

**Sensitive Wildlife Species Reported within the Regional Study Area and Potential to Occur**

Species	Listing Status <sup>1</sup>	ECCC HCP/NCCP Status <sup>2</sup>	Habitat Association	Likelihood of Occurrence within Project Area
Longhorn fairy shrimp <i>Branchinecta longiantenna</i>	FE, CH	Covered	Inhabits small, clear-water depressions in clear to turbid clay/grass-bottomed pools and in shallow swales.	Not likely; there are no vernal pools or depressional seasonal wetlands within the local study area.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT, PCH	Covered	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains in rain-filled pools; inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not likely; there are no vernal pools or depressional seasonal wetlands within the local study area.
Conservancy fairy shrimp <i>Branchinecta conservation</i>	FE	-	Endemic to large vernal pools in the Central Valley. Dependent on seasonal water fluctuations and water quality.	Not likely; there are no vernal pools or depressional seasonal wetlands within the local study area.
Midvalley fairy shrimp <i>Branchinecta mesovallensis</i>	-	covered	Vernal pools.	Not likely; there are no vernal pools or depressional seasonal wetlands within the local study area.

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Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE, CH	Covered	Inhabits vernal pools containing clear to highly turbid water; pools are commonly located in grass-bottomed swales in old alluvial soils underlain by hardpan or mud.	Not likely; there are no vernal pools or depressional seasonal wetlands within the local study area.
Lange's metalmark butterfly <i>Apodemia mormo langei</i>	FE	-	Has a close relationship with the food plant of its larvae: naked-stemmed buckwheat ( <i>Eriogonum nudum</i> ).	Not likely; species is recorded from the Antioch Dunes and not likely to travel to the local study area. Additionally, naked-stemmed buckwheat was not observed within the project area.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE	-	Found in the fog belt of steep north facing slopes that receive little direct sunlight. The San Bruno elfin is restricted to a few small populations, including one on Mount Diablo.	Not likely; no suitable habitat is present within the local study area. The closest California Natural diversity Database (CNDDDB) record is approximately 10 miles south of the project site in the Diablo mountains.
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	FE	-	Found in native grassland and adjacent habitats, where females lay their eggs on the larval food plant, Johnny-jump-up. Extirpated through much of its historic range of coastal areas in the San Francisco Bay area.	Not likely; the host plant for this species was not observed during the field survey and there are no known occurrences recorded within 10 miles of the local study area.

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Delta green ground beetle <i>Elaphrus viridis</i>	FT, CH	-	Associated with vernal pool habitats in the grassland area between Jepson Prairie and Travis Air Force Base.	Not likely; the project is outside of known range of this species.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	-	Dependent on elderberry shrubs as a host plant. Potential habitat is shrubs with stems 1 inch in diameter or greater.	Not likely; no elderberry shrubs are present in the local study area.
California linderiella <i>Linderiella occidentalis</i>	-	-	Found in a variety of natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. Suitable habitat must contain completely dry soil during the summer for species to complete its lifecycle.	Not likely; there is no suitable habitat for this species within the local study area.
Curved-foot hygrotus diving beetle <i>Hygrotus curvipes</i>	-	-	Aquatic species found only in shallow ponded waters.	Not likely; this species has a restricted distribution. The closest known occurrence is approximately 10 miles to the southeast of the local study area.

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Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	-	-	Interior dunes, apparently extirpated from the type locality at Antioch Dunes. A microscavenger, it prefers loose, sandy substrate.	Not likely; there is no suitable habitat for this species within the local study area.
San Joaquin dune beetle <i>Coelus gracilis</i>	-	-	Probably detritivores. Restricted to small isolated sand dunes along the western edge of the San Joaquin Valley. The population near Antioch has apparently been extirpated.	Not likely; there is no suitable habitat for this species within the local study area.
Antioch efferian robberfly <i>Efferia antiochi</i>	-	-	Interior dunes; robber flies are predaceous on other insects, and larvae usually develop in the ground or in rotting wood where they prey upon other insect larvae.	Not likely; there is no suitable habitat for this species within the local study area.
Hurd's metapogon robberfly <i>Metapogon hurdi</i>	-	-	No specific habitat information is available. Robber flies are predaceous on other insects, and larvae usually develop in the ground or in rotting wood where they prey upon other insect larvae.	Not likely; there are no known occurrences within proximity to the local study area.

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Antioch andrenid bee <i>Perdita scitula antiochensis</i>	-	-	Interior dunes.	Not likely; there is no suitable habitat for this species within the local study area.
Antioch multilid wasp <i>Myrmosula pacifica</i>	-	-	Interior dunes.	Not likely; there is no suitable habitat for this species within the local study area.
Redheaded sphecid wasp <i>Eucerceris ruficeps</i>	-	-	Interior dunes.	Not likely; there is no suitable habitat for this species within the local study area.
Antioch sphecid wasp <i>Philanthus nasalis</i>	-	-	Interior dunes.	Not likely; there is no suitable habitat for this species within the local study area.
Blennosperma vernal pool andrenid bee <i>Andrena blennospermatis</i>	-	-	Solitary, ground-nesting bee. Nests in upland areas near vernal pools. Limited flight ability and low dispersal tendencies.	Not likely; there are no known occurrences within proximity to the local study area and species has limited flight ability and dispersal tendencies.
Antioch Dunes halcetid bee <i>Sphecodogastra antiochensis</i>	-	-	Interior dunes.	Not likely; there is no suitable habitat for this species within the local study area.
Middlekauff's shieldback katydid <i>Idiostatus middlekauffi</i>	-	-	Interior dunes.	Not likely; there is no suitable habitat for this species within the local study area.

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Bridges' coast range shoulderband <i>Helminthoglypta nickliniana bridgesi</i>	-	-	Interior dunes.	Not likely; there is no suitable habitat for this species within the local study area.
California tiger salamander <i>Ambystoma californiense</i>	FT, ST, PCH, CSC	covered	Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding. Most populations found below 1,500 feet, though have been recorded up to 4,500 feet.	Potential to occur; the local study area is located within the species' range, but not within the ECCC HCP/NCCP modeled habitat distribution. However, because a comprehensive survey has not been conducted in the HCP inventory area, neither the current population size nor the locations of all occurrences are known. Tiger salamanders sometimes use reservoirs to breed and lay their eggs. Small-mammal burrows throughout the local study area provide suitable cover during the non-breeding season; however, seasonal wetland habitats are very limited and highly disturbed within the local study area, reducing the likelihood of occurrence.

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California red-legged frog <i>Rana aurora draytonii</i>	FT, CSC Proposed CH	covered	Inhabits lowlands and foothills in or near permanent deep water with dense growth of emergent and woody riparian vegetation, bordering permanent and semi-permanent ponds, ponded streams, marshes, and springs. Requires 11 to 20 weeks of permanent water for larval development. Upland habitat surrounding breeding areas is important for shelter during dispersal and aestivation.	Potential to occur; the local study area is located within the species' range. Suitable aquatic habitat is associated with the permanent wetland in the South Tank Farm. However, the highly disturbed nature of the land surrounding this habitat significantly reduces the potential for this species to occur within the local study area.
Foothill yellow-legged frog <i>Rana boylei</i>	CSC	covered	Require shallow, flowing perennial water in small and moderate-sized streams with some cobble-sized substrate. Usually absent from habitat with introduced aquatic predators. Feeds on aquatic and terrestrial insects; tadpoles graze on algae.	Not likely; the local study area is located within the species' range and the ECCC HCP/NCCP models show suitable low-use habitat in riparian corridors to the south and east within a 0.25-mile of the local study area; however, this species is typically found associated with swift-flowing creeks and drainages with a rocky substrate, which are not present within the local study area.

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Western pond turtle <i>Emys marmorata</i>	CSC	covered	Found in rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters from sea level to 6,500 feet. Prefers habitats with large areas for cover and basking sites. Overwinters in both aquatic and terrestrial habitats.	Potential to occur; the local study area is located within the species' year-round range and core habitat is modeled along the shoreline north of the storage terminal.
Coast horned lizard <i>Phrynosoma blainvillii</i>	CSC	-	Utilizes a wide variety of habitats, but most common in lowlands along sandy washes with scattered shrubs. Uses open areas for sunning and bushes for cover.	Not likely; there is no suitable habitat for this species within the local study area.
Silvery legless lizard <i>Anniella pulchra pulchra</i>	CSC	covered	Occurs primarily in areas with sandy or loose loamy soils under sparse vegetation. Often found under, or in the close vicinity of surface objects, such as logs, rocks, and old boards.	Not likely; there is no suitable habitat for this species within the local study area.
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT, ST	covered	Closely associated with chaparral habitat containing rock outcroppings; will venture into adjacent habitats, such as grasslands or woodland.	Not likely; there is no suitable habitat for this species within the local study area.



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Giant garter snake <i>Thamnophis gigas</i>	FT, ST	covered	Forages in permanent or seasonal slow-moving water with emergent vegetation, mud bottoms, and dirt banks. Occurs in irrigation ditches year-round, and rice fields during the growing season. Absent from waters with predatory fish. Requires upland sites or elevated features above floodwaters for winter refugia.	Not likely; the local study area is located at the edge of the species' range and the closest CNDDDB record is roughly 7 miles to the east. The ECCC HCP/NCCP modeled habitat for this species is confined to the eastern half of Contra Costa County.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT, CSC, BCC	-	Requires sandy, gravelly or friable soil substrate along tidal waters and ponds for nesting. Forages in wet and dry beach sand.	Not likely; there is no suitable habitat for this species within the local study area.
Short-eared owl <i>Asio flammeus</i>	CSC	-	Grassland species. Commonly found in treeless areas using fence posts and small mounds as perches. Requires dense vegetation for resting and roosting cover.	Potential to occur; foraging habitat occurs along the proposed pipeline alignment. Owl pellets were found near railroad tracks during planning surveys. Limited nesting habitat occurs within local study area.

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Burrowing owl <i>Athene cunicularia</i>	BCC, CSC	covered	Inhabits open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation; nests underground, usually in abandoned California ground squirrel ( <i>Spermophilus beecheyi</i> ) burrows.	Potential to occur; the proposed pipeline alignment crosses annual grassland utilized by ground squirrels, and owl pellets were found onsite, although not associated with burrows. The ECCC HCP/NCCP models this grassland as suitable habitat for Western burrowing owl.
Golden eagle <i>Aquila chrysaetos</i>	FP, WL, BCC	covered	Uncommon permanent resident and migrant throughout California. Requires open terrain for hunting. Nests on cliffs and in large trees.	Not likely; although the South Tank Farm is located adjacent to habitat modeled as suitable for Golden eagle in ECCC HCP/NCCP and the proposed pipeline alignment is located within modeled suitable habitat, suitable foraging habitat and nest trees are very limited throughout the local study area and no nests were observed.
Ferruginous hawk <i>Buteo regalis</i>	WL, BCC	-	A winter resident of open habitat in California including agricultural flatlands, open grasslands, deserts, and shrublands featuring scattered trees, rocky mounds, or outcrops. Breeds in interior western and Great Plains states. Roosts in on utility poles or tall trees in open areas. Requires open terrain for hunting.	Potential to occur; this species may utilize the open marshes and fields adjacent to the local study area to forage during the winter but is not known to breed in California and would not be impacted by the proposed project.

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Swainson’s hawk <i>Buteo swainsoni</i>	BCC, ST	covered	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah. Requires adjacent suitable foraging areas, such as grasslands, or alfalfa and grain fields supporting rodent populations.	Potential to occur; this species is an unlikely visitor to the local study area. The closest CNDDDB record is from 2007 for a nesting pair 10 miles southeast of the site (CNDDDB EOID# 69955). Habitat modeled as potential breeding habitat or potential foraging habitat is found on the east side of the county, but very limited foraging and nesting habitat occurs within the local study area.
White-tailed kite <i>Elanus leucurus</i>	FP	-	Breeds in savannas, riparian woodlands, grassy foothills. Resident species.	Potential to occur; species was observed foraging in the marshes west of the local study area during the field survey and in the field south of the East Tank Farm.
Hoary bat <i>Lasiurus cinereus</i>	-	-	Broadleaved upland forests/open space mosaics near water. Roosts in foliage of medium to large trees.	Not likely; there are no broadleaved trees in vicinity to local study area. Closest known record is 5 miles away.
Townsend’s western big-eared bat <i>Corynorhinus townsendii townsendii</i>	-	covered	Associated with buildings, caves, and mines associated with desert scrub, mixed conifer forest, and pinon-juniper or pine forest habitat. Forage in forests and along heavily vegetated stream corridors, avoiding open, grazed pasture land.	Potential to occur; there are no published records of Townsend’s big eared bat within Contra Costa County. Records of this species include sites in the coastal lowlands of adjacent counties, and future research may show small numbers of individuals roost in buildings or other structures, which are present within the local study area.

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Western red bat <i>Lasiurus blossevillii</i>	CSC	-	Cismontane forest; prefers open/forested mosaic for feeding; roosts in dense tree foliage.	Potential to occur; non-native woodlands in the East Tank Farm provide suitable roosting habitat, though frequent tree trimming makes this habitat low quality.
Pallid bat <i>Antrozous pallidus</i>	CSC	-	Common species of low elevations. Occupies grasslands, shrublands, woodlands, and forests, though most common in open, dry habitat with rocky areas for roosting. Roosts in caves, crevices, mines, occasionally hollow trees and buildings. May night roost in more open spaces such as porches. Very sensitive to roosting site disturbance.	Potential to occur; may roost in buildings and forage over the storage terminal, though frequent disturbances associated with routine maintenance at the storage terminal make this low quality habitat.
Berkeley kangaroo rat <i>Dipodomys heermanni berkeleyensis</i>	-	-	Open, grassy hilltops and open spaces in chaparral and blue oak/grey pine woodland.	Not likely; there is no suitable habitat for this species within the local study area. The nearest CNDDDB record for this species is approximately 10 miles south of the local study area.
American badger <i>Taxidea taxus</i>	CSC	-	Uncommon, permanent resident throughout most of the state except in the North Coast area. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Not likely; though the local study area is within the year-long distribution of the American badger, it is an uncommon species throughout most of the state and there is no suitable habitat present within the local study area.

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San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE, ST	Covered	Inhabits annual grasslands or grassy open stages with scattered shrubby vegetation; needs loose-textured, sandy soils for burrowing and suitable prey base.	Not likely; the local study area does not lie within suitable core habitat or suitable low use habitat modeled in the ECCC HCP/NCCP and no sign of the species was observed during the field survey.

Source: CDFG, 2011

**<sup>1</sup>Federal Listing**

- FT: Federally listed threatened
- FE: Federally listed endangered
- FPD: Federally proposed for delisting
- FSC: Federal species of concern
- PCH: Proposed critical habitat
- BCC: Federally listed birds of conservation concern
- CH: Critical habitat designation

**State Listing**

- SE: State listed endangered
- FP: State fully protected
- ST: State listed threatened
- CSC: California species of special concern
- WL: Watch list

<sup>2</sup>East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan, 2006

**Source**

California Department of Fish and Wildlife (CDFG). 2011. *California Natural Diversity Database (CNDDDB), Rarefind 3.1.0*. Data collected September 9, 2011.