

Special-Status Species with Potential to Occur in the Study Area

Special-status plant and wildlife species considered for inclusion in the analysis in Chapter 13, *Terrestrial Biological Resources*, are presented in this appendix. Table 13A-1 presents detailed information on the special-status plant species known or with potential to occur in study area and includes their common and scientific names, listing status (federal, state, and California Native Plant Society [CNPS]), notes on the species habitat, distribution in California, flowering period, potential for occurrence in the study area, and whether they are analyzed in the chapter. Table 13A-2 provides information on the special-status wildlife species that were identified for consideration in Chapter 13, including common and scientific names, listing status (federal, state, global rank, and/or state rank), notes on the species life history, habitat, distribution in California, potential for occurrence in the study area, and whether they are analyzed in the chapter. The species listed in these table were generated from queries of the California Natural Diversity Database (CNDDDB), CNPS, and the U.S. Fish and Wildlife Service (USFWS) database based on the limits of the study area, and by taking into consideration the ranges of special-status species that have a potential to occur in the study area despite not having occurrences in the study area. Due to the length and complexity of this information, and in an effort to maintain the readability of Chapter 13, this information is presented in an appendix.

1 **Table 13A-1. Special-Status Plant Species Considered for Analysis (in the Study Area)**

Common and Scientific Names	Legal Status ^a		Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State/CRPR	Habitat and Distribution in California		
Large-flowered fiddleneck <i>Amsinckia grandiflora</i>	E/E/1B.1	Cismontane woodland, valley and foothill grassland slopes; 902–1,804 feet. Historically known from Mount Diablo foothills in Contra Costa, Alameda, and San Joaquin Counties; currently known from three natural occurrences.	Species not known to occur in study area; study area below 900 feet elevation.	No
Slender silver moss <i>Anomobryum julaceum</i>	-/-/2B.2	On damp rock and soil on outcrops, usually on roadcuts in broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest; 328–3,281 feet. Scattered occurrences in California from Humboldt and Shasta Counties south to Los Angeles County; Oregon and elsewhere.	Species not known to occur in study area; no potential habitat present.	No
Mt. Diablo manzanita <i>Arctostaphylos auriculata</i>	-/-/1B.3	Chaparral and oak woodland in canyons and on slopes on sandstone; 443–2,132 feet. Endemic to Contra Costa County especially Mt Diablo area, San Francisco Bay Area.	Species not known to occur in study area; no potential habitat in study area.	No
Contra Costa manzanita <i>Arctostaphylos manzanita</i> subsp. <i>laevigata</i>	-/-/1B.2	Rocky sites in chaparral; 1,640–3,609 feet. Eastern San Francisco Bay region, Mount Diablo, southern Inner North Coast Range, Vaca Mountains in Contra Costa County.	Species not known to occur in study area; no potential habitat present.	No
Ferris's milk vetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	-/-/1B.1	Seasonally wet areas in meadows and seeps, subalkaline flats in valley and foothill grassland; 6–246 feet. Historical range included the Central Valley from Butte to Alameda County but currently only occurs in Butte, Glenn, Colusa, and Yolo Counties.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	-/-/1B.2	Playas, on adobe clay in valley and foothill grassland, vernal pools on alkaline soils; 3–197 feet. Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay Area.	Occurrences reported in or abutting study area.	Yes
Heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	-/-/1B.2	Saline or alkaline soils in chenopod scrub, meadows and seeps, sandy areas in valley and foothill grassland; below 1,837 feet. Western Central Valley and valleys of adjacent foothills.	One occurrence in study area at Jepson Prairie, outside area that would be affected.	No
Crownscale <i>Atriplex coronata</i> var. <i>coronata</i>	-/-/4.2	Alkaline clay soils in chenopod scrub, playas, valley and foothill grasslands; 1–516 feet. Southern Sacramento Valley, eastern San Joaquin Valley, eastern San Francisco Bay Area, Inner South Coast Ranges.	Occurrences reported in study area.	Yes
Brittlescale <i>Atriplex depressa</i>	-/-/1B.2	Alkaline clay soils in chenopod scrub, playas, valley and foothill grasslands; 3–1,049 feet. Western and eastern Central Valley and adjacent foothills on west side of Central Valley.	Occurrences reported in or abutting study area.	Yes

Common and Scientific Names	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
Lesser saltscare <i>Atriplex minuscula</i>	-/-/1B.1	Sandy alkaline soils in chenopod scrub, playas, valley and foothill grassland; 49–656 feet. Sacramento Valley and San Joaquin Valley: Merced County to Kern County, disjunct to Alameda and Butte Counties.	Species not known to occur in study area, study area not within species' range.	No
Vernal pool smallscale <i>Atriplex persistens</i>	-/-/1B.2	Dry beds of vernal pools on alkaline soils; 33–377 feet. Central Valley from Glenn to Tulare County.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	-/-/1B.2	Sometimes on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 295–5,102 feet. Scattered occurrences in the Coast Ranges and Sierra Nevada foothills.	Species not known to occur in study area; no potential habitat in study area.	No
Big tarplant <i>Blepharizonia plumosa</i>	-/-/1B.1	Valley and foothill grassland; 98–1,657 feet. San Francisco Bay Area, with occurrences in Alameda, Contra Costa, San Joaquin*, Stanislaus, and Solano Counties.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Watershield <i>Brasenia schreberi</i>	-/-/2B.3	Freshwater marshes; 98–7,218 feet. Scattered occurrences in northern and central California; widespread across US.	Occurrences reported in and abutting study area.	Yes
Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i>	-/-/1B.2	Cismontane woodland; chaparral, riparian woodland, valley and foothill grassland; 98–2,756 feet. Alameda, Contra Costa, and Solano Counties.	Species not known to occur in study area; no potential habitat in study area.	No
Bristly sedge <i>Carex comosa</i>	-/-/2B.1	Coastal prairie, marshes and swamps at lake margins, valley and foothill grassland; below 2,050 feet. Scattered occurrences throughout California; Oregon, Washington, and elsewhere.	Occurrences reported in study area.	Yes
Tiburon paintbrush <i>Castilleja affinis</i> subsp. <i>neglecta</i>	E/T/1B.2	Serpentine grasslands; 197–1,312 feet. San Francisco Bay Area: Marin, Napa, and Santa Clara Counties.	Species not known to occur in study area; no potential habitat in study area.	No
Lemmon's jewel-flower <i>Caulanthus lemmonii</i>	-/-/1B.2	Dry, exposed slopes in grasslands and pinyon-juniper woodland; 262– 4,003 feet. Southeast San Francisco Bay Area, south through the South Coast Ranges and adjacent San Joaquin Valley to Ventura County.	Species not known to occur in study area; no potential habitat in study area.	No
Congdon's tarplant <i>Centromadia parryi</i> subsp. <i>congdonii</i>	-/-/1B.2	Alkaline soils in annual grassland, on lower slopes, flats, and swales, sometimes on saline soils; below 754 feet. East San Francisco Bay Area, Salinas Valley, Los Osos Valley.	Species range does not overlap with the geographic region or habitats that could be affected by project activities.	No

Common and Scientific Names	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
Pappose tarplant <i>Centromadia parryi</i> subsp. <i>parryi</i>	-/-/1B.2	Coastal prairie, meadows and seeps, coastal salt marshes and swamps, alkaline soils in vernal mesic valley and foothill grassland; 6–1,378 feet. North and Central Coast Ranges, the southern Sacramento Valley; occurrences in Butte, Colusa, Glenn, Lake, Napa, San Mateo, and Solano Counties.	Species range does not overlap with the geographic region or habitats that could be affected by project activities.	No
Parry's rough tarplant <i>Centromadia parryi</i> subsp. <i>rudis</i>	-/-/4.2	Grassland habitats, often on clay or alkaline soils; 0–300 feet. Inner North Coast Ranges, Sacramento Valley, northern San Joaquin Valley.	Species range does not overlap with the geographic region or habitats that could be affected by project activities.	No
Hispid bird's-beak <i>Chloropyron molle</i> subsp. <i>hispidum</i>	-/-/1B.1	Meadow and seeps, valley and foothill grassland, playas, on alkaline soils; 3–508 feet. Central Valley in Alameda, Fresno, Kern, Merced, Placer, and Solano Counties.	Species range does not overlap with the geographic region or habitats that could be affected by project activities.	No
Soft bird's-beak <i>Chloropyron molle</i> subsp. <i>molle</i>	E/R/1B.2	Tidal salt marsh; below 10 feet. San Francisco Bay region: Suisun Marsh, Contra Costa, Marin*, Napa, Solano, Sacramento*, and Sonoma* Counties.	Only known occurrence in study area is extirpated.	Yes
Palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	E/E/1B.1	Alkaline sites in grassland and chenopod scrub; 16–508 feet. Livermore Valley and scattered locations in the Central Valley from Colusa County to Fresno County.	Species range does not overlap with the geographic region or habitats that could be affected by project activities.	No
Bolander's water-hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	-/-/2.1	Marshes and swamps, coastal, fresh or brackish water; 0–656 feet. Contra Costa, Los Angeles*, Marin, Sacramento, Santa Barbara*, San Luis Obispo*, Solano Counties; also, Arizona, New Mexico, and Washington.	Occurrences reported in and abutting study area.	Yes
Slough thistle <i>Cirsium crassicaule</i>	-/-/1B.1	Chenopod scrub, riparian scrub, sloughs in swamps and marshes; 10–328 feet. San Joaquin Valley: San Joaquin, Kings and Kern Counties.	Species range does not overlap with the geographic region or habitats that could be affected by project activities.	No
Suisun thistle <i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	E/-/1B.1	Salt marshes and swamps; below 3 feet. Suisun Marsh, Solano County.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Small-flowered morning-glory <i>Convolvulus simulans</i>	-/-/4.2	Grassland, coastal sage scrub, chaparral, on clay soils, occasionally on serpentine, 100–2,870 feet. Southern Sierra Nevada foothills, San Joaquin Valley, San Francisco Bay Area, South Coast Ranges, coastal Southern California.	Species not known to occur in study area; potential habitat present in study area.	Yes

Common and Scientific Names	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
Hoover's cryptantha <i>Cryptantha hooveri</i>	-/-/1A	Inland dunes and coarse, sandy soil in valley and foothill grassland; 29–492 feet. Northern and central San Joaquin Valley: Contra Costa*, Kern, Madera*, and Stanislaus* Counties.	Only known occurrence in study area No historic last seen in Antioch in 1908 and possibly extirpated due to development. No potential habitat in study area.	No
Peruvian dodder <i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	-/-/2B.2	Freshwater marshes and swamps; 49–919 feet. Not seen since 1948; occurrences in Butte, Los Angeles, Merced, Sacramento(?), San Bernardino*, and Sonoma Counties; Baja California and elsewhere.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Hospital Canyon larkspur <i>Delphinium californicum</i> subsp. <i>interius</i>	-/-/1B.2	Openings in chaparral, mesic cismontane woodland, on moist slopes and ravines; 754–3,592 feet. Inner South Coast Ranges, eastern San Francisco Bay: Alameda, Contra Costa, Merced, San Benito, Santa Clara, San Joaquin, San Luis Obispo, and Stanislaus Counties.	Species not known to occur in study area; no potential habitat in study area.	No
Recurved larkspur <i>Delphinium recurvatum</i>	-/-/1B.2	Alkaline soils in valley and foothill grassland, saltbush scrub, cismontane woodland; 10–2,460 feet. Central Valley from Colusa* to Kern Counties.	Occurrences reported in study area.	Yes
Western leatherwood <i>Dirca occidentalis</i>	-/-/1B.2	Moist areas in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland; 82–1,296 feet. San Francisco Bay region, Alameda, Contra Costa, Marin, Santa Clara, San Mateo, and Sonoma Counties.	Species not known to occur in study area; no potential habitat in study area.	No
Dwarf downingia <i>Downingia pusilla</i>	-/-/2B.2	Wet areas in valley and foothill grassland, vernal pools; 3–1,460 feet. Inner North Coast Ranges, southern Sacramento Valley, northern and central San Joaquin Valley.	Occurrences reported in or abutting study area.	Yes
Streamside daisy <i>Erigeron biolettii</i>	-/-/3	Moist, rocky areas in broadleaved upland forest, cismontane woodland, North Coast coniferous forest, and ledges along rivers; 98–3,609 feet. North Coast, from Humboldt County to Marin County.	Species not known to occur in study area; no potential habitat in study area.	No
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	-/-/1B.2	On sandy to gravelly serpentinite soils in chaparral, coastal prairie, oak woodland, valley and foothill grassland; below 2,296 feet. Central Inner North Coast Range, northern Central coast, and northern San Francisco Bay Area: Alameda, Contra Costa, Marin, and Sonoma(?) Counties.	Species not known to occur in study area; no potential habitat in study area.	No

Common and Scientific Names	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
Antioch Dunes buckwheat <i>Eriogonum nudum</i> var. <i>psychicola</i>	-/-/1B.1	Inland dunes; below 66 feet. Known from a single occurrence in the Antioch Dunes, Contra Costa County.	Species occurs in study area outside of area that would be affected (Antioch). No suitable habitat within areas that would be affected.	No
Mt. Diablo buckwheat <i>Eriogonum truncatum</i>	-/-/1B.1	Coarse, sandy soils in chaparral, coastal scrub, valley and foothill grassland; 10–1,148 feet. Historically known from Alameda, Contra Costa, and Solano Counties; recently rediscovered on Mt. Diablo.	Species not known to occur in study area; no potential habitat in study area.	No
Jepson's button-celery or Jepson's coyote thistle <i>Eryngium jepsonii</i>	-/-/1B.2	Grasslands, on vernal moist clay soils, below 1,640 ft; Southern Interior North Coast Ranges, deltaic Great Valley, San Francisco Bay Area	Two occurrences in study area are outside of areas that would be affected. Potential habitat in areas that would be affected.	Yes
Spiny-sepaed button-celery <i>Eryngium spinosepalum</i>	-/-/1B.2	Vernal pools, swales, roadside ditches, at 50–4,165 feet; Western San Joaquin Valley, southern Sierra Nevada Foothills	Species occurs in study area.	Yes
Delta button-celery <i>Eryngium racemosum</i>	-/E/1B.1	Riparian scrub in seasonally inundated depressions on clay soils; 10–98 feet. San Joaquin River delta, floodplains, and adjacent Sierra Nevada Foothills: Calaveras, Contra Costa, Merced, San Joaquin*, and Stanislaus Counties.	Only occurrences in study area are extirpated. Suitable habitat is present in the study area.	Yes
Contra Costa wallflower <i>Erysimum capitatum</i> var. <i>angustatum</i>	E/E/1B.1	Inland dunes; 10–66 feet. Known only from the Antioch Dunes in Contra Costa County.	Species occurs in study area outside of area that would be affected (Antioch). No suitable habitat within areas that would be affected.	No
Diamond-petaled California poppy <i>Eschscholzia rhombipetala</i>	-/-/1B.1	On alkaline clay soils in grassland, chenopod scrub, where grass cover is sparse enough to allow growth of low annuals; below 3,199 feet. Interior foothills of South Coast Ranges from Alameda County to Stanislaus Counties, Carrizo Plain in San Luis Obispo County.	Species occurs in study area.	Yes
San Joaquin spearscale <i>Extriplex joaquinana</i>	-/-/1B.2	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; 3–2,739 feet. Western edge of the Central Valley from Glenn to Tulare Counties.	Occurrences reported in or abutting study area.	Yes
Stinkbells <i>Fritillaria agrestis</i>	-/-/4.2	Chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland, on clay or serpentinite substrate; 33–5,102 feet. Alameda, Contra Costa, Fresno, Kern, Mendocino, Monterey, Merced, Monterey, Mariposa, Placer, Sacramento, Santa Barbara, San Benito, San Luis Obispo, San Mateo, Stanislaus, and Tuolumne Counties.	Species range does not overlap with the geographic region or habitats that could be affected by project activities.	Yes

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	Federal/State/CRPR	Habitat and Distribution in California		
Fragrant fritillary <i>Fritillaria liliacea</i>	-/-/1B.2	Adobe soils of interior foothills, coastal prairie, coastal scrub, valley and foothill grassland, often on serpentinite; 10–1,345 feet. Coast Ranges from Marin County to San Benito County.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Adobe-lily <i>Fritillaria pluriflora</i>	-/-/1B.2	Chaparral, cismontane woodland, valley and foothill grassland, often on adobe soils; 197–2,313 feet. Northern Sierra Nevada foothills, Inner North Coast Ranges, edges of Sacramento Valley.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	-/E/1B.2	Clay soils in areas of shallow water, lake margins of swamps and marshes, vernal pool margins; 33–7,792 feet. Inner North Coast Ranges, Central Sierra Nevada foothills, Sacramento Valley and Modoc Plateau in Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama Counties; and Oregon.	A single occurrence reported in study area (Jepson Prairie). Would only be potentially affected by tidal restoration.	Yes
Diablo helianthella <i>Helianthella castanea</i>	-/-/1B.2	At chaparral/oak woodland ecotone, often in partial shade, on rocky soils, also coastal scrub, riparian woodland, broadleaved upland forest, valley and foothill grassland; 197–4,265 feet. San Francisco Bay Area: Alameda, Contra Costa, Marin*, San Francisco*, and San Mateo Counties; also reported from San Diego County.	Species not known to occur in study area; no potential habitat in study area.	No
Hogwallow starfish <i>Hesperovax caulescens</i>	-/-/4.2	Vernal pools, clay flats, in grasslands; 0–985 feet. Broadly ranging in California, primarily in Great Valley and adjacent foothills, also in South Coast Ranges, Peninsular Ranges.	Species occurs in study area.	Yes
Brewer's western flax <i>Hesperolinon breweri</i>	-/-/1B.2	Chaparral, cismontane woodland, valley and foothill grassland usually on soils derived from serpentinite; 98–2,953 feet. Southern North Inner Coast Ranges, northeast San Francisco Bay region, especially Mt. Diablo: Contra Costa, Napa, and Solano Counties.	Species not known to occur in study area; no potential habitat in study area.	No
Woolly rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	-/-/1B.2	Freshwater marshes and swamps; below 394 feet. Scattered locations in the Central Valley, including the Delta, from Butte County to San Joaquin County.	Occurrences reported in and abutting study area.	Yes
Santa Cruz tarplant <i>Holocarpha macradenia</i>	T/E/1B.1	Coastal terrace grasslands, coastal scrub, often on light sandy to sandy clay soils; 33–722 feet. Coastal slope of the Santa Cruz Mountains, Monterey and Santa Cruz Counties.	No suitable coastal terrace grasslands or coastal scrub in the study area.	No
Central Coast iris <i>Iris longipetala</i>	-/-/4.2	North and Central Coast, outer North Mesic areas in coastal prairie, lower montane coniferous forest, meadows; 0–2,000 feet. Coast Ranges, San Francisco Bay Area.	Occurrences adjacent to but not in study area; no potential habitat in study area.	No
Carquinez goldenbush <i>Isocoma arguta</i>	-/-/1B.1	Annual grassland on alkaline soils and flats; 3–66 feet. Deltaic Sacramento Valley, Suisun Slough, Contra Costa and Solano Counties.	Species range does not overlap with the geographic region that could be affected by project activities.	No

Common and Scientific Names	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
Contra Costa goldfields <i>Lasthenia conjugens</i>	E/-/1B.1	Wet areas in cismontane woodland, valley and foothill grassland, vernal pools, alkaline playas or saline vernal pools and swales; below 1,542 feet. Scattered occurrences in Coast Range valleys and southwest edge of Sacramento Valley: Alameda, Contra Costa, Mendocino*, Monterey, Marin, Napa, Santa Barbara*, Santa Clara*, Solano and Sonoma Counties.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Ferris' goldfields <i>Lasthenia ferrisiae</i>	-/-/4.2	Alkaline vernal pools, wet saline flats; 0–2,300 feet. San Joaquin Valley and valleys of adjacent foothills.	Occurrences reported in study area.	Yes
Delta tule pea <i>Lathyrus jepsonii</i> subsp. <i>jepsonii</i>	-/-/1B.2	Coastal and estuarine marshes (freshwater and brackish); below 13 feet. San Francisco Bay region, also part of Central Valley in Alameda, Contra Costa, Napa, Santa Clara*, San Joaquin, Solano, and Sonoma Counties.	Occurrences reported in or abutting study area.	Yes
Legenere <i>Legenere limosa</i>	-/-/1B.1	Vernal pools; 3–2,887 feet. Primarily in the lower Sacramento Valley, also from North Coast Ranges, northern San Joaquin Valley, and the Santa Cruz mountains.	Occurrences reported in or abutting study area.	Yes
Heckard's peppergrass <i>Lepidium latipes</i> var. <i>heckardii</i>	-/-/1B.2	On margins of alkali scalds in annual grassland; 6–656 feet. Southern Sacramento Valley in Glenn, Merced, Sacramento, Solano, and Yolo Counties.	Occurrences reported in study area.	Yes
Woolly-headed lessingia <i>Lessingia hololeuca</i>	-/-/3	Clay or serpentinite soils of broadleaved upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; 49–1,001 feet. Southern North Coast Ranges; southern Sacramento Valley; northern San Francisco Bay region; and Alameda, Monterey, Marin, Napa, Santa Clara, San Mateo, Solano, Sonoma, and Yolo Counties.	Species not known to occur in study area, no potential habitat in study area.	No
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	-/R/1B.1	Freshwater or brackish marsh, riparian scrub, in tidal zone; below 33 feet. Southern Sacramento Valley, Sacramento-San Joaquin River Delta, northeast San Francisco Bay Area in Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, and Yolo Counties.	Occurrences reported in or abutting study area.	Yes
Delta mudwort <i>Limosella australis</i>	-/-/2B.1	Muddy or sandy intertidal flats and marshes, streambanks in riparian scrub; generally, at sea level (i.e., below 10 feet). Deltaic Central Valley: Contra Costa, Sacramento, San Joaquin, and Solano Counties; Oregon.	Occurrences reported in or abutting study area.	Yes

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	Federal/State/CRPR	Habitat and Distribution in California		
Showy madia <i>Madia radiata</i>	-/-/1B.1	Oak woodland, valley and foothill grassland, slopes; 82–3,986 feet. Scattered populations in the interior foothills of the South Coast Ranges: Contra Costa*, Fresno, Kings*, Kern, Monterey*, Santa Barbara*, San Benito, Santa Clara, San Joaquin*, San Luis Obispo, and Stanislaus Counties.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Hall's bush-mallow <i>Malacothamnus hallii</i>	-/-/1B.2	Chaparral and coastal scrub; 22–2,493 feet. Alameda, Contra Costa, Mendocino, Merced, Santa Clara, San Mateo, and Stanislaus Counties.	Species not known to occur in study area; no potential habitat in study area.	No
Little mousetail <i>Myosurus minimus</i> subsp. <i>apus</i>	-/-/3.1	Valley and foothill grassland, alkaline vernal pools; 66–2,100 feet. Central Valley and South Coast from Butte County south to San Diego County; Baja California, Oregon.	One occurrence reported in study area, which may be a misidentification.	Yes
Cotula navarretia <i>Navarretia cotulifolia</i>	-/-/4.2	Grassland, oak woodland, openings in chaparral, on adobe clay soils; 0–1,640 feet. Inner North Coast Ranges, western Sacramento Valley, San Francisco Bay Area, Inner South Coast Ranges.	Occurrences in study area.	Yes
Baker's navarretia <i>Navarretia leucocephala</i> subsp. <i>bakeri</i>	-/-/1B.1	Vernal pools and swales in woodland, lower montane coniferous forest, mesic meadows, and grassland; 16–5,709 feet. Inner North Coast Range, western Sacramento Valley: Colusa, Glenn, Lake, Mendocino, Marin, Napa, Solano, Sonoma, Tehama, and Yolo Counties.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Shining navarretia <i>Navarretia nigelliformis</i> subsp. <i>radians</i>	-/-/1B.2	Mesic areas with heavy clay soils, in swales and clay flats; in oak woodland, grassland; 249–3,281 feet. Interior foothills of South Coast Ranges from Merced County to San Luis Obispo County.	Species occurs adjacent to study area and potential habitat present in study area.	Yes
Colusa grass <i>Neostapfia colusana</i>	T/E/1B.1	Adobe soils of large vernal pools; 16–656 feet. Central Valley with scattered occurrences from Colusa to Merced Counties.	One occurrence in study area (Jepson Prairie). Would only be potentially affected by tidal restoration.	Yes
Antioch Dunes evening-primrose <i>Oenothera deltooides</i> subsp. <i>howellii</i>	E/E/1B.1	Inland dunes; below 98 feet. Northeast San Francisco Bay region, known from three native occurrences; Contra Costa and Sacramento Counties.	No suitable habitat would be affected by project activities.	No
Gairdner's yampah <i>Perideridia gairdneri</i> subsp. <i>gairdneri</i>	-/-/4.2	Coastal prairie, grasslands, and grassy openings in coniferous forest; 0–1,150 feet. Widely scattered localities, primarily in coastal California and the North Coast Ranges.	Species not known to occur in study area; study area outside of the species' range.	No
Bearded popcorn-flower <i>Plagiobothrys hystriculus</i>	-/-/1B.1	Mesic grassland, vernal pools; below 899 feet. Montezuma Hills in Napa, Solano, and Yolo Counties.	Species range does not overlap with the geographic region that could be affected by project activities.	No

Common and Scientific Names	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
Eel-grass pondweed <i>Potamogeton zosteriformis</i>	-/-/2B.2	Assorted freshwater marshes, ponds, lakes and streambanks; below 6,102 feet. Scattered locations in northern California: Contra Costa, Lake, Lassen, Modoc, and Shasta Counties; Oregon, Utah, Washington, and elsewhere.	A single occurrence is known from study area.	Yes
Delta woolly marbles <i>Psilocarphus brevissimus</i> var. <i>multiflorus</i>	-/-/4.2	Vernal pools and swales; 30–1,640 feet. Widely scattered occurrences in the Sacramento Valley, northern San Joaquin Valley, and San Francisco Bay Area.	Species present in study area outside of areas that would be affected, but potential habitat in project footprint.	Yes
California alkali grass <i>Puccinellia simplex</i>	-/-/1B.2	Seasonally wet alkaline wetlands, sinks, flats, vernal pools, and lake margins, below 3,000 feet; Scattered locations in the San Francisco Bay Area, Great Valley, Tehachapi Mountains, western Mojave Desert	Two occurrences in study area; potential habitat present in study area.	Yes
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-/-/1B.2	Freshwater marshes, sloughs, canals, and other slow-moving shallow water habitats; below 2,132 feet. Scattered locations in Central Valley and Coast Ranges.	Occurrences reported in and abutting study area.	Yes
Marsh skullcap <i>Scutellaria galericulata</i>	-/-/2B.2	Marshes, mesic meadows, seeps, lower montane coniferous forest; below 6,890 feet. Northern High Sierra Nevada, Modoc Plateau in El Dorado, Lassen, Modoc, Nevada, Placer, Plumas, Shasta, and Siskiyou Counties. Also known from the Delta in San Joaquin County, Oregon, and elsewhere.	Occurrences reported in study area.	Yes
Side-flowering skullcap <i>Scutellaria lateriflora</i>	-/-/2B.2	Mesic meadows, marshes and swamps; below 1,640 feet. Known in California from occurrences in northern San Joaquin Valley in Sacramento and San Joaquin Counties and east of the Sierra Nevada in Inyo County, New Mexico, Oregon, and elsewhere.	Occurrences reported in study area.	Yes
Chaparral ragwort <i>Senecio aphanactis</i>	-/-/2B.2	Oak woodland, coastal scrub, chaparral, open sandy or rocky areas, on alkaline soils; 49–2,625 feet. Scattered locations in central western and southwestern California, from Alameda County to San Diego County.	Occurrences adjacent to but not in study area; no potential habitat in study area.	No
Keck's checkerbloom <i>Sidalcea keckii</i>	E/-/1B.1	Serpentine clay soils in cismontane woodland, valley and foothill grassland; 394 feet–1,394 feet. Known historically from only three occurrences in Fresno, Merced, and Tulare Counties; similar plants from Inner North Coast Ranges in Colusa, Napa, Solano, and Yolo Counties treated as this species until further studies completed.	Species not known to occur in study area; no potential habitat in study area.	No
Long-styled sand-spurrey <i>Spergularia macrotheca</i> var. <i>longistyla</i>	-/-/1B.2	Alkaline grassland, meadows, marshes, mud flats, hot springs, below 200 m; Interior North Coast Ranges, Great Valley	Six occurrences and potential habitat in study area.	Yes

Common and Scientific Names	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
Suisun Marsh aster <i>Symphyotrichum lentum</i>	-/-/1B.2	Brackish and freshwater marshes and swamps; below 10 feet. Sacramento–San Joaquin Delta, Suisun Marsh, Suisun Bay: Contra Costa, Napa, Sacramento, San Joaquin, and Solano Counties.	Occurrences reported in or abutting study area.	Yes
Wright’s trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	-/-/2B.1	On alkaline soils in floodplains, meadows and seeps, marshes and swamps, riparian forest, vernal pools; 16–1,427 feet. Scattered locations in the Central Valley and Southern Coast; Texas.	Species current range does not overlap with the geographic region that could be affected by project activities.	No
Showy rancheria clover <i>Trifolium amoenum</i>	E/-/1B.1	Low elevation grasslands, including swales and disturbed areas, sometimes on serpentinite soils; 16–1,361 feet. Coast Range foothills in the San Francisco Bay region, currently known from only two recent occurrences in Marin County.	Species range does not overlap with the geographic region that could be affected by project activities.	No
Saline clover <i>Trifolium hydrophilum</i>	-/-/1B.2	Salt marsh, mesic alkaline areas in valley and foothill grasslands, vernal pools, marshes and swamps; below 984 feet. Sacramento Valley, central western California.	Occurrences reported in study area.	Yes
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	-/-/1B.1	Grasslands on alkaline hills; below 1,493 feet. Historically known from the northwest San Joaquin Valley and adjacent Coast Range foothills; currently known from Fresno, Monterey, and San Luis Obispo Counties.	Extant occurrence adjacent to study area, and potential habitat present in study area.	Yes
Solano grass <i>Tuctoria mucronata</i>	E/E/1B.1	Vernal pools, mesic grassland; 16–33 feet. Southwestern Sacramento Valley in Solano and Yolo Counties.	One occurrence in study area (Jepson Prairie). Would only be potentially affected by tidal restoration.	Yes
Oval-leaved viburnum <i>Viburnum ellipticum</i>	-/-/2B.3	Chaparral, cismontane woodland, and lower montane coniferous forest; 705–4,593 feet. Northwest California, San Francisco Bay Area, northern and central Sierra Nevada foothills.	No suitable chaparral, cismontane woodland, or lower montane coniferous forest within the study area. No suitable habitat is present in areas affected by project activities.	No

- 1 **Habitat and Distribution in California**
- 2 ? = population status within that County uncertain.
- 3 * = known populations believed extirpated from that County.
- 4 ^a Status explanations:
- 5 **Federal**
- 6 E = listed as endangered under the federal Endangered Species Act.
- 7 T = listed as threatened under the federal Endangered Species Act.
- 8 – = no listing.

- 1 **State**
- 2 E = listed as endangered under the California Endangered Species Act.
- 3 T = listed as threatened under the California Endangered Species Act.
- 4 R = listed as rare under the California Native Plant Protection Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
- 5 -- = no listing.
- 6 **California Rare Plant Rank¹**
- 7 1A = presumed extinct.
- 8 1B = rare, threatened, or endangered in California and elsewhere.
- 9 2B = rare, threatened, or endangered in California only.
- 10 3 = plants about which more information is needed to determine their status.
- 11 4 = plants of limited distribution.
- 12 .1 = seriously endangered in California.
- 13 .2 = fairly endangered in California.
- 14 .3 = not very endangered in California.

¹ In March 2010, CDFW changed the name of “CNPS List” or “CNPS Ranks” to “California Rare Plant Rank” (or CRPR). This was done to reduce confusion over the fact that CNPS and CDFW jointly manage the Rare Plant Status Review groups (300+ botanical experts from government, academia, non-governmental organizations, and the private sector) and that the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

1 **Table 13A-2. Special-Status Wildlife Species Considered for Analysis (in the Study Area)**

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Invertebrates					
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	E/-	G1 S2	Found in large turbid playa pools. Occurs from Butte and Tehama Counties to Ventura County.	Known to occur in the study area.	Yes
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/-	G3 S3	Vernal pools, swales, and other ephemeral wetlands. Occurs in the Central Valley from Shasta to Tulare and Kings Counties, in the central and southern Coast Ranges from Napa County to Los Angeles County, and inland in western Riverside County.	Known to occur in the study area.	Yes
Midvalley fairy shrimp <i>Branchinecta mesovallensis</i>	-/-	G2 S2S3	Vernal pools, swales, and other ephemeral wetlands. Occurs in the Sacramento Valley from Glenn County to Santa Clara County, San Joaquin Valley, and the Sierra foothills from Yuba County to Kern County.	Known to occur in the study area.	Yes
California linderiella <i>Linderiella occidentalis</i>	-/-	G2G3 S2S3	Vernal pools, swales, and other ephemeral wetlands. Range is limited to the Central Valley and Coast Ranges.	Known to occur in the study area.	Yes
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/-	G4 S3S4	Occupies a variety of vernal pool habitats in the Central Valley and San Francisco Bay Area. Species has a patchy distribution across the Central Valley from Shasta County southward to northwestern Tulare County.	Known to occur at several locations in the study area.	Yes
Hairy water flea <i>Dumontia oregonensis</i>	-/-	G1G3 S1	Described in 2003 from a specimen taken from a vernal pool in southern Oregon. Documented in California in Sacramento and Solano Counties.	Known to occur in a vernal pool less than 1 mile outside the study area; could occur in vernal pools throughout the study area.	Yes
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	-/-	G1 S1	Loose sand on sand bars and sand dunes. Detected at Antioch Dunes in Contra Costa County as well as several sites along the Sacramento River in Glenn, Tehama, Shasta, and Solano Counties.	Could occur in dune or sandbar habitat in the study area.	Yes
Sacramento anthicid beetle <i>Anthicus sacramento</i>	-/-	G1 S1	Interior sand dunes and sand bars, as well as in dredge spoil heaps. Found on Sacramento and lower San Joaquin Rivers from Shasta to San Joaquin Counties. Found at one site on the Feather River in Sutter County.	Could occur in sandy riparian habitat in the study area.	Yes
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/-	G3T2 S2	Elderberry shrubs, typically in riparian habitats. Central Valley, including the study area, below approximately 500 feet elevation.	Known to occur in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Delta green ground beetle <i>Elaphrus viridis</i>	T/-	G1S1	Typically occurs in the grassland-vernal pool complex. Species has only been detected in the greater Jepson Prairie area in Solano County. Typically occurs in the grassland-vernal pool complex.	Jepson Prairie is within the western portion of the study area, where the species is known to occur.	Yes
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	-/-	G2? S2?	Detected in Lake, Marin, Placer, Sacramento, San Joaquin, San Mateo, Solano, and Sonoma Counties. Typically known from a variety of aquatic habitats including vernal pools.	Potential to occur in the study area.	Yes
Curved-foot hygrotus diving beetle <i>Hygrotus curvipes</i>	-/-	G1 S1	Known to occur in Alameda and Contra Costa Counties. Small seasonal pools, associated with alkaline plant communities.	Potential to occur in the south western part of the study area, in Contra Costa County.	Yes
Molestan blister beetle <i>Lytta molesta</i>	-/-	G2 S2	Has been collected on <i>Lupinus</i> , <i>Trifolium</i> , and <i>Eriodium</i> . Often associated with grasslands and dried vernal pools. Occurs in the Central Valley of California.	Known to occur in the study area.	Yes
Monarch butterfly <i>Danaus plexippus</i>	CE/-	G4 S2	Open habitats including fields, meadows, weedy areas, marshes, and roadsides. Monarch butterflies roost in wind-protected tree groves (such as eucalyptus) with nectar and water sources nearby. Breeding habitat (caterpillar host plants) are native milkweeds. Adults breed and migrate throughout California and overwinter along the California coast and in central Mexico.	Adults may breed, forage, and migrate through the site. However, there are no monarch butterfly overwintering populations within 10 miles of the study area.	Yes
Blennosperma vernal pool andrenid bee <i>Andrena blennospermatis</i>	-/-	G2 S2	Detected in the Inner North Coast Ranges and Tehama, Solano, San Joaquin, Sacramento, El Dorado, and Placer Counties. Occurs in uplands around vernal pools.	Could occur in vernal pool grasslands in the study area.	Yes
Crotch bumble bee <i>Bombus crotchii</i>	-/CE	G3G4 S1S2	Occurs throughout the Pacific Coast, Western Desert, and adjacent foothills throughout most of the state's southwestern region. Inhabits grasslands and shrublands.	Historic records in the study area.	Yes
Western bumble bee <i>Bombus occidentalis</i>	-/CE	G2G3 S1	Current range is outside of the study area in the Northern Coast Range and Sierra Nevada (California Department of Fish and Wildlife 2023). Habitat varies widely and includes open grassy areas, urban parks and gardens, chaparral and scrub lands, and mountain meadows.	Historic records in the study area; however, current range is outside of the study area.	No

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Lange's metalmark butterfly <i>Apodemia mormo langei</i>	E/-	G5T1 S1	Endemic to the Antioch Dunes. Host plant is nude buckwheat. Distribution limited to Antioch Dunes in Contra Costa County.	Known to occur at Antioch Dunes in the study area but not addressed due to no potential for effects from construction and operations.	No
Longhorn fairy shrimp <i>Branchinecta longiantenna</i>	E/-	G1 S1S2	Typically found in sandstone outcrop pools in the region but also occurs in alkali sink pools on the Carrizo Plain. Known to occur in Alameda, Contra Costa, Merced, and San Luis Obispo Counties.	Not known to occur in the study area and the study area lacks sandstone outcrop pools	No
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	E/-	G4T1 S1	Species is found in the fog-belt of steep north-facing slopes in the coastal mountains and is associated with its larval food plant, stonecrop (<i>Sedum spathulifolium</i>). All known locations are restricted to San Mateo County.	Study area is outside the known range of this species.	No
Sacramento Valley tiger beetle <i>Cicindela hirticollis abrupta</i>	-/-	G5T2 SH	Required fine to medium sand on terraced floodplains or low sandy water edge flats. Sandy floodplain habitat in the Sacramento Valley. Historic records for Sutter, Colusa, and Yolo Counties. Presumed extinct.	Not expected to occur in the study area because the species is believed to be extinct.	No
San Joaquin dune beetle <i>Coelus gracilis</i>	-/-	G1 S1	Species is a flightless beetle that burrows in sand dunes. Occurred historically from Kings County north to Antioch Dunes; presumed extirpated from Antioch Dunes.	Unlikely to occur in the study area because species is believed to be extirpated from the Antioch Dunes.	No
Antioch efferian robberfly <i>Efferia antiochi</i>	-/-	G1G2 S1S2	No specific habitat information is available; robberfly larvae usually develop in the ground or in rotting wood, where they prey on other insect larvae. Known to occur in the Antioch Dunes, near Danville in Contra Costa County, and in Fresno County.	Known to occur at Antioch Dunes in the study area but not addressed due to no potential for effects from construction and operations	No
Redheaded sphecid wasp <i>Eucerceris ruficeps</i>	-/-	G1G3 S1S2	Occur in hard-packed sand. Known from Interior dunes in Western Central Valley from Contra Costa County to Fresno County.	Known to occur at Antioch Dunes, which would not see effects from project operations and maintenance.	No
Middlekauff's shieldback katydid <i>Idiostatus middlekauffi</i>	-/-	G1G2 S1	Interior dunes. Known only from Antioch Dunes.	Known to occur at Antioch Dunes, which would not see effects from project operations and maintenance.	No
Hurd's metapogon robberfly <i>Metapogon hurdi</i>	-/-	G1G2 S1S2	Sand dunes. Antioch Dunes and near Fresno, historically.	Known to occur at Antioch Dunes, which would not see effects from project operations and maintenance.	No
Antioch multilid wasp <i>Myrmosula pacifica</i>	-/-	GH SH	Possibly extinct. Known historically from Antioch Dunes, near the City of Davis, and Inyo County. CNDDDB reports Inyo and Antioch site extant.	Known to occur at Antioch Dunes, which would not see effects from project operations and maintenance.	No

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Antioch andrenid bee <i>Perdita scitula antiochensis</i>	-/-	G1T1 S1	Ground nesting bee that has been collected from Eriogonum, California matchweed (<i>Gutierrezia californica</i>), telegraphweed (<i>Heterotheca grandiflora</i>), and Valley lessingia (<i>Lessingia gladulifera</i>). Currently known only from Antioch Dunes. Formerly occurred in Oakley.	Known to occur at Antioch Dunes, which would not see effects from project operations and maintenance.	No
Antioch sphecid wasp <i>Philanthus nasalis</i>	-/-	G1 S1	Sand dunes and inland marine sand hills. Extirpated from Antioch Dunes, extant in sand hills in Santa Cruz County.	Extirpated from Antioch Dunes, which would not see effects from project operations and maintenance.	No
Antioch Dunes halictid bee <i>Sphecodogastra antiochensis</i>	-/-	G1 S1	Nests in stabilized sand dunes, host plant is Antioch Dunes evening primrose (<i>Oenothera deltoids howellii</i>) and Contra Costa wildflower (<i>Erysimum capitatum angustatum</i>). Species is restricted to the Antioch Dunes.	Known to occur at Antioch Dunes, which would not see effects from project operations and maintenance.	No
Amphibians					
California tiger salamander <i>Ambystoma californiense</i>	T/T	G2G3 S2S3	In winter, breeds in vernal pools and seasonal wetlands with a minimum 10-week inundation period. In summer, aestivates in grassland habitat, primarily in small mammal burrows. Occurs from Yolo County to Kern County in the Central Valley, up to 2,000 feet elevation in the Sierra Nevada foothills, and from Sonoma County to Santa Barbara County on the coast.	Known to occur in the study area.	Yes
Western spadefoot <i>Spea hammondi</i>	-/SSC	G3 S3	In winter, breeds in vernal pools and seasonal wetlands with a minimum 3-week inundation period. In summer, aestivates in grassland habitat, in soil crevices, and rodent burrows. Species is found throughout the Central Valley and coastal lowlands from Shasta County in Northern California to Baja California in Mexico, at elevations ranging from sea level to 4,500 feet.	No records in the study area, but the study area does contain suitable habitat and is in the range of the species.	Yes
California red-legged frog <i>Rana draytonii</i>	T/SSC	G2G3 S2S3	Foothill ponds and streams with none to dense shrubby or emergent riparian vegetation, minimum 11–20 weeks of water for larval development, and upland refugia for aestivation. Occurs in the San Francisco Bay Area and Coast Ranges, in addition to the Transverse and Peninsular ranges. Very few populations are now known from Ventura, Los Angeles, and Riverside Counties.	Known to occur in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Foothill yellow-legged frog <i>Rana boylei</i>	-/E, SSC	G3 S3	In most of Northern California west of Cascade crest and along western flank of Sierra south to Kern County. Isolated population in San Joaquin County. Absent from Monterey County and San Gabriel Mountains. Ranges up to approximately 6,000 feet. Inhabits moderate to high gradient streams in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby.	No records in the study area and no suitable habitat.	No
Reptiles					
Western pond turtle <i>Emys marmorata</i>	-/SSC	G3G4 S3	Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands with low, sparse vegetation. Species is found from the Pacific Coast inland to the Sierra Nevada foothills to elevations as high as 6,700 ft above sea level.	Known to occur in the study area.	Yes
Coast horned lizard <i>Phrynosoma blainvilli</i>	-/SSC	G3G4 S3S4	Variety of open habitats, including chaparral, oak savanna, and grassland; found primarily in areas with sandy, friable soils, scattered shrubs, and abundant ant colonies. Species is found from Shasta County in the north to Baja California in the south and along the California coast inland to the Sierra Nevada and west of the Mojave Desert.	No known occurrence in the study area but the study area is within the species range and there is suitable habitat.	Yes
Northern California legless lizard <i>Anniella pulchra</i>	-/SSC	G3 S3	Occurs from Contra Costa County south to Baja California, at elevations from sea level to 5,900 feet. Found in habitats with loose soil for burrowing or thick duff or leaf litter; often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas.	Known to occur in the study area.	Yes
California glossy snake <i>Arizona elegans occidentalis</i>	-/SSC	G5T2 S2	Occurs from Contra Costa County south to San Quintin, Baja California, including the central San Joaquin Valley and along the base of the Southern Coastal Range, at elevations ranging from sea level to 5,900 feet. Found in grasslands, coastal sage scrub, and chaparral in areas where soil is loose.	Known to occur in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
San Joaquin coachwhip <i>Masticophis flagellum ruddocki</i>	-/SSC	G5T2T3 S2?	Occurs from Arbuckle in the Sacramento Valley southward to the grapevine in the San Joaquin Valley and westward into the inner Coast Ranges. An isolated population occurs at Sutter Buttes. Known elevation range from approximately 66 to 2,952 feet. Occurs in open, dry, vegetative associations with little or no tree cover (e.g., valley grassland and saltbush scrub associations); often occurs in association with mammal burrows.	No occurrences in the study area but is within the species range and suitable habitat exists.	Yes
Giant garter snake <i>Thamnophis gigas</i>	T/T	G2 S2	Forages in slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches; also requires upland refugia not subject to flooding during the snake's inactive season. Range extends from near Chico in Butte County, south to the Mendota Wildlife Area in Fresno County.	Known to occur in the study area.	Yes
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	T/T	G4T2 S2	Range restricted to Alameda and Contra Costa Counties; fragmented into five disjunct populations throughout its range. Absent from Central Valley floor. Inhabits valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging.	The study area is outside the known range of the species.	No
Birds					
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	T, BCC/E (nesting)	G5T2T3 S1	Nests in valley, foothill, and desert riparian forest with densely foliated deciduous trees and shrubs, especially willows; other associated vegetation includes cottonwood trees, blackberry, nettle, and wild grape. Potential habitat also occurs in valley marshland with willow riparian corridors, such as that found in the Llano Seco area of Butte County. Patch size has been found to be the most important habitat variable to predict presence of western yellow-billed cuckoos on the Sacramento River (Girvetz and Greco 2009:24; Halterman 1991:3-4). Large patch sizes (minimum 50 acres to 100 acres, with a minimum width of 328.1 feet) are typically required for cuckoo occupancy (Laymon 1998; Riparian Habitat Joint Venture 2004:57). Historically common throughout the Central Valley, the	There are two historic sightings and two recent sightings of yellow-billed cuckoo in the vicinity of the study area, but they are presumed to be migrating birds. There are no known breeding pairs in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
			recent known breeding populations of breeding western yellow-billed cuckoo in California include the Colorado River system in Southern California, the South Fork Kern River east of Bakersfield, and several disjunct locations in isolated sites along the Sacramento River in Northern California north of the study area, including Sutter Basin and Butte County.		
California black rail <i>Laterallus jamaicensis coturniculus</i>	BCC/T, FP	G3G4T1 S1	Nests and forages in saline, freshwater, or brackish emergent marshes with gently grading slopes and upland refugia with vegetative cover beyond the high-water line. The species persists in remaining tidal marshes in the San Francisco Bay estuary, Tomales Bay, Bolinas Lagoon, the Delta, Morro Bay, the Salton Sea, and the lower Colorado River. The species has also been found more recently at several inland freshwater sites in the Sierra Nevada foothills in Butte, Yuba, Nevada Counties, and most recently in Placer County. In the Sacramento–San Joaquin Delta, the species occurs in patches of emergent wetland found along the perimeter of sloughs and on in-Channel Islands of larger watercourses.	Known to occur in the study area.	Yes
Greater sandhill crane <i>Antigone canadensis tabida</i>	–/T, FP (nesting, wintering)	G5T4 S2	In the Delta, the greater sandhill crane forages primarily in croplands with waste grain, such as corn, alfalfa fields and pastures, and in rice where available. Roosting habitat consists of wetlands or flooded croplands and in the delta cranes are traditional to their roost sites (in that they return to the same sites year after year). The winter range includes the Central Valley and Delta, Carrizo Plain, Southern California south of the Salton Sea, and Colorado River. The breeding range of the Central Valley Population of greater sandhill crane extends into northeastern California, outside of the study area.	Known to occur in the study area during winter.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Lesser sandhill crane <i>Antigone canadensis</i>	-/SSC (wintering)	G5T4 S3S4	In the Delta, the lesser sandhill crane forages primarily in croplands with waste grain, such as corn, alfalfa and pastures, and in rice, where available. Roosting habitat consists of wetlands or flooded croplands and in the Delta cranes are traditional to their roost sites (in that they return to the same sites year after year). The subspecies does not breed in California but is a winter resident in Sacramento–San Joaquin Delta. Lesser sandhill cranes also winter regularly in Sacramento Valley, San Joaquin River NWR, Tulare Basin, and in smaller numbers in Southern California south of the Salton Sea.	Known to occur in the study area during winter.	Yes
California least tern <i>Sternula antillarum browni</i>	E/E, FP	G4T2T3 Q S2	California least terns nest in loose colonies on barren or sparsely vegetated sandy or gravelly substrates above the high tide line along the coastline and in lagoons and bays of the California coast. Foraging typically occurs in shallow estuaries or lagoons or in the shallow tidal zone of the open ocean and bays. Nests along the Pacific Coast from Baja California up to San Francisco. The San Francisco Bay Estuary through to the Delta is considered to be at the northern limit of the species range where some small colonies occur.	Known to occur in the western portion of study area at the Pittsburgh Power Plant and east of the study area in the Sacramento Wastewater Treatment Plant Bufferlands.	Yes
Double-crested cormorant <i>Phalacrocorax auritus</i>	-/WL (nesting colony)	G5 S4	Breeds colonially in trees, human-made features such as transmission line towers, and on rock ledges. Forages in open water. Breeding range spans the study area, the coast and offshore islands, Clear Lake, the Salton Sea, the Colorado River, and portions of northeastern California; winter range expands to include the Central Valley and additional portions of Southern California.	Rookeries known to occur in the study area. Known to occur throughout the study area.	Yes
Least bittern <i>Ixobrychus exilis</i>	BCC/SSC (nesting)	G4G5 S2	Nests and forages in freshwater and brackish marshes with tall emergent vegetation. Current breeding range is scattered in patches of the Sacramento and San Joaquin valleys, Clear Lake, marshes around several large lakes in eastern California, and portions of Southern California, where they also winter.	Uncommon breeder in the study area but have been recorded at Stone Lakes National Wildlife Refuge, Cosumnes River Preserve, Sherman Island, Holland Tract and Shin Kee Tract.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Great blue heron <i>Ardea herodias</i>	-/- (nesting colony)	G5 S4	Nests colonially in tall trees that often include nesting with other species. Forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures. Year-round range spans most of California except the eastern portion of the state and the highest elevations; winter range expands to include eastern California.	Rookeries known to occur in the study area. May nest and forage throughout the study area.	Yes
Great egret <i>Ardea alba</i>	-/- (nesting colony)	G5 S4	Typically nests in rookeries that often include nesting with other species. Forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures. Year-round range spans the Central Valley, central coast, and portions of Southern California. Winter range expands to include the remainder of the coast.	Rookeries known to occur in the study area. May nest and forage throughout the study area.	Yes
Snowy egret <i>Egretta thula</i>	-/- (nesting colony)	G5 S4	Nests colonially in dense marshes and low trees; forages in freshwater and saline marshes, shallow open water, and occasionally irrigated cropland or wet upland habitats. Year-round range spans the Central Valley, Delta, entire coast, central Coast Ranges, and southeastern California; winter range expands to include northeastern California.	Rookeries known to occur in the study area. May nest and forage throughout the study area.	Yes
Black-crowned night-heron <i>Nycticorax nycticorax</i>	-/- (nesting colony)	G5 S4	Nests colonially in dense marshes, groves of low trees, and dense shrubs; forages in freshwater and saline marshes and in shallow open water at the edge of marsh vegetation. Year-round range includes much of lowland California.	Rookeries known to occur in the study area. May nest and forage throughout the study area.	Yes
Osprey <i>Pandion haliaetus</i>	-/WL (nesting)	G5 S4	Forages exclusively in fish-bearing waters; nests in nearby trees or tall, constructed platforms. Breeding range includes Cascade Range to Lake Tahoe and south to Marin County. Winter range also includes the central coast and additional portions of Southern California. Year-round range includes the northern and western portions of the Central Valley.	Known to occur in the study area, but few nests have been documented and therefore assumed to be a rare nesting species in the Delta.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
White-tailed kite <i>Elanus leucurus</i>	-/FP (nesting)	G5 S3S4	Forages in low-elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Nests in nearby uplands in valley/foothill riparian or other trees associated with compatible foraging habitat. Year-round range spans the Central Valley, Coast Ranges and coast, Sierra Nevada foothills, and Colorado River.	Known to occur in the study area.	Yes
Golden eagle <i>Aquila chrysaetos</i>	BCC/ FP, WL (nesting, wintering)	G5 S3	Forages in a variety of open habitats, including grassland, pasture, and cropland; Nests primarily on cliffs, rock outcrops, and in large trees. Winter range spans most of California; breeding range excludes the Central Valley floor.	Low potential for pairs to nest in the vicinity of the project footprint due to lack of suitable habitat; nonbreeding individuals may forage throughout the area's uplands and in the scrub and grasslands of the southern portion near Clifton Court Forebay and around the Bethany Reservoir.	Yes
Northern harrier <i>Circus cyaneus</i>	-/SSC (nesting)	G5 S3	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes. Year-round resident of California. Breeding range encompasses Northern California, the Central Valley, the central coast, and portions of Southern Californian desert.	Known to occur in the study area.	Yes
Cooper's hawk <i>Accipiter cooperii</i>	-/WL (nesting)	G5 S4	Nests and forages primarily in riparian woodlands and other wooded habitats. Year-round range spans most of the wooded portions of California.	Known to occur in the study area.	Yes
Swainson's hawk <i>Buteo swainsoni</i>	BCC/T (nesting)	G5 S3	Nests in isolated trees, open woodlands, and woodland margins; forages in grasslands and agricultural fields. Breeding range spans the Central Valley, northeastern California, and a few additional scattered sites; most of the population migrates south of California in fall/winter to Mexico and South America, although a small number winters in the Delta.	Known to occur in the study area.	Yes
Ferruginous hawk <i>Buteo regalis</i>	BCC/WL (wintering)	G4 S3S4	Forages most commonly in grasslands, shrublands, and agricultural fields. Winter range includes Modoc Plateau, Central Valley, Coast Ranges, and southwestern California. Does not breed in California.	No potential for nesting individuals in the study area because outside of breeding range; individuals may forage in winter throughout the uplands of the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Burrowing owl <i>Athene cunicularia</i>	BCC/SSC (burrowing sites and some wintering sites)	G4 S3	Nests and forages in grasslands, agricultural fields, and low scrub habitats, especially where California ground squirrel burrows are present; occasionally inhabits artificial structures and small patches of disturbed habitat. Year-round range includes the Central Valley and Delta and portions of the central coast, eastern California, and Southern California.	Known to occur in the study area.	Yes
Short-eared owl <i>Asio flammeus</i>	-/SSC (nesting)	G5 S3	Nests on the ground in short vegetation. Forages in wetland natural communities, grasslands, and grassland-like cultivated lands such as pastures and alfalfa fields. Breeding range is patchily distributed throughout the state, including portions of the Sacramento and San Joaquin valleys, northeastern California, and a few scattered coastal sites.	Uncommon breeder in the study area, but small numbers have been documented episodically at the Cosumnes River Preserve and in Byron in Contra Costa County.	Yes
Loggerhead shrike <i>Lanius ludovicianus</i>	BCC/SSC (nesting)	G4 S4	Nests in isolated shrubs and trees and woodland/scrub edges of open habitats; forages in grasslands, agricultural fields, and low scrub habitats. Occurs year-round throughout California, except for the northwest, heavily forested higher mountains, and higher areas of deserts. Breeding range spans much of lowland California, and winter range includes most lowland areas south of Glenn County.	Known to occur in the study area.	Yes
Least Bell's vireo <i>Vireo bellii pusillus</i>	E/E (nesting)	G5T2 S2	Nests and roosts in low riparian thickets of willows and shrubs, usually near water but sometimes along dry, intermittent streams; other associated vegetation includes cottonwood trees, blackberry, mulefat, and mesquite (in desert). Formerly a common and widespread summer resident throughout Sacramento and San Joaquin valleys and in the coastal valleys and foothills from Santa Clara County south, but its numbers have drastically declined, and the species has been extirpated from much of its California range.	There was a sighting in April 2010 of two singing males in the Yolo Bypass Wildlife Area, and a second sighting of a least Bell's vireo in the spring of 2011. Singing males were also detected at Bradford Island in 2018 and 2019 (eBird 2021). Although there is no evidence of nesting success, these observations suggest the species may have the potential to re-establish within the study area.	Yes
California horned lark <i>Eremophila alpestris actia</i>	-/WL	G5T4Q S4	Nests and forages in open habitats with sparse vegetation, including grasslands and fallow agricultural fields. Year-round range of the California horned lark encompasses California's central and southern coast and the San Joaquin Valley.	Known to occur in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Bank swallow <i>Riparia</i>	-/T (nesting)	G5 S2	Nests in vertical banks or bluffs, typically adjacent to water, devoid of vegetation, and with friable, eroding soils; forages in a wide variety of habitats. Breeds in much of lowland and riparian California, with 75 percent nesting colonies along the Sacramento and Feather Rivers and their tributaries. Additional breeding locations are scattered throughout the northern and central portions of the state; migrates south of California in fall/winter.	Low probability of nesting in the study area because suitable bank conditions are rare; however, one nesting colony has been documented in the Delta in Brannan Island State Recreation Area.	Yes
Grasshopper sparrow <i>Ammodramus savannarum</i>	-/SSC (nesting)	G5 S3	Nests and forages in dense grasslands; favors a mix of native grasses, forbs, and scattered shrubs. Breeding range in California is fragmented throughout the state west of the Cascade-Sierra Nevada Crest. In the Central Valley, loss of native and nonnative grassland through agriculture and urbanization have further fragmented grasshopper sparrow's patchy breeding distribution. In California, grasshopper sparrows occur primarily in summer from March to September. Some may winter in California, mostly on the southern coast.	Known to occur in the study area.	Yes
Song sparrow ("Modesto" population) <i>Melospiza melodia</i>	-/SSC	G5 S3?	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats, and infrequently in mature riparian forest and sparsely vegetated ditches and levees. Year-round range includes the Delta east of Suisun Marsh, the Sacramento Valley, and the northern San Joaquin Valley.	Known to occur in the study area.	Yes
Suisun song sparrow <i>Melospiza melodia maxillaris</i>	BCC/SSC	G5T3 S3	Nests and forages in brackish water marshes dominated by cattails, tules, and pickleweed. Year-round range is confined to tidal salt and brackish marshes of the Suisun Bay area from the Carquinez Strait east to Antioch at the confluence of the San Joaquin and Sacramento Rivers. Current distribution of the species in this area is defined by the extent of remaining tidal marsh habitats in the Suisun Bay.	Known to occur on Sherman Island at the eastern limit of the subspecies range.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Yellow-breasted chat <i>Icteria virens</i>	-/SSC (nesting)	G5 S3	Nests and forages in riparian thickets of willow and other brushy tangles near water and thick understory in riparian woodland. Breeding range includes the northern Sacramento Valley, Cascade Range, Sierra Nevada foothills, northwestern California, most of the Coast Ranges, the Colorado River, and other scattered sites. Breeding range is thought to be approximately 35% of its historical range, with breeding yellow-breasted chats now rare or absent in much of the Central Valley.	Known to occur in the study area.	Yes
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	-/SSC (nesting)	G5 S3	Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Breeds east of the Cascade Range and Sierra Nevada, the Central Valley, portions of the Coast ranges, and in Southern California in the Imperial and Colorado River valleys. Migrates south to winter; some winter in the southern Central Valley and in Imperial Valley.	Known to occur in the study area.	Yes
Tricolored blackbird <i>Agelaius tricolor</i>	BCC/T, SSC (nesting colony)	G2G3 S1S2	Nests colonially in large, dense stands of freshwater marsh, riparian scrub, and other shrubs and herbs; forages in grasslands and agricultural fields. Year-round resident throughout the Central Valley and the central and southern coasts, with additional scattered locations throughout California. Breeding occurs in the foothills of the Sierra Nevada south to Kern County, the coastal slopes from Sonoma County to the Mexican border, and sporadically in the Modoc Plateau. Uncommon breeder in the Delta.	Known to occur in the study area.	Yes
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	BCC/SSC	G5T3 S3	Occurs in primarily brackish marsh with dense and continuous wetland or riparian vegetation down to the water surface; however, to a lesser degree, also uses woody swamp/riparian and freshwater marsh. Often found in rush, tall grass, and willow-dominated communities. Endemic to the greater San Francisco Bay Area.	Known to occur on Sherman Island at the eastern limit of the subspecies range.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Yellow warbler <i>Setophaga petechia</i>	BCC/SSC (nesting)	G5 S3S4	Nests and forages in early successional riparian habitats. Range includes coastal and Northern California and the Sierra Nevada below approximately 7,000 feet; mostly extirpated from the southern Sacramento and San Joaquin valleys. However, nesting territories have been recorded in the San Joaquin Wildlife Refuge.	Known to occur in the study area, likely as a migrant.	Yes
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	T, BCC/SSC (nesting)	G3T3 S2S3	Nests and forages on sandy and gravelly beaches along the coast and the shores of inland alkali lakes. Breeds in coastal California and near alkali lakes in eastern California and remnant alkali playas in the southern San Joaquin Valley.	Not expected to occur in the study area.	No
Merlin <i>Falco columbarius</i>	-/WL (wintering)	G5 S3S4	Forages in a wide variety of habitats, but in the Central Valley is most common around agricultural fields and grasslands. Winter range encompasses most of California except the highest elevations; does not breed in California.	May forage in winter throughout the study area.	Yes
Prairie falcon <i>Falco mexicanus</i>	BCC/WL (nesting)	G5 S4	Nests on bluffs and cliffs. Forages most commonly in grasslands and low shrublands; also forages in agricultural fields. Year-round range includes eastern California, the Coast Ranges, and much of Southern California; winter range expands to include the Delta, Central Valley, and coastal California.	Low potential for nesting pairs to occur in the study area due to lack of suitable habitat.	No
American peregrine falcon <i>Falco peregrinus anatum</i>	BCC/FP (nesting)	G4T4 S3S4	Nests on cliffs or on buildings in urban areas. Forages in a wide variety of habitats but is most common near water where shorebirds and waterfowl are abundant. Year-round range includes the Sierra Nevada, Cascade Range, northeastern California, Coast Ranges, and coast; winter range expands to include the Central Valley and the Delta and additional portions of eastern and Southern California.	Not expected to nest in the study area because outside of the published breeding range.	No

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Purple martin <i>Progne subis</i>	-/SSC (nesting)	G5 S3	Nests in tree cavities, bridges, utility poles, lava tubes, and buildings; forages in foothill and low montane oak and riparian woodlands, and less frequently in coniferous forests and open or developed habitats. Breeding range includes the Sierra Nevada, Cascade Range, portions of the Coast Ranges and coast, and parts of Southern California; extirpated from the Delta, and nesting in the Central Valley has been reduced to transportation structures in and around the city of Sacramento.	Not expected to nest in the study area.	No
California Ridgway's rail <i>Rallus obsoletus</i>	E/E, FP	G5T1 S1	Nests and forages in dense cordgrass and cattail marshes with vegetated refugia during the highest tides. Year-round near coastal range, surrounds San Francisco and San Pablo bays, and documented at several locations in Suisun Bay.	Range does not include the study area.	No
Mammals					
Pallid Bat <i>Antrozous pallidus</i>	-/SSC	H G5 S3	Deserts, grasslands, shrublands, woodlands, and forests; most common in open, dry habitats; typically roosts in rock crevices, also in tree hollows, bridges, and buildings, in colonies ranging from 1 to more than 200 individuals. Occurs throughout California except for the high Sierra Nevada from Shasta to Kern Counties to northern Mendocino County.	Potentially occurs in the study area.	Yes
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	-/SSC	H G3G4 S2	This species requires caves, mines, tunnels, buildings, or other human-made structures for roosting, and may use separate sites for night, day, hibernation, or maternity roosts. Typically roosts in colonies of fewer than 100 individuals. Forages in all habitats except alpine and subalpine, although most commonly in mesic forests and woodlands. Year-round range spans most of California, except the highest elevations of the Sierra Nevada south of Lake Tahoe.	Potentially occurs in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Big brown bat <i>Eptesicus fuscus</i>	-/-	L	Common throughout California, absent only from the highest alpine meadows and talus slopes. Roosts opportunistically in buildings, bridges, palm thatch, snags, tree hollows, and in rock crevices. Forages over wide range of habitats including open habitat among scattered trees, over water, and above residential areas.	Known to occur in the study area.	Yes
Silver-haired bat <i>Lasionycteris noctivagans</i>	-/-	M G5 S3S4	Distribution includes coastal and montane forests from the Oregon border south along the coast to San Francisco Bay and along the Sierra Nevada and Great Basin region to Inyo County. Typically roosts in tree cavities, crevices and under loose bark. May also use leaf litter, buildings, mines and caves. Breeds in coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats; may occur in any habitat during migration. Breeding range does not include the Delta. There are only a few scattered breeding locations known in the San Francisco Bay Area, Central Valley, or central coast.	Potentially occurs in the study area.	Yes
Western red bat <i>Lasiurus blossevillii</i>	-/SSC	H G5 S3	Mature riparian broadleaf forest in the Central Valley is primary summer breeding habitat for the species in California (females and pups). Riverside orchards may also be used as maternity roosts. Roosts alone or in small family groups in tree foliage, occasionally shrubs; prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands. Unsubstantiated records of hibernation in leaf litter during the winter. Occurs from Shasta County to the Mexico border, west of the Sierra Nevada/Cascade crest and deserts.	Known to occur in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Hoary bat <i>Lasiurus cinereus</i>	-/-	M G5 S4	This species is the most widespread North American bat and may be found nearly everywhere in California from sea level to 13,200 feet, although its distribution is patchy in southeastern deserts. Populations in the Central Valley are most likely non-reproductive or migratory. Typically roosts alone in a variety of broadleaf tree species such as cottonwood and sycamore; also found roosting in conifers. Breeding habitat includes all woodlands and forests with medium to large-size trees and dense foliage. May be found in a range of vegetation and roost substrates during migration.	Known to occur in the study area.	Yes
California myotis <i>Myotis californicus</i>	-/-	L	Commonly found throughout California below 6,000 feet in elevation. Roosts singly or in small groups in crevices and cavities in trees and rocks; occasionally roosts in human structures. Maternity colonies of up to 52 individuals have been documented in large snags and under tree bark. Forages over a variety of habitats, including arid habitats, open lands, forest canopies, forest margins, and water.	Potentially occurs in the study area.	Yes
Little brown bat <i>Myotis lucifugus</i>	-/- (San Bernardino Mountains population)	M G3 S2S3	Occurs in California from the Oregon border south along the coast to San Francisco Bay and along the Sierra Nevada/Cascades and Great Basin from the Oregon border to Kern County. An isolated population occurs in the San Bernardino Mountains. Roosts opportunistically in a variety of structures from trees to buildings. Forages in a range of habitats, but typically over water. Likely fall latitudinal or elevational migrant to colder areas with caves of suitable temperature regime for hibernation.	Potentially occurs in the study area.	Yes
Western small-footed myotis <i>Myotis ciliolabrum</i>	-/-	M G5 S3	Occurs in coastal California from Contra Costa County south to the Mexico border, the west and east side of the Sierra Nevada, and in Great Basin and desert habitats from Modoc to Kern and San Bernardino Counties. Particularly associated with coniferous forests and rocky xeric habitats. Typically roosts in rock crevices in mines, caves and occasionally in buildings, bridges and other human structures. Forages over a variety of habitats.	Potentially occurs in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
Yuma myotis <i>Myotis yumanensis</i>	-/-	LM G5 S4	Common and widespread throughout California from sea level to 11,000 feet excluding the Mojave and Colorado Desert regions. Strongly associated with water sources. Roosts in a variety of structures including bridges, buildings, caves, mines, trees and rock crevices. Has been known to roost in cliff swallow nests. Typically forages low over water.	Potentially occurs in the study area.	Yes
Western pipistrelle <i>Pipistrellus hesperus</i>	-/-	L	Occurs in the Central Valley, foothills, and Coast Ranges from Tehama County to Mexico, and in the deserts from Alpine County to Mexico. Scattered populations exist in eastern Modoc County, and Siskiyou, Lassen, and Trinity Counties. Found in arid habitats throughout California and in lower elevation montane forests with significant rocky areas. Typically roosts in or under rocks, in crevices in cliffs, rocky slopes, or scattered boulders. Unsubstantiated records of roosting in burrows.	Potentially occurs in the study area.	Yes
Western mastiff bat <i>Eumops perotis californicus</i>	-/SSC	H G4T4 S3S4	Typically roosts in crevices in cliffs and rocky outcrops, in colonies of fewer than 100 individuals. May also roost in bridges, caves and buildings that allow sufficient height and clearance for dropping into flight. There is at least one record of this species roosting in an untrimmed palm tree. Forages in a variety of grassland, shrub, and wooded habitats, including riparian and urban areas, although most commonly in open, arid lands. Uncommon resident in southeastern San Joaquin Valley and the Coastal Ranges specifically residing between Monterey County to Southern California and from the California coast east to the Colorado Desert.	Potentially occurs in the study area.	Yes
Mexican free-tailed bat <i>Tadarida brasiliensis</i>	-/-	L	Common throughout California, although uncommon in high Sierra Nevada and the north coastal region. Prefers open habitats such as woodlands, shrublands, and grasslands. Widely distributed throughout California during the breeding season. Roosts in large colonies in bridges and buildings in the Central Valley; breeding colonies may be concentrated in relatively few sites. Also roosts in caves, rock crevices, mines and tunnels. Forages over a range of habitats.	Known to occur in the study area.	Yes

Common and Scientific Names	Status ^a		Habitat and Distribution in California	Potential for Occurrence in the Study Area	Analyzed in EIR
	Federal/State	Other			
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	E/T	G4T S2	Grasslands and oak savannas with friable soils; home range sizes of 600–1,300 acres. Year-round range is fragmented throughout the San Joaquin Valley.	Outside of current range defined by USFWS.	No
American badger <i>Taxidea taxus</i>	-/SSC	G5 S3	Uncommon solitary species that is widely distributed throughout the state except in the northern North Coast area from below sea level to over 12,000 ft. Prefers drier open shrub, forest, and herbaceous habitats with friable soils. Home range typically varies in size between 5 and 1,800 acres but can become much larger during breeding season as males locate receptive females. Natal dens are constructed in dry, sandy soil with sparse overstory.	Historic records in the study area.	Yes
San Joaquin pocket mouse <i>Perognathus inornatus</i>	-/-	G2G3 S2S3	Occurs between 1,100 and 2,000 ft elevation, spanning through the San Joaquin Valley, Delta, Sacramento Valley through Colusa County, and portions of the southern Coast Ranges. Habitat includes shrubby ridge tops and hillsides in dry, open grasslands or scrub areas with friable soils.	Known to occur in the study area.	Yes
Salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	E/E, FP	G1G2 S1S2	Occurs primarily in tidal brackish emergent wetlands dominated by pickleweed and at higher elevation refugia. Year-round range includes the marshes surrounding Suisun, San Pablo, and San Francisco bays, with the Collinsville-Antioch area forming the eastern limit of the range.	Known to occur in the study area.	Yes
Riparian brush rabbit <i>Sylvilagus bachmani riparius</i>	E/E	G5T1 S1	Extirpated from most of its historic range and now restricted to Caswell Memorial State Park on the Stanislaus River, at the confluence with the San Joaquin River, and an adjacent portion of an overflow channel and Paradise Cut, Tom Paine Slough, and channels of the San Joaquin River. Prefers dense thickets of brush associated with riparian habitats.	Known to occur in the study area.	Yes
Riparian woodrat <i>Neotoma fuscipes riparia</i>	E/SSC	G5 T1Q S1	Riparian forest, particularly dense willow thickets with an oak overstory. Extirpated from most of historic range and now restricted to Caswell Memorial State Park on the Stanislaus River, at the confluence with the San Joaquin River, and an historic occurrence from 1970s near Vernalis.	Outside of the current defined range for the species.	No

1 ^a Status

2 **Federal Listing Categories:**

3 E = Listed as endangered under the federal Endangered Species Act (ESA).

4 T = Listed as threatened under the ESA.

5 PT = Proposed for listing as threatened under the ESA.

6 BCC = U.S. Fish and Wildlife Service bird of conservation concern.

7 C = Candidate for listing under the ESA.

8 -- = No status.

9 **State Listing Categories:**

10 E = Listed as endangered under the California Endangered Species Act (CESA).

11 T = Listed as threatened under CESA.

12 C = Candidate for protection under CESA.

13 FP = Fully protected under the California Fish and Game Code.

14 SSC = California species of special concern.

15 WL = California Department of Fish and Wildlife watch list.

16 CFGC = Rookeries protected under the California Fish and Game Code.

17 -- = No status.

18 **Other:**

19 **Western Bat Working Group (http://www.wbwg.org/spp_matrix.html)**

20 H = High priority: Species is imperiled or at high risk of imperilment.

21 M = Moderate priority: This designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats.
22 A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

23 L = Low priority: While there may be localized concerns, the overall status of the species is believed to be secure.

24 **NatureServe Conservation Status (shown only for species without legal status)**

25 GH = Possibly Extinct (species)—Missing; known from only historical occurrences but still some hope of rediscovery.

26 G1 = Critically Imperiled—At very high risk of extinction because of extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

27 G2 = Imperiled—At high risk of extinction because of very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

28 G3 = Vulnerable—At moderate risk of extinction because of a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

29 G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern because of declines or other factors.

30 G5 = Secure—Common; widespread and abundant.

31 G#G# = Range Rank—A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty in the status of a species or community.

32 G#? = Question mark indicated uncertainty as to status of a species.

33 SH = Possibly Extirpated (Historical)—Species or community occurred historically in the state, and there is some possibility that it may be rediscovered.

34 S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it
35 especially vulnerable to extirpation from the state.

36 S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to
37 extirpation from the state.

38 S3 = Vulnerable—Vulnerable in the state because of a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable
39 to extirpation.

- 1 S4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern because of declines or other factors.
- 2 S#S# = Range Rank—A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty in the status of a species or community.
- 3 S#? = Question mark indicates uncertainty as to status of a species.
- 4 T = Intraspecific Taxon (trinomial)—The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species’ global rank State Rank, lower numbers
- 5 equate to higher vulnerability.
- 6 Q = Q following the T-rank denotes the taxon’s information taxonomic status.

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