

APPENDIX B: SPECIAL STATUS SPECIES TABLES



Special-status Plant Species Evaluated For The Georgia Pacific Gypsum Wharf Rehabilitation Project

Oct 16, 2014

FAMILY

| Scientific Name Common Name | Status | Habitat Affinities And Reported Distribution | Blooming Time Life Form | Potential For Occurrence On Site |
|--|--|--|--|---|
| Apiaceae - Carrot Family | | | | |
| <i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water hemlock | Federal: none State: none CNPS: 2B.1 G5T3T4/ Other: | Occurs in marshes and swamps. Moisture: freshwater or brackish. Recorded from Contra Costa, Los Angeles, Marin, Sacramento, San Luis Obispo, Santa Barbara, Solano. Known from a single record (1978) from project vicinity. | Jul-Sep Perennial Herb | Not expected: marginally suitable habitat present. |
| <i>Lilaeopsis masonii</i> Mason's lilaeopsis | Federal: none State: SR CNPS: 1B.1 G2/S2 Other: DFG: SP | Occurs in freshwater marsh, marshes and swamps, riparian scrub. Recorded from Alameda, Contra Costa, Marin, Napa, Sacramento, San Joaquin, Solano, Yolo. Recorded from shoreline east and west of project site. | Apr-Nov Perennial Herb (rhizomatous) | Possible: suitable habitat present. See text for discussion. |
| Asteraceae - Sunflower Family | | | | |
| <i>Blepharizonia plumosa</i> big tarplant | Federal: none State: none CNPS: 1B.1 G2/S2 Other: DFG: SP | Occurs in valley and foothill grassland. Recorded from Alameda, Contra Costa, San Joaquin, Stanislaus. Additional distribution: presumed extirpated in Solano County. Known from a single historical record (1885) from project vicinity. | Jul-Oct Annual Herb | Not expected: marginally suitable habitat present. Site is too highly altered. |
| <i>Lasthenia conjugens</i> Contra Costa goldfields | Federal: FE State: none CNPS: 1B.1 G1/S1 Other: DFG: SP | Occurs in cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools Moisture: mesic. Recorded from Alameda, Contra Costa, Marin, Mendocino, Monterey, Napa, Santa Barbara, Santa Clara, Solano, Sonoma. Additional distribution: presumed extirpated in Mendocino, Santa Barbara and Santa Clara counties. Known from a single historical (1895) record from project vicinity. | Mar-Jun Annual Herb | None: no suitable habitat present. |
| <i>Symphotrichum lentum</i> Suisun Marsh aster | Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP | Occurs in freshwater marsh, marshes and swamps. Recorded from Contra Costa, Napa, Sacramento, San Joaquin, Solano. Recorded from shoreline east and west of project site. | May-Nov Perennial Herb (rhizomatous) | Detected: suitable habitat present. see text for discussion. |



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|---|--|---|----------------------------|---|
| Boraginaceae - Borage Family | | | | |
| <i>Cryptantha hooveri</i> Hoover's cryptantha | Federal: none State: none CNPS: 1A GH/SH Other: DFG: SP | Occurs in inland dunes, valley and foothill grassland (sandy). Substrate: sandy. Recorded from Contra Costa, Madera, Stanislaus. Presumed extinct. Known from a single historical record (1908) from project vicinity. | Apr-May Annual Herb | None: no suitable habitat present. |
| <i>Plagiobothrys hystriculus</i> bearded popcorn-flower | Federal: none State: none CNPS: 1B.1 G2/S2 Other: DFG: SP | Occurs in valley and foothill grassland, vernal pools Moisture: moist. Recorded from Solano. Not recorded from project vicinity. | Apr-May Annual Herb | None: no suitable habitat present. |
| Brassicaceae - Mustard Family | | | | |
| <i>Erysimum capitatum</i> ssp. <i>angustatum</i> Contra Costa wallflower | Federal: FE State: SE CNPS: 1B.1 G5T1/S1 Other: DFG: SP | Occurs in inland dunes. Recorded from Contra Costa. Recorded from shoreline east and west of project site. | Mar-Jul Perennial Herb | Not expected: marginally suitable habitat present. See text for discussion. |
| Campanulaceae - Bellflower Family | | | | |
| <i>Downingia pusilla</i> dwarf downingia | Federal: none State: none CNPS: 2B.2 GU/S2 Other: DFG: SP | Occurs in foothill woodland, valley and foothill grassland, vernal pools Moisture: moist, Habitats Note: clay. Recorded from Mariposa, Merced, Napa, Placer, Sacramento, Solano, Sonoma, Stanislaus, Tehama, Yuba. Also recorded from South America. Not recorded from project vicinity. | Mar-May Annual Herb | None: no suitable habitat present. |



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|---|--|--|----------------------------|--|
| Chenopodiaceae - Goosefoot Family | | | | |
| <i>Extriplex joaquiniana</i> San Joaquin sparscale | Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP | Occurs in chenopod scrub, meadows, playas, seeps, valley and foothill grassland Substrate: alkaline. Recorded from Alameda, Colusa, Contra Costa, Fresno, Glenn, Merced, Monterey, Napa, San Benito, San Joaquin, San Luis Obispo, Santa Clara, Solano, Tulare, Yolo. Additional distribution: presumed extirpated in Santa Clara, San Joaquin, and Tulare counties; questionable in San Luis Obispo County. Not recorded from project vicinity. | Apr-Oct Annual Herb | None: no suitable habitat present. |
| Fabaceae - Legume Family | | | | |
| <i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch | Federal: none State: none CNPS: 1B.2 G2T2/S2 Other: DFG: SP | Occurs in playas, valley and foothill grassland (adobe clay), vernal pools Substrate: adobe clay, alkaline. Recorded from Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, San Francisco, San Joaquin, Santa Clara, Solano, Sonoma, Stanislaus, Yolo. Additional distribution: presumed extirpated in Contra Costa, Monterey, San Benito, Santa Clara, San Francisco, San Joaquin, Sonoma, and Stanislaus counties. Not recorded from project vicinity. | Mar-Jun Annual Herb | None: no suitable habitat present. |
| <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea | Federal: none State: none CNPS: 1B.2 G5T2/S2 Other: DFG: SP | Occurs in marshes and swamps (freshwater and brackish). Recorded from Contra Costa, Napa, Sacramento, San Joaquin, Solano, Sonoma, Yolo. Present at the Antioch Dunes National Wildlife Refuge. | May-Sep Perennial Herb | Detected: suitable habitat present. See text for discussion. |



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| Geraniaceae - Geranium Family | | | | |
| <i>California macrophylla</i> round-leaved filaree | Federal: none State: none CNPS: 1B.1 G2/S2 Other: DFG: SP | Occurs in cismontane woodland, valley and foothill grassland Substrate: clay. Recorded from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Kings, Lake, Lassen, Los Angeles, Merced, Monterey, Napa, Riverside, San Benito, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Solano, Sonoma, Stanislaus, Tehama, Ventura, Yolo. Santa Cruz Island. Also recorded from Baja California, Oregon, Utah. Known from a single record (1907) from project vicinity. | Mar-May Annual Herb | None: no suitable habitat present. |
| Liliaceae - Lily Family | | | | |
| <i>Fritillaria liliacea</i> fragrant fritillary | Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP | Occurs in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland Substrate: often serpentinite. Recorded from Alameda, Contra Costa, Marin, Monterey, San Benito, San Francisco, San Mateo, Santa Clara, Solano, Sonoma. Not recorded from project vicinity. | Feb-Apr Perennial Herb (bulbiferous) | None: no suitable habitat present. |
| Malvaceae - Mallow Family | | | | |
| <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> woolly rose-mallow | Federal: none State: none CNPS: 1B.2 G5T2/S2 Other: DFG: SP | Occurs in freshwater marsh, marshes and swamps. Recorded from Butte, Colusa, Contra Costa, Glenn, Sacramento, San Joaquin, Solano, Sutter, Yolo. Not recorded from project vicinity. | Jun-Sep Perennial Herb (rhizomatous), Emergent | Not expected: suitable habitat present. Would have been detectable during present survey. |
| <i>Sidalcea keckii</i> Keck's checkerbloom | Federal: FE State: none CNPS: 1B.1 G1/S1 Other: DFG: SP | Occurs in cismontane woodland, foothill woodland, valley and foothill grassland Substrate: serpentinite. Recorded from Fresno, Merced, Tulare. Additional distribution: also possibly in Colusa, Napa, Solano and Yolo counties. Not recorded from project vicinity. | Apr-May Annual Herb | None: no suitable habitat present. |



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| Onagraceae - Evening Primrose Family | | | | |
| <i>Oenothera deltooides</i> ssp. <i>howellii</i> Antioch Dunes evening-primrose | Federal: FE State: SE CNPS: 1B.1 G5T1/S1 Other: DFG: SP | Occurs in inland dunes. Recorded from Contra Costa, Sacramento. Recorded from shoreline east and west of project site. | Mar-Sep Perennial Herb | Not expected: marginally suitable habitat present. See text for discussion. |
| Orobanchaceae - Broomrape Family | | | | |
| <i>Chloropyron molle</i> ssp. <i>molle</i> soft bird's-beak | Federal: FE State: SR CNPS: 1B.2 G2T1/S1 Other: DFG: SP | Occurs in coastal salt marsh. Recorded from Contra Costa, Marin, Napa, Sacramento, Solano, Sonoma. Additional distribution: presumed extirpated in Marin, Sacramento, and Sonoma counties. Not recorded from project vicinity. | Jul-Nov Annual Herb, Hemiparasitic | None: no suitable habitat present. |
| Papaveraceae - Poppy Family | | | | |
| <i>Eschscholzia rhombipetala</i> diamond-petaled California poppy | Federal: none State: none CNPS: 1B.1 G1/S1 Other: DFG: SP | Occurs in valley and foothill grassland. Substrate: alkaline, clay. Recorded from Alameda, Colusa, Contra Costa, San Joaquin, San Luis Obispo, Stanislaus. Additional distribution: presumed extirpated in Contra Costa and Colusa counties. Known from a single historical record (1889) from project vicinity. | Mar-Apr Annual Herb | None: no suitable habitat present. |
| Polygonaceae - Buckwheat Family | | | | |
| <i>Eriogonum nudum</i> var. <i>psychicola</i> Antioch Dunes buckwheat | Federal: none State: none CNPS: 1B.1 G5T1/S1 Other: | Occurs in inland dunes. Recorded from Contra Costa. Additional distribution: Known only from the Antioch sand dunes. Present at the Antioch Dunes National Wildlife Refuge. | Jul-Oct Perennial Herb | Not expected: marginally suitable habitat present. No members of genus detected during present survey. |



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| <i>Eriogonum truncatum</i> Mt. Diablo buckwheat | Federal: none State: none CNPS: 1B.1 G2/S2 Other: DFG: SP | Occurs in chaparral, coastal scrub, valley and foothill grassland Substrate: sandy. Recorded from Alameda, Contra Costa, Solano. Additional distribution: rediscovered in May 2005 in Mount Diablo State Park. Presumed extirpated in Solano County. Known from a single historical record (1886) from project vicinity. | Apr-Dec Annual Herb | Not expected: marginally suitable habitat present. No members of genus detected during present survey. |
| Potamogetonaceae - Pondweed Family | | | | |
| <i>Potamogeton zosteriformis</i> eel-grass pondweed | Federal: none State: none CNPS: 2B.2 G5/S3 Other: DFG: SP | Occurs in freshwater marsh, marshes and swamps. Recorded from Contra Costa, Lake, Lassen, Modoc, Shasta. Also recorded from Idaho, Oregon, Utah, Washington. Not recorded from project vicinity. | Jun-Jul Annual Herb, Aquatic | Not expected: marginally suitable habitat present. See text for discussion. |
| Scrophulariaceae - Figwort Family | | | | |
| <i>Limosella australis</i> Delta mudwort | Federal: none State: none CNPS: 2B.1 G4G5/S2 Other: DFG: SP | Occurs in freshwater marsh, marshes and swamps Moisture: wet. Recorded from Contra Costa, Sacramento, San Joaquin, Solano. Also recorded from Oregon. Present at the Antioch Dunes National Wildlife Refuge. | May-Aug Perennial Herb (stoloniferous) | Possible: suitable habitat present. See text for discussion. |



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|---|---|---|---|
| Branchiopoda - Branchiopods | | | |
| <i>Branchinecta conservatio</i> Conservancy fairy shrimp | Federal FE State none Other DFG: SA Global/State Rank: G1/S1 | Inhabits large, turbid, astatic pools located in swales formed by old, braided alluvium, filled by winter/spring rains, and lasting until June. Recorded from Butte, Glenn, Merced, Solano, Stanislaus, Tehama, Yuba counties. Additional distribution: endemic to the grasslands of the northern two-thirds of the Central Valley. Not recorded from project vicinity. | None: no suitable habitat present. |
| <i>Branchinecta lynchi</i> vernal pool fairy shrimp | Federal FT State none Other DFW: SA Global/State Rank: G3/S2S3 | Inhabits small, clear-water sandstone-depression astatic rain-filled pools and grassed swales, earth slumps, or basalt-flow depression pools. Recorded from Alameda, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Glenn, Kings, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Ventura, Yuba counties. Additional distribution: endemic to the grasslands of the Central Valley, Central Coast and South Coast mountains. Recorded from project vicinity. | None: no suitable habitat present. |
| <i>Lepidurus packardi</i> vernal pool tadpole shrimp | Federal FE State none Other DFW: SA Global/State Rank: G3/S2S3 | Inhabits vernal pools and grassy swales of unplowed grasslands. Tolerant of mud-bottoms and highly turbid conditions. Recorded from Alameda, Butte, Colusa, Fresno, Kings, Merced, Placer, Sacramento, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, Yuba counties. Recorded from project vicinity. | None: no suitable habitat present. |
| <i>Linderiella occidentalis</i> California linderiella | Federal none State none Other DFG: SA Global/State Rank: G2G3/S2S3 | Inhabits seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Found in pools of water with very low alkalinity, conductivity, and total dissolved solids. Recorded from Alameda, Butte, Contra Costa, Fresno, Madera, Merced, Monterey, Placer, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Cruz, Shasta, Solano, Sonoma, Stanislaus, Sutter, Tehama, Yuba counties. Recorded from project vicinity. | None: no suitable habitat present. See text for discussion. |



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| <i>Insecta - Insects</i> | | | |
| <i>Anthicus antiochensis</i> Antioch Dunes anthicid beetle | Federal none State none Other DFG: SA Global/State Rank: G1/S1 | Known to occupy small sand deposits, including dredge spoils. Recorded from Contra Costa County. Additional distribution: recorded only from the Antioch Dunes. Known from a single 1953 record at the Antioch Dunes National Wildlife Refuge. | Not expected: marginally suitable habitat present. Site is too highly altered. |
| <i>Apodemia mormo langei</i> Lange's metalmark butterfly | Federal FE State none Other DFG: SA Global/State Rank: G5T1/S1 | Inhabits stabilized dunes. Primary host plant is <i>Eriogonum nudum</i> var. <i>auriculatum</i> . Feeds on nectar of other wildflowers, as well as host plant. Recorded from Contra Costa County. Additional distribution: endemic to Antioch Dunes. Known from a single 2008 record at the Antioch Dunes National Wildlife Refuge. | Not expected: no suitable habitat present. No larval host plants present in study area. |
| <i>Coelus gracilis</i> San Joaquin dune beetle | Federal none State none Other BLM: S DFG: SA Global/State Rank: G1/S1 | Burrows in the sand of well-developed sand dunes. Inhabits fossil dunes on sandy substrates. Occurs along the western edge of San Joaquin Valley. Extirpated from Antioch Dunes (type locality). Recorded from Contra Costa, Fresno, Kings, San Benito counties. Known from a single 1976 record at the Antioch Dunes National Wildlife Refuge. Presumed extirpated. | Not expected: marginally suitable habitat present. Site is too highly altered. |
| <i>Efferia antiochi</i> Antioch efferian robberfly | Federal none State none Other DFG: SA Global/State Rank: G1G2/S1S2 | Associated primarily with sand dunes. Recorded from Contra Costa, Fresno counties. Additional distribution: known only from Antioch and Fresno. Known from a single 1995 record at the Antioch Dunes National Wildlife Refuge. Presumed extant. | Not expected: marginally suitable habitat present. Site is too highly altered. |



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| <i>Eucerceris ruficeps</i> redheaded sphecid wasp | Federal none State none Other DFG: SA Global/State Rank: G1G3/S1S2 | Nests in hard-packed sand utilizing abandoned halictine bee burrows. Occurs on interior dunes. Recorded from Fresno, Stanislaus counties. Additional distribution: central California. Known from a single 1979 record at the Antioch Dunes National Wildlife Refuge. Presumed extant. | Not expected: marginally suitable habitat present. Site is too highly altered. |
| <i>Hygrotus curvipes</i> curved-foot hygrotus diving beetle | Federal none State none Other DFG: SA Global/State Rank: G1/S1 | Aquatic inhabitant known only from a single, shallow, muddy pool. Recorded from Alameda, Contra Costa counties. Additional distribution: known from Oakley, Byron, Mountain House. Not recorded from project vicinity. | None: no suitable habitat present. |
| <i>Idiostatus middlekaufi</i> Middlekauf's shieldback katydid | Federal none State none Other DFG: SA Global/State Rank: G1G2/S1 | Associated with various native dune shrubs. Recorded from Contra Costa County. Additional distribution: formerly found at the Antioch Dunes, but has not been seen for several decades. Known from a single 1965 record at the Antioch Dunes National Wildlife Refuge. Presumed extant. | Not expected: marginally suitable habitat present. Site is too highly altered. |
| <i>Metapogon hurdi</i> Hurd's metapogon robberfly | Federal none State none Other DFG: SA Global/State Rank: G1G3/S1S3 | Associated primarily with sand dunes. Known from a single 1975 record at the Antioch Dunes National Wildlife Refuge. Possibly extirpated. | Not expected: marginally suitable habitat present. Site is too highly altered. |
| <i>Myrmosula pacifica</i> Antioch multilid wasp | Federal none State none Other DFG: SA Global/State Rank: GH/SH | This species is probably a synonym of a more widespread mutillid. Thus, this species may not be as unique as was originally believed. Recorded from Contra Costa County. Additional distribution: Antioch Dunes. Known from a single 1952 record at the Antioch Dunes National Wildlife Refuge. Presumed extant. | Not expected: marginally suitable habitat present. Site is too highly altered. |



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| <i>Perdita scituta antiochensis</i> Antioch andrenid bee | Federal none State none Other DFG: SA Global/State Rank: G1T1/S1 | Restricted to sand dunes. Active in early fall. Known to visit the flowers of various native plants, especially <i>Eriogonum nudum</i> , <i>Gutierrezia californica</i> , <i>Heterotheca grandiflora</i> , and <i>Lessingia glandulifera</i> . Recorded from Contra Costa County. Additional distribution: Antioch Dunes. Known from a single 1977 record at the Antioch Dunes National Wildlife Refuge. Presumed extant. | Not expected: marginally suitable habitat present. Site is too highly altered. |
| <i>Philanthus nasalis</i> Antioch spicid wasp | Federal none State none Other DFW: SA Global/State Rank: G1/S1 | Associated with sand dunes. Previously known only from the Antioch Dunes. Now known only from inland sandhills of Santa Cruz County. Found on flowers of <i>Eriogonum nudum decurrens</i> , <i>Gnaphalium beneolens</i> , G. "Zayateense", <i>Ericameria</i> . Recorded from Contra Costa, Santa Cruz counties. Known from a single 1959 record at the Antioch Dunes National Wildlife Refuge. Presumed extirpated. | Not expected: no suitable habitat present. Site is too highly altered. |
| <i>Sphecodogastra antiochensis</i> Antioch Dunes halcetid bee | Federal none State none Other DFG: SA Global/State Rank: G1/S1 Xerces: CI | Ground-nesting bee found in stabilized dunes in open, xeric areas. Host plant is <i>Oenothera deltoides howellii</i> . Recorded from Contra Costa County. Additional distribution: restricted to Antioch Dunes. Known from a single 1982 record at Sherman Island. Presumed extant. | Not expected: no suitable habitat present. Site is too highly altered. |
| <i>Actinopterygii - Ray-finned Fishes</i> | | | |
| <i>Acipenser medirostris</i> North American green sturgeon | Federal FT State none Other AFS: E DFW: SSC Global/State Rank: G3/S1S2 | Anadromous. Found in estuaries, lower reaches of large rivers, and in salt or brackish water off river mouths. Probably spawns in deep, fast freshwater. Spawns in the Sacramento River and the Klamath River. Not recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |



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| <i>Archoplites interruptus</i> Sacramento perch | Federal none State none Other DFG: SSC Global/State Rank: G2G3/S1 | Common in ponds and impoundments. Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of physico-chemical water conditions. Freshwater. Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Recorded from Contra Costa, Lake, Sacramento counties. Additional distribution: native range is Sacramento-San Joaquin, Pajaro, and Salinas River drainages, and Clear Lake. Recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |
| <i>Hypomesus transpacificus</i> delta smelt | Federal FT State SE Other AFS: T DFW: SA Global/State Rank: G1/S1 | Occurs in open brackish and freshwater of large channels. Most frequently found at salinities < 2ppt.; seldom found at salinities > 10 ppt. Occurs in the Sacramento-San Joaquin Delta. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Recorded from Solano, Sacramento, San Joaquin, Solano, Yolo counties. Recorded from project vicinity; site is located within critical habitat. | Possible: suitable habitat present. See text for discussion. |
| <i>Mylopharodon conocephalus</i> hardhead | Federal none State none Other DFG: SSC FS: S Global/State Rank: G3/S3 | Inhabits deep pools with sand-gravel-boulder bottoms and slow-moving water. Not found where exotic centrarchids predominate. Freshwater. Occurs in low to mid-elevation streams in the Sacramento-San Joaquin drainage. Recorded from Fresno, Merced, Modoc, Shasta counties. Recorded from project vicinity. | Possible: suitable habitat present. |
| <i>Oncorhynchus mykiss irideus</i> steelhead - Central Valley DPS | Federal FT State none Other AFS: T DFW: SA Global/State Rank: G5T2/S2 | The Distinct Population Segment includes steelhead inhabiting the Sacramento and San Joaquin Rivers and their tributaries. Also included are river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay westward of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |



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| <i>Oncorhynchus mykiss irideus</i> steelhead - central Calif. coast DPS | Federal FT State none Other AFS: T DFW: SA Global/State Rank: G5T2Q/S2 | The Distinct Population Segment includes steelhead inhabiting streams and tributaries from the Russian River south to Soquel Creek and to, but not including the Pajarro River. Also occurs in the San Francisco and San Pablo basins. Recorded from Alameda, Marin, Napa, San Mateo, Santa Cruz, Sonoma counties. Not recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |
| <i>Oncorhynchus tshawytscha</i> chinook salmon - Central Valley spring-run ESU | Federal FT State ST Other AFS: T DFW: SA Global/State Rank: G5/S1 | Federal listing refers to populations spawning in Sacramento River and its tributaries. Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures greater than 27 C lethal to adult. Recorded from Butte, Humboldt, Nevada, Shasta, Siskiyou, Tehama, Trinity, Yuba counties. Not recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |
| <i>Oncorhynchus tshawytscha</i> chinook salmon - Sacramento River winter-run ESU | Federal FE State SE Other AFS: E DFW: SA Global/State Rank: G5/S1 | Anadromous. Spawning restricted to the Sacramento River. Requires clean, cold water over gravel beds with water temperatures between 6 and 14 c for spawning. Federal listing refers to populations in the Sacramento River from Keswick Dam, Shasta County (River Mile 302) to Chipps Island (River Mile 0) at the westward margin of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay westward of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Recorded from Butte, Colusa, Contra Costa, Glenn, Napa, Nevada, Placer, Plumas, Sacramento, Shasta, Solano, Sutter, Tehama, Trinity, Yolo, Yuba counties. Not recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |



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|---|--|---|--|
| <i>Pogonichthys macrolepidotus</i> Sacramento splittail | Federal none | Inhabits slow-moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young. Inhabits fresh and brackish water. Recorded from Sacramento, Solano, Sonoma, Stanislaus counties. Additional distribution: endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento-San Joaquin Delta, Suisun Bay and associated marshes. Recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |
| | State none | | |
| | Other DFG: SSC Global/State Rank: G2/S2 | | |
| <i>Spirinchus thaleichthys</i> longfin smelt | Federal FC | Found mostly close to shore, in bays and estuaries, ascending coastal streams to spawn. Anadromous. Occurs in fresh and brackish water, and marine environments. Recorded from project vicinity. | Possible: suitable habitat present. See text for discussion. |
| | State ST | | |
| | Other DFG: SSC Global/State Rank: G5/S1 | | |
| Amphibia - Amphibians | | | |
| <i>Ambystoma californiense</i> California tiger salamander - Central Calif. DPS | Federal FT | Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding. Recorded from Alameda, Amador, Butte, Calaveras, Contra Costa, Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Stanislaus, Sutter, Tulare, Yolo counties. Recorded from project vicinity but only inland locations.. | None: no suitable habitat present. |
| | State ST | | |
| | Other DFW: SSC Global/State Rank: G2G3/S2S3 | | |
| <i>Rana draytonii</i> California red-legged frog | Federal FT | Inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat. Recorded from Alameda, Butte, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Glenn, Lake, Los Angeles, Marin, Mariposa, Mendocino, Merced, Monterey, Napa, Nevada, Placer, Plumas, Riverside, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Solano, Sonoma, Stanislaus, Tehama, Tuolumne, Ventura, Yuba counties. Recorded from project vicinity but only inland locations.. | None: no suitable habitat present. |
| | State none | | |
| | Other DFW: SSC Global/State Rank: G2G3/S2S3 | | |



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|---|---|---|--------------------------------------|
| Reptilia - Reptiles | | | |
| <i>Anniella pulchra pulchra</i> silvery legless lizard | Federal none | Inhabits sandy or loose loamy soils under sparse vegetation, on moist. | Not expected: |
| | State none | FS listing covers full species. | marginally suitable habitat present. |
| | Other DFG: SSC FS: S Global/State Rank: G3G4T3T4Q/ S3 | Recorded from Contra Costa, Fresno, Los Angeles, Merced, Riverside, San Benito, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Ventura counties. Recorded from project vicinity. | Site is too highly altered. |
| <i>Emys marmorata</i> Pacific pond turtle | Federal none | A thoroughly aquatic turtle inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and sandy banks or grassy open fields in upland areas for egg-laying. | Possible: |
| | State none | | suitable habitat present. |
| | Other BLM: S DFW: SSC FS: S Global/State Rank: G3G4/S3 | Recorded from Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kern, Kings, Lake, Lassen, Los Angeles, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Orange, Placer, Plumas, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Tehama, Trinity, Tulare, Tuolumne, Ventura, Yolo, Yuba counties. Recorded from project vicinity. | |
| <i>Thamnophis gigas</i> giant gartersnake | Federal FT | Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California. | Not expected: |
| | State ST | | marginally suitable habitat present. |
| | Other DFG: SA Global/State Rank: G2/S2 | Recorded from Butte, Colusa, Contra Costa, Fresno, Great Basin Floristic Province, Kern, Merced, Sacramento, San Joaquin, Solano, Sutter, Yolo counties. Recorded from project vicinity, but presumed anomalous. | |



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|--|--|--|--|
| Aves - Birds | | | |
| <i>Agelaius tricolor</i> tricolored blackbird | Federal none State none Other ABC: WL BLM: S DFW: SSC FWS: BCC; MBTA Global/State Rank: G2G3/S1S2 | Highly colonial species. Requires open water, protected nesting substrate, and foraging areas with insect prey within a few km of the colony. Greatest concentrations are in the Central Valley and vicinity. Largely endemic to California. DFG listing covers nesting colonies only. Not recorded from project vicinity. | Not expected: marginally suitable nesting habitat present in study area. No suitable habitat present on shoreline across from wharf. |
| <i>Ardea herodias</i> great blue heron | Federal none State none Other CDF: S DFG: SA FWS: MBTA Global/State Rank: G5/S4 | Nests colonially in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites are usually in close proximity to foraging areas such as marshes, lake margins, tide-flats, rivers and streams, wet meadows. DFG listing covers nesting colonies only. Recorded from Alameda, Butte, Del Norte, Humboldt, Imperial, Lake, Lassen, Marin, Merced, Monterey, Placer, Riverside, Sacramento, San Joaquin, San Mateo, Santa Clara, Shasta, Siskiyou, Solano, Sonoma, Stanislaus, Tehama, Tulare, Yolo counties. Not recorded from project vicinity. | Not expected: marginally suitable nesting habitat present. Would have been detectable. |
| <i>Asio flammeus</i> short-eared owl | Federal none State none Other ABC: WL Aud: WL DFW: SSC FWS: MBTA Global/State Rank: G5/S3 | Inhabits both freshwater and salt water swamp lands, lowland meadows, and irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depressions concealed in vegetation. DFW listing covers nesting birds only. Recorded from Contra Costa, Imperial, Los Angeles, Modoc, Monterey, San Mateo, Solano counties. Not recorded from project vicinity. | None: no suitable habitat present. |



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|---|--|--|--|
| <i>Athene cunicularia</i> burrowing owl | Federal none State none Other BLM: S DFW: SSC FWS: BCC; MBTA Global/State Rank: G4/S3 | Inhabits open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Nests underground in mammal burrows, especially those of California ground squirrel. DFW listing covers burrow sites and some wintering sites only. Recorded from project vicinity. | Not expected: marginally suitable habitat present. No suitable nesting burrows detected during present survey. |
| <i>Buteo swainsoni</i> Swainson's hawk | Federal none State ST Other ABC: WLBC AUD: WL DFG: SA FS: S FWS: BCC; MBTA Global/State Rank: G5/S3 | Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. DFG listing covers nesting birds. Recorded from Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Kings, Lassen, Los Angeles, Madera, Merced, Modoc, Mono, Placer, Sacramento, San Bernardino, San Joaquin, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo counties. Recorded from project vicinity. | Not expected: marginally suitable nesting habitat present. No nests detected during present survey. |
| <i>Elanus leucurus</i> white-tailed kite | Federal none State none Other DFW: FP FWS: MNB, MBTA Global/State Rank: G5/S3 | Inhabits rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Utilizes open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. DFW listing covers nesting individuals only. Recorded from project vicinity. | Possible: marginally suitable nesting habitat present. |



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|---|---|--|---|
| <i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat | Federal none State none Other DFW: SSC FWS: BCC, MBTA Global/State Rank: G5T2/S2 | Inhabits freshwater and salt marshes. Requires thick, continuous cover down to water surface for foraging. Nests in tall grasses, tule patches and willows. Resident of the San Francisco Bay region. Recorded from Alameda, Marin, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma counties. Recorded from project vicinity. | Not expected: no suitable nesting habitat present. |
| <i>Laterallus jamaicensis coturniculus</i> California black rail | Federal none State ST Other ABC: WL DFG: FP FWS: BCC, MBTA Global/State Rank: G4T1/S1 | Inhabits freshwater marshes, wet meadows and shallow margins bordering large bays. Also found in freshwater and brackish marshes, near sea level. AUD, FWS & ABC listings cover full species. Recorded from Alameda, Butte, Contra Costa, Imperial, Los Angeles, Marin, Napa, Nevada, Orange, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Cruz, Solano, Sonoma, Yuba counties. Known from multiple records at the western tip of Sherman Island. . | Not expected: no suitable nesting habitat present. |
| <i>Melospiza melodia</i> song sparrow "Modesto population" | Federal none State none Other DFW: SSC FWS: MBTA Global/State Rank: G5/S3? | Moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semiopen canopies to allow light, and exposed ground or leaf litter for foraging. Associated with emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets. Also may nest in riparian forests of Valley Oak with an understory of blackberry, along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites. Recorded from Butte, Colusa, Colusa, Contra Costa, Placer, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, Yolo counties. Known from a single 1901 record at the Antioch Dunes National Wildlife Refuge. Presumed extant. | Possible: marginally suitable nesting habitat present. See text for discussion. |



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|---|---|---|---|
| <i>Melospiza melodia maxillaris</i> Suisun song sparrow | Federal none State none Other DFG: SSC FWS: BCC; MBTA Global/State Rank: G5T2/S2 | Inhabits cattails, tules and other sedges, and pickleweed. Also known to frequent tangles bordering sloughs. Occurs in brackish-water marshes surrounding Suisun Bay. Recorded from Contra Costa, Solano counties. Recorded from project vicinity. | Possible: marginally suitable nesting habitat present. See text for discussion. |
| <i>Phalacrocorax auritus</i> double-crested cormorant | Federal none State none Other DFG: WL FWS: MBTA Global/State Rank: G5/S3 | Nests colonially on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins. DFG listing covers rookery sites only. Recorded from Alameda, Contra Costa, Del Norte, Humboldt, Lake, Lassen, Mariposa, Monterey, Sacramento, San Diego, San Francisco, Santa Barbara, Sonoma, Ventura counties. Known from a single 1988 record at Sherman Island. Presumed extant. | None: no suitable nesting habitat present. |
| <i>Rallus longirostris obsoletus</i> California clapper rail | Federal FE State SE Other ABC: WL DFW: FP FWS: MBTA Global/State Rank: G5T1/S1 | Inhabits salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs. Not recorded from project vicinity. | Not expected: marginally suitable habitat present. |



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| <i>Riparia riparia</i> bank swallow | Federal none State ST Other DFW: SA FWS: MBTA Global/State Rank: G5/S2S3 | Nests colonially, primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole. DFW listing covers nesting colonies only. Recorded from Alameda, Butte, Colusa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Inyo, Lassen, Modoc, Mono, Monterey, Plumas, Sacramento, San Benito, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Shasta, Siskiyou, Sonoma, Sutter, Tehama, Ventura, Yolo counties. Not recorded from project vicinity. | None: no suitable habitat present. |
| <i>Sternula antillarum browni</i> California least tern | Federal FE State SE Other ABC: WL DFW: FP FWS: MBTA Global/State Rank: G4T2T3Q/S2 S3 | Breeds in colonies on bare or sparsely vegetated, flat substrates consisting of sand beaches, alkali flats, land fills, or paved areas. Nests along the coast from San Francisco Bay south to northern Baja California. Listing covers nesting colonies Not recorded from project vicinity. | None: no suitable habitat present. |
| Mammalia - Mammals | | | |
| <i>Lasiurus blossevillii</i> western red bat | Federal none State none Other DFG: SSC FS: S Global/State Rank: G5/S3? WBWG: H | Roosts primarily in trees, 2-40 feet above the ground. Prefers habitat edges and mosaics with trees that are protected from above and open below, with open areas for foraging. Found from sea level to higher elevations with mixed conifer forests. Known from a single 1998 record inland. Presumed extant. | Not expected: marginally suitable habitat present. |



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|--|---|--|---|
| <i>Lasiurus cinereus</i> hoary bat | Federal none State none Other DFW: SA Global/State Rank: G5/S4? WBWG: M | The hoary bat is the most widespread North American bat. May be found at any location in California. Prefers open habitats or mosaics with access to trees for cover and open areas or edges for foraging. Roosts in dense foliage of medium to large trees. Not recorded from project vicinity. | Not expected: marginally suitable habitat present. |
| <i>Perognathus inornatus inornatus</i> San Joaquin pocket mouse | Federal none State none Other BLM: S DFG: SA Global/State Rank: G4T2T3/S2S3 | Typically found in grasslands and blue oak savannas. Needs friable soils. Recorded from Alameda, Colusa, Contra Costa, Fresno, Kern, Kings, Lake, Los Angeles, Merced, Monterey, San Joaquin, San Luis Obispo, Stanislaus, Sutter, Tehama, Tulare, Ventura counties. Not recorded from project vicinity. | None: no suitable habitat present. |
| <i>Phoca vitulina</i> harbor seal | Federal none State none Other MMPA | Fairly common, non-migratory pinnipeds found on California islands and along entire mainland coast. Prefers to remain close to shore in subtidal and intertidal habitats. Often swim into bays and estuaries, and sometimes venture into rivers in northern California. Frequently haul out in small to moderate-sized groups on emergent offshore and tidal rocks, mudflats, sandbars, and sandy beaches (Orr 1972). Known to move up the San Joaquin River. | Possible: marginally suitable habitat present. |
| <i>Reithrodontomys raviventris</i> salt-marsh harvest mouse | Federal FE State SE Other DFW: FP Global/State Rank: G1G2/S1S2 | Pickleweed (<i>Salicornia</i>) is the primary habitat. Builds loosely organized nests and does not burrow into the ground. Requires higher areas to escape flooding. Restricted to saline emergent wetlands. Recorded from Contra Costa, Marin, Napa, San Mateo, Santa Clara, Solano, Sonoma counties. Additional distribution: San Francisco Bay and its tributaries. Recorded from project vicinity. | None: no suitable habitat present. |



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|--|--|--|---|
| <i>Zalophus californianus</i> California sea lion | Federal none State none Other MMPA | Inhabits the eastern North Pacific Ocean in shallow coastal and estuarine waters. Sandy beaches are preferred for haul out sites. In California, they haul out on marina docks as well as jetties and buoys. Common seen in the Sacramento-San Joaquin river delta. Known to move up the San Joaquin River. | Possible: marginally suitable habitat present. |