

Appendix C

List of Special-Status
Plant Species Potentially
Found in Area



APPENDIX C

Special-Status Species; Habitats on Wastewater Treatment Plant Project Site

Special-Status Species Potentially Occurring in Project Area

The “Potential for Occurrence” category is defined as follows:

- **Unlikely:** The Project site and/or immediate area do not support suitable habitat for a particular species or the Project site is outside the species’ known range.
- **Low Potential:** The Project site and/or immediate area provide only limited habitat for a particular species. In addition, the known range for a particular species may be outside the Project area.
- **Medium Potential:** The Project site and/or adjacent areas that could be affected by the Project provide suitable habitat for a particular species, but the species has not been documented in the Project area.
- **High Potential:** The Project site and/or immediate area provide ideal habitat conditions for a particular species and/or the species has been documented in the Project area.

TABLE C-1
SPECIAL-STATUS PLANT SPECIES POTENTIALLY OCCURRING
IN THE VICINITY OF THE WASTEWATER TREATMENT PLANT EXPANSION PROJECT

Scientific Name Common Name	Listing Status (Federal/State/ CNPS)	Blooming Period	General Habitat	Potential for Occurrence
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	FSC/--/1B	March - June	Generally found in playas, valley and foothill grasslands with adobe clay and alkaline soils and vernal pools; up to 200 feet in elevation	Unlikely: Typically associated with vernal pools, which are not present at the Project Site.
<i>Atriplex cordulata</i> Heartscale	FSC/--/1B	April - October	Alkali scrub, alkali seasonal wetlands and grassland. Often found in the sandy soils of alkaline flats and scalds in the Central Valley; up to 1,200 feet in elevation	Medium: Potential habitat present in the alkali scrub, seasonal wetland, and grassland.
<i>Atriplex depressa</i> Brittlescale	FSC/--/1B	May - October	Alkali scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools with alkaline and clay soils; up to 1,100 feet in elevation	Medium: Potential habitat present in the alkali scrub, seasonal wetland, and grassland.
<i>Atriplex minuscula</i> Lesser saltscale	FSC/--/1B	May - October	Alkali scrub, playas, and valley and foothill grassland with sandy, alkaline soils; up to 650 feet in elevation	Medium: Potential habitat present in the alkali scrub and grassland.
<i>Atriplex persistens</i> Vernal pool smallscale	FSC/--/1B	June - October	Alkaline vernal pools; up to 400 feet in elevation.	Unlikely: Vernal pool habitat not present in the Project Site.
<i>Atriplex subtilis</i> Subtle orache	SLC/--/1B	June - October	Valley and foothill grassland; up to 350 feet in elevation	Medium: Potential habitat present in the grassland.
<i>Castilleja campestris</i> ssp. <i>succulenta</i> Succulent owl's-clover	FT/SE/1B	April - May	Vernal pools, often with acidic soils; up to 2500 feet in elevation	Unlikely: Vernal pool habitat not present in the Project Site.
<i>Chamaesyce hooveri</i> Hoover's spurge	FT/--/1B	July - August	Vernal pools; up to 850 feet in elevation	Unlikely: Vernal pool habitat not present in the Project Site.
<i>Cordylanthus mollis</i> ssp. <i>hispidus</i> Hispid bird's-beak	FSC/--/1B	June - September	Meadows and seeps, playas, and valley and foothill grassland with alkaline soils; up to 500 feet in elevation	Medium: Potential habitat present in the grassland and seasonal wetland.
<i>Cryptantha hooveri</i> Hoover's cryptantha	SLC/--/1A	April - May	Valley and foothill grassland, often in sandy soils; up to 500 feet in elevation	Unlikely: Sandy soils do not occur in the Project Site.

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<i>Delphinium recurvatum</i> Recurved larkspur	FSC/-/1B	March - May	Alkali scrub, cismontane woodland, and valley and foothill grassland with alkaline soils; up to 2,500 feet in elevation	Medium: Potential habitat present in the alkali scrub and grassland.
<i>Downingia pusilla</i> Dwarf downingia	--/--/2	March - May	Lake margins, vernal pools, and wet places, sometimes playas and grasslands; up to 1500 feet in elevation	Unlikely: Vernal pool habitat not present in the Project Site.
<i>Eryngium racemosum</i> Delta button-celery	--/SE/1B	June - September	Riparian scrub habitats; often found on clay soils in seasonally inundated floodplains; up to 100 feet in elevation	Unlikely: Riparian scrub habitat is not present in the Project Site.
<i>Eryngium spinosepalum</i> Spiny-sepalad button-celery	FSC/-/1B	April - May	Valley and foothill grassland and vernal pools; up to 850 feet in elevation	Unlikely: Typically associated with vernal pools, which are not present at the Project Site.
<i>Navarretia nigelliformis</i> ssp. <i>radicans</i> Shining navarretia	--/--/1B	May - July	Cismontane woodland, valley and foothill grassland, and vernal pools; up to 3,300 feet in elevation	Medium: Potential habitat present in the grassland.
<i>Navarretia prostrata</i> Prostrate navarretia	FSC/-/1B	April - July	Coastal scrub, valley and foothill grassland with alkaline soils, and vernal pools or mesic areas; up to 2,500 feet in elevation	Medium: Potential habitat present in the grassland and seasonal wetland.
<i>Neostapfia colusana</i> Colusa grass	FT/SE/1B	May - August	Vernal pools, often associated with adobe clay soils; up to 650 feet in elevation	Unlikely: Vernal pool habitat not present in the Project Site.
<i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass	FT/SE/1B	April - September	Vernal pools; up to 650 feet in elevation	Unlikely: Vernal pool habitat not present in the Project Site.
<i>Orcuttia pilosa</i> Hairy Orcutt grass	FE/SE/1B	May - September	Vernal pools; up to 650 feet in elevation	Unlikely: Vernal pool habitat not present in the Project Site.
<i>Phacelia ciliata</i> var. <i>opaca</i> Merced phacelia	FSC/-/1B	February - May	Valley and foothill grassland, often associated with adobe or clay soils of valley floors, open hills, or alkaline flats; up to 500 feet in elevation	Medium: Potential habitat present in the grassland.

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<i>Sagittaria sanfordii</i> Sanford's arrowhead (=Valley sagittaria)	FSC/-/1B	May - October	Marshes and swamps, assorted shallow freshwater features; up to 2,000 feet in elevation	Medium: Potential habitat present in Hartley Slough.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	--/--/2	May - September	Occurs on alkaline substrates under vernal flooded conditions in riparian, meadow, marsh and vernal pool habitats, up to 1,427 feet in elevation.	Low: Flooded conditions are limited to the seasonal wetland habitat, but this area may remain flooded for long durations

STATUS CODES:

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STATE: (California Department of Fish and Game)
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CNPS: (California Native Plant Society)
 List 1A = Presumed extinct in California
 List 1B = Plants rare, threatened, or endangered in California and elsewhere
 List 2 = Plants rare, threatened, or endangered in California but more common elsewhere
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**TABLE C-2
SPECIAL-STATUS ANIMAL SPECIES POTENTIALLY OCCURRING
IN THE VICINITY OF THE WASTEWATER TREATMENT PLANT EXPANSION PROJECT**

Scientific Name Common Name	Listing Status (Federal/State/ CNPS)	General Habitat	Potential for Occurrence
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	FE/--/--	Lifecycle restricted to large, cool-water vernal pools with moderately turbid water.	Unlikely: No vernal pools occur within the Project Site or immediate area.
<i>Branchinecta longiantenna</i> Longhorn fairy shrimp	FE/--/--	Lifecycle restricted to vernal pools with clear to rather turbid water.	Unlikely: No vernal pools occur within the Project Site or immediate area.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT/--/--	Vernal pools, swales, and other seasonal aquatic habitats in grasslands.	Unlikely: No vernal pools occur within the Project Site or immediate area.
<i>Branchinecta mesovallensis</i> Midvalley fairy shrimp	FSC/--/--	Lifecycle restricted to vernal pools in the Central Valley	Unlikely: No vernal pools occur within the Project Site or immediate area.
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT/--/--	Breeds and forages exclusively on blue elderberry shrubs (<i>Sambucus mexicana</i>) below 3,000 feet in elevation.	High: May occur in the 30 elderberry shrubs detected onsite by ESA (ESA 2005).
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	FE/--/--	Life cycle restricted to vernal pools.	Unlikely: No vernal pools occur within the Project Site or immediate area.
<i>Lindneriella occidentalis</i> California linderiella fairy shrimp	FSC/--/--	Lifecycle restricted to vernal pools.	Unlikely: No vernal pools occur within the Project Site or immediate area.
<i>Lytta molesta</i> Molestan blister beetle	FSC/--/--	Lifecycle restricted to vernal pools.	Unlikely: No vernal pools occur within the Project Site or immediate area.

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<i>Hypomesus transpacificus</i> Delta smelt	FT/ST/--	Sacramento/San Joaquin Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	Unlikely: Project Area is located outside the known range of species and does not contain suitable habitat.
<i>Lampetra ayresi</i> River lamprey	FSC/CSC/--	Lower Sacramento River, San Joaquin River, and Russian River. May also occur in coastal streams north of San Francisco Bay.	Unlikely: Species' range does not include the Project Area. In addition, the waterways in the Project Area lack spawning habitat, suitable ammocoete habitat, and have predatory carp.
<i>Lampetra tridentate</i> Pacific lamprey	FSC/--/--	Estuaries and nearby ocean areas, migrates upstream to spawn.	Unlikely: Species' range does not include the Project Area. In addition, the waterways in the Project Area lack spawning habitat, suitable ammocoete habitat, and have predatory carp.
<i>Mylopharodon conocephalus</i> Hardhead	--/CSC/--	Prefers deep clear pools (>1 m) with sand/gravel/boulder substrate and slow-moving water in undisturbed streams at 10-1,450 meters elevation. Needs well oxygenated water, 17-21 deg. C. Always found in association with Sacramento squawfish and usually with Sacramento suckers.	Low: Limited marginal habitat exists in the channels on the Project study area.
<i>Oncorhynchus mykiss irideus</i> Central Valley steelhead	FT/--/--	Spawns in Sacramento River and tributaries where gravely substrate and shaded riparian habitat occurs.	Unlikely: The Project Area is located outside the range of the species ESU and does not contain suitable habitat.
<i>Oncorhynchus tshawytscha</i> Central Valley spring-run Chinook salmon	FT/ST/--	Occurs in the Sacramento River watershed and spawns in a few select tributaries with flowing water, cool temperatures, and suitably sized cobble.	Unlikely: The Project Area is located outside the range of the species ESU and does not contain suitable habitat.
<i>Oncorhynchus tshawytscha</i> Winter-run Chinook salmon, Sacramento River	FE/SE/--	Spawns in Sacramento River where gravely substrate and adequate flow conditions occur.	Unlikely: The Project Area is located outside the range of the species ESU and does not contain suitable habitat.
<i>Oncorhynchus tshawytscha</i> Central Valley fall/late fall-run Chinook salmon	FSC/CSC/--	This population occurs in the Sacramento and San Joaquin Rivers and their tributaries, and spawns in cool flowing water with suitably sized cobble.	Unlikely: The Project Area is located outside the range of the species ESU and does not contain suitable habitat.

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<i>Pogonichthys macrolepidotus</i> Sacramento splittail	FSC, FD/CSC/--	Delta and associated marshes. Requires flooded vegetation for spawning and juvenile foraging habitat. Historic range includes all of San Joaquin Valley.	Medium: They have been found below the confluence of the San Joaquin and Merced Rivers, which is below the Project Area. The Project Area provides suitable habitat in the tule rush along Hartley Slough.
<i>Spirinchus thaleichthys</i> Longfin smelt	FSC/CSC/--	Found in all major bays and estuaries from San Francisco Bay northward.	Unlikely: Project Area is out of species' range.
Amphibians			
<i>Ambystoma californiense</i> California tiger salamander	FT/CSC/--	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges and vernal pools or other seasonal water sources.	Unlikely: The Project Area does not contain suitable habitat.
<i>Rana aurora draytonii</i> California red-legged frog	FT/CSC/--	Breeds in slow moving streams, ponds, and marshes with emergent vegetation; forages in nearby uplands within about 200 feet.	Low: Although there is ample emergent vegetation along Hartley Slough, the presence of predatory carp within the slough likely precludes the presence of this species.
<i>Spea</i> (=Scaphiopus) <i>hammondi</i> Western spadefoot toad	FSC/CSC/--	Breed in shallow, temporary pools formed by winter rains. Takes refuge in burrows.	Unlikely: The Project Area does not contain suitable habitat.
Reptiles			
<i>Anniella pulchra pulchra</i> Silvery legless lizard	FSC/CSC/--	Burrows in loose soils (sand, loam, or humus) associated with drainages and valley bottoms. Prefers coastal dunes, chaparral, beaches, pine-oak woodland, sycamores, and cottonwoods with sparse vegetation. Does not occur in soils disturbed by agriculture or human activity (CDFG, 1994). Year-round range includes the western portion of Merced County (Vindum, 1997).	Low: Although the Project study area has sandy loamy soils in the alkali scrub and grassland habitats, it is not the preferred habitat for this species. The Project study area is just beyond the species' range and previous soil disturbance in this area also reduce likelihood for this species to occur.
<i>Emmys</i> (=Clemmys) <i>marmorata</i> Western pond turtle	FSC/CSC/--	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying.	Medium: May occur in Hartley Slough or adjacent effluent conveyance ditch.
<i>Gambelia</i> (=Crotaphytus) <i>sila</i> Blunt-nosed leopard lizard	FE/SE, CFP/--	Occurs in open valley and foothill grasslands, valley saltbush scrub, and alkali playa communities of the San Joaquin Valley, Carrizo Plain, and Cuyama Valley. Uses small mammal burrows for refuge.	Medium: The Project Area provides suitable habitat in the alkali scrub vegetation community.

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<i>Phrynosoma coronatum</i> frontale California horned lizard	FSC/CSC/--	Nests in loose soil within riparian and oak woodland habitats.	Unlikely: The Project Area does not contain suitable habitat.
<i>Thamnophis gigas</i> Giant garter snake	FT/ST/--	Freshwater marsh, low gradient streams, drainage canals, and irrigation ditches; uplands within about 200 feet of aquatic habitat.	Medium: May occur in Hartley Slough, adjacent effluent conveyance ditch, or within adjacent Miles Creek.
Birds			
<i>Agelaius tricolor</i> Tricolored blackbird	FSC/CSC/-- (nesting colony)	Largely endemic to California, most numerous in the Central Valley and nearby vicinity. Requires open water, protected nesting substrate, and foraging grounds within vicinity of the nesting colony.	High: May breed or forage in the Project area. Observed in the Project vicinity (CDFG unpublished data).
<i>Athene cucularia</i> Burrowing owl	FSC/CSC/-- (burrow sites)	Open, dry annual or perennial grasslands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals.	Medium: May breed or forage in the irrigation ditches and agricultural fields surrounding the Project Area.
<i>Branta canadensis</i> <i>leucopareia</i> Aleutian Canada goose	FSC, FD/--/-- (wintering)	Winter resident in the Central Valley. Tends to graze in open fields near water.	Low: May occur in the winter in the wetland areas on the Project Site.
<i>Buteo regalis</i> Ferruginous hawk	FSC/CSC/-- (wintering)	Uncommon wintering species throughout the Central Valley. Forages for rodents over open country.	Medium: May occur in the winter in grasslands and agricultural lands in and in the vicinity of the Project Area.
<i>Buteo swainsoni</i> Swainson's hawk	FSC/ST/-- (nesting)	Forages in grasslands and open agricultural fields. Breeds in oak savanna and riparian areas.	High: May breed or forage in the Project Area. The CNDDDB documents 7 active nests within 10 miles of the Project Area (CNDDDB 2005). The nearest active nest is 3 miles from the Project Area. Another is 5 miles from the Project Area, and the remaining nests are 7.5 to 8.5 miles away.
<i>Calypte costae</i> Costa's hummingbird	FSC/--/--	Inhabits arid scrub and chaparral communities and edges of desert and valley foothill riparian communities. Requires herbaceous and woody plants with nectar-producing flowers, and shrubs and trees for cover.	Unlikely: Scrub communities within the Project Area do not support an abundance of nectar-producing flowers.
<i>Carduelis lawrencei</i> Lawrence's goldfinch	FSC/--/-- (nesting)	Breeds in open, dry woodlands, especially oaks.	Unlikely: Project Area does not contain suitable habitat.
<i>Chaetura vauxi</i> Vaux's swift	FSC/CSC/-- (nesting)	Nests primarily in coniferous habitats from May through August.	Unlikely: Project Area does not contain suitable habitat.

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<i>Charadrius montanus</i> Mountain plover	FSC/CSC/-- (wintering)	Winters in barren agricultural fields and grasslands with sparse vegetation between September and March.	Medium: May occur in the agricultural fields surrounding the Project Area.
<i>Elanus leucurus</i> White-tailed kite	FSC/CFP/-- (nesting)	Nests in dense oak, willow, or other tree stands near open grasslands, meadows, farmlands, and emergent wetlands for foraging.	High: May breed or forage in the eucalyptus grove and agricultural fields surrounding the Project Area. Observed during the November 2005 reconnaissance survey.
<i>Empidonax traillii brewsteri</i> Little willow flycatcher	FSC/SE/-- (nesting)	Wet meadow and montane riparian habitats usually at 600–2,500 meters.	Unlikely: Project Area does not contain suitable habitat.
<i>Falco peregrinus anatum</i> American peregrine falcon	FD/SE/-- (nesting)	Breeds on high cliffs, banks, dunes, mounds, and human-made structures near wetlands, lakes, rivers, or other sources of water.	Unlikely: Project Area does not contain suitable habitat.
<i>Grus canadensis tabida</i> Greater sandhill crane	--/ST, CFP/-- (nesting & wintering)	Winters in the Central Valley within annual and perennial grasslands, croplands, and freshwater emergent wetlands.	High: May occur in the winter on the Project Site in the annual grassland and surrounding agricultural lands. Observed during the November 2005 reconnaissance survey.
<i>Haliaeetus leucocephalus</i> Bald eagle	FT, FPD/SE, CFP/-- (nesting & wintering)	Nests near lakes, reservoirs, and large rivers. Winters near similar habitats at lower latitudes.	Unlikely: Project Area does not contain suitable habitat.
<i>Lanius ludovicianus</i> Loggerhead shrike	FSC/CSC/-- (nesting)	Nests in dense shrub or tree foliage; forages in scrub, open woodlands, grasslands, and croplands.	High: May breed or forage in the Project Area. Observed during the reconnaissance survey in November 2005.
<i>Melanerpes lewis</i> Lewis' woodpecker	FSC/--/-- nesting)	Uncommon local winter resident of oak savannas and coniferous habitat.	Unlikely: Project Area does not contain suitable habitat.
<i>Numenius americanus</i> Long-billed curlew	FSC/CSC/-- (nesting)	Winters in the Central Valley in croplands and wetlands, breeds in northeastern California.	Low: Species may winter in croplands in the vicinity of the Project Area.
<i>Picoides nuttalli</i> Nuttall's woodpecker	SLC/--/--	Uses riparian areas with adjacent oak woodland.	Unlikely: Project Area does not contain suitable habitat.

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<i>Plegadis chihii</i> White-faced ibis	FSC/CSC/-- (rookery site)	Nests and forages in freshwater marshes and rivers.	Low: Species may use fresh emergent wetlands in the Project Area.
<i>Selasphorus rufus</i> Rufous hummingbird	FSC/--/-- (nesting)	Spring migrant through California; forages in oak woodlands, riparian, and chaparral habitats; breeds in Oregon and Washington, and extreme northern California.	Unlikely: Project Area does not contain suitable habitat.
Mammals			
<i>Ammospermophilus nelsoni</i> San Joaquin (=Nelson's) antelope squirrel	FSC/ST/--	Occurs in the San Joaquin Valley, in arid annual grassland and shrubland communities with sparse-to-moderate shrub cover. Needs friable soils and areas free from flooding for digging burrows.	Low: Project Site contains suitable habitat but is outside species' range.
<i>Corynorhinus</i> (=Plecotus) <i>townsendii townsendii</i> Townsend's (=Pacific) western big-eared bat	FSC/CSC/--	Found throughout California, highly associated with mines and caves. Commonly feeds on moths. Maternity colony most active from May through July.	Unlikely: Project Area does not contain suitable habitat.
<i>Dipodomys heermanni dixonii</i> Merced kangaroo rat	FSC/--/--	Subspecies of Heerman's kangaroo rat. In annual grassland, coastal scrub, mixed and montane chaparral, and open/sparse valley foothill woodland.	Medium: Annual grassland in the Project Area provides suitable habitat.
<i>Dipodomys nitratoides</i> <i>exilis</i> Fresno kangaroo rat	FE/SE/--	Subspecies of San Joaquin kangaroo rat. In sandy and saline sandy soils in annual Valley grassland, chenopod scrub, alkali sink communities. Needs open/sparse vegetation, loose soils. Extirpated in Merced, Madera, and Fresno Counties.	Unlikely: Project Area is located outside of the species' known range. Species is extirpated from Merced County.
<i>Eumops perotis californicus</i> Greater western mastiff-bat	FSC/CSC/--	Roosts primarily in crevices within cliffs and canyons, occasionally in buildings. Primarily feeds on moths. Maternity colonies active May through July.	Unlikely: Project Area does not contain suitable habitat.
<i>Myotis ciliolabrum</i> Small-footed myotis bat	FSC/--/--	Primarily found in mid to high elevations (6,000 feet). Roosts in cavities within trees and mines.	Unlikely: Project Area is located outside of the species' known range and does not contain suitable habitat.
<i>Myotis volans</i> Long-legged myotis bat	FSC/--/--	Primarily found in coniferous forested habitats. Mostly roosts in large diameter trees and snags.	Unlikely: Project Area does not contain suitable habitat.
<i>Myotis yumanensis</i> Yuma myotis bat	FSC/--/--	Often found near reservoirs. Roosts in buildings, trees, mines, caves, bridges, and rock crevices. Maternity colonies active May through July.	Unlikely: Project Area does not contain suitable habitat.

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<i>Perognathus inornatus</i> San Joaquin pocket mouse	FSC/-/--	Typically found in grasslands and blue oak savanna; needs friable soils.	Medium: Annual grassland in the Project Area provides suitable habitat.
<i>Taxidea taxus</i> American badger	--/CSC/--	Occurs in a wide variety of open forest, shrub, and grassland habitats that have friable soils for digging.	Medium: Annual grassland in the Project Area provides suitable habitat.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST/--	Annual grasslands or grassy open stages with scattered shrubby vegetation. Requires suitable prey base and loose-textured soils for burrowing.	High: Known to occur in the western San Joaquin Valley near the Project Area. The CNDDDB documents 5 occurrences within 10 miles of the Project Area (CNDDDB 2005). The nearest active nest is 3.5 miles from the Project Area. The remaining nests are 6.5 to 8.5 miles away.

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Habitat Descriptions

Project Site Description

The Project site is located approximately 1.5 miles south of the City of Merced, in Merced County, California. Surrounding land use is largely agriculture - the Project site is surrounded by relatively level disced fields with several canals and drainage ditches within and adjacent to the fields. The Project study area encompasses approximately 178 acres of the 1,335-acre WWTP property and includes treatment facilities, sludge basins, spreading and drying fields, and an effluent channel that parallels Miles Creek and eventually connects with Hartley Slough. Other areas of the WWTP not directly used in plant operations includes a police shooting range, eucalyptus grove, and a 88-acre preserve area that includes annual grassland, alkali scrub, seasonal wetlands, and remnant orchard trees. Habitats descriptions provided in the following text are illustrated in Figure 3-2 of the EIR.

Vegetation Communities and Wildlife Habitats

The following vegetation communities occur in the Project study area. These vegetation communities are described using the California Department of Fish and Game (CDFG) *A Guide to Wildlife Habitats* (Mayer and Laudenslayer, 1988). The wildlife habitats described below generally correlate with vegetative communities. Vegetative communities are assemblages of plant species that occur together in the same area. They are defined both by species composition and relative abundance.

Annual Grassland

Approximately 24.1 acres of annual grassland occur in floodplain adjacent to a segment of Hartley Slough at the Project site. Formerly used as a peach pit disposal site several peach tree (*Prunus persica*) snags occur sporadically along the eastern edge of this plant community. Dominant plant species include soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), ripgut brome (*Bromus diandrus*), and common tarweed (*Hemizonia pungens* ssp. *pungens*). Non-native forbs include shortpod mustard (*Hirschfeldia incana*), milk thistle (*Silybum marianum*), perennial pepperweed (*Lepidium latifolium*), and prickly lettuce (*Lactuca serriola*).

Several wildlife species were noted using the annual grassland habitat including field mice (*Peromyscus maniculatus*), California vole (*Microtus californicus*), and a variety of birds such as northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), and goldfinches.

Alkali Scrub

Approximately 48 acres of alkali scrub occurs in the floodplain and former peach pit disposal site. Peach tree snags are scattered throughout this plant community which was later planted with big saltbush (*Atriplex lentiformis*) shrubs and Arizona cyprus (*Cupressus arizonica*) to create wildlife habitat managed for hunting by CDFG. This plant community is characterized by dense thickets of big saltbush shrubs with little to no understory, and cover ranges from continuous to

intermittent. Associated shrub and small tree species include peach trees, coyote brush (*Baccharis pilularis*), and blue elderberry (*Sambucus mexicana*).

Wildlife species using this alkali scrub habitat include coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), cottontail (*Sylvilagus audubonii*), feral cat (*Felis domesticus*), and several bird species including western scrub jay (*Aphelocoma californica*), white-crowned sparrow (*Zonotrichia leucophrys*), Lincoln's sparrow (*Melospiza lincolnii*), and loggerhead shrike (*Lanius ludovicianus*).

Eucalyptus

An approximately 20.6-acre stand of eucalyptus occurs between the floodplain and the police shooting range. This habitat is characterized by a closed canopy of mature blue gum (*Eucalyptus globulus*) trees with a sparse understory of annual grasses and non-native forbs. Understory components include blue gum saplings, milkthistle, prickly lettuce, poison hemlock (*Conium maculatum*), and grasses including salt grass (*Distichlis spicata*), riggut brome, and foxtail barley. The northern portion of this habitat was recently burned and lacks an understory, and the remaining understory appears to have been mowed sometime during the growing season. This area is being harvested and approximately one-third of the original stand has been removed.

Wildlife species using the eucalyptus are mainly bird species which feed, roost, and nest in the gum trees. Several red-tailed hawks (*Buteo jamaicensis*) were observed in the grove, but barn owl (*Tyto alba*), great-horned owl (*Bubo virginianus*), and other birds may also occur.

Ruderal

Approximately 2.7 acres of ruderal habitat occur throughout the project site. Ruderal areas are generally in disturbed or maintained areas and are characterized by a predominance of invasive non-native plant species. Dominant species are generally tall-growing invasive species such as poison hemlock, perennial pepperweed, prickly lettuce, and shortpod mustard interspersed with annual grasses such as Italian ryegrass (*Lolium multiflorum*), foxtail barley, and soft chess. The ruderal area between the alkali scrub and eucalyptus stand appears to have been recently mowed and the dominant species include fiddle dock (*Rumex pulcher*), prickly lettuce, milkthistle, but scattered big saltbush shrubs and blue elderberry are present as well. This area also has a large brush pile surrounded by dense stand of milkthistle. The ruderal area adjacent to the landfill is characterized by a dense stand of milkthistle and shortpod mustard with some downed eucalyptus trees and debris piles. The ruderal area in the northernmost portion of project site is characterized by a few mature Goodding's willow trees with open grassy areas dominated by wild oats (*Avena fatua*), Italian ryegrass, common tarweed, milkthistle, and shortpod mustard. A significant quantity of trash is present as a result of illegal dumping.

Wildlife species that use ruderal habitat are varied and may include American crow (*Corvus brachyrhynchos*), morning dove (*Zenaida macroura*), lizards, and several species of songbirds that feed on the weedy vegetation. Burrowing owl may use mowed ruderal habitat for foraging.

Disced Field

Approximately 30.6 acres of disced fields occur throughout the project site. These fields have been disced sometime during the growing season and are generally lacking vegetation. However, ruderal species have become established such as poison hemlock, Bermuda grass (*Cynodon dactylon*), amaranth (*Amaranthus* sp.), and goosefoot (*Chenopodium* sp.). Common tarweed and vegetation cover ranges from 10 to 60 percent. Just south of the eucalyptus stand, what was once an almost solid stand of poison hemlock and milkthistle has been mowed and there is a large debris pile of blue gum trees. The field immediately south of the existing facilities serves as an emergency overflow retention pond. The eastern half of this field is characterized by a mostly continuous cover of Italian ryegrass with associated species such as cheeseweed (*Malva parviflora*), goosefoot, fiddle dock, and mustard (*Brassica* sp.), but the center of this area has a few large bare areas. The western half of this field has approximately 45 percent vegetation cover with dominants including Johnson grass, field bindweed (*Convolvulus arvensis*), cheeseweed, goosefoot, and common knotweed (*Polygonum arenastrum*). A small area approximately 15 feet wide, between the edge of the alkali scrub and access roads has also been recently disced and lacks vegetation cover.

Frequently-disced fields typically provide foraging habitat for wildlife species such as great-egret (*Ardea alba*), great-blue heron (*Ardea herodias*), northern harrier, red-tailed hawk, killdeer (*Charadrius vociferus*), white-tailed kite (*Elanus leucurus*), and burrowing owl.

Landfill

Approximately 3.8 acres of the project site is a previous landfill that has been capped and is currently used for dumping. The area is lined by a gravel base and is characterized by numerous piles of concrete and asphalt rubble. Some vegetation has become established both within the landfill area and along its edges. Established vegetation is dominated by ruderal species including milkthistle, blue gum saplings, yellow starthistle (*Centaurea solstitialis*), Italian ryegrass, prickly lettuce, wild oats, foxtail barley, and shortpod mustard.

Often landfills provide foraging habitat for ubiquitous bird species such as gulls and crows. Fence lizards and a feral cat were observed in this area.

Developed Area

Approximately 27.5 acres of the project site are developed and include the WWTP facilities, paved and unpaved roads, and parking lots. The roads are sparsely to densely vegetated along the edges by ruderal species including poison hemlock, prickly lettuce, Johnson grass, and everlasting cudweed (*Gnaphalium luteo-album*). Landscaped areas within WWTP facilities include a solid groundcover of iceplant (*Carpobrotus edulis*), a row of oleander (*Nerium oldeander*) shrubs, and scattered ornamental pines (*Pinus* sp.).

Diversity of wildlife species in developed areas is typically low and limited to those species that are associated with human activity, including rock pigeon (*Columba livia*), American crow, house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*). Several California ground squirrels (*Spermophilus beecheyi*) were observed along the edge of the iceplant where the

ground slopes down into a basin. Several ground squirrel burrows were noted in this area and along the roads as well.

Fresh Emergent Marsh

Approximately 7.97 acres of fresh emergent marsh occur at the project site within the ordinary high water mark of Hartley Slough. Common plant species observed in this habitat include common tule (*Scirpus acutus*), broad-leaved cattail (*Typha latifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), common water smartweed (*Polygonum punctatum*), and common rush. This type of vegetation is also currently established within the Project site's agricultural drainage ditches, but these features are periodically maintained to remove vegetation. Therefore, the establishment of this plant community in ditches is ephemeral in nature and not considered a permanent feature.

Wildlife using the fresh emergent marsh largely includes wading birds and waterfowl species such as great blue heron, great egret, black-crown night heron (*Nycticorax nycticorax*), American coot (*Fulica americana*), and mallard (*Anas platyrhynchos*). Red-winged blackbirds (*Agelaius phoeniceus*) also use this type of habitat, as do some aquatic reptiles and amphibians such as garter snake (*Thamnophis* sp.), pond turtle (*Clemmys marmorata*), and frogs (*Rana* sp.).

Seasonal Wetland

A low-lying floodplain adjacent to Hartley Slough supports a nearly continuous cover of seasonal wetland vegetation. This feature is approximately 2.68 acres. The basin lies between the levee berm of Hartley Slough and the elevated adjacent grassland and alkali scrub habitats. This floodplain potentially acts as a detention basin for over bank flows during periods of heavy precipitation. The vegetation within the basin ranges from dense homogenous stands of perennial pepperweed to stands of perennial pepperweed, common tule, and narrow-leaved milkweed (*Asclepias fascicularis*) to areas dominated by Baltic rush, common tarweed and rabbitsfoot grass. A few mature edible fig (*Ficus carica*) trees and scattered bare areas also occur in this wetland feature.

Seasonal wetlands may support a variety of wildlife, some of which can be rare. A diversity of birds, invertebrates, some amphibian, and few reptiles may use ponded areas for food, cover, and/or breeding. Given the abundance of tall vegetation in the seasonal wetland habitat on the Project site, species such as red-winged blackbird and northern harrier are likely to be seen.

Riverine

Approximately 7.17 acres (21,769 linear feet) of riverine habitat occur at the project site in Hartley Slough, the effluent channel (Ditch D-5), and the four agricultural drainage ditches. Both Hartley Slough and the effluent channel are perennial drainages, but the agricultural ditches generally flow on an intermittent basis. Open water habitat is important habitat for wildlife species, particularly birds, such as great blue heron, great egret, mallard, American coot, belted kingfisher (*Ceryle alcyon*), and black phoebe (*Sayornis nigricans*). Several common carp (*Cyprinus carpio carpio*), mosquitofish (*Gambusia affinis*), and Sacramento pikeminnow (*Ptychocheilus grandis*) have been observed in the slough and channels at the Project site, and

garter snake may also use this habitat. Great-horned owls have been observed roosting in the fig trees on the edge of the seasonal wetland habitat.

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