNDDB documents several occurrences of SJKF within 5 miles of the project area, with three occurrences within 1 mile of the MEP site (Figure 5.2-4). In 2000, occupied dens were recorded approximately 3 miles north of the MEP site, just west of the Clifton Court Forebay. In 1992, a single kit fox was observed running down Kelso Road just west of Bruns Road in the immediate project vicinity (CNDDB, 2009). Protocol-level surveys for SJKF natal dens have not yet occurred for MEP. However, anecdotal observations taken during several reconnaissance-level surveys and rare plant surveys found that neither natal dens nor burrows occur in the project area. Nevertheless, an abundance of ground squirrel burrows provides an opportunity for SJKF to establish dens in the future. Thus, focused preconstruction surveys for natal dens and active burrows will be performed for the project. The results of these surveys will be included in a BA to the USFWS during Section 7 consultation. Habitat compensation for temporary and permanent losses to the SJKF may include purchasing credits at a USFWS-approved mitigation bank. Additionally, the protection measures listed in Section 5.2.3 may be required during project construction; the actual mitigation measures for MEP will be finalized during Section 7 consultation.

American badger (*Taxidea taxus*) (California Species of Special Concern)**.** The American badger is a relatively large member of the weasel family. This species is a carnivorous mammal that digs burrows in friable soils for cover. Badgers typically prefer open areas with minimal overstory (CWHR, 2009).

There are several CNDDB occurrences of this species within 5 miles of the project area, and a 2007 CNDDB road kill record just north of the MEP site (Figures 5.2-3 and 5.2-4) along

Kelso Road. Focused surveys for American badger natal dens or burrows in the project area have not yet occurred, but anecdotal observations during several reconnaissance-level surveys and rare plant surveys found that this species does not den onsite. Nevertheless, an abundance of ground squirrel burrows found in the project area provides an opportunity for American badger to establish a den in the future. Thus, preconstruction surveys will be performed for badger natal dens or burrows. If natal dens or burrows are detected during the surveys, Mariposa Energy will provide the results of the survey in a MOU to CDFG. The MOU will provide proposed measures (see Section 5.2.3) to minimize, avoid, and/or offset project-related impacts on the American badger; the actual mitigation measures for MEP will be finalized during consultation with CDFG.

Fish

Nearby federal and state water conveyance projects have fish screens and other engineering controls in their canal systems that, when functioning properly, preclude all protected Delta fish species from entering BBID's Canal 45 via the California Aqueduct. The aqueduct originates in the Delta, which supports numerous fish that are important to sport fishermen and considered special-status by the resource agencies. This includes species such as winter run Chinook, Delta smelt, and Central Valley steelhead that are protected by the ESA. The project would not adversely affect these species because the BBID diversion is downstream of the Skinner Fish Screen Facility (http://www.deltacorridors.com/Delta_Fish_Facilities.html) and also downstream of the California Aqueduct/Canal 45 pump station. The fish screen facility is a barrier to fish passage that prevents thousands of Delta fish from entering the intake pumps of the aqueduct system each day.

A review of satellite imagery and topographical maps and a reconnaissance-level survey concluded that the four drainages crossed by the water supply pipeline become channelized into a single irrigation ditch approximately 0.5 miles downstream of the project area. Farther downstream and east of Byron Highway (Figure 5.2-1), the irrigation ditch discharges either into agricultural fields or into Russian Slough via a motorized pumping facility. The pump is considered a barrier to fish passage. Because of these precluding factors, special-status fishes are not further evaluated in this section.

Wetlands are protected under specific regulations of the USACE, CDFG, and the Regional Water Quality Control Board (RWQCB) and are important because they support the highest abundance and diversity of plant and wildlife species in the project area. Some special-status species (such as California tiger salamander, California red-legged frog, and vernal pool crustaceans) are dependent on them.

Potentially jurisdictional wetlands and other waters in the project area were delineated during a formal wetland delineation. This delineation was conducted in April 2009 for all proposed project areas that potentially would be impacted. The delineation followed the guidelines of the USACE 1987 Wetland Delineation Manual and Arid West Regional Supplement. A wetland delineation report will be provided following submittal of the AFC. Where avoidance to wetland and waters is not feasible (for example, along the water supply pipeline) an appropriate permit for alteration will be secured from USACE, CDFG, and RWQCB. Figure 5.2-2 provides preliminary location of potential waters of the United States (including wetlands). Verification of jurisdictional areas will occur during formal consultation/discussions with USACE, RWQCB, and CDFG. Copies of the delineation will be provided to the CEC when transmittal to the USACE, CDFG, and RWQCB occurs.

5.2.1.5 Recreational and Commercial Opportunities

The MEP site is private property, located in the southern portion of the Sacramento-San Joaquin Delta region. Numerous private hunting clubs are located within 10 miles of the project site, but the property under consideration has not been leased for hunting or otherwise used for recreational purposes. The Bethany Reservoir State Recreation Area, popular for fishing and windsurfing, is less than 1 mile southwest of the MEP site. Access by the public to this recreation area will not be impaired during project construction or plant operation. No other similar land uses are nearby that would provide significant recreational or commercial opportunities for exploiting wildlife.

5.2.1.6 Biological Resources of Project Linears

The project would require construction of new pipelines to carry service water and natural gas to the MEP site. New electrical transmission lines mounted on steel poles would run from MEP to PG&E's Kelso Substation. Cumulatively, these project features are described and evaluated as the project linears. The water line and transmission line work will rely on their own temporary laydown areas shown on Figure 5.2-2.

The project linears cross habitat that is similar to that of the project site, and supports the same or similar species to those described for MEP site impacts. However, linears also span a much larger area and have the potential to intersect specific areas of biological importance. Such areas would include wetlands and surface water features, unique habitat types, or local populations of special-status species. Also, project linears may cause specific impacts during operation because of their physical structure or characteristics (for example, collision hazards from power lines). Minimizing impacts on biological resources was a key selection criterion for potential linear alignments.

5.2.1.6.1 Water Supply Line

Service water would be conveyed from a new pump station at Bruns Road and BBID Canal 45 to the new power plant by a buried pipeline. The new pump station and intake structure would be constructed near and on (respectively) the south bank of Canal 45, immediately adjacent to an existing BBID pump house. BBID will construct the water supply line. BBID will establish a temporary 1-acre laydown area during pipeline construction. This laydown will be sited in an existing, previously disturbed BBID development.

Canal 45 within the project area is disturbed. Concrete and asphalt rip rap armor the canal banks where wetland vegetation is precluded. Conditions further degrading the aquatic setting include routine maintenance, seasonal use, and various engineered controls including fish screen facilities, valve gates, and pump stations.

From the new pump station, the water supply pipeline would be buried under a BBID agricultural field, in the roadbed of Bruns Road, and under the Lee Property main access road. Along this alignment, the pipeline would cross four unnamed drainages (Figure 5.2-2) intersecting Bruns Road using the open-trench method. The intermittent drainages that traverse through the Byron Conservation Bank and under Bruns Road are considered particularly sensitive because California tiger salamander and California red-legged frog are known to occur upstream of the pipeline route. These drainages also may provide habitat for several state species of special concern. Preconstruction surveys for special-status species will occur in support of formal consultation with the USFWS (under Section 7) and CDFG.

The drainages are likely regulated by USACE, RWQCB, and CDFG. Mariposa Energy anticipates submitting a Preconstruction Notification (PCN) to the USACE to work under Nationwide Permit 12; filing an application for Section 401 water quality certification with the RWQCB; and a filing an application for streambed alteration with CDFG for project work in these four drainages.

5.2.1.6.2 Natural Gas Pipeline

A new 580-foot-long buried pipeline would convey natural gas supply to the new power plant from PG&E's existing main line. The proposed alignment occurs entirely within the Lee Property, thus is similarly characterized with the MEP site. The MEP temporary laydown area will be used during pipeline construction.

5.2.1.6.3 Electrical Transmission Line

Power from MEP would be conveyed by an interconnection with PG&E's Kelso Substation located north of the Lee Property. The connection would consist of six new steel monopoles, with new conductors (wire) running across the central portion of the Lee Property and along the eastern property boundary of the substation. PG&E personnel will construct the new transmission line; a separate temporary laydown area located immediately adjacent to their gas compressor station will be used.

Habitat affected by the new transmission towers would be non-native annual grassland, previously described for the MEP site.

5.2.1.6.4 Stormwater Detention Basin

A series of inlets and storm drain pipes will convey stormwater from within the new power plant site to a new onsite earthen stormwater retention basin (refer to Figure 5.15-2B). Stormwater contacting areas of potential oil contamination will be redirected to the onsite oil/water separator for treatment and onsite reuse, and not to the retention basin. A multi-stage discharge structure installed inside the new basin will allow particulates to settle out before stormwater discharges offsite. Offsite discharge will occur into one of two new grass-lined swales located along the perimeter of the MEP site. The swales will provide an unimpeded hydrological connection between the upper watershed to the south and the lower watershed to the north of the new facility. The swales will conform to the site's existing drainage patterns, discharging stormwater into open grassland.

5.2.1.7 Biological Survey Methods

CH2M HILL biologists Todd Ellwood and Russell Huddleston performed a biological reconnaissance survey of the project area and general vicinity on December 31, 2008. Mr. Ellwood performed two additional reconnaissance surveys on February 19 and February 23, 2009. The reconnaissance surveys were aided by aerial photographs (1:4,800 scale), which helped identify land uses and habitat areas. Led by botanist Mr. Huddleston, both biologists conducted the first round of early spring rare plant surveys on April 7 and 8, 2009. Additional rare plant surveys for the remaining targeted late season species are scheduled for late spring and summer 2009. The surveyors' qualifications are provided in Appendix 5.2A

The presence, or potential presence, of sensitive biological resources was determined from information gathered during the field survey, published and unpublished literature, and natural resource agency databases. Wildlife and plant species observed in the project

vicinity during the surveys are included in Tables 5.2-2 and 5.2-4, respectively. As discussed earlier in this section, as-needed focused surveys to support formal consultation for impacts on federally and state-listed species will occur for the project.

5.2.2 Environmental Analysis

Potential direct and indirect impacts on biological resources were evaluated to determine the permanent and temporary effects of construction, operation, and maintenance of the proposed MEP. Results from the reconnaissance surveys, habitat evaluations, and aerial photographs conclude a presence of suitable habitat for special-status species within the project area. Therefore, construction, operation, and maintenance of MEP could have an impact on:

- Mid-valley fairy shrimp (HCP-covered species)
- Vernal pool fairy shrimp (Federal Threatened)
- California tiger salamander (Federal Threatened)
- California red-legged frog (Federal Threatened)
- Western pond turtle (California Species of Concern)
- Tricolored blackbird (California Species of Concern)
- Loggerhead shrike (California Species of Concern)
- Western burrowing owl (California Species of Concern)
- Swainson's hawk (California threatened)
- Grasshopper sparrow (California Species of Concern)
- Yellow-headed blackbird (California Species of Concern)
- San Joaquin kit fox (Federal Endangered/California Threatened)
- American badger (California Species of Concern)
- Rare plants listed in Table 5.2-3 with low to moderate potential to occur

A summary of potential project construction impacts on these species is presented in Table 5.2-6. A more detailed description of these potential impacts is provided below.

5.2.2.1 Permanent Impacts during Construction of the New Facility

The proposed generating facility site would require up to a 10-acre footprint to support four combustion turbine generators each equipped with 80-foot tall exhaust stacks. Associated support equipment and an administration building are included in the facility general arrangement. The existing access road serving the nearby 6.5-MW cogen facility will be improved from a 10-foot wide gravel road to a 20-foot wide asphalt paved road and extended to the plant entrance. Widening and extension of the road will result in a loss of approximately 0.5 acre of annual grassland. The expected MEP construction schedule is April 2011 to July 2012.

Noise and construction activities could temporarily displace wildlife from foraging and nesting in the project area and vicinity. Any special-status species found nesting during preconstruction surveys will be protected by implementation of the measures listed in Section 5.2.3.

TABLE 5.2-6
Potential Construction Impacts

Location	Project Work	Maximum Construction Zone Size	Habitat Type	Sensitive Biological Resources	Estimated Impacts	
					Temporary	Permanent
MEP Site	Grading for footprint construction; widening and improving onsite gravel access road.	10.5 acres; includes onsite retention basin and perimeter drainage swales and improvement of existing access road.	Annual Grassland	Loss of suitable SJKF and American badger (AMBA) habitat; loss of suitable upland dispersal habitat for CRLF and CTS; loss of suitable breeding habitat for western burrowing owl (BUOW) and migratory birds; loss of foraging habitat for other raptors; loss of suitable rare plant habitat; potential indirect effect on branchiopod habitat.	3.6 acres	10.5 acres of annual grassland
MEP Laydown Area	Grade and construct level area and improve existing access routes found in the grassland	5 acres	Annual Grassland	Loss of suitable SJKF and AMBA habitat; loss of suitable upland dispersal habitat for CRLF and CTS; loss of suitable breeding habitat for BUOW and migratory birds; loss of foraging habitat for other raptors; loss of potential rare plant habitat.	5 acres of annual grassland; any gravel underlayment will be removed as part of project completion.	None
Natural Gas Pipeline	Open-cut trenching; staging areas	Approx. 580-foot long trench, 75-foot wide work corridor	Annual Grassland	Loss of suitable SJKF and AMBA habitat; loss of suitable upland dispersal habitat for CRLF and CTS; loss of suitable breeding habitat for BUOW and migratory birds; loss of foraging habitat for other raptors; loss of potential rare plant habitat.	1-acre loss of annual grassland	None
230-kV Transmission Line	Installation of six new monopoles, stringing of new conductor, equipment staging and access.	Approx. 0.7-mile transmission line route; 1,000-square-foot work area at each new pole site plus 50-foot wide access corridor along alignment. Each new pole mounted on new 10-foot diameter concrete foundation.	Annual Grassland	Loss of suitable SJKF and AMBA habitat; loss of suitable upland dispersal habitat for CRLF and CTS; loss of suitable breeding habitat for BUOW and migratory birds; loss of foraging habitat for other raptors; loss of potential rare plant habitat.	6.2-acres temporary disturbance to annual grassland; overland access to pole sites.	0.016-acre permanent loss of annual grassland for six new concrete foundations.
Water Supply Line	Open cut trenching; construction of pump house and intake structure at Canal 45; staging area located within existing BBID facility.	Approx. 1.8-mile water supply pipeline; 8 foot by 8 foot pump house station footprint with intake structure; 30-foot-wide construction corridor on roadways minimized to 10 feet wide at drainage crossings.	Graveled and asphalt paved roads, seasonal and perennial wetlands, agricultural field	Loss of suitable CRLF, CTS, and western pond turtle breeding habitat; loss and/or disturbance of suitable migratory bird and raptor nesting habitat; loss of suitable rare plant habitat.	Approx. 6-acre total temporary loss of roadway, drainage wetlands, and agricultural development (alfalfa field).	0.001-acre loss of agricultural development for new pump house and intake at Canal 45.

5.2.2.1.1 Vegetative Communities

Construction of MEP would result in the permanent loss of approximately 10.5 acres of non-native annual grassland habitat. This habitat type is regionally common, and the loss of 10.5 acres would not be considered individually significant. However, many wildlife species use grassland habitat for foraging and nesting, and the loss of 10.5 acres would contribute incrementally to the losses experienced regionally.

5.2.2.1.2 Wildlife

Construction will displace common wildlife species that forage or nest in the grassland habitat, including western meadowlark (*Sturnella neglecta*), American pipit (*Anthus rubescens*), and lark sparrow (*Chondestes grammacus*), or small mammals including California ground squirrel. The area is also used as foraging habitat by resident raptors such as red-tailed hawk (*Buteo jamaicensis*) and northern harrier and predatory mammals such as coyote (*Canis latrans*). Although the 10.5-acre loss of foraging and potential nesting habitat for common species would not be considered individually significant, losses associated with this conversion to industrial development would contribute to regional losses that could be cumulatively significant.

5.2.2.1.3 Special-status Species

The 10-acre MEP site provides suitable habitat for the following special-status species:

1. **California red-legged frog.** Known breeding populations of this species occur within 1 mile of the MEP site; therefore, construction of MEP will result in the loss of suitable upland dispersal and aestivation habitat for this species.

2. **California tiger salamander.** Known breeding populations of this species occur within 1 mile of the MEP site; therefore, construction of MEP will result in the loss of suitable upland dispersal and aestivation habitat for this species.

3. **San Joaquin kit fox.** There are known records of this species in the MEP site vicinity. No kit fox natal dens or burrows were observed on the MEP site during several reconnaissance-level surveys and the spring 2009 rare plant surveys. Ground squirrel burrows provide an opportunity for this species to establish dens in the future; therefore, the construction of MEP will result in the loss of suitable foraging and potential breeding habitat for this species.

4. **Western burrowing owl.** Numerous ground squirrel burrows found on the MEP site provide suitable nesting and roosting habitat for this species. The annual grassland provide suitable foraging habitat for this species. An active burrow was detected on the adjacent 5-acre laydown area on April 8 during the early spring 2009 rare plant survey event.

5. **American badger.** There are known records of this species in the MEP site vicinity. No badger dens or burrows were observed on the MEP site during several reconnaissance-level surveys and the spring 2009 rare plant surveys. Ground squirrel burrows provide an opportunity for this species to establish dens in the future; therefore, construction of MEP will result in the loss of suitable foraging and potential breeding habitat for this species.

6. **Raptors and migratory birds.** Project construction will result in a 10.5-acre loss of potential nesting habitat for ground-nesting migratory birds (western meadowlark and grasshopper sparrow), and potential foraging habitat for raptors, such as Swainson's hawk and golden eagle, and loggerhead shrike.

7. **Vernal pool fairy shrimp, mid-valley fairy shrimp**. A shallow 0.01-acre seasonal wetland located just north of the MEP site and adjacent to the 6.5-MW cogen plant is occupied by *Branchinecta* sp. This wetland will be avoided during project construction; however, this habitat may be subject to potential indirect effects because of its proximity (within 250 feet) to the MEP site.

8. **Rare plants.** No special-status plant species were observed during the April 2009 protocol-level rare plant survey. Protocol surveys will continue during late spring and summer 2009 for the late season target species. The likelihood that the MEP site supports rare plants is considered quite low because of low native plant diversity observed during the first round of rare plant surveys.

5.2.2.1.4 Waters of the United States (Including Wetlands)

The MEP site does not support any potential waters of the United States (including wetlands). The habitat within the 10-acre site and adjacent to the existing access road to be improved is characterized as annual grassland. The formal wetland delineation has confirmed the lack of wetlands on the project site.

5.2.2.2 Temporary Impacts during Construction of the New Facility

The new facility site would result in a temporary loss of approximately 5 acres of grassland habitat for a temporary construction laydown area and access routes. The construction laydown area, adjacent to and immediately east of the new facility site, would be used for storage of equipment and supplies and as a construction parking area. During development of the laydown area, grassland will likely be stripped of its topsoil and then compacted and underlain with gravel or other material. Additionally, 3.6 acres will be disturbed in association with the cut-and-fill grading for the site. During project completion, all temporarily disturbed soil areas will be restored to match preconstruction conditions. Cut-and-fill slopes will be restored by reseeding with an approved seed mix and the use of appropriate erosion control measures. The effects of these construction activities on biological resources are similar to those previously described for the permanent impacts at the new facility site.

5.2.2.3 Operational Impacts of the New Facility

5.2.2.3.1 Cooling Tower Drift

The new facility does not include cooling towers; therefore, potential impacts on biological resources from cooling tower drift are not applicable.

5.2.2.3.2 Water Discharge

MEP is a zero liquid discharge facility. Process water for the new facility will be conveyed via the water supply pipeline from BBID's Canal 45. A primary wastewater collection system will collect process water and stormwater runoff from all plant equipment and route it to the onsite oil/water separator before recycling the water within the plant process water system. Infrequent turbine wash water will be trucked offsite for disposal by a licensed

waste hauler. Domestic water will be treated by an onsite septic system or removed for offsite disposal.

5.2.2.3.3 Stormwater Retention Basin

The new 0.34-acre onsite earthen (grass-lined) stormwater retention basin is designed to release site runoff from the design storm over a 48-hour period to allow particles and associated pollutants to settle; the basin is not designed to hold water for longer periods. A multi-stage discharge structure will discharge to one of two earthen swales routing upgradient stormwater around the MEP site. The new basin will be routinely mowed following the growth season. Routine maintenance should preclude the development of foraging and nesting wildlife habitat.

The new basin may attract wildlife if suitable aquatic conditions are allowed to develop. Continuous inundation over several months could promote the growth of aquatic invertebrates and thus attract shore birds and water fowl that feed on them and the raptors that prey on these water birds. Seasonal inundation longer than 10 weeks could provide breeding opportunities for California tiger salamander.

5.2.2.3.4 Combustion Turbine Emissions

Air emissions from the four combustion turbine exhaust stacks include nitrogen oxides, sulfur oxides, and particulates. Nitrogen oxide gases convert to nitrate particulates in a form that is suitable for uptake by most plants. Generally, studies have shown that nitrogen deposition can cause decreased plant function and promote exotic species. The exotic species outcompete with the native flora because they grow more quickly and are not easily affected by native processes, including pests and diseases. The pre-existing condition of the surrounding landscape already supports a dominance of non-native grassland plant species, thus nitrogen deposition, even if it were to exceed the standard thresholds, will have an negligible effect on the surrounding grassland habitat.

5.2.2.3.5 Noise and Lights from Plant Operations

Annual grassland and the wildlife it supports surround the new facility site to the west, east, and south. To the immediate north is the 6.5-MW Byron Cogen Plant. Operation of MEP would produce additional noise in the local environment as described in Section 5.7. Noise and construction activities could temporarily prevent wildlife from foraging and nesting in the project area. However, noise from long-term operations is not expected to adversely impact wildlife because it usually becomes accustomed to routine background noise.

Bright night lighting could disturb wildlife such as nesting birds, foraging mammals, and flying insects. Night lighting is also suspected to attract migratory birds to an area and any lights on tall buildings could cause collisions. To reduce these effects, lighting, will be pointed downward and shielded to minimize the potential for avian collisions and wildlife disturbance.

5.2.2.3.6 Potential for Collision Hazard to Birds

The new facility would include four 80-foot tall stacks and a new 230-kV transmission line that could potentially result in bird collisions. Most collisions involve nocturnal migrants flying at night in inclement weather and low-visibility conditions, colliding with tall guyed television or radio transmission towers (CEC, 1995; Kerlinger, 2000). Migratory birds

generally fly at an altitude that would avoid ground structures, except when crossing over topographic features (such as ridge tops) or when inclement weather forces them closer to the ground.

Avian collisions as a result of the stormwater retention basin are unlikely. In the unlikely event that aquatic conditions develop here to attract avian species, approximately 500 feet separate the basin from the new 80-foot tall exhaust stacks and 230-kV transmission line. This clearance should be adequate to allow any birds entering and leaving the basin to successfully maneuver past the potential hazards. There are no other topographic or ecological features that would attract birds to this immediate location or funnel them into the vicinity of exhaust stacks or other elevated features of the project. Raptor species expected to occur in the general area, such as the red-tailed hawk and Swainson's hawk, could potentially collide with the stacks during inclement weather (fog and rain). Other species, including songbirds, are smaller and more agile and are less likely to collide with these stacks.

5.2.2.3.7 New Facility Maintenance Impacts

Maintenance activities on the 10-acre MEP site include keeping vegetation clear of the perimeter fence line for fire control. An area approximately 10 feet wide around the fence line will be kept mowed. This routine maintenance activity is not expected to have an adverse effect on plants or wildlife. The maintenance area is included in the 10-acre construction footprint, so it will be previously disturbed. Routine maintenance should preclude the development of foraging and nesting wildlife habitat.

5.2.2.3.8 New Facility Decommissioning Impacts

Decommissioning of MEP and supporting facilities could return grassland habitats to the area, depending on the LORS existing at that time. This could increase habitat for general and species-status species. However, it is not yet known what would occur on the site after decommissioning. Potential effects would be addressed in appropriate environmental documents at a time closer to the decommissioning process. Decommissioning of the temporary construction laydown areas would occur as soon as feasible after construction is complete.

5.2.2.4 Construction of the Project Linears

5.2.2.4.1 Water Supply Line

The following sections describe potential impacts on biological resources from construction of the water supply pipeline.

Waters of the United States (Including Wetlands)

Potential wetlands and waters of the United States occur along the water supply pipeline route. A formal wetland delineation for the project occurred in April 2009. Mariposa Energy identified four ephemeral and intermittent drainages that occur along Bruns Road that may be classified as jurisdictional wetlands by the USACE and RWQCB. These aquatic features are also likely regulated by the CDFG as jurisdictional streambeds. Mariposa Energy's formal wetland delineation will be verified by the USACE during a jurisdictional determination.

Using the open-cut trenching method, the water supply pipeline will impact drainages in compliance with conditions specified in an appropriate permit from CDFG, USACE, and

RWQCB. Each drainage crossing will entail an estimated 10-foot wide construction corridor of temporary disturbance. A backhoe will enter the drainage area and excavate a 4-foot wide by 6-foot deep trench for the new pipeline. After the new pipe is laid, the open trench will be backfilled with suitable material. Post-construction restoration activities may include recontouring the disturbed areas and application of erosion control measures, as-needed.

Wildlife

Temporary impacts on wildlife could occur during construction of the water supply pipeline. Birds, small mammals, reptiles, and amphibians that forage in the agricultural and annual grassland areas could be temporarily displaced during construction activities. Vegetation growing along the pipeline corridor would be removed during construction. As proposed, the impacts of habitat disturbance would be significantly minimized by placing the pipeline within existing road beds. The temporary laydown area would be sited on BBID property in a previously disturbed area. However, trenching through the intermittent and ephemeral drainages would affect aquatic habitat and thus have an impact on the aquatic wildlife that likely occur there. Ground-dwelling animals could become trapped in uncovered trenches if left open overnight or if suitable egress is not provided. Impacts on nesting birds could occur if construction activities take place in or adjacent to natural habitat during the nesting season.

Special-status Species

The 1.8-mile water supply pipeline route provides habitat for the following special-status species:

1. **California red-legged frog.** Known breeding populations of this species occur within 1 mile of the pipeline route. The intermittent drainages supporting marsh wetlands (Figure 5.2-2) provide suitable breeding habitat for this species. The ephemeral drainages supporting seasonal wetlands provide suitable dispersal habitat for this species. Therefore, open-cut trenching through these aquatic sites will result in temporary impacts on suitable breeding and dispersal habitat, including the potential for direct take of eggs, larvae, or adult frogs.

2. **California tiger salamander.** Known breeding populations of this species occur within 1 mile of the pipeline route. The intermittent drainages supporting marsh wetlands (Figure 5.2-2) provide potential suitable breeding habitat for this species. The ephemeral drainages supporting seasonal wetlands provide suitable dispersal habitat for this species. Therefore, open-cut trenching through these aquatic sites will result in temporary impacts on potentially suitable breeding and suitable dispersal habitat, including the potential for direct take of eggs, larvae, or adult salamanders.

3. **San Joaquin kit fox.** Although there are known records of this species in the immediate vicinity of the pipeline route, pre-existing human disturbance and vehicle traffic along the proposed work corridor likely preclude foraging or denning by this species. However, any dispersing kit fox that could move through the construction corridor may become entrapped in open trenches or run over by construction equipment.

4. **Western pond turtle.** The western pond turtle is known to occur in the project vicinity (Figure 5.2-3). The intermittent drainages supporting marsh wetlands provide suitable

breeding habitat for this species. Open-cut trenching through these aquatic sites may result in potential impacts on turtles.

5. **Western burrowing owl.** Potential western burrowing habitat is limited to the BBID agricultural field located along the last 1,000 feet of the pipeline corridor. Ground squirrel burrows that may occur here or along the Canal 45 berm would provide suitable breeding habitat for this species.

6. **Raptors and migratory birds.** Pipeline construction could result in disturbance of nesting raptors and migratory birds if nest sites occur within or near the work corridor. The intermittent drainages supporting marsh wetlands provide potential breeding habitat for tricolored blackbird and yellow-headed blackbird. Landscaping trees found along the perimeter of PG&E Kelso Substation provide potential nest sites for Swainson's hawk, loggerhead shrike, and white-tailed kite.

7. **Rare plants.** No special-status plant species were observed during the April 7 and April 8, 2009 protocol-level rare plant surveys. Protocol surveys will continue during late spring of 2009 and summer 2009 for the remaining late season target species.

Operation Impacts

Operation of the water supply pipeline is not expected to cause impacts on biological resources.

Maintenance Impacts

It is anticipated that the water supply line will be buried and not require surface disturbance for maintenance. Therefore, no significant impacts resulting from pipeline maintenance are expected. Maintenance that may be required at the new pump station would occur in an area of BBID's property that is already subject to routine maintenance and disturbance. Any maintenance on the intake structure inside the canal would occur when the canal is dry. Because of high levels of disturbance and other precluding factors, aquatic wildlife species are not considered to exist here.

Decommissioning Impacts

Decommissioning of the water supply pipeline could involve digging the pipeline out of the ground and removing the pump station and intake structure. These activities would cause impacts similar to the construction impacts mentioned above. The pipeline also could be sealed and left in place, which would significantly reduce potential impacts on biological resources.

5.2.2.4.2 Natural Gas Pipeline

The natural gas pipeline will result in a temporary loss of annual grassland habitat. Therefore, the related impacts on biological resources are similar to those already discussed for the MEP site. However, gas pipeline work will not impact wetlands or waters or listed branchiopod habitat (directly or indirectly).

Operation Impacts

Operation of the gas pipeline would not cause impacts on biological resources unless a leak should occur. Leakage of the gas pipeline could result in a fire, which could impact vegetation and wildlife.

Maintenance Impacts

It is anticipated that the gas pipeline will be buried and not require surface disturbance for maintenance. Therefore, no significant impacts resulting from pipeline maintenance are expected.

Decommissioning Impacts

Decommissioning of the gas pipeline could involve digging the pipeline out of the ground. These activities would cause impacts similar to the construction impacts mentioned above. The gas pipeline also could be sealed and left in place, which would not cause impacts on biological resources.

5.2.2.4.3 Electric Transmission Line

The 230-kV transmission line will result in a temporary and permanent loss of annual grassland habitat. Therefore, the related impacts on biological resources are similar to those already discussed for the MEP site. Construction of the new transmission line will not impact wetland or waters. A seasonal wetland located just north of PG&E's Kelso Substation (Figure 5.2-2), may be indirectly affected during transmission line work. The wetland area provides potential suitable habitat for listed branchiopods.

Operation Impacts

The electric transmission line occurs primarily within annual grassland that supports foraging habitat for birds such as red-tailed hawk, Swainson's hawk, and suitable nesting habitat for western burrowing owl. Bird collisions with electric conducting wires occur when birds are unable to see the lines, especially during fog or rain events. Factors that affect the risk of collision include weather conditions, behavior of the species of bird, and design and location of the line. Electrocutions occur when a bird simultaneously contacts two conductors of different phases or contacts a conductor and a ground. This happens most frequently when a bird attempts to perch on a structure with insufficient clearance between these components. On a 230-kV transmission line, all clearances between conductors or between conductors and ground are sufficient to protect even the largest birds (Avian Power Line Interaction Committee [APLIC], 1996) and no impacts from electrocution are expected.

Maintenance Impacts

Maintenance of the electric transmission line could include routine onsite inspections and restringing of the wires. This could include walking and/or driving vehicles on the alignment that would temporarily disturb grassland habitat and wildlife.

Decommissioning Impacts

Decommissioning of the electric transmission line would involve removing the overhead lines and temporary surface disturbance while working around each pole. These activities would cause temporary impacts similar to the construction impacts mentioned above.

5.2.2.5 Coordination with Regional Habitat Conservation Plans

MEP falls within the coverage area of the EACCS. Alameda County is finalizing and adopting this strategy, which will provide guidance on the permitting process to promote an assurance that impacts are offset in a biologically effective manner (Alameda County, 2008). The EACCS will not provide, or otherwise authorize, permits or other agency approvals for take or disturbance of special-status species. Some of the strategy's focal

species are also known to occur, or could potentially occur, within the MEP area. They include:

- San Joaquin spearscale
- Big tarplant
- Congdon's tarplant
- Palmate-bracted bird's-beak
- Livermore tarplant
- Recurved larkspur
- Vernal pool fairy shrimp
- California tiger salamander
- California red-legged frog
- Western pond turtle
- Tricolored blackbird
- Western burrowing owl
- Swainson's hawk
- San Joaquin kit fox
- American badger

The northern extent of the MEP's water supply line lies in Contra Costa County, and therefore falls in the planning area of the ECCHCP. Between July 2007 and August 2007, CDFG and USFWS approved the ECCHCP and implementing agreement, and issued regional permits to the local agency permitees. The following ECCHCP-covered species are known to occur, or could potentially occur, in the project area:

- Brittlescale
- San Joaquin spearscale
- Big tarplant
- Round-leaved filaree
- California tiger salamander
- California red-legged frog
- Western pond turtle
- Tricolored blackbird
- Western burrowing owl
- San Joaquin kit fox

Mariposa Energy will cooperate with local, state, and federal interests when developing habitat avoidance, minimization, and/or mitigation. The focal/ECCHCP-covered wildlife species are also state or federally protected species; therefore, Mariposa Energy will consult with USFWS and/or CDFG for potential effects on them. If any of the CNPS species are detected during protocol-level surveys, avoidance, minimization, and/or mitigation to protect the rare plant population will be addressed in an amendment to this AFC. Conflicts with the ECCHCP or conservation strategy are thus not anticipated.

5.2.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may

compound or increase the incremental effect of the proposed project (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, and 15355).

The proposed project is a peaking power plant, which will not be operated continuously. MEP will convert approximately 10 acres of annual grassland to utility uses. The incremental loss is slight in this case, but nevertheless, the affected non-native grassland provides habitat value for most species in the area. By maintaining the Williamson Act contract for the 158-acre parcel, Mariposa Energy is supporting the continued management of the overall property for cattle grazing, reducing the potential for future development on the parcel.

MEP, with the mitigation proposed in this application, will not result in significant impacts on special-status plants, natural plant communities, wetlands, and associated habitat values for wildlife. The project area supports suitable habitat for San Joaquin kit fox, California red-legged frog, California tiger salamander, listed branchiopods, western burrowing owl, American badger, various raptors and migratory birds, and rare plants. The project proposes to minimize potential adverse impacts on wildlife through avoidance, minimization, and mitigation to reduce impacts to less-than-significant levels for key wildlife resources and habitat for special-status species. Therefore, the project is not expected to cause any significant cumulative impacts on biological resources.

Standards of Significance
Impacts on biological resources are considered significant if one or more of the following conditions could result from implementation of the proposed project:

- Substantial effect, reduction in numbers, restricted range, or loss of habitat for a population of a state or federally listed threatened or endangered species
- Substantial effect, reduction in numbers, restricted range, or loss of habitat for a population of special-status species, including fully protected, candidate proposed for listing, California Species of Concern, and certain CNPS list designations
- Substantial interference with the movement of any resident or migratory fish or wildlife species
- Substantial reduction of habitat for native fish, wildlife, or plants
- Substantial disturbance of wetlands, marshes, riparian woodlands, and other wildlife habitat
- Removal of trees designated as heritage or significant under county or local ordinances
- Conflict with local habitat conservation plan or other approved local, regional, or state plan

5.2.4 Proposed Monitoring and Mitigation Measures

Plant and wildlife species listed as threatened or endangered have special requirements under the federal and California ESAs when a project could affect them or their critical habitats. Permanent and temporary construction impacts are shown in Table 5.2-6. Mitigation (or protective) measures for biological resources, including special-status species

that could be affected by MEP, were taken from existing guidelines developed with the USFWS and CDFG. The mitigation measures will also reduce or eliminate impacts on other special-status species and species occurring within the MEP areas that do not have special protective requirements under the ESAs. Mitigation measures developed for unavoidable project impacts that eliminate or minimize impacts to less than significant are described in this section and will be detailed and expanded upon in the Biological Resources Mitigation Implementation Monitoring Plan (BRMIMP) that will be submitted to the CEC and natural resource agencies for approval. The BRMIMP also presents protection and mitigation measures issued by the natural resource agencies' in each of their permit terms and conditions.

5.2.4.1 Overall Project Construction

The following measures would be implemented in all MEP construction areas:

- A qualified biologist(s) will prepare and oversee an environmental education program for construction crews before beginning site work and during construction activities. Sessions will include information about the federal and state ESAs, the consequences of noncompliance with these acts, identification of sensitive species and wetland habitats, and review of mitigation requirements.
- Provide mitigation construction monitoring by a qualified Designated Biologist (or approved designee) during construction activities near sensitive habitats.
- An educational brochure will be produced for construction crews working on MEP. Color photos of sensitive species will be included, as well as a discussion of protective measures to which Mariposa Energy and the resource agencies have agreed.
- Vehicles will be confined to established roadways and pre-approved access roads. Access routes and number and size of staging areas and work areas will be limited to the minimum necessary to achieve the project goals. Routes and boundaries of work areas, including access roads, will be clearly marked prior to initiating project construction.
- Construction along the project linears will be constrained within a designated temporary construction corridor, generally 75 feet wide or less.
- All temporarily affected project areas will be restored to pre-existing contours and revegetated after construction.
- Sensitive resource areas such as rare plant populations, protected habitat for listed species, and active nests of protected birds in the project vicinity will be mapped and marked in the field when construction is occurring nearby.
- The Designated Biologist (or approved designee) will be onsite during any construction activity near sensitive habitat and will ensure implementation of, and compliance with, mitigation measures. The monitor has the authority to stop work and determine alternative work practices in consultation with construction personnel if construction activities are likely to impact sensitive biological resources.
- Pre- and post-construction photo-documentation of all habitats will be prepared and made part of the project report submitted to the resource agencies no later than 90 days following completion of construction.

- Mariposa Energy will make every effort to protect the existing plant community and keep temporary impacts to a minimum. If determined necessary, temporary impacts on habitat will be addressed through a revegetation/restoration plan prepared in conjunction with the resource agencies.
- Trash dumping, firearms, open fires (such as barbecues), hunting, and pets will be prohibited in the project area.
- To avoid attracting predators of the target species of concern, the project site will be kept as clean of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site(s).
- A Stormwater Pollution Prevention Plan (SWPPP) will be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary for the project. Erosion control measures will be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures will be implemented in the event erosion control strategies are inadequate. Sediment/erosion control measures will be continued at the project site until such time as the revegetation efforts are successful at soil stabilization. All equipment will be maintained so that there will be no leaks of automotive fluids such as fuels, solvents, or oils. Hazardous materials such as these will be stored in sealable containers in a designated location that is at least 250 feet from aquatic habitats. All refueling and maintenance of vehicles and other construction equipment and staging areas will occur at least 250 feet from any aquatic habitat. Successful implementation of the SWPPP will preclude any indirect effects on nearby protected wetland areas.
- Erodible fill material will not be deposited into water courses. Brush, loose soils, or other similar debris material will not be stockpiled in the drainage channel or on its banks. Similarly, equipment and personnel will not be allowed to enter the drainage channel or be on the banks unless otherwise authorized by the resource agencies.
- Sensitive habitats and species will be avoided during construction by developing construction exclusion zones and silt fencing around sensitive areas during the duration of the project. Exclusion fence also will be installed along the perimeter of the MEP site, the 5-acre laydown area, and main access road for the duration of project construction; this exclusionary fence will allow project construction to occur year-round during the construction period.
- Mariposa Energy will conduct additional preconstruction surveys for sensitive species in impact areas during the spring before construction begins, especially habitats known to support special-status species.
- Mariposa Energy will conduct preconstruction surveys for native avian species in habitats affected by the proposed project. These surveys will take place prior to vegetation removal or ground disturbance occurring during the typical breeding season (February 1 to August 31). The surveys will continue during the construction season as determined by a qualified biologist. No-work buffers will be established around all active nests until nestlings have fledged. The active bird nests will be closely monitored by a qualified biologist for potential disturbance by the project.
- Mariposa Energy will prepare construction monitoring and compliance reports that analyze the effectiveness of the mitigation measures.

5.2.4.2 Special-status Biological Resources

Specific mitigation measures were developed to minimize project impacts for the sensitive habitats potentially occupied by San Joaquin kit fox, California red-legged frog, California tiger salamander, listed branchiopods, and rare plants. Formal consultation with USFWS under Section 7 of the ESA will be completed by Mariposa Energy and a Biological Opinion (BO) issued by USFWS prior to construction. Mariposa Energy agrees to abide by the conditions of the Section 7 permit, which may include the following additional mitigation/protective measures that would be implemented in the project's sensitive areas. Mariposa Energy also agrees to implement the measures listed below for protection of burrowing owls, Swainson's hawk, western pond turtle, and American badger that may also occur in the project area.

5.2.4.2.1 Federally Listed San Joaquin Kit Fox

The following are standard measures from USFWS (1999) for protection of San Joaquin kit fox prior to and during ground disturbance:

1. The exclusion zones for kit fox dens will be 50 feet for potential dens, 100 feet for known dens, and 50 feet for atypical dens. If a natal/pupping den is detected in the project area, the USFWS will be contacted for further direction.

2. Project-related vehicles will observe a 10-mile-per-hour speed limit in all project areas, except on county roads and state and federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction will be minimized. Off-road traffic outside designated project areas will be prohibited.

3. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks.

4. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, Measure 13 must be followed.

5. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods will be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe will not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

6. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a week from a construction or project site.

7. No firearms will be allowed on the project site.

8. To prevent harassment, mortality of kit foxes, or destruction of dens by dogs or cats, no pets will be permitted on project sites.

9. Use of rodenticides and herbicides in project areas will be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds will observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit foxes.

10. The designated biologist (or approved assignee) will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped individual. The USFWSapproved biologist will be identified during the employee education program, including their name and telephone number.

11. An employee education program will be conducted for any element of the project that is expected to impact kit fox or other endangered species. The program will consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and personnel involved in the project. The program will include the following: a description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the ESA; and a list of measures being taken to reduce impacts on the species during project construction and implementation. A fact sheet conveying this information will be prepared for distribution to the above-mentioned people and anyone else who may enter the project site.

12. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. will be recontoured if necessary, and revegetated to promote restoration of the area to preproject conditions. An area subject to temporary disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas will be determined on a site-specific basis in consultation with the USFWS, CDFG, and revegetation experts.

13. In the case of trapped animals, escape ramps or structures will be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for advice.

14. Any contractor or employee who inadvertently kills or injures a San Joaquin kit fox will immediately report the incident to Designated Biologist. The Designated Biologist will contact the CDFG immediately in the case of a dead, injured, or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

15. The Sacramento Fish and Wildlife Office and CDFG will be notified in writing within 3 working days of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident or

of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.

5.2.4.2.2 Federally Listed California Red-legged Frog and California Tiger Salamander

Protection measures in addition to the following may be identified during formal consultation with the USFWS.

1. A USFWS-approved biological monitor will be on site each day during construction if take of CRLF or CTS could occur and during initial grading of development sites.
2. Implement a Worker Environmental Awareness Training Program to educate all construction personnel on the life history of CRLF and CTS. The training program should also include all applicable agency permit conditions regarding protection of these species.
3. A qualified biologist will perform preconstruction surveys for CRLF and CTS for all project impact areas a maximum of 1 week and minimum of 48 hours prior to ground disturbance activities. If CRLF or CTS are discovered during preconstruction surveys, individuals will be relocated to an USFWS-approved site. Only biologists specifically approved by USFWS will capture and relocate these species.
4. During project implementation, concentrations of small mammal burrows and other refugia that may support aestivating CRLF or CTS will be avoided to the extent feasible.
5. Initial ground disturbance activities will be scheduled to occur during the dry summer months between April 15 and October 15. Construction of the project linears will also occur during this same time period. A permanent solid barrier fence (for example, a silt fence) will be installed around the MEP site, 5-acre laydown area, and main access road for the duration of the project. This exclusionary fence will be routinely inspected for good repair for the duration of MEP construction; any damage (such as holes or gaps) will be repaired immediately. During the wet winter months, the USFWS-approved biological monitor will periodically survey along the exclusion fence for any CRLF or CTS. CRLF or CTS discovered along the fence barrier will be relocated to the USFWS-approved relocation site.
6. As appropriate, an environmentally sensitive area fence will be installed along linear routes to protect potential breeding sites. Construction personnel will not enter the environmentally sensitive areas.
7. Before the start of linear work each morning, the biological monitor (or a person designated by the biological monitor) will check for CRLF and CTS under any equipment such as vehicles and stored pipes. The biological monitor will check all excavated steep-walled holes or trenches greater than 1 foot deep each morning for any CRLF and CTS. CRLF and CTS will be removed by the biological monitor and relocated as approved by the USFWS. All excavated holes or trenches located outside the MEP site will be either covered or ramped at the end of the work day, or escape boards will be placed in the trench to allow the animals to escape.

8. A 10-mile-per-hour speed limit will be enforced at all construction sites, except on roads with a posted speed limit.

9. Best Management Practices (BMPs) listed in the SWPPP will be implemented during project construction to protect against adverse affects on sensitive aquatic areas. Dust control measures will be implemented during construction in the dry season. Work areas and dirt access roads will be watered regularly to minimize airborne dust and soil particles generated by construction.

5.2.4.2.3 Federally Listed Vernal Pool Branchiopods

1. Construction personnel will be trained to avoid affecting listed branchiopod habitat (such as vernal pools). A USFWS-approved biologist will inform all construction personnel about the life history of listed branchiopods, the importance of avoiding their habitat, and the terms and conditions of the USFWS BO related to avoiding and minimizing impacts on them.

2. If feasible, a buffer zone of 250 feet or the limit of the immediate watershed supporting the seasonal wetland (whichever is larger) will be established around all known and potentially occupied branchiopod habitat. The buffer zone will be delineated with temporary fencing. The fencing will be kept in good repair and remain installed for the duration of MEP construction.

3. Construction of the linear projects will occur during the dry summer season to minimize the potential for indirect effects on nearby branchiopod habitat.

4. In consultation with the USFWS, Mariposa Energy will provide onsite or offsite compensatory mitigation for project-related indirect effects on known and potentially occupied listed branchiopod habitat.

5.2.4.2.4 Western Burrowing Owl

Mitigation/protective actions will be carried out prior to the burrowing owl breeding season, generally from February 1 through August 31. The following guidelines were taken from CBOC (1993):

1. Conduct preconstruction surveys during the breeding season (February 1 to August 31) of construction areas to determine if habitat is occupied by burrowing owls.

2. Occupied burrows will not be disturbed during the nesting season unless the CDFG verifies that the birds have not begun egg-laying and incubation or that the juveniles from those burrows are foraging independently and capable of independent survival at an earlier date.

3. No disturbance will occur within approximately 160 feet of occupied burrows during the non-breeding season of September 1 through January 31 or within 250 feet during the breeding season. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird.

4. When destruction of occupied burrows is unavoidable, burrows will be enhanced (enlarged or cleared of debris) in a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.

5. If owls must be moved away from the disturbance area, passive relocation will be implemented in coordination with CDFG. Relocation of owls will only be implemented during the non-breeding season. A time period of at least 1 week to allow the owls to move and acclimate to alternate burrows will be provided. Owls will be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances: one-way doors will be left in place 48 hours to ensure owls have left the burrow before excavation. Numerous natural burrows located in the project vicinity provide potential alternate burrow sites for relocated burrowing owls.
6. Mariposa Energy will provide onsite or offsite mitigation for unavoidable impacts on occupied habitat. The type and level of mitigation will be determined during consultation with CDFG, but may include:

   – Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.

   – Replacement of occupied habitat with habitat contiguous to currently occupied habitat 2 times 6.5 (13.0) acres per pair or single bird.

   – Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

5.2.4.2.5 Western Pond Turtle

1. A qualified biologist will conduct a pre-construction survey for western pond turtles no more than 30 days prior to construction in suitable aquatic habitats along the water supply pipeline corridor.
2. If the species is found near any proposed construction areas, impacts on individuals and their habitat will be avoided to the extent feasible. Occupied habitat will be designated as an environmentally sensitive area by marking the boundary with temporary orange plastic fencing. Construction personnel will not be allowed to enter the environmentally sensitive area.
3. If avoidance is not possible and the species is determined to be present in work areas, the biologist with approval from CDFG will capture turtles prior to construction activities and relocate them to nearby, suitable habitat a minimum of 300 feet downstream from the work area.
4. Exclusion fencing will be installed if feasible to prevent turtles from reentering the work area.

5.2.4.2.6 American Badger

1. All areas within 250 feet of the project area will be surveyed for occupied habitat prior to onset of ground disturbance activities. These surveys will be conducted regardless of season of the year.
2. If badger dens are detected, each will be classified as inactive, potentially active, or definitely active.

   – Inactive dens will be excavated by hand and backfilled to prevent reuse by badgers.

– Potentially and definitively active dens will be monitored for three consecutive nights using a tracking medium at the entrance. If no tracks are observed in the tracking medium after three nights, the den will be progressively blocked with natural materials (dirt, sticks, and vegetation piled in from of the entrance) for the next three to five nights to discourage the badger from continued use. The den will then be excavated and backfilled by hand to ensure that no badgers are trapped in the den.

5.2.4.2.7 Foraging and Nesting Raptors, Herons, Egrets, and Waterbirds

1. Provide safety lighting that points downward on the HRSG stacks to reduce avian collisions.

2. The project area is not known to support significant concentrations of raptors, nor does it fall within a known migratory bird flyway. Nonetheless, to mitigate the potential for bird collisions, the new 230-kV transmission line will be designed to be raptor-safe in accordance with the APLIC (1996).

3. Preconstruction nesting bird surveys will be conducted within 2 weeks of ground disturbance activities where potential nesting habitat may be directly or indirectly impacted. Nest surveys for Swainson's hawk will occur within 0.5 miles of project features. No-work exclusion zones will be established around all active bird nests potentially affected by project activities. For raptors such as Swainson's hawk, this buffer may be a 300-foot radius from the nest site. A qualified biologist and/or CDFG will determine the setback distance of each species' active nest. Pre-existing conditions including topography, visual obstructions (such as buildings), and existing human activity (such as roadway traffic) will be taken into account when determining the final setback distance of these zones.

5.2.4.2.8 Rare Plants

Protocol-level rare plant surveys occurred on April 7 and April 8, 2009, for all proposed project impact areas. None of the early spring species, including all federally listed species on the target list, were detected during the 2-day survey event. Two more survey events are scheduled for late spring 2009 and summer 2009. The following measures will be incorporated into the project should any populations of rare plants be identified in the project area.

1. If feasible, the project design will be modified to avoid impacting the rare plant population.

2. If avoidance is not feasible, the affected rare plant population will be relocated (transplanted) outside the construction impact area by a qualified botanist.

5.2.4.3 Compensatory Mitigation

Mitigation for potential indirect and direct impacts from MEP on special-status species may include paying in-lieu fees into conservation easements or buying species credits at local mitigation banks. Regulatory agency personnel whom Mariposa Energy contacted regarding the project are shown in Table 5.2-7. During these contacts, the USFWS representative concurred that Mariposa Energy may forego protocol-level surveys and simply assume presence for listed species. Factors supporting opting out of protocol surveys

include suitability of onsite habitat and proximity of known occupied habitat to MEP. For MEP, assuming presence for listed species is recommended because the USFWS would not accept surveys documenting absence of species due to the aforementioned factors. As a result, compensatory mitigation is anticipated for California red-legged frog, California tiger salamander, San Joaquin kit fox, and vernal pool branchiopods. Mariposa Energy will propose in the BA an appropriate level of compensatory mitigation for these listed species. The BA will be prepared prior to project construction during Section 7 consultation with the USFWS, resulting in a BO for the project. The BO will include project-specific compensatory mitigation requirements.

5.2.5 Laws, Ordinances, Regulations, and Standards

The following sections describe the primary LORS that apply to potential impacts on biological resources in the project area, and list the agencies responsible for enforcing the regulations. A summary of the LORS is provided in Table 5.2-8, at the end of this section.

5.2.5.1 Federal LORS

Federal Endangered Species Act (16 United States Code [USC] 153 et seq.). Applicants for projects that could result in adverse impacts on any federally listed species are required to consult with and mitigate potential impacts in consultation with USFWS. Adverse impacts are defined as "take," which is prohibited except through authorization of a Section 7 or Section 10 consultation and Incidental Take Authorization. Take under federal definition includes "such act as may include significant habitat modification or degradation" (50 Code of Federal Regulations [CFR] §17.3). Species that are not listed are not protected by federal ESA, even if they are candidates for listing; however, USFWS advises that a candidate species (as well as species of concern) could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

Migratory Bird Treaty Act (16 USC 703 to 711) protects all migratory birds, including nests and eggs.

Bald and Golden Eagle Protection Act (16 USC 668) specifically protects bald and golden eagles from harm or trade in parts of these species.

5.2.5.2 State LORS

California Endangered Species Act (Fish and Game Code Section 2050 et seq.). Species listed under this act cannot be "taken" or harmed, except under specific permit. At present, "take" means to do or attempt to do the following: hunt, pursue, catch, capture, or kill.

Fish and Game Code Section 3511 describes bird species, primarily raptors, that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements.

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

Fish and Game Code Section 3503.5 protects all birds of prey and their eggs and nests.

Fish and Game Code Section 3513 makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Fish and Game Code Sections 4700, 5050, and 5515 lists mammal, amphibian, and reptile species that are fully protected in California.

Fish and Game Code Sections 1900 et seq., the Native Plant Protection Act lists threatened, endangered, and rare plants listed by the state.

Title 14, California Code of Regulations, Sections 670.2 and 670.5 lists animals designated as threatened or endangered in California. California Species of Concern is a category conferred by CDFG on those species that are indicators of regional habitat changes or are considered potential future protected species. California Species of Concern do not have any special legal status, but the designation is intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

California Fish and Game Code (Sections 1601 through 1607) prohibits alteration of any stream, including intermittent and seasonal channels and many artificial channels, without a permit from CDFG. CDFG jurisdiction is limited to areas within the 100-year floodplain. Within this zone, CDFG jurisdiction is subject to the judgment of the department. This applies to any channel modifications that would be required to meet drainage, transportation, or flood control objectives of a project.

California Environmental Quality Act (CEQA) (Public Resources Code Section 15380) defines "rare" in a broader sense than the definitions of threatened, endangered, or species of special concern. Under this definition, CDFG can request additional consideration of species not otherwise protected. CEQA requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.

Warren Alquist Act (Public Resources Code Section 25000, et seq.) is a CEQA-equivalent process implemented by the CEC. Preparation of this application will result in an assessment prepared by the CEC staff to fulfill the requirements of CEQA.

5.2.5.3 Local and Other Jurisdictions LORS

5.2.5.3.1 General Plans

Alameda County has a general plan that is divided into separate subplans based on geographic areas, with MEP falling in the East County Area Plan (ECAP) (Alameda County, 2000). The county's board of supervisors adopted the ECAP on May 5, 1994. The ECAP was revised by initiative in November 2000. MEP falls outside the urban growth boundary in an unincorporated area of the county designated as Rural Density Residential. The plan's open space diagram designates the project area as a Wind Resource Area and not within a designated resource management unit.

Contra Costa County has a General Plan with a purpose to guide future growth, development, and the conservation of resources through to the year 2020; plan initiation occurred in 2005. A portion of the MEP's water supply pipeline, which terminates at a proposed new pump station and intake structure, is located in Contra Costa County. Within the county, the new pipeline will be installed under Bruns Road and adjacent to BBID

agricultural fields. According to the plan, land use affected by MEP includes Agricultural and/or Public/Semi Public Land. No significant ecological areas or selected locations of protected wildlife and plant species areas as designated by the Plan will be impacted by MEP (Contra Costa County, 2005).

5.2.5.3.2 Applicable Habitat Conservation Plans

The northern extent of the proposed MEP water supply pipeline is located within the ECCHCP/Natural Community Conservation Plan (NCCP), which covers approximately 175,000 acres in the eastern part of the county. The ECCHCP/NCCP satisfies federal and state regulations (respectively) governing authorization of impacts on listed species. The overarching plan helps streamline the permit process for endangered species and wetland regulations. The final ECCHCP/NCCP was released in October 2006 and is administered by the East Contra Costa County Habitat Conservancy. If determined appropriate, Mariposa Energy would participate in the ECCHCP/NCCP with Contra Costa County, one of several HCP/NCCP permittees for impacts in the county. Participation may include paying in-lieu fees for compensatory mitigation and working with the county to identify appropriate conservation measures for the MEP water supply pipeline.

5.2.6 Agencies and Agency Contacts

Table 5.2-7 lists the persons contacted at the natural resources agencies involved with the project or resources in the project area.

TABLE 5.2-7
Agency Contacts for Biological Resources

Issue	Agency	Contact
On March 5, 2009 discussed protocol-level surveys and inferring presence of federally listed. Ms. Picco will likely be assigned to MEP during Section 7 consultation for federally listed species.	U.S. Fish and Wildlife Service	Angela Picco (916) 414-6496
Engaged in email communication with Ms. Grefsrud on March 27, 2009 email. CDFG not available to answer specific questions regarding Streambed Alteration Agreements, California threatened or endangered species, and California wildlife.	California Department of Fish and Game	Marcia Grefsrud mgrefsrud@dfg.ca.gov
On February 26, 2009, Ms. Gan indicated that she could assist Mariposa Energy with Habitat Conservation – Mitigation Banks and Land Acquisition	California Department of Fish and Game	Janice Gan (209) 835-6910
On March 3, 2009, Mr. Fubler confirmed his assignment to the MEP area. The telephone discussion also included potential waters of the United States (including wetlands) impacts; Nationwide Permits; and Section 404 consultation.	U.S. Army Corps of Engineers	Mark Fubler (916) 557-5525

TABLE 5.2-7
Agency Contacts for Biological Resources

Issue	Agency	Contact
No contact with Mr. Salecki thus far. RWQCB issues would include waters of the state (including isolated wetlands) impact, and Water Quality Certification under Section 401 of the Clean Water Act.	Regional Water Quality Control Board	Bob Salecki (916) 464-4684

5.2.7 Permits Required and Permit Schedule

Mariposa Energy may be required to obtain several biological resources permits, authorizations, and agreements. Table 5.2-9 provides a list of permits and permit schedule.

TABLE 5.2-9
Permits and Permit Schedule for Biological Resources

Permit/Authorization	What Is Required to Complete Consultations	Date Application Submitted
USFWS Biological Opinion/Authorization	A federal permit from the USACE is anticipated to authorize temporary impacts to waters of the United States (including wetlands) during the water supply pipeline work. Therefore, the USACE will consult with the USFWFS under Section 7 of the ESA to address potential effects of MEP on federally listed species. Mariposa Energy will prepare a BA on behalf of the USACE to initiate formal consultation.	1 year before construction
CDFG Memorandum of Understanding/Authorization	Prepare incidental take permit application for take of California listed species and species of concern, include 2080.1, if required. A list of state-protected species potentially affected by MEP is provided in Table 5.2-3.	1 year before construction
Alameda County Approval of Construction Plans	Submit construction plans and receive feedback.	60 days before construction.
CDFG Streambed Alteration Agreement for four unnamed drainage crossings along water supply pipeline	Prepare application that clearly identifies areas of impact and measures to protect vegetation and wildlife downstream of construction, and restore impacted bed and bank. Mariposa Energy expects the water supply pipeline project will require a 1602 Streambed Alteration Agreement for the four drainage crossings.	6 months before construction
Clean Water Act Section 404 Permit (Preconstruction Notification for Nationwide Permit)	Mariposa Energy anticipates that construction of the water supply pipeline will impact waters of the United States (including wetlands). A formal wetland delineation occurred in April 2009 that determined the location of jurisdictional wetland and waters in the project area. Mariposa will likely file a Pre-construction Notification to the USACE to authorize temporary fill in waters of the United States (including wetlands) as authorized by Nationwide Permit 12 (Utility Line Activities).	6 months before construction

TABLE 5.2-9
Permits and Permit Schedule for Biological Resources

Permit/Authorization	What Is Required to Complete Consultations	Date Application Submitted
Clean Water Act Section 401 Permit	The potential waters of the United States (including wetlands) occurring along the water supply pipeline are likely considered jurisdictional by the State of California. The April 2009 wetland delineation also identified "isolated wetlands" in the project area covered by the RWQCB. Mariposa Energy will complete an application for a Section 401 Water Quality Certification to authorize temporary fill of waters of the state and wetlands (including isolated wetlands).	6 months before construction

5.2.8 References

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TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Plants					
Large-flowered fiddleneck	*Amsinckia grandiflora*	FE, CE,1B, ECCHCP: No, EACCS: No	Apr-May	Cismontane woodland, valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Bent-flowered fiddleneck	*Amsinckia lunaris*	1B, ECCHCP: No, EACCS: No	Mar-Jun	Coastal bluff scrub, cismontane woodland, valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Alkali milk-vetch	*Astragalus tener var. tener*	1B, ECCHCP: No, EACCS: No	Mar-Jun	Playas, valley and foothill grassland, vernal pools/alkaline	Low; alkaline wetland areas lacking in project area. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Heartscale	*Atriplex cordulata*	1B, ECCHCP: No, EACCS: No	Apr-Oct	Chenopod scrub, meadows and seeps, valley and foothill grassland	Moderate; there are no known records of occurrence in the project area, but alkaline conditions exist along segments of project linears. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Brittlescale	*Atriplex depressa*	1B, ECCHCP: Yes, EACCS: No	Apr-Oct	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools	Moderate; there are no known records of occurrence in the project area, but alkaline conditions exist along segments of project linears. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
San Joaquin spearscale	*Atriplex joaquiniana*	1B, ECCHCP: Yes, EACCS: Yes	Apr-Oct	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland/alkaline	Moderate; there are no known records of occurrence in the project area, but alkaline conditions exist along segments of project linears. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Big-scale balsamroot	*Balsamorhiza macrolepis var. macrolepis*	1B, ECCHCP: No, EACCS: No	Mar-Jun	Chaparral, cismontane woodland, valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Big tarplant	*Blepharizonia plumosa*	1B, ECCHCP: Yes, EACCS: Yes	Jul-Oct	Valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs, and there are no known records of occurrence in the project area. Protocol-level surveys for this species scheduled for summer 2009.
Round-leaved filaree	*California macrophylla*	1B, ECCHCP: Yes, EACCS: No	Mar-May	Cismontane woodland, valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Bristly sedge	*Carex comosa*	2, ECCHCP: No, EACCS: No	May-Sep	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland	Low; potentially suitable habitat in project area is disturbed and no known records of occurrences in project area. Protocol-level surveys for this species scheduled for summer 2009.
Brown fox sedge	*Carex vulpinoidea*	2, ECCHCP: No, EACCS: No	May-Jun	Marshes and swamps (freshwater), riparian woodland	Low; potentially suitable habitat in project area is disturbed and no known records of occurrences in project area. Protocol-level surveys for this species scheduled for summer 2009.
Lemmon's jewelflower	*Caulanthus coulteri var. lemmonii*	1B, ECCHCP: No, EACCS: No	Mar-May	Valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during Spring 2009 rare plant surveys. No additional surveys needed for this species.
Congdon's tarplant	*Centromadia parryi ssp. congdonii*	1B, ECCHCP: No, EACCS: Yes	May-Oct(Nov)	Valley and foothill grassland (alkaline)	Low; project area dominated by non-native annual grasses and forbs, and there are no known records of occurrence in the project area. Protocol-level surveys for this species scheduled for summer 2009.
Hispid bird's-beak	*Cordylanthus mollis ssp. hispidus*	1B, ECCHCP: No, EACCS: No	Jun-Sep	Meadows and seeps, playas, valley and foothill grassland/alkaline	Low; project area dominated by non-native annual grasses and forbs, and there are no known records of occurrence in the project area. Protocol-level surveys for this species scheduled for summer 2009.
Palmate-bracted bird's-beak	*Cordylanthus palmatus*	FE, CE,1B, ECCHCP: No, EACCS: Yes	May-Oct	Chenopod scrub, valley and foothill grassland/alkaline	Low; project area dominated by non-native annual grasses and forbs, and there are no known records of occurrence in the project area. Protocol-level surveys for this species scheduled for summer 2009.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Livermore tarplant	*Deinandra bacigalupi*	1B, ECCHCP: No, EACCS: Yes	Jun-Oct	Meadows and seeps (alkaline)	Low; potentially suitable habitat in project area is disturbed, and there are no known records of occurrences in project area. Protocol-level surveys for this species scheduled for summer 2009.
Hospital Canyon larkspur	*Delphinium californicum ssp. interius*	1B, ECCHCP: No, EACCS: No	Apr-Jun	Chaparral (openings), cismontane woodland (mesic)	None, chaparral habitat does not occur in the project area.
Recurved larkspur	*Delphinium recurvatum*	1B, ECCHCP: No, EACCS: Yes	Mar-Jun	Chenopod scrub, cismontane woodland, valley and foothill grassland/alkaline	Moderate; CNDDB occurrence in an alkaline meadow located less than 1,000 feet from the water supply pipeline. However, this species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Delta button-celery	*Eryngium racemosum*	CE,1B, ECCHCP: No, EACCS: No	Jun-Sep	Riparian scrub (vernally mesic clay depressions)	None; riparian habitat does not occur in the project area.
Diamond-petaled California poppy	*Eschscholzia rhombipetala*	1B, ECCHCP: No, EACCS: No	Mar-Apr	Valley and foothill grassland (alkaline)	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Diablo helianthella	*Helianthella castanea*	1B, ECCHCP: No, EACCS: No	Mar-Jun	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Woolly rose-mallow	*Hibiscus lasiocarpus*	2, ECCHCP: No, EACCS: No	Jun-Sep	Marshes and swamps (freshwater)	Low; potentially suitable habitat in project area is disturbed and no known records of occurrences in project area. Protocol-level surveys for this species scheduled for summer 2009.
Contra Costa goldfields	*Lasthenia conjugens*	FE, 1B, ECCHCP: No, EACCS: No	Mar-Jun	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Delta tule pea	*Lathyrus jepsonii var. jepsonii*	1B, ECCHCP: No, EACCS: No	May-Jul(Sep)	Marshes and swamps (freshwater and brackish)	None; this species generally associated with Delta water bodies (i.e., sloughs). There are no known records of occurrence in the project area.
Mason's lilaeopsis	*Lilaeopsis masonii*	CR,1B, ECCHCP: No, EACCS: No	Apr-Nov	Marshes and swamps (brackish or freshwater), riparian scrub	None; this species generally associated with Delta water bodies (i.e., sloughs). There are no known records of occurrence in the project area.
Delta mudwort	*Limosella subulata*	2, ECCHCP: No, EACCS: No	May-Aug	Marshes and swamps	None; this species generally associated with Delta water bodies (i.e., sloughs). There are no known records of occurrence in the project area.
Showy golden madia	*Madia radiata*	1B, ECCHCP: No, EACCS: No	Mar-May	Cismontane woodland, valley and foothill grassland	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Little mousetail	*Myosurus minimus ssp. apus*	2, ECCHCP: No, EACCS: No	Mar-Jun	Valley and foothill grassland, vernal pools (alkaline)	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Hairless popcorn-flower	*Plagiobothrys glaber*	1B, ECCHCP: No, EACCS: No	Mar-May	Meadows and seeps (alkaline)	Low; there are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Marsh skullcap	*Scutellaria galericulata*	2, ECCHCP: No, EACCS: No	Jun-Sep	Meadows and seeps (mesic), marshes and swamps	None; this species generally associated with Delta water bodies (i.e., sloughs). There are no known records of occurrence in the project area.
Chaparral ragwort	*Senecio aphanactis*	2, ECCHCP: No, EACCS: No	Jan-Apr	Chaparral, cismontane woodland, coastal scrub/sometimes alkaline.	None; there are no known records of occurrence in the project area and suitable habitat does not occur in the project area.
Suisun Marsh aster	*Symphyotrichum lentum*	1B, ECCHCP: No, EACCS: No	May-Nov	Marshes and swamps (brackish and freshwater)	None; this species generally associated with Delta water bodies (i.e., sloughs). There are no known records of occurrence in the project area.
Saline clover	*Trifolium depauperatum var. hydrophilum*	1B, ECCHCP: No, EACCS: No	Apr-Jun	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools	Low; there are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	1B, ECCHCP: No, EACCS: No	Mar-Apr	Valley and foothill grassland (alkaline hills)	Low; project area dominated by non-native annual grasses and forbs. There are no known records of occurrence in the project area. This species not observed during spring 2009 rare plant surveys. No additional surveys needed for this species.
Insects and Crustaceans					
Mid-valley fairy shrimp	*Branchinecta mesovallensis*	ECCHCP: Yes, EACCS: No	RES	Shallow vernal pools, swales and various artificial ephemeral wetland habitats	Moderate; project area is located on edge of this species range, but suitable habitat is present and *Branchinecta* sp. has been observed near the MEP site.
Conservancy fairy shrimp	*Branchinecta conservatio*	FE, ECCHCP: No, EACCS: No	RES	Large, cool-water vernal pools with moderately turbid water	None; large playa pools do not occur in the project area and no known records in the project area.
Longhorn fairy shrimp	*Branchinecta longiantenna*	FE, ECCHCP: Yes, EACCS: Yes	RES	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats	Low; no known records in the project area; suitable habitat is present but this species is quite rare.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT, ECCHCP: Yes, EACCS: Yes	RES	Vernal pools, ephemeral alkali pools, seasonal drainages, stock ponds, vernal swales, and rock outcrops	High; suitable habitat is present and *Branchinecta* sp. has been observed near the MEP site.
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE, ECCHCP: Yes, EACCS: No	RES	Vernal pool wetland ecosystems	None; large playa pools do not occur in the project area; no known records in the project area.
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT, ECCHCP: No, EACCS: No	RES	The species is nearly always found on or close to its host plant, elderberry	None; the elderberry host plant does not occur in the project area; no known records in the project area.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Amphibians					
California tiger salamander, central population	*Ambystoma californiense*	FT, CSC, ECCHCP: Yes, EACCS: Yes	RES	Grassland, oak savanna, and edges of mixed woodlands; breeding: vernal pools, temporary rainwater ponds, permanent human-made ponds if predatory fishes are absent	High; CNDDB occurrences within 1 mile of MEP. Potentially suitable aestivation and dispersal habitat in project area.
Western spadefoot toad	*Spea hammondii*	CSC, ECCHCP: No, EACCS: Yes	RES	Open areas with sandy or gravelly soils, in mixed woodlands, grasslands; rain pools that do not contain bullfrogs, fish, or crayfish are necessary for breeding	Low; no known record occurrences in project area and no suitable breeding habitat is present.
California red-legged frog	*Rana draytonii*	FT, CSC, ECCHCP: Yes, EACCS: Yes	RES	Grasslands and streamsides with plant cover; permanent water sources: lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps	High; CNDDB occurrences within 0.5 miles of MEP and on the Lee Property. Suitable breeding, aestivation, and dispersal habitat in project area.
Reptiles					
San Joaquin coachwhip	*Masticophis flagellum ruddocki*	CSC, ECCHCP: No, EACCS: Yes	RES	Open, dry, treeless areas, including grassland and saltbush scrub. Takes refuge in rodent burrows, under vegetation, and surface objects.	Low; no known record occurrences in project area, and grasslands with a shrub component lacking in project area.
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT, CT, ECCHCP: Yes, EACCS: Yes	RES	Open areas in canyons, rocky hillsides, chaparral scrublands, open woodlands, pond edges, and stream courses	None; no suitable chaparral habitat and known record occurrences present in the project area.
Giant garter snake	*Thamnophis gigas*	FT, CT, ECCHCP: Yes, EACCS: Yes	RES	Marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks	Low; no known record occurrence in the project area. Project area located above the valley floor.
Silvery legless lizard	*Anniella pulchra pulchra*	CSC, ECCHCP: Yes, EACCS: Yes	RES	Moist, warm, loose soil with plant cover; sparsely vegetated areas	Low; no known record occurrences in project area; loose friable soils suitable for this species lacking in project area.
California coast horned lizard	*Phrynosoma coronatum (frontale population)*	CSC, ECCHCP: No, EACCS: Yes	RES	Grasslands, woodlands, and chaparral, with open areas and patches of loose soil; frequently found near ant hills	Low; no known record occurrences in project area and ant prey base not observed during site surveys.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
Western pond turtle	*Actinemys marmorata*	CSC, ECCHCP: Yes, EACCS: Yes	RES	Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with abundant vegetation	Moderate; CNDDB occurrences within 1 mile of MEP. Suitable breeding pond located in the project area along the water supply pipeline corridor.
Birds					
Tricolored blackbird	*Agelaius tricolor*	CSC, ECCHCP: Yes, EACCS: Yes	RES (primarily)	Near open accessible water with dense emergent vegetation (e.g., cattails)	Moderate; no known record occurrences in project area, but onsite marsh habitat found along the water supply pipeline provides suitable breeding habitat.
Golden eagle	*Aquila chrysaetos*	BGPA, CFP, ECCHCP: Yes, EACCS: Yes	RES (primarily)	Open grasslands and savannahs; nests on cliffs of all heights and in large trees in open areas	Detected during April 2009 rare plant survey foraging in project area grasslands; suitable breeding habitat not present in project area.
Loggerhead shrike	*Lanius ludovicianus*	CSC, ECCHCP: No, EACCS: Yes	RES (primarily	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Detected during February 2009 site visits; foraging habitat only, as no trees or shrubs will be impacted during construction.
Western burrowing owl	*Athene cunicularia*	CSC, ECCHCP: Yes, EACCS: Yes	Primarily RES (may WNTR to south)	Open, dry grassland; usually nests in old burrows of ground squirrel or other small mammals	Detected during April 2009 plant surveys. Suitable breeding and foraging habitat in project area.
Short-eared owl	*Asio flammeus*	CSC; ECCHCP: No; EACCS: No	WNTR	Usually found in open areas with few trees such as annual and perennial grasslands, prairies, dunes, wetlands, and irrigated lands	Low; winter migrant to central valley and western Sierra Nevada foothills. Suitable roosting and resting habitat not present in the project area. No known records in the project area.
Swainson's hawk	*Buteo swainsoni*	CT, ECCHCP: Yes, EACCS: Yes	SUM	Open riparian habitat, in scattered trees or small groves in sparsely vegetated flatlands; usually near water in the Central Valley	High; CNDDB occurrences within 1 mile of MEP; foraging habitat only, as no trees will be impacted during construction.
Northern harrier	*Circus cyaneus*	CSC, ECCHCP: No, EACCS: Yes	RES (primarily)	Flat, open areas of tall, dense grasses; moist or dry shrubs; and edges for nesting, cover, and feeding	Detected during February 2009 site survey within 1 mile of MEP. Suitable foraging habitat only in project area.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area
White-tailed kite	*Elanus leucurus*	CFP, ECCHCP: No, EACCS: Yes	RES	Open grasslands, meadows, farmlands and emergent wetlands; groves of dense, broad-leafed deciduous trees used for nesting and roosting	Moderate; no known record occurrences in project area, but suitable foraging habitat is present in project area.
Grasshopper sparrow	*Ammodramus savannarum*	CSC, ECCHCP: No, EACCS: No	SUM	Native grassland with mix of grasses and forbs for nesting and foraging	Moderate; no known record occurrences in project area, but suitable breeding habitat is present.
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	CSC ECCHCP: No, EACCS: No	WNTR	Dense emergent wetland of cattails, tules, and other wetland plants, often along border of lake or pond	Moderate; no known record occurrences in project area, but marsh wetland located along water supply pipeline corridor provides suitable breeding habitat.
Mammals					
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, CT, ECCHCP: Yes, EACCS: Yes	RES	Annual grasslands or grassy open stages of vegetation; some agricultural areas	High; CNDDB occurrences within 1 mile of MEP. Suitable foraging habitat in project area; small mammal burrow located on site may provide denning opportunities for this species.
American badger	*Taxidea taxus*	CSC, ECCHCP: No, EACCS: Yes	RES	Friable soils and relatively open, uncultivated ground; grasslands, savannas	Moderate; CNDDB occurrences within 1 mile of MEP. Suitable foraging habitat in project area; small mammal burrow located on site may provide denning opportunities for this species.
Pallid bat	*Antrozous pallidus*	CSC, ECCHCP: Yes, EACCS: Yes	RES	Shrub-steppe grasslands; day roosts in caves, crevices, mines, and occasionally in hollow trees and buildings	Low; suitable roosting habitat lacking in project area; may disperse through the project area.
Western mastiff bat	*Eumpos perotis californicus*	CSC, ECCHCP: No, EACCS: Yes	RES	Broad open areas; chaparral, oak woodland, grassland, and agricultural areas; primarily cliff-dwelling; building roosts	Low; suitable roosting habitat lacking in project area; may disperse through the project area.

TABLE 5.2-3
Comprehensive List of Special-status Species Potentially Occurring in the MEP Area

Common Name	Scientific Name	Status[a]	Season[b]	Primary Habitat[c]	Potential Occurrence in Project Area

[a] Status.

Federal Status
FE = federally listed as endangered
FT = federally listed as threatened
BGPA = Bald and Golden Eagle Protection Act
State Status
CE = state listed as endangered
CT = state listed as threatened
CFP = state fully protected
CR = state rare
CSC = state species of concern
California Native Plant Society (CNPS) Status
1A = plants presumed extinct in California
1B = plants rare, threatened, or endangered in California, but more common elsewhere
2 = plants rare, threatened, or endangered in California, but more common elsewhere
East Contra Costa Habitat Conservation Plan (ECCHCP), East Alameda County Conservation Strategy (EACCS)
Yes = covered species
No = not a covered species

[b] Season. Blooming period for plants. Season of use for animals. RES = Resident; SUMR = Summer; WNTR = Winter

[c] Primary Habitat. Most likely habitat association

Sources: CNDDB, 2009, and CNPS, 2008 (Clifton Court Forebay, Brentwood, Woodward Island, Holt, Union Island, Tracy, Midway, Altamont, and Byron Hot Springs Quads searched)

TABLE 5.2-8
Applicable Laws, Ordinances, Regulations, and Standards for Biological Resources

Element	Goal/Policy	Conformance
Federal		
Federal Endangered Species Act (Federal ESA, 16 USC 153)	Applicants for projects that could result in adverse impacts on any federally listed species are required to consult with and mitigate potential impacts in consultation with USFWS.	The MEP site supports suitable habitat for federally listed species. Construction and operation will avoid significant impacts on federally listed species and their habitat by consulting under Section 7 of the ESA.
Migratory Bird Treaty Act (16 USC 703 to 711)	Protects all migratory birds, including nests and eggs.	MEP's new stormwater retention basin may attract migratory birds. However, nearby stacks will be low in profile (80 feet in height) and are not likely to result in significant bird strikes due to their distance from the basin. The 230-kV transmission line is inherently raptor safe against electrocution and collisions and would tie in to existing aboveground electrical infrastructure. Any active migratory bird nests indentified during preconstruction surveys will be protected against take.
Bald and Golden Eagle Protection Act (16 USC 668)	Specifically protects bald and golden eagles from harm or trade in parts of these species.	Water birds that may forage at the MEP stormwater retention basin may attract eagles. Stacks will be low in profile (80 feet) and are not likely to result in significant bird strikes. The transmission line is raptor safe and would tie in to existing above ground electrical infrastructure.
State		
California Endangered Species Act (Fish and Game Code Section 2050 et seq.).	Species listed under this act cannot be taken or harmed, except under specific permit.	State-listed species potentially affected by the project are also federally protected. Thus, formal consultation with the USFWS will entail a letter of concurrence from CDFG for the shared species. As a result, construction or operation of MEP will not adversely affect state-listed species.
Fish and Game Code Section 3511	Describes bird species, primarily raptors, that are fully protected. Fully protected birds may not be taken or possessed, except under specific permit requirements.	MEP's new stormwater retention basin may attract migratory birds. However, nearby stacks will be low in profile (80 feet) and are not likely to result in significant bird strikes. The 230-kV transmission line is inherently raptor safe against electrocution and would tie in to existing aboveground electrical infrastructure.

TABLE 5.2-8
Applicable Laws, Ordinances, Regulations, and Standards for Biological Resources

Element	Goal/Policy	Conformance
Fish and Game Code Section 3503	States that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.	The MEP area provides suitable nesting habitat for avian species. Any active nests encountered during preconstruction surveys will be avoided during the species' breeding season.
Fish and Game Code Section 3503.5	Protects all birds of prey and their eggs and nests.	The MEP site provides suitable nesting habitat for western burrowing owl. Preconstruction surveys and mitigation measures for potential adverse impacts on this species will ensure compliance with this code. Stacks will be low in profile (80 feet) and will be affixed with downward-facing lighting; therefore, they are not likely to result in significant bird strikes. The transmission line design is inherently raptor safe and would tie in to existing aboveground electrical infrastructure. The MEP site was analyzed and does not include features that would encourage or accommodate nest building.
Fish and Game Code Section 3513	Makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.	MEP construction and operation will not result in take of birds of prey, their nests, or eggs. Site features have been designed to avoid avian strikes. The MEP area provides suitable nesting habitat for avian species. Any active nests encountered during preconstruction surveys will be avoided during the species' breeding season.
Fish and Game Code Sections 4700, 5050, and 5515	Lists mammal, amphibian, and reptile species that are fully protected in California.	The MEP site was analyzed and likely does not provide habitat for fully protected mammal, amphibian, or reptile species.
Fish and Game Code Sections 1900 et seq.,	The Native Plant Protection Act lists threatened, endangered, and rare plants listed by the state.	The grassland habitat on the MEP site may support protected plant species. Should protected species be identified during protocol-level floristic surveys, Mariposa Energy will ensure their avoidance during MEP construction. If avoidance is not feasible, Mariposa Energy will implement avoidance and/or minimization measures identified in this section and by the regulating agencies.

TABLE 5.2-8
Applicable Laws, Ordinances, Regulations, and Standards for Biological Resources

Element	Goal/Policy	Conformance
Title 14, California Code of Regulations, Sections 670.2 and 670.5	Lists animals designated as threatened or endangered in California.	The MEP site may provide habitat for state-listed species including the Swainson's hawk and San Joaquin kit fox. The giant garter snake is less likely to occur because suitable habitat is not present in the project area. Should listed species be identified or assumed present for MEP, Mariposa Energy will ensure their avoidance during construction. If avoidance is not feasible, Mariposa Energy will implement avoidance, minimization, and/or mitigation measures approved by the regulating agencies.
California Fish and Game Code (Sections 1601 through 1607)	Prohibits alteration of any stream, including intermittent and seasonal channels and many artificial channels, without a permit from CDFG.	Construction of the MEP water supply pipeline likely includes alteration of a stream or channel. In the event that an alteration would occur, Mariposa Energy will apply for a lake or streambed alteration agreement and comply with the conditions of the permit provided therein. There is a potential for streambed alteration at several creek crossings occurring along the water supply pipeline route.
California Fish and Game Code (Sections 2000-2019)	Prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided in this code or regulations made pursuant thereto.	MEP may affect special-status species including American badger and western burrowing owl. If disturbance of these species is unavoidable during project construction, Mariposa Energy with request written authorization from CDFG prior to the disturbance.
CEQA (Public Resources Code Section 15380)	CEQA requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.	The AFC analysis and process is CEQA equivalent. All requirements under CEQA are met with the analysis in the MEP AFC.
Warren Alquist Act (Public Resources Code Section 25000, et seq.)	Warren-Alquist Act is a CEQA-equivalent process implemented by the CEC.	The AFC analysis and process is CEQA equivalent. All requirements under the Warren-Alquist Act are met with the analysis in the MEP AFC.

TABLE 5.2-8
Applicable Laws, Ordinances, Regulations, and Standards for Biological Resources

Element	Goal/Policy	Conformance
Local and Other Jurisdictions		
ECCHCP/NCCP	Long-term conservation goals that address existing biological resources; proposed urban growth; habitat losses; and direct, indirect, and cumulative impacts on sensitive species throughout eastern Contra Costa County.	MEP will not affect the long-term conservation goals for the ECCHCP/NCCP. If determined feasible, Mariposa Energy will participate (paying in-lieu fees) in the ECCHCP/NCCP for biological impacts associated with the water supply pipeline.
Contra Costa County General Plan	Long-term purpose to guide growth, development, and conservation of resources.	No significant ecological areas or selected locations of protected wildlife and plant species areas designated by the General Plan will be impacted by MEP. In Contra Costa County, MEP will primarily affect existing roadways.
East County Area Plan (Alameda County)	Long-term purposed to guide growth, development, and conservation of resources.	MEP is not sited in a plan-designated resource management unit. MEP will conform, as feasible, to the policies of the ECAP.
Alameda County Conservation Strategy	Provides guidance on the permitting process to promote an assurance that impacts are offset in a biologically effective manner. Does not provide, or otherwise authorize, permits or other agency approvals for take of listed species.	Mariposa Energy will make every effort to fully cooperate with local interests when developing habitat avoidance, minimization, and/or mitigation. Mariposa Energy will employ industry standard conservation measures when available designed to either avoid or lessen impacts on biological resources (including focal species) to insignificant levels.