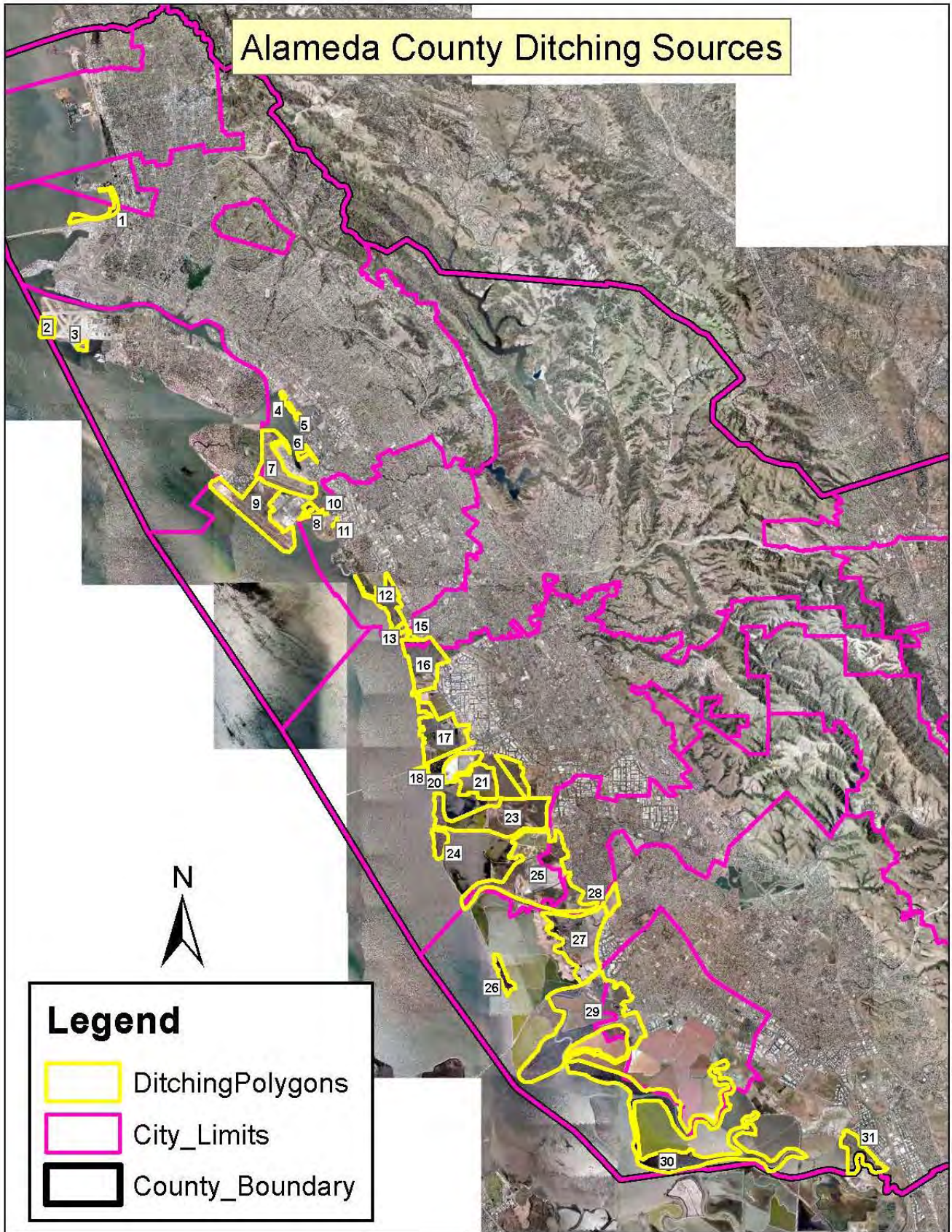





**Appendix A**

**Proposed Work Areas for Mosquito Source Reduction by District/County**

# Alameda County Ditching Sources



**Legend**

-  DitchingPolygons
-  City\_Limits
-  County\_Boundary

Source: Alameda Mosquito Vector Control District 2013



## ALAMEDA COUNTY OVERVIEW

Bay Area Mosquito Abatement District  
Alameda County, California

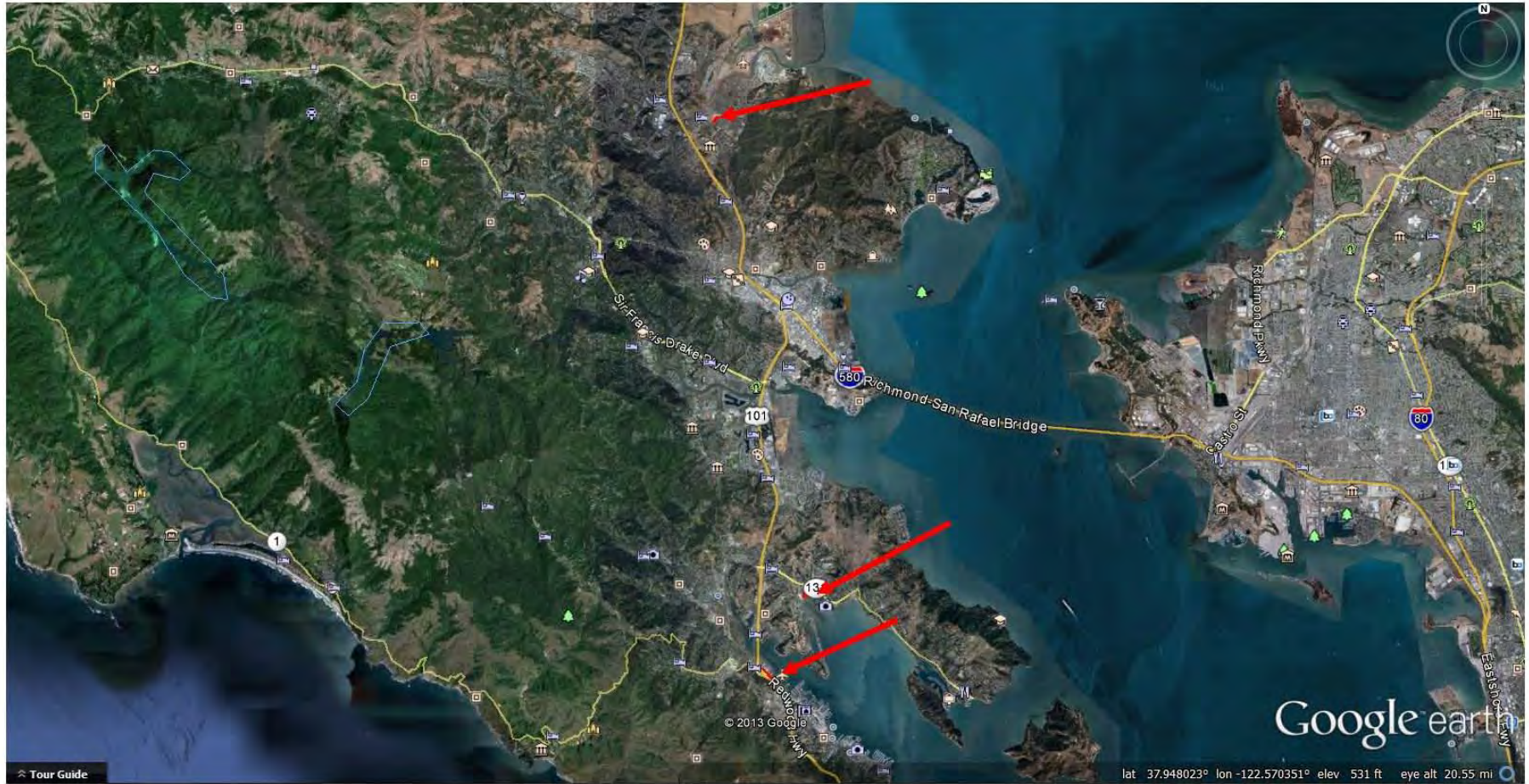
May 2014

Project No. 1178

**Figure A-1**

Marin/Sonoma Mosquito and Vector Control District  
2013 Source Reduction Permit Renewal

Project Vicinity Map



Source: Marin/Sonoma Mosquito Vector Control District 2013



**MARIN COUNTY OVERVIEW**

Bay Area Mosquito Abatement District  
Marin County, California

File: App-A\_MSMVCD\_Project-Vicinity\_Marin\_1178\_2014-0505srb

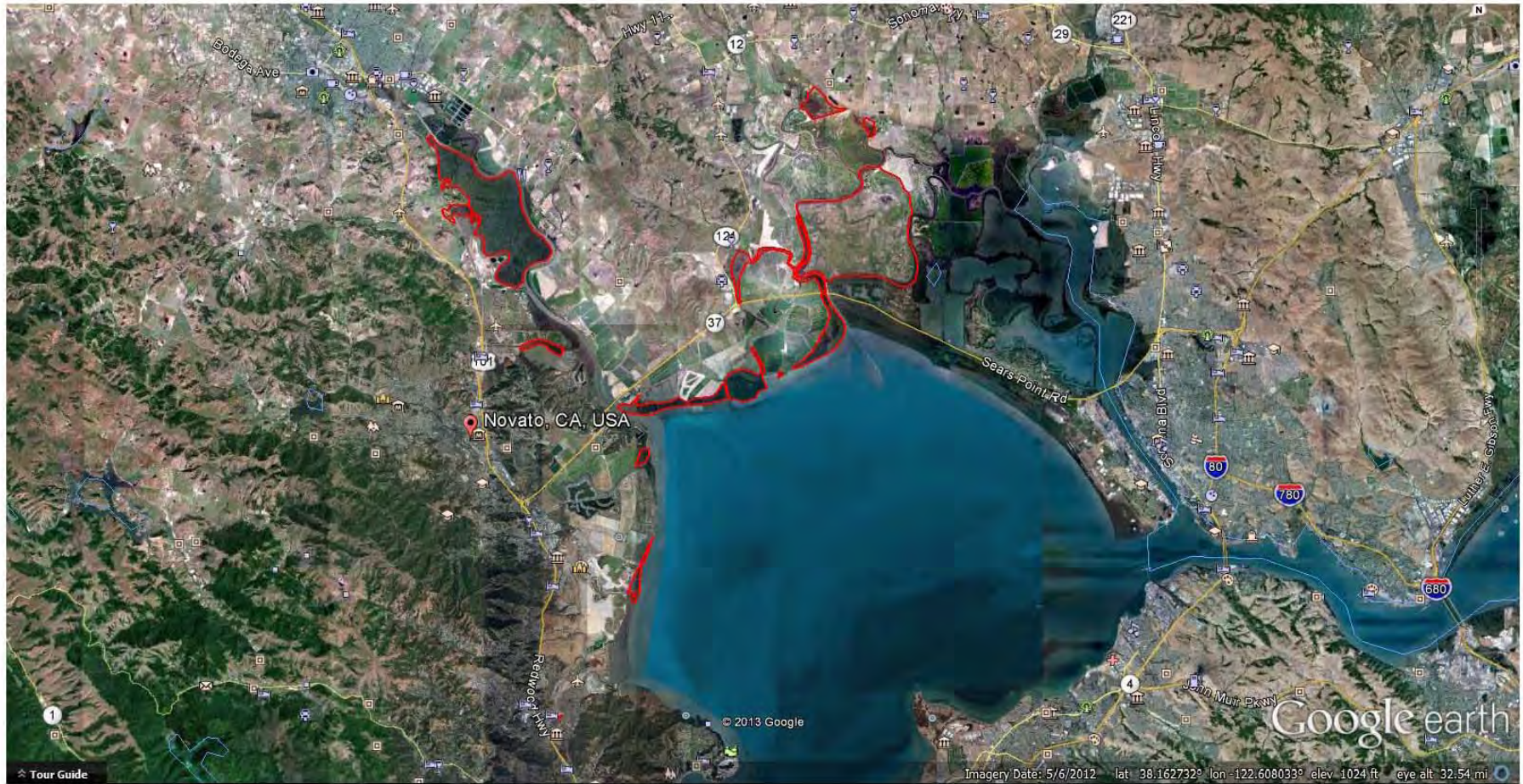
May 2014

Project No. 1178

**Figure A-3**

Marin/Sonoma Mosquito and Vector Control District  
2013 Source Reduction Permit Renewal

Project Vicinity Map



Source: Marin/Sonoma Mosquito Vector Control District 2013



**MARIN/SONOMA COUNTY  
OVERVIEW**

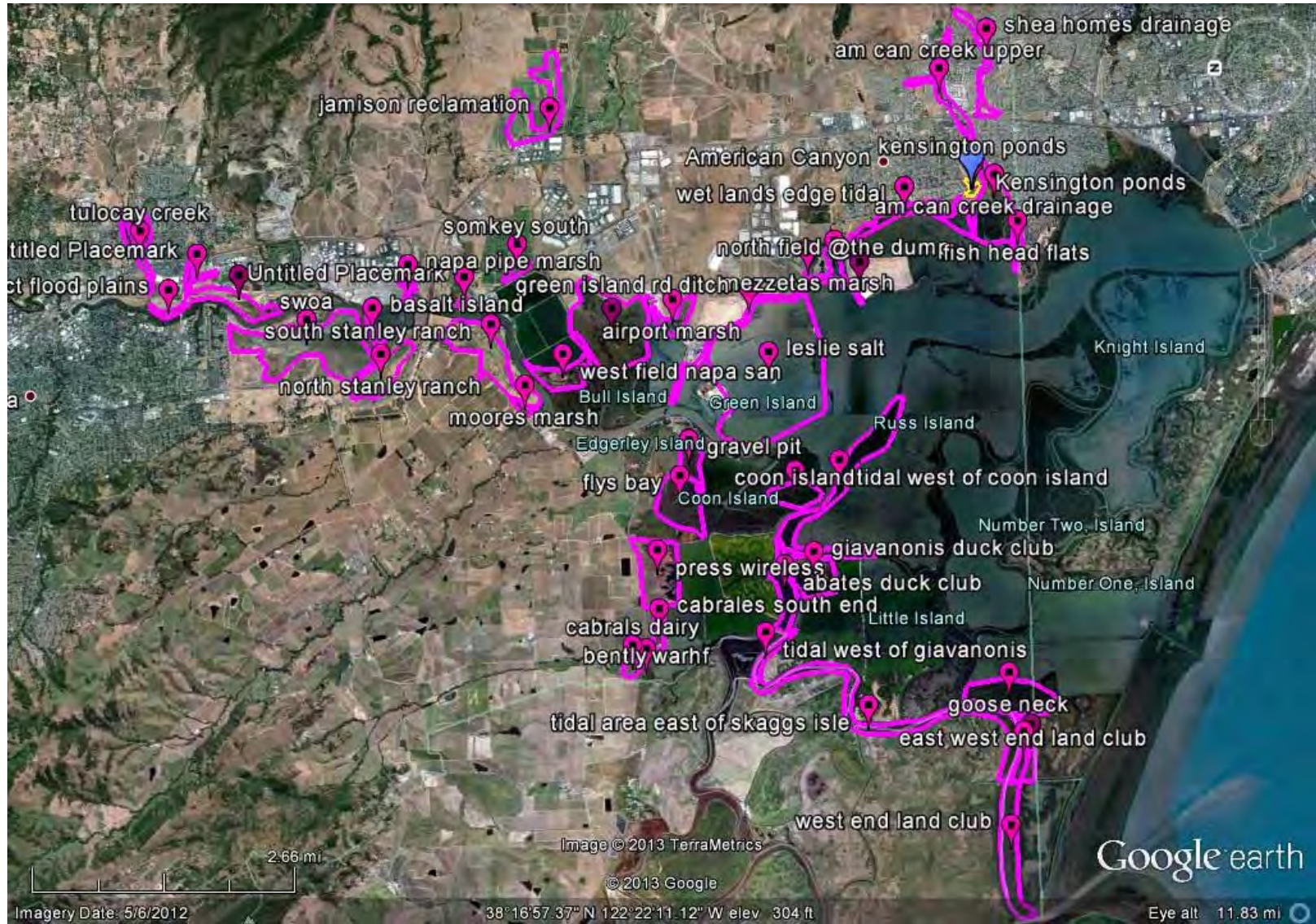
Bay Area Mosquito Abatement District  
Marin and Sonoma County, California

File: App-A\_MSMVCD\_Project-Vicinity\_Marin-Sonoma\_1178\_2014-0505srb

May 2014

Project No. 1178

**Figure A-2**



Source: Napa Mosquito Vector Control District 2013



## NAPA COUNTY OVERVIEW

Bay Area Mosquito Abatement District  
Napa County, California

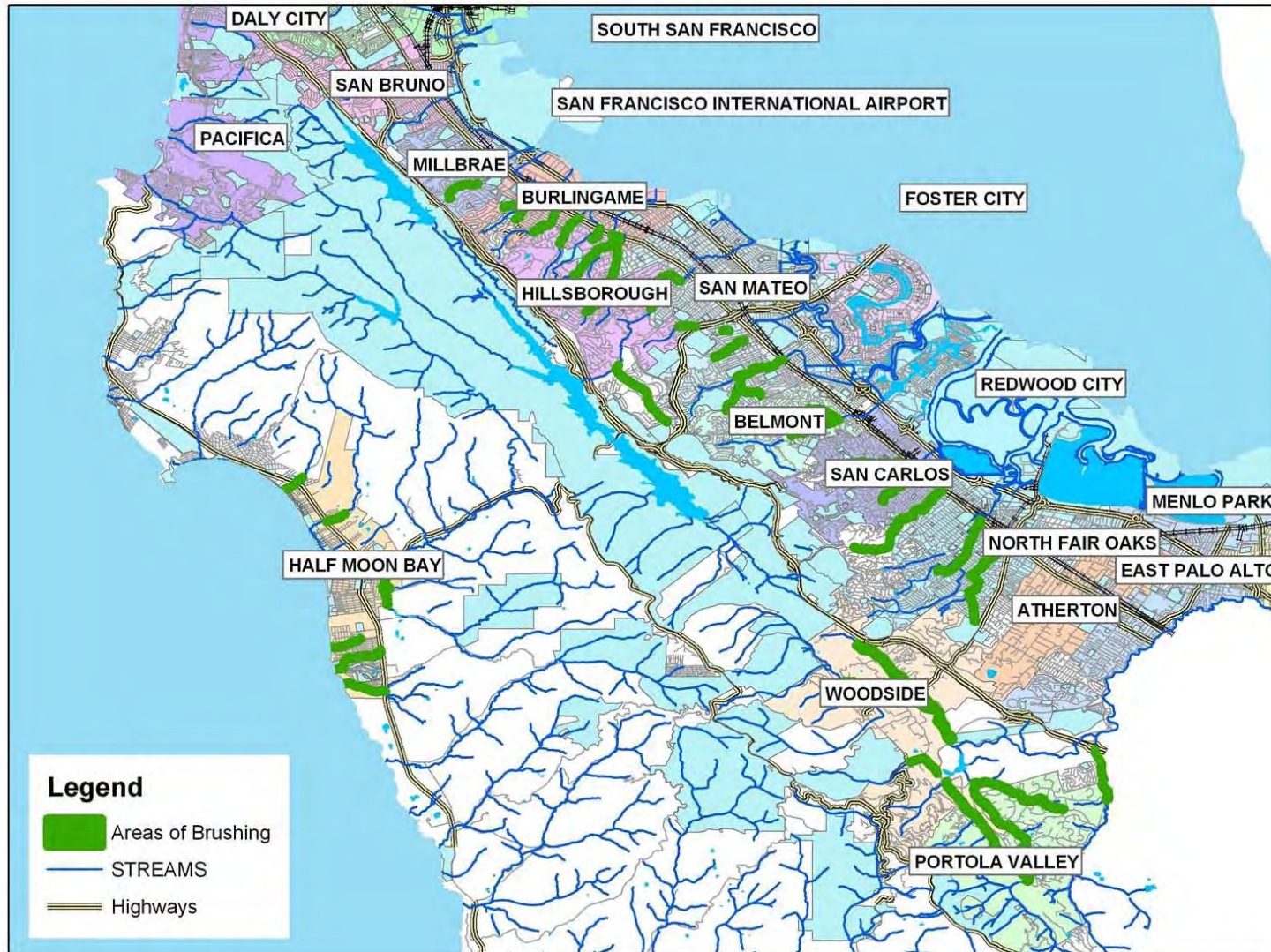
File: App-A\_NMVCD\_Project-Vicinity\_Napa\_1178\_2014-0506srb

May 2014

Project No. 1178

**Figure A-4**

## Location of Brushing in Creeks: Overview



Source: San Mateo Mosquito Vector Control District 2013



### SAN MATEO COUNTY OVERVIEW

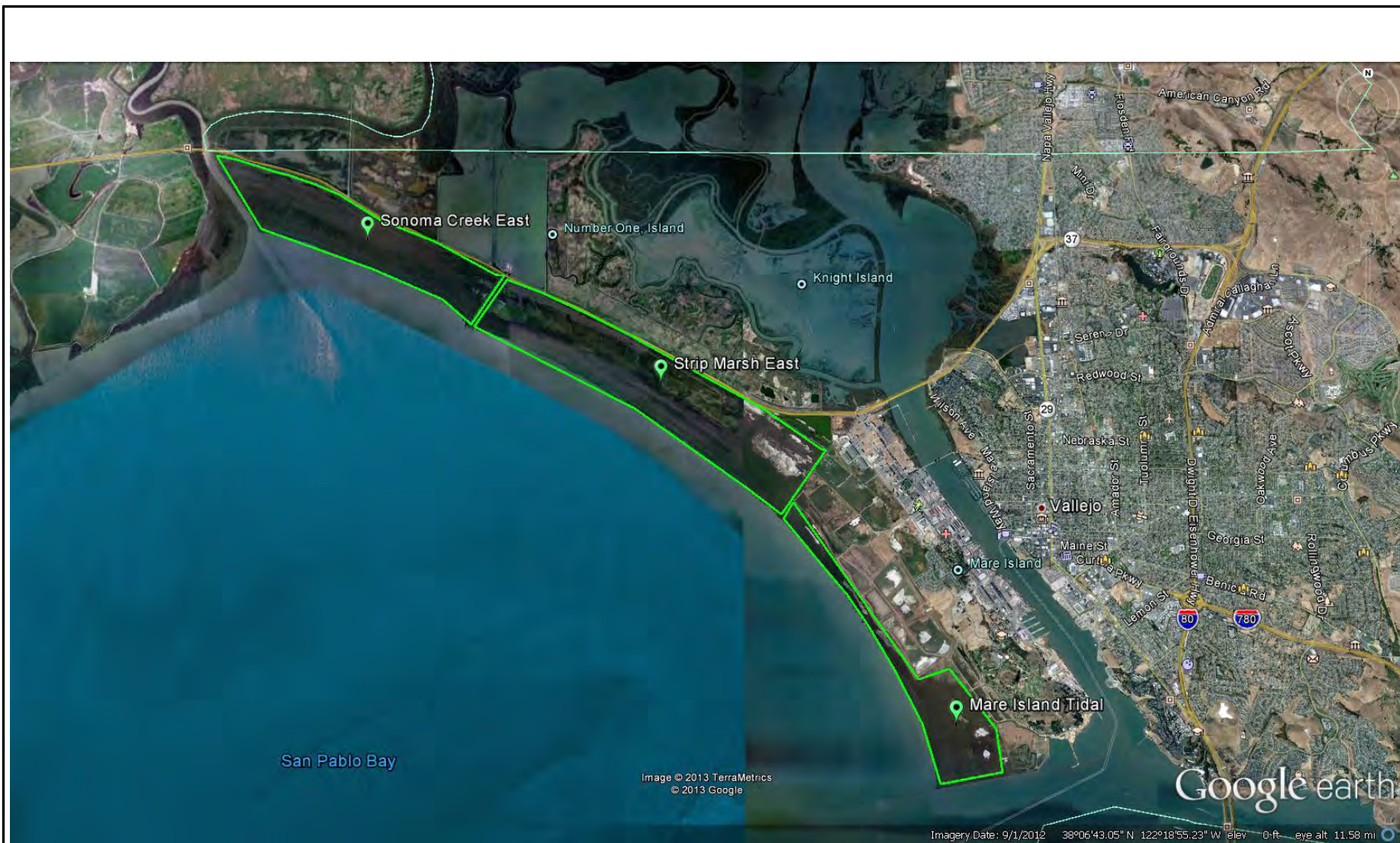
Bay Area Mosquito Abatement District  
San Mateo County, California

File: App-A\_SMMVCD\_Project-Vicinity\_San-Mateo\_1178\_2014-0506srb

May 2014

Project No. 1178

**Figure A-5**



Source: Solano Mosquito Vector Control District 2013



## SOLANO COUNTY OVERVIEW

Bay Area Mosquito Abatement District  
Solano County, California

File: App-A\_SMVCD\_Project-Vicinity\_Solano\_1178\_2014-0506srb

May 2014

Project No. 1178

**Figure A-6**

**Appendix B**  
**Representative Images of Work Activities**





Photo 1. Ditch excavation by MAD working using hand tools.



Photo 2. Ditch excavation by a mechanical rotary ditcher.



Photo 3. Image showing the circulation channel and adjacent area immediately post mechanical excavation.



Photo 4. View newly created small circulation channel and Argo used for site access/equipment transport.



Photo 5. View of a small circulation ditch one year post-excavation.



Photo 6. View of a pickleweed vegetation within tidal marsh one year after excavation of circulation ditch.

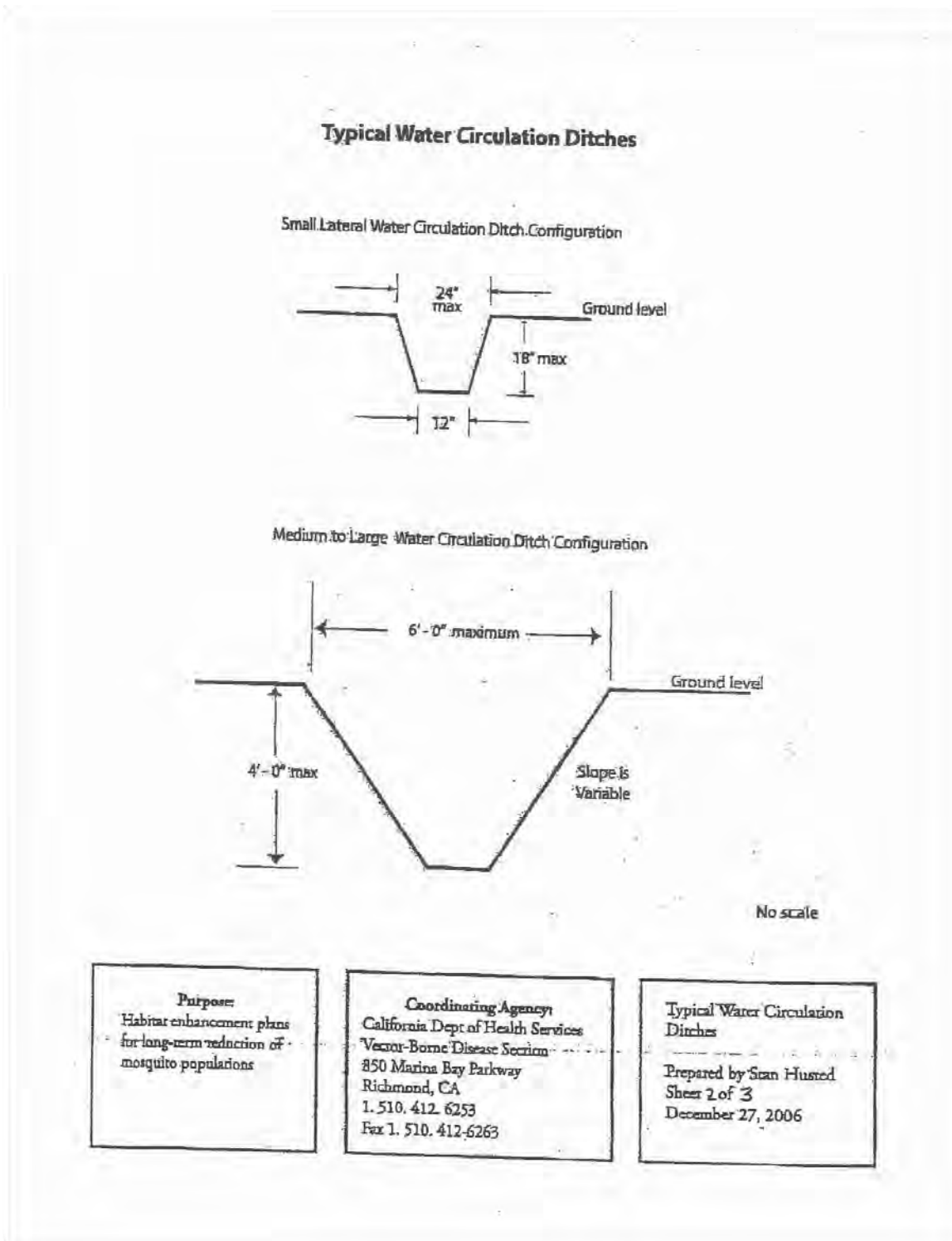
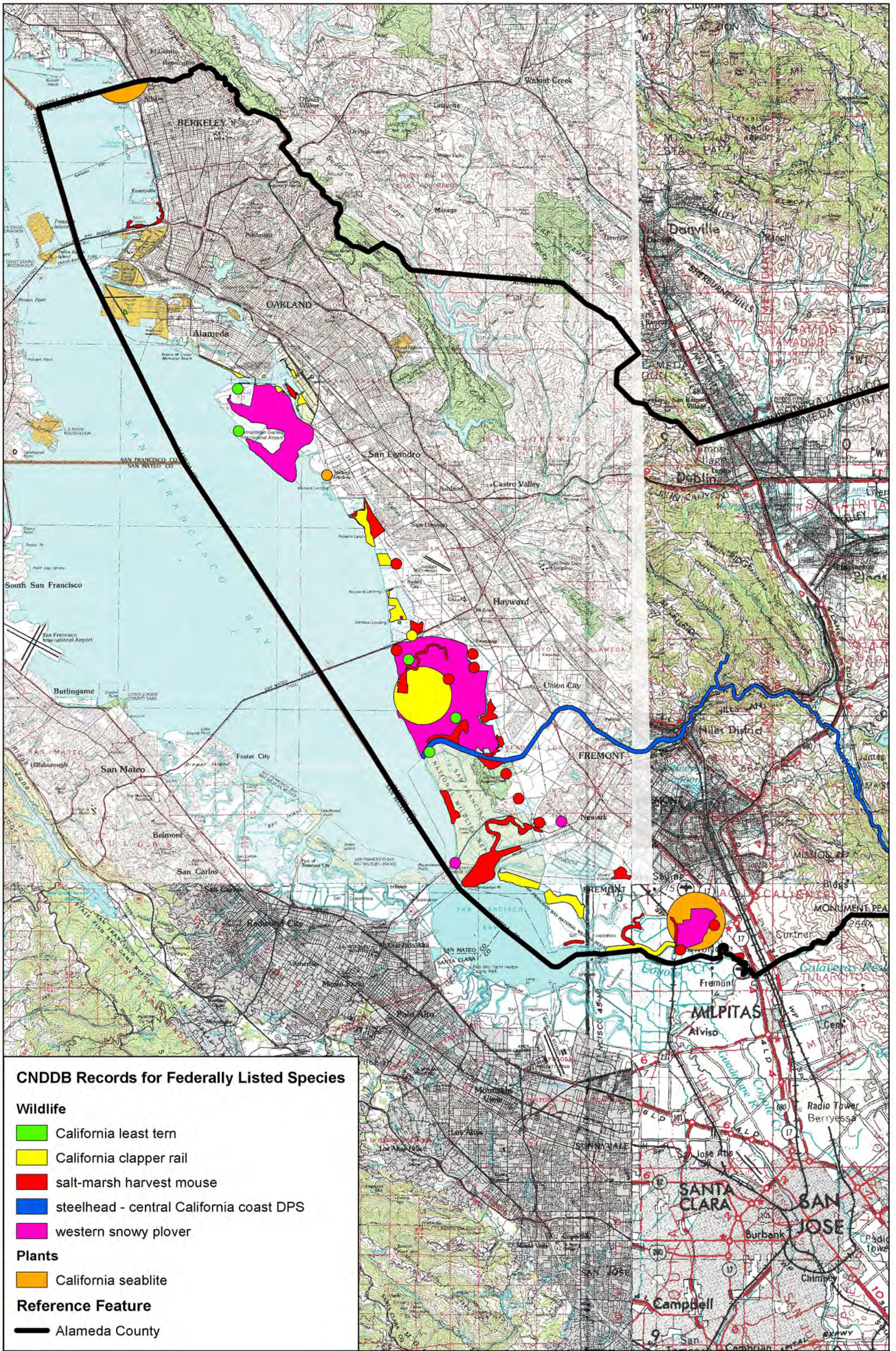


Figure B-1. Graphical representation of channel dimensions provided in Army Corps of Engineers (ACO) Regional Permit 4 issued to the Districts on July 31, 2007.

**Appendix C**  
**CNDDB Occurrence Maps by District/County**



**CNDDB Records for Federally Listed Species**

**Wildlife**

- California least tern
- California clapper rail
- salt-marsh harvest mouse
- steelhead - central California coast DPS
- western snowy plover

**Plants**

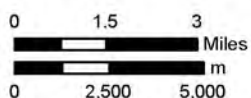
- California seablite

**Reference Feature**

- Alameda County



1:200,000 (1" = 3 miles at Tabloid Layout)



Data Sources: USGS Quads (Palo Alto, San Francisco, San Jose, Stockton), Federally Listed Species (CNDDB 2013)

Produced by WWR: May 2014  
Map File: Alameda-CNDDB-map\_BP\_1178\_2014-0506srp



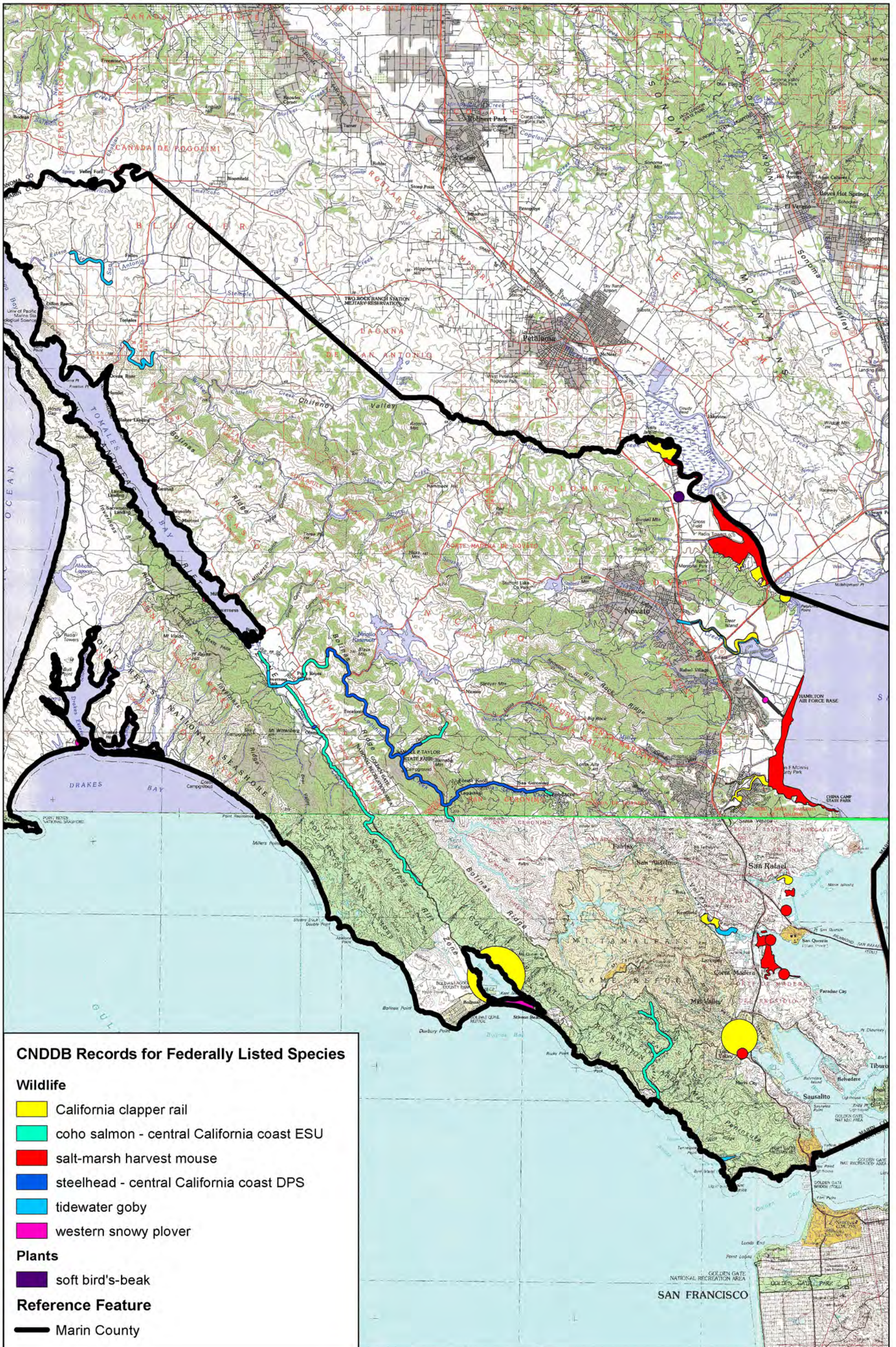
**CNDDB OCCURENCES - ALAMEDA COUNTY  
FEDERALLY LISTED SPECIES**

Bay Area Mosquito Abatement District  
Marin County, California

May 2014

Project No. 1178

**Figure C-1**



**CNDDB Records for Federally Listed Species**

**Wildlife**

- California clapper rail
- coho salmon - central California coast ESU
- salt-marsh harvest mouse
- steelhead - central California coast DPS
- tidewater goby
- western snowy plover

**Plants**

- soft bird's-beak

**Reference Feature**

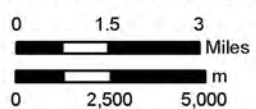
- Marin County



Data Sources: USGS Quads (Napa, San Francisco), Federally Listed Species (CNDDB 2013)

Produced by WWR: May 2014  
Map File: Marin-CNDDB-map\_BP\_1178\_2014-0506srb

1:200,000 (1" = 3 miles at Tabloid Layout)



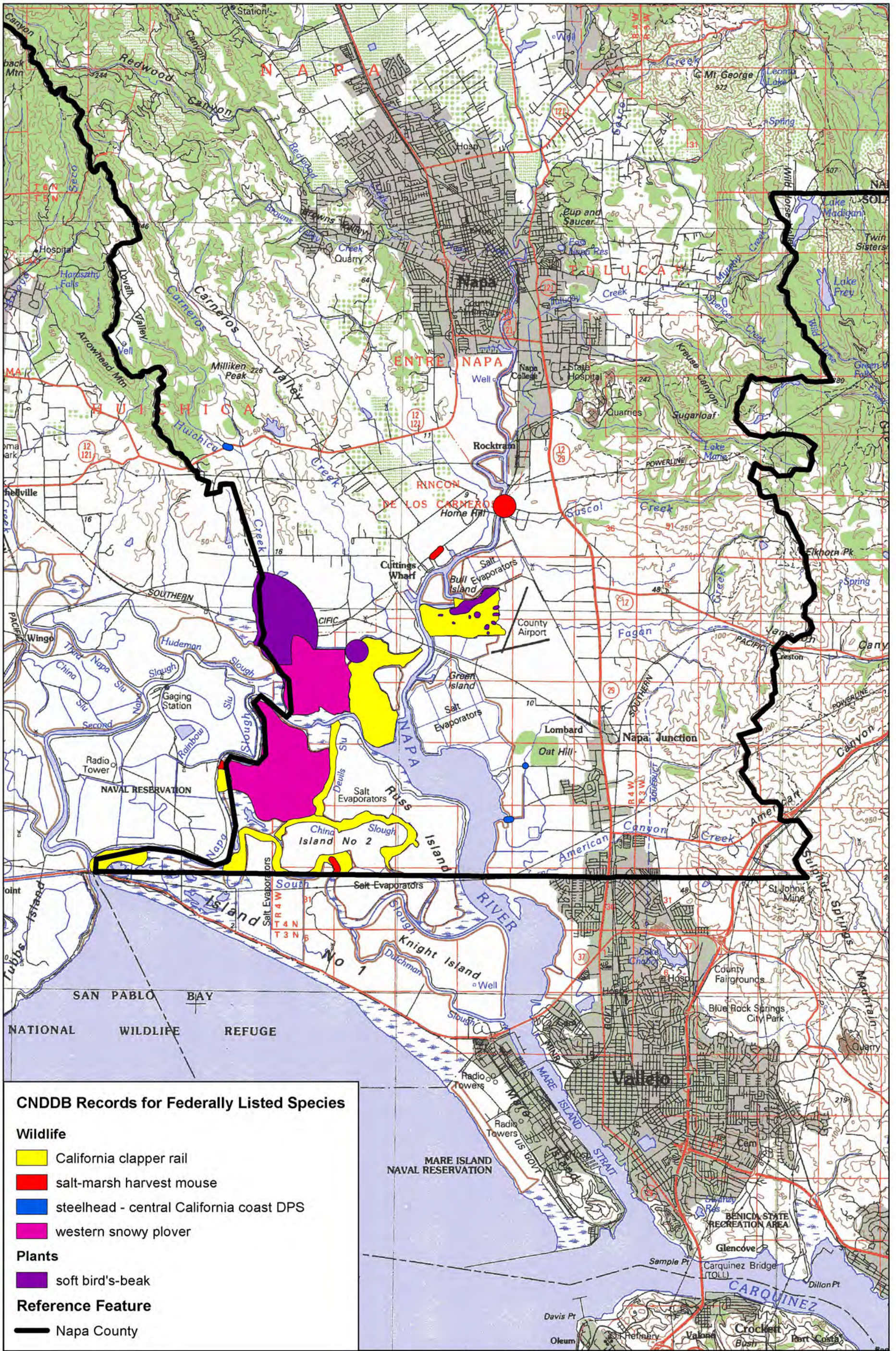
**CNDDB OCCURENCES - MARIN COUNTY  
FEDERALLY LISTED SPECIES**

Bay Area Mosquito Abatement District  
Marin County, California

May 2014

Project No.1178

**Figure C-2**



**CNDDB Records for Federally Listed Species**

**Wildlife**

- California clapper rail
- salt-marsh harvest mouse
- steelhead - central California coast DPS
- western snowy plover

**Plants**

- soft bird's-beak

**Reference Feature**

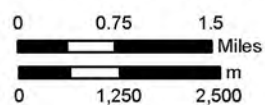
- Napa County



Data Sources: USGS Quads (San Francisco, Napa), Federally Listed Species (CNDDB 2013)

Produced by WWR: May 2014  
Map File: Napa-CNDDB-map\_BP\_1178\_2014-0506srb

1:94,541 (1" = 1.5 miles at Tabloid Layout)



**CNDDB OCCURENCES - NAPA COUNTY  
FEDERALLY LISTED SPECIES**

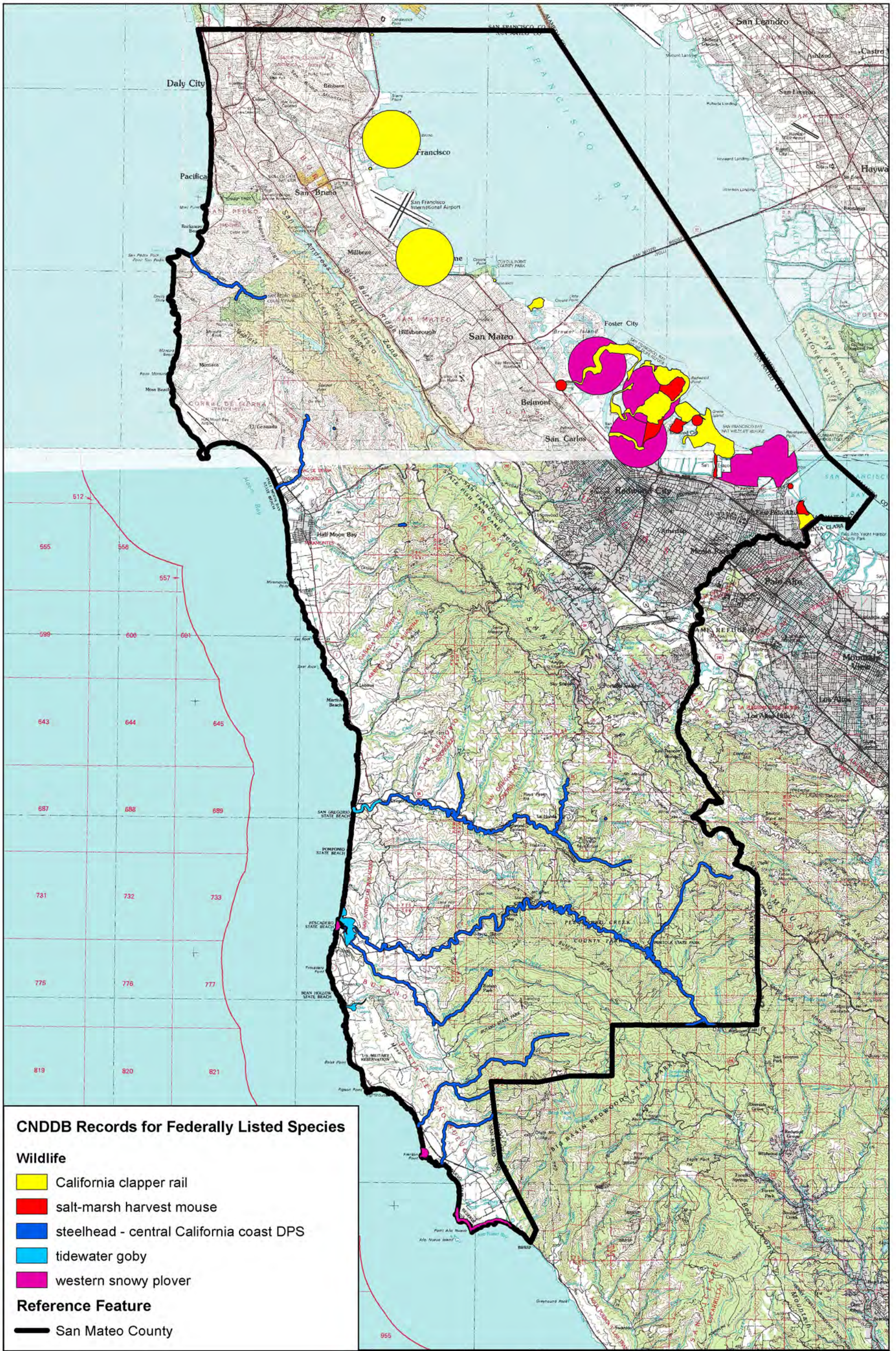
Bay Area Mosquito Abatement District  
Napa County, California


May 2014

Project No.1178

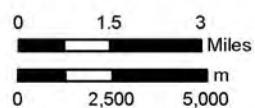
**Figure C-3**





  
 Data Sources: USGS Quads (San Francisco, Palo Alto),  
 Federally Listed Species (CNDDDB 2013)  
 Produced by WWR: May 2014  
 Map File: San Mateo-CNDDDB-map\_BP\_1178\_2014-0506srb

1:200,000 (1" = 3 miles at Tabloid Layout)



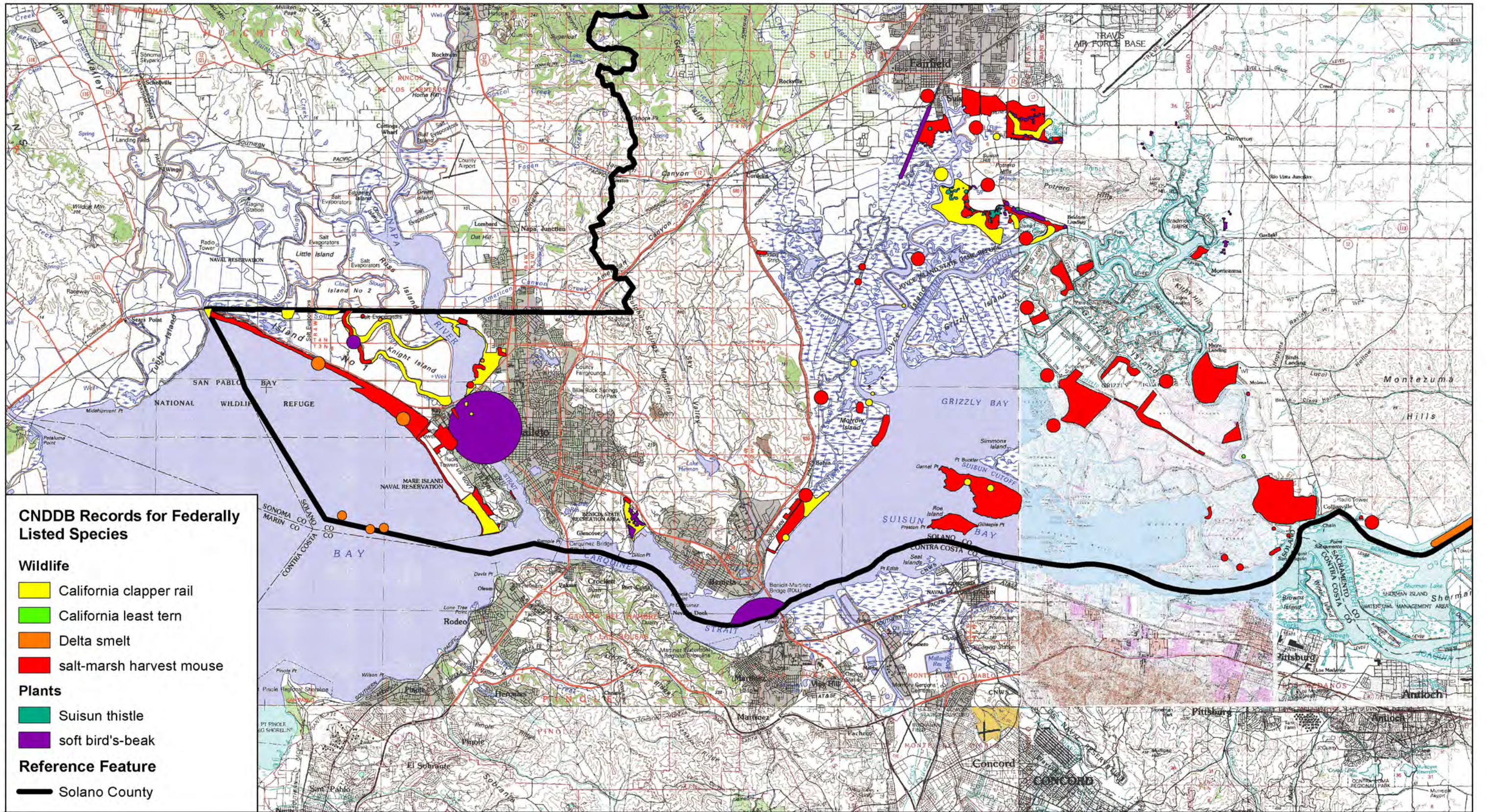
**CNDDDB OCCURENCES - SAN MATEO COUNTY  
FEDERALLY LISTED SPECIES**

Bay Area Mosquito Abatement District  
San Mateo County, California

May 2014

Project No. 1178

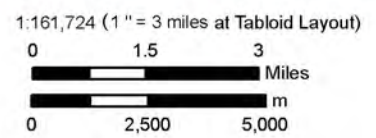
**Figure C-4**



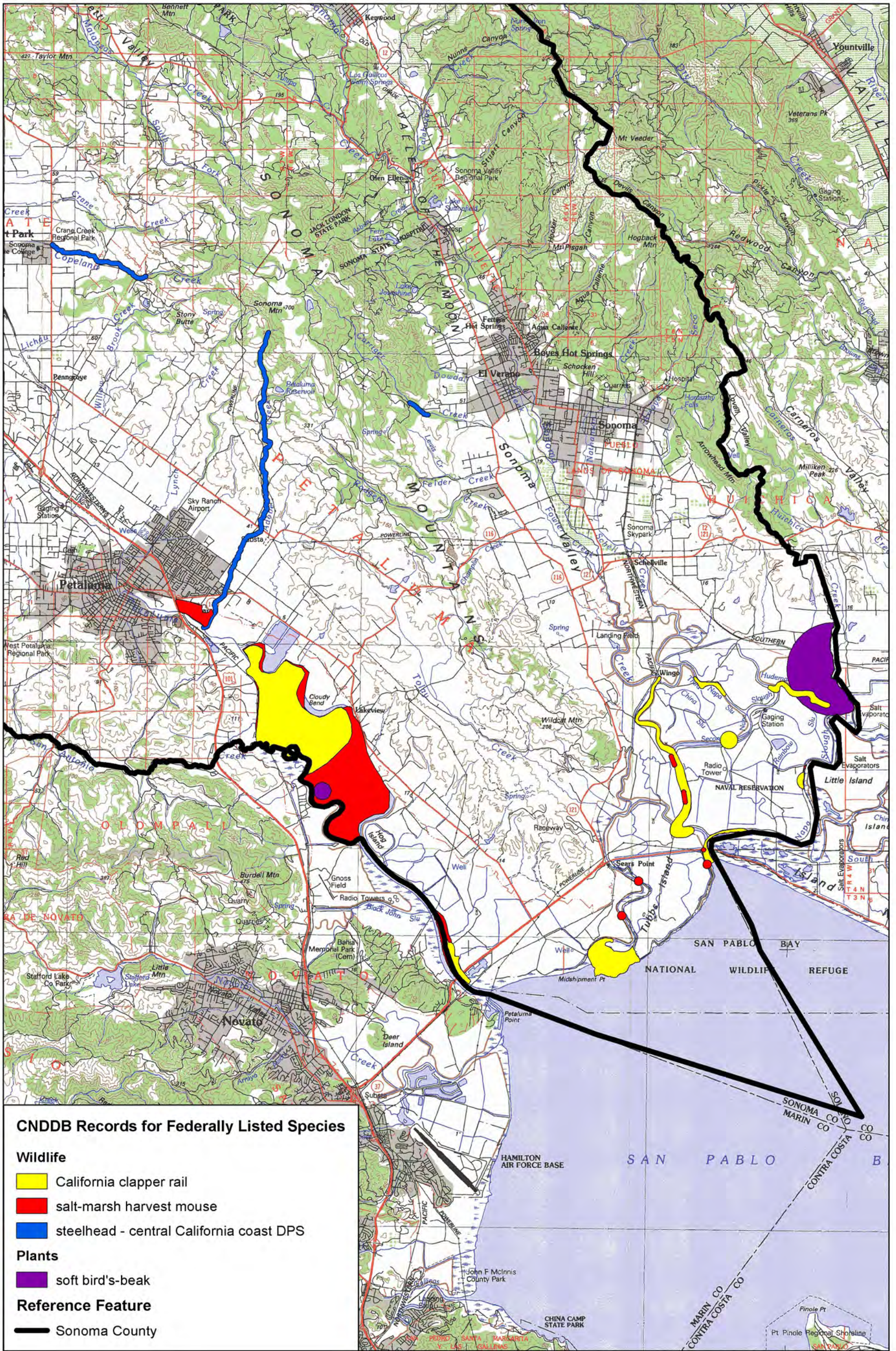
**CNDDB Records for Federally Listed Species**

- Wildlife**
- California clapper rail
  - California least tern
  - Delta smelt
  - salt-marsh harvest mouse
- Plants**
- Suisun thistle
  - soft bird's-beak
- Reference Feature**
- Solano County

Data Sources: USGS Quads (San Francisco, Napa, Stockton, Honker Bay, Lodi), Federally Listed Species (CNDDB 2013)  
 Produced by WWR, May 2014  
 Map File: Solano-CNDDB-map\_BI\_2014-0506srb



**CNDDB OCCURENCES - SOLANO COUNTY  
 FEDERALLY LISTED SPECIES**  
 Bay Area Mosquito Abatement District  
 Solano County, California



**CNDDB Records for Federally Listed Species**

**Wildlife**


- California clapper rail
- salt-marsh harvest mouse
- steelhead - central California coast DPS

**Plants**

- soft bird's-beak

**Reference Feature**

- Sonoma County

  
 Data Sources: USGS Quads (Napa, San Francisco),  
 Federally Listed Species (CNDDB 2013)  
 Produced by WWR: May 2014  
 Map File: Sonoma-CNDDB-map\_BP\_1178\_2014-0506srb

1:125,000 (1" = 2 miles at Tabloid Layout)  
 0 1 2 Miles  
 0 1,600 3,200 m



**CNDDB OCCURENCES - SONOMA COUNTY  
 FEDERALLY LISTED SPECIES**

Bay Area Mosquito Abatement District  
 Sonoma County, California

May 2014

Project No. 1178

**Figure C-6**

**Appendix D**

**Federally Listed Species, CNDDDB Query Species Tables by District/County**

## Alameda County CNNDDB Occurrences

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<b><u>Invertebrates:</u></b>			
<i>Branchinecta longiantenna</i> longhorn fairy shrimp	E	Endemic to the eastern margin of the Central Coast Mountains in seasonally astatic grassland vernal pools.	None
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	T	Endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains, in astatic rain-filled pools.	None
<i>Euphydryas editha bayensis</i> bay checkerspot butterfly	T	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay.	None
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	E	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	None
<b><u>Fish:</u></b>			
<i>Eucyclogobius newberryi</i> tidewater goby	E	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, in fairly still, but not stagnant water with high oxygen levels.	Possible
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	T	From the Russian River, south to Soquel Creek. Also found in San Francisco and San Pablo Basins. Use natural cover such as submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.	None
<b><u>Amphibians</u></b>			
<i>Ambystoma californiense</i> California tiger salamander	E	Central Valley population is threatened; Sonoma County population is endangered. Breed in vernal pools; requires underground refugia in adjacent upland areas, especially ground squirrel burrows.	None
<i>Rana draytonii</i> California red-legged frog	T	Lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	None
<b><u>Reptiles</u></b>			
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	T	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna, and woodland habitats.	None
<b><u>Birds:</u></b>			
<i>Rallus longirostris obsoletus</i> California clapper rail	E	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. Associated with abundant pickleweed, but feeds away from cover on invertebrates from mud-bottom sloughs.	Possible
<i>Charadrius alexandrinus nivosus</i> western snowy plover	T	Sandy beaches, levees around salt ponds and tidal marshes, and shores of large alkali lakes.	Possible
<i>Sterna antillarum browni</i> California least tern	E	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sandy beaches, alkali flats, land fills, or paved areas.	Possible
<b><u>Mammals:</u></b>			
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	E	Only in the saline emergent wetlands of the San Francisco Bay and its tributaries. Pickleweed is primary habitat, do not burrow, build loosely organized nests, require higher areas for flood escape.	Possible
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	E	Annual grasslands or grassy open areas with scattered shrubby vegetation.	None
<b><u>Plants</u></b>			
<i>Amsinckia grandiflora</i> Large-flowered fiddleneck	E, CH	Valley grasslands and foothill woodland.	None
<i>Arctostaphylos pallida</i> Pallid manzanita	T	Chaparral, foothill woodlands, and mixed evergreen forest.	None
<i>Chloropyron palmatum</i> Palmate-bracted bird's beak	E	Seasonally flooded saline-alkali habitats in lowland plains and basins.	None

**Alameda County CNDDDB Occurrences**

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<b>Plants</b>			
<i>Chorizanthe robusta var. robusta</i> Robust spineflower	E	Dunes within coastal strand, foothill woodland and northern coastal scrub	None
<i>Clarkia franciscana</i> Presidio clarkia	E	Serpentine soils of valley grassland and northern coastal scrub	None
<i>Holocarpha macradenia</i> Santa Cruz tarplant	T	Coastal prairie and valley grassland, likely extirpated from Alameda County.	None
<i>Lasthenia conjugens</i> Contra Costa goldfields	E	Valley and foothill grasslands, vernal pools, alkaline playas, cismontane woodland. Only coastal occurrence record for Alameda County is from 1959.	None
<i>Suaeda californica</i> California seablite	E	Margins of coastal salt marshes from 0-15 meters, sandy salt marsh habitats (USFWS 2010a,b). Presently only known to occur in reintroduced locations within the San Francisco Bay region. (USFWS 2010a,b).	Possible

<sup>1</sup>Explanation of Federal listing codes:

- E = Endangered
- T = Threatened
- CH = Critical Habitat (Proposed or Final) is designated

## Marin/Sonoma Counties CNDDDB Occurrences

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<b>Invertebrates:</b>			
<i>Plebejus icarioides missionensis</i> Mission blue butterfly	E	Grasslands in the San Francisco Peninsula and Marin that contain larval host plants: <i>Lupinus albifron</i> , <i>L. varicolor</i> , and <i>L. formosus</i> , of which <i>L. albifron</i> is favored.	None
<i>Speyeria zerene behrensii</i> Behren's silverspot butterfly	E	Restricted to the Pacific side of the Coast Ranges from Point Arena to Cape Mendicino, Mendicino County. Inhabits coastal terrace prairie habitat.	None
<i>Speyeria zerene myrtleae</i> Myrtle's silverspot	E	Restricted to the foggy, coastal dunes of the Point Reyes Peninsula. Larval host plant thought to be <i>viola adunca</i> .	None
<i>Syncaris pacifica</i> California freshwater shrimp	E	Endemic to Marin, Napa, and Sonoma Counties. Found in low elevation, low gradient streams, where riparian cover is moderate.	None
<b>Fish:</b>			
<i>Eucyclogobius newberryi</i> tidewater goby	E	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, in fairly still, but not stagnant water with high oxygen levels.	Possible
<i>Oncorhynchus kisutch</i> Coho salmon	E	Populations between Punta Gorda and San Lorenzo River. Requires beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen levels.	Possible
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	T	From the Russian River, south to Soquel Creek. Also found in San Francisco and San Pablo Basins. Use natural cover such as submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.	Possible
<b>Amphibians</b>			
<i>Ambystoma californiense</i> California tiger salamander	E	Central Valley population is threatened; Sonoma County population is endangered. Breed in vernal pools; requires underground refugia in adjacent upland areas, especially ground squirrel burrows.	None
<i>Rana draytonii</i> California red-legged frog	T	Lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	None
<b>Birds:</b>			
<i>Rallus longirostris obsoletus</i> California clapper rail	E	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. Associated with abundant pickleweed, but feeds away from cover on invertebrates from mud-bottom sloughs.	Possible
<i>Charadrius alexandrinus nivosus</i> western snowy plover	T	Sandy beaches, levees around salt ponds and tidal marshes, and shores of large alkali lakes.	Possible
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	C	Riparian woodland with dense understory, cottonwoods provide foraging habitat.	None
<b>Mammals:</b>			
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	E	Only in the saline emergent wetlands of the San Francisco Bay and its tributaries. Pickleweed is primary habitat, do not burrow, build loosely organized nests, require higher areas for flood escape.	Possible
<i>Enhydra lutris nereis</i> southern sea otter	E	Nearshore marine environments. Needs canopies of giant kelp and bull kelp for rafting and feeding.	None
<b>Plants</b>			
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	E	Freshwater marshes and swamps, riparian banks.	None
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	E	Cismontane woodland, valley and foothill grassland, chaparral.	None
<i>Blennosperma bakeri</i> Sonoma sunshine	E	Vernal pools, valley and foothill grasslands.	None

## Marin/Sonoma Counties CNDDDB Occurrences

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<i>Calochortus tiburonensis</i> Tiburon mariposa-lily	T	Serpentine grasslands.	None
<i>Castilleja affinis</i> var. <i>neglecta</i> Tiburon paintbrush	E	Rocky serpentine grasslands.	None
<i>Chloropyron molle</i> ssp. <i>molle</i> soft bird's-beak	E	Coastal salt marsh with <i>Distichlis spicata</i> , <i>Salicornia virginica</i> , and <i>Frankenia salina</i> .	Possible
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	E	Dunes within coastal strand, foothill woodland and northern coastal scrub.	None
<i>Chorizanthe valida</i> Sonoma spineflower	E	Coastal prairie in sandy soils, 10-50 meter elevation range.	None
<i>Clarkia imbricata</i> Vine Hill clarkia	E	Valley and foothill grasslands, vernal pools, alkaline playatas, cismontane woodland. Only coastal occurrence record for Alameda County is from 1959.	None
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> Pennell's bird's-beak	E	Closed-cone coniferous forest, chaparral.	None
<i>Delphinium bakeri</i> Baker's larkspur	E	Broadleaf upland forest, coastal scrub, grasslands.	None
<i>Delphinium luteum</i> golden larkspur	E	Chaparral, coastal prairie, and coastal scrub.	None
<i>Eryngium constancei</i> Loch Lomond button-celery	E	Vernal pools.	None
<b>Plants</b>			
<i>Hesperolinon congestum</i> Marin western flax	T	Serpentine grasslands, chaparral.	None
<i>Lasthenia burkei</i> Burke's goldfields	E	Vernal pools, meadows and seeps.	None
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> Pitkin Marsh lily	E	Cismontane woodland, meadows and seeps, freshwater marsh.	None
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	E	Mesic meadows, vernal pools, valley foothill grassland.	None
<i>Lupinus tidestromii</i> Tidestrom's lupine	E	Cismontane woodland, meadows and seeps, freshwater marsh.	None
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i> many-flowered navarretia	E	Vernal pools	None
<i>Sidalcea oregana</i> ssp. <i>valida</i> Kenwood Marsh checkerbloom	E	Edges of freshwater marshes, 115-150m elevation range.	None
<i>Streptanthus glandulosus</i> ssp. <i>niger</i> Tiburon jewel-flower	E	Rocky serpentine grasslands, slopes.	None
<i>Trifolium amoenum</i> showy rancheria clover	E	Valley and foothill grasslands, coastal bluff scrub, sometimes on serpentine soils.	None

<sup>1</sup>Explanation of Federal listing codes:

E = Endangered

T = Threatened

C = Candidate



## Napa County CNDDDB Occurrences

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<b>Invertebrates:</b>			
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	T	Endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains, in astatic rain-filled pools.	None
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	T	Occurs only in the Central Valley of California, in associations with blue elderberry ( <i>Sambucus mexicana</i> ).	None
<i>Syncaris pacifica</i> California freshwater shrimp	E	Endemic to Marin, Napa, and Sonoma Counties. Found in low elevation, low gradient streams where riparian cover is moderate.	None
<b>Fish:</b>			
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	T	From the Russian River, south to Soquel Creek. Also found in San Francisco and San Pablo Basins. Use natural cover such as submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.	Possible
<b>Amphibians</b>			
<i>Rana draytonii</i> California red-legged frog	T	Lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	None
<b>Birds:</b>			
<i>Rallus longirostris obsoletus</i> California clapper rail	E	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. Associated with abundant pickleweed, but feeds away from cover on invertebrates from mud-bottom sloughs.	Possible
<i>Charadrius alexandrinus nivosus</i> western snowy plover	T	Sandy beaches, levees around salt ponds and tidal marshes, and shores of large alkali lakes.	Possible
<i>Sternula antillarum browni</i> California least tern	E	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sandy beaches, alkali flats, land fills, or paved areas.	Possible
<b>Mammals:</b>			
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	E	Only in the saline emergent wetlands of the San Francisco Bay and its tributaries. Pickleweed is primary habitat, do not burrow, build loosely organized nests, require higher areas for flood escape.	Possible
<b>Plants</b>			
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	E	Cismontane woodland, valley and foothill grassland, chaparral.	None
<i>Castilleja affinis</i> var. <i>neglecta</i> Tiburon paintbrush	E	Rocky serpentine grasslands.	None
<i>Chloropyron molle</i> ssp. <i>molle</i> soft bird's-beak	E	Coastal salt marsh with <i>Distichlis spicata</i> , <i>Salicornia virginica</i> , and <i>Frankenia salina</i> .	Possible
<i>Lasthenia burkei</i> Burke's goldfields	E	Vernal pools, meadows and seeps.	None
<i>Lasthenia conjugens</i> Contra Costa goldfields	E	Valley and foothill grasslands, vernal pools, alkaline playas, cismontane woodland. Only coastal occurrence record for Alameda County is from 1959.	None
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	E	Mesic meadows, vernal pools, valley foothill grassland.	None
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i> few-flowered navarretia	E	Vernal pools	None
<i>Plagiobothrys strictus</i> Calistoga popcornflower	E	Vernal pools, meadows and seeps, valley and foothill grassland.	None
<i>Poa napensis</i> Napa blue grass	E	Meadows and seeps, valley and foothill grasslands.	None
<i>Sidalcea keckii</i> Keck's checkerbloom	E	Cismontane woodland, valley and foothill grassland.	None
<i>Trifolium amoenum</i> showy rancheria clover	E	Valley and foothill grasslands, coastal bluff scrub, sometimes on serpentine soils.	None

<sup>1</sup>Explanation of Federal listing codes:

E = Endangered

T = Threatened

## San Mateo County CNDDDB Occurrences

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<b>Invertebrates:</b>			
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	T	Coatal mountainous areas with grassy ground cover mainly in the vicinity of San Bruno Mountain, San Mateo County.	None
<i>Euphydryas editha bayensis</i> bay checkerspot butterfly	T	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay.	None
<i>Plebejus icarioides missionensis</i> Mission blue butterfly	E	Grasslands in the San Francisco Peninsula and Marin that contain larval host plants three larval host plants: <i>Lupinus.albifron</i> , <i>L. varicolor</i> , and <i>L. formosus</i> , of which <i>L. albifrons</i> is favored.	None
<i>Speyeria callippe callippe</i> callippe silverspot butterfly	E	Restricted to the northern coastal scrub of the San Francisco Peninsula.	None
<i>Speyeria zerene myrtleae</i> Myrtle's silverspot	E	Restricted to the foggy, coastal dunes of the Point Reyes Peninsula. Larval host plant thouht to be <i>viola adunca</i> .	None
<i>Syncaris pacifica</i> California freshwater shrimp	E	Endemic to Marin, Napa, and Sonoma Counties. Found in low elevation, low gradient streams where riparian cover is moderate.	None
<b>Fish:</b>			
<i>Eucyclogobius newberryi</i> tidewater goby	E	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, in fairly still, but not stagnant water with high oxygen levels.	Possible
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	T	From the Russian River, south to Soquel Creek. Also found in San Francisco and San Pablo Basins. Use natural cover such as submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.	Possible
<b>Amphibians</b>			
<i>Ambystoma californiense</i> California tiger salamander	E	Central Valley population is threatened; Sonoma County population is endangered. Breed in vernal pools; requires underground refugia in adjacent upland areas, especially ground squirrel burrows.	None
<i>Rana draytonii</i> California red-legged frog	T	Lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	None
<b>Reptiles</b>			
<i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	E	Vicinity of freshwater marshes, ponds, and slow moving streams in San Mateo County and extreme northern Santa Cruz County.	None
<b>Birds:</b>			
<i>Rallus longirostris obsoletus</i> California clapper rail	E	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. Associated with abundant pickleweed, but feeds away from cover on invertebrates from mud-bottom sloughs.	Possible
<i>Charadrius alexandrinus nivosus</i> western snowy plover	T	Sandy beaches, levees around salt ponds and tidal marshes, and shores of large alkali lakes.	Possible
<i>Sternula antillarum browni</i> California least tern	E	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sandy beaches, alkali flats, land fills, or paved areas.	Possible
<b>Mammals:</b>			
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	E	Only in the saline emergent wetlands of the San Francisco Bay and its tributaries. Pickleweed is primary habitat, do not burrow, build loosely organized nests, require higher areas for flood escape.	Possible
<b>Plants</b>			
<i>Acanthomintha duttonii</i> San Mateo thorn-mint	E	Chaparral, valley and foothill grassland, coastal scrub	None

## San Mateo County CNDDDB Occurrences

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<b>Plants</b>			
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	E	Dunes within coastal strand, foothill woodland and northern coastal scrub	None
<i>Cirsium fontinale</i> var. <i>fontinale</i> fountain thistle	E	Valley and foothill chaparral	None
<i>Eriophyllum latilobum</i> San Mateo woolly sunflower	E	Cismontane woodland	None
<i>Hesperocyparis abramsiana</i> var. <i>butanoensis</i> Butano Ridge cypress	E	Closed-cone coniferous forest, lower montane coniferous forest, chaparral	None
<i>Hesperolinon congestum</i> Marin western flax	T	Serpentine grasslands, chaparral	None
<i>Layia carnosa</i> beach layia	E	Coastal dunes, coastal scrub	None
<i>Lessingia germanorum</i> San Francisco lessingia	E	Coastal scrub	None
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	E	Valley and foothill grasslands, cismontane woodland	None
<i>Trifolium amoenum</i> showy rancheria clover	E	Valley and foothill grasslands, coastal bluff scrub, sometimes on serpentine soils	None

<sup>1</sup>Explanation of Federal listing codes:

E = Endangered

T = Threatened

## Solano County CNDDDB Occurrences

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Associations & Additional Notes	Potential for Occurrence
<b>Invertebrates:</b>			
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	E	Endemic to grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools.	None
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	T	Endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains, in astatic rain-filled pools.	None
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	T	Occurs only in the Central Valley of California, in association with blue elderberry ( <i>Sambucus mexicana</i> ).	None
<i>Elaphrus viridis</i> Delta green ground beetle	T	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis Air Force Base.	None
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	E	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	None
<b>Fish:</b>			
<i>Hypomesus transpacificus</i> Delta smelt	T	Found in the Sacramento-San Joaquin Delta, and seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay. Seldom found at salinities greater than 10 parts per thousand (ppt), most often at salinities less than 2 ppt.	Possible
<b>Amphibians</b>			
<i>Ambystoma californiense</i> California tiger salamander	E	Central Valley population is threatened; Sonoma County population is endangered. Breed in vernal pools; requires underground refugia in adjacent upland areas, especially ground squirrel burrows.	None
<i>Rana draytonii</i> California red-legged frog	T	Lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	None
<b>Reptiles</b>			
<i>Thamnophis gigas</i> giant garter snake	T	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	Possible
<b>Birds:</b>			
<i>Rallus longirostris obsoletus</i> California clapper rail	E	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. Associated with abundant pickleweed, but feeds away from cover on invertebrates from mud-bottom sloughs.	Possible
<i>Sternula antillarum browni</i> California least tern	E	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sandy beaches, alkali flats, land fills, or paved areas.	Possible
<b>Mammals:</b>			
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	E	Only in the saline emergent wetlands of the San Francisco Bay and its tributaries. Pickleweed is primary habitat, do not burrow, build loosely organized nests, require higher areas for flood escape.	Possible
<b>Plants</b>			
<i>Chloropyron molle ssp. molle</i> soft bird's-beak	E	Coastal salt marsh with <i>Distichlis spicata</i> , <i>Salicornia virginica</i> , and <i>Frankenia salina</i> .	Possible
<i>Cirsium hydrophilum var. hydrophilum</i> Suisun thistle	E	Salt marsh habitats in Suisun Marsh.	Possible
<i>Lasthenia conjugens</i> Contra Costa goldfields	E	Valley and foothill grasslands, vernal pools, alkaline playas, cismontane woodland	None
<i>Neostapfia colusana</i> Colusa grass	T	Vernal pools	None
<i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass	T	Vernal pools	None
<i>Sidalcea keckii</i> Keck's checkerbloom	E	Cismontane woodland, valley and foothill grassland.	None

Appendix D: CNNDDB Occurrences by District/County

<i>Trifolium amoenum</i> showy rancheria clover	E	Valley and foothill grasslands, coastal bluff scrub, sometimes on serpentine soils.	None
<i>Tuctoria mucronata</i> Crampton's tuctoria or Solano grass	E	Vernal pools, valley and foothill grassland.	None

<sup>1</sup>Explanation of Federal listing codes:

- E = Endangered
- T = Threatened

**Appendix E**  
**Federally Listed Species with Potential to Occur in Tidal Habitats of the  
San Francisco Bay Area**

CNDDDB Occurrences in San Francisco Bay Area Tidal Marsh Habitats

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Requirements & Additional Notes	County	Tidal Marsh Local Distribution	Potential for Occurrence in Tidal Marsh Work Areas
<b>Fish:</b>					
<i>Eucyclogobius newberryi</i> Tidewater goby	E, CH	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River (Douglas County, Oregon). Found in shallow lagoons and lower stream reaches and near the entrance of freshwater tributaries (in SF Bay), in fairly still, but not stagnant water with high oxygen levels.	Alameda	The species has been extirpated from San Francisco Bay in Alameda County (Federal Register Vol. 78, No. 25, February 2013). According to the CNDDDB, the species was historically reported from Lake Merritt and Berkeley Aquatic Park.	Not Expected
			Marin	CH designation within Lagunitas Creek, Rodeo Lagoon (proposed), and other locations in Marin County, but no CH near proposed work areas. Historically known to occur in Corte Madera Creek and Novato Creek.	Not Expected
			Napa	No documented occurrences in this County (CNDDDB).	Not Expected
			San Mateo	CH designation and occurrences in four creeks along the coast, but no CH or occurrences within San Francisco Bay.	Not Expected
			Solano	No documented occurrences in this County (CNDDDB).	Not Expected
			Sonoma	CH designation and species documented in Salmon Creek along the Coast, but none within San Francisco or San Pablo Bay or in or near work areas.	Not Expected
<i>Hypomesus transpacificus</i> Delta smelt	T, CH	Inhabits brackish water in the Sacramento-San Joaquin Delta. Delta smelt have been documented as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River and downstream as far as San Pablo Bay. Breed in freshwater habitat during winter and spring.	Alameda	Alameda County and San Francisco Bay are south of the expected distribution of the species.	Not Expected
			Marin	Marin County and San Francisco Bay are outside of the expected distribution of the species.	Not Expected
			Napa	Napa County is outside of the expected distribution of the species.	Not Expected
			San Mateo	San Mateo County and San Francisco Bay are outside of the expected distribution of the species.	Not Expected
			Solano	CH designation east of the Carquinez Bridge and includes portions of the Delta and its tributaries within and bordering Solano County - Delta smelt known or likely to occur in these areas.	Possible
			Sonoma	The southern portion of Sonoma County borders San Pablo Bay. During high-outflow periods, Delta Smelt may be washed into San Pablo Bay, but they do not establish permanent populations there (Moyle 2002).	Not Expected (established populations); Possible (incidental occurrences)
<i>Oncorhynchus kisutch</i> Coho salmon - central CA coast ESU	E	Populations between Punta Gorda and San Lorenzo River. Requires beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen levels.	Alameda	Outside of the range of the central CA coast ESU (CalFish range maps).	Not Expected
			Marin	Known to occur in the Lagunitas Creek Watershed, which drains west into Tomales Bay. NOTE: need to explain why not in any work areas.	Not Expected
			Napa	Outside of the range of the central CA coast ESU (CalFish range maps).	Not Expected
			San Mateo	Coastal portions of County within central CA coast ESU, but portions of County bordering the San Francisco Bay are outside of the ESU.	Not Expected
			Solano	Outside of the range of the central CA coast ESU (CalFish range maps).	Not Expected
			Sonoma	Portion of County bordering San Pablo Bay are outside of the range of the central CA coast ESU (CalFish range maps).	Not Expected
<i>Oncorhynchus mykiss irideus</i> Steelhead - central California coast DPS, central valley DPS	T	Central CA coast steelhead occur from the Russian River (Mendocino and Sonoma counties), south to Soquel Creek (Santa Cruz County). Also found in San Francisco and San Pablo Bays. Central valley steelhead occur in the Sacramento and San Joaquin Rivers and their tributaries and are expected to spawn in streams in Solano County. Use natural cover such as submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks for foraging and predator avoidance.	Alameda	San Francisco Bay is within the range of central CA coast steelhead, but outside of the range of central valley steelhead (CalFish range maps). CH crosses the central portion of SF Bay (north to south) and occurs in the south Bay.	Possible
			Marin	Central CA coast steelhead known to occur in Lagunitas Creek and most of its tributaries, as well as other creeks in Marin County. CH designation in Petaluma River and Corte Madera Creek.	Possible
			Napa	In range of central CA coast steelhead and the species is known to occur in the Napa River Watershed. CH designation in the Napa River.	Possible
			San Mateo	In range of central CA coast steelhead. CH designation in San Francisquito Creek.	Possible
			Solano	Within range of central valley and central CA coast steelhead, and both may spawn in the County. CH (migration routes) occurs within the Delta and some tributaries.	Possible
			Sonoma	Within range of central CA coast steelhead and CH occurs in Sonoma Creek and Petaluma River.	Possible
<i>Acipenser medirostris*</i> Green sturgeon	T	Spawn in deep pools or "holes" in large, turbulent, freshwater river mainstems including the Sacramento and Feather Rivers. Adults inhabit oceanic waters, bays, and estuaries when not spawning.	Alameda	The entire San Francisco Bay (including San Pablo Bay), and lower portions of the larger creeks entering the bay, is CH for the species. However, proposed activities would not occur in larger tributaries potentially used by adult green sturgeon and this species is not expected to occur in small channels affected by proposed work activities.	Not Expected
			Marin	See above.	Not Expected
			Napa	See above.	Not Expected
			San Mateo	See above.	Not Expected
			Solano	See above.	Not Expected
			Sonoma	See above.	Not Expected
<i>Oncorhynchus tshawytscha*</i> Chinook salmon - Sacramento River winter-run ESU	T	Prefer streams that are deeper and larger than those used by other Pacific salmon species. Includes all naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries in California, as well as two artificial propagation programs. Currently only found in the mainstem Sacramento River, below Keswick Dam (Moyle 2002).	Alameda	Alameda County and San Francisco Bay are within the range of chinook salmon, but outside of the expected distribution of this run (CalFish range maps). Additionally, chinook salmon would not be expected to occur in the small channels potentially affected by the proposed work activities.	Not Expected
			Marin	See above.	Not Expected
			Napa	See above.	Not Expected
			San Mateo	See above.	Not Expected
			Solano	See above.	Not Expected
			Sonoma	See above.	Not Expected
<i>Oncorhynchus tshawytscha*</i> Chinook salmon - California Coastal ESU	T	Prefer streams that are deeper and larger than those used by other Pacific salmon species. This ESU covers fall-run chinook salmon in coastal streams from Cape Blanco in Oregon south to San Francisco Bay (Moyle 2002).	Alameda	Alameda County and San Francisco Bay are within the range of chinook salmon, but outside of the expected distribution of this run (CalFish range maps). Additionally, chinook salmon would not be expected to occur in the small channels potentially affected by the proposed work activities.	Not Expected
			Marin	See above.	Not Expected
			Napa	See above.	Not Expected
			San Mateo	See above.	Not Expected
			Solano	See above.	Not Expected
			Sonoma	Sonoma County is within the range of chinook salmon, and the western portion of the County is within the range of this run (CalFish range maps). However, chinook salmon would not be expected to occur in the small channels potentially affected by the proposed work activities. CH designation in Sacramento River and Sacramento/San Joaquin River Delta. CH is east of proposed work areas.	Not Expected

**CNDDDB Occurrences in San Francisco Bay Area Tidal Marsh Habitats**

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Requirements & Additional Notes	County	Tidal Marsh Local Distribution	Potential for Occurrence in Tidal Marsh Work Areas
<b>Fish:</b>					
<i>Oncorhynchus tshawytscha</i> * Chinook salmon - Central Valley spring-run ESU	T	Prefer streams that are deeper and larger than those used by other Pacific salmon species. This ESU covers spring-run chinook salmon in both rivers and their tributaries, although it exists today only in the Sacramento River drainage (Moyle 2002).	Alameda	Alameda County and San Francisco Bay are within the range of chinook salmon, but outside of the expected distribution of this run (CalFish range maps). Additionally, chinook salmon would not be expected to occur in the small channels potentially affected by the proposed work activities.	Not Expected
			Marin	See above.	Not Expected
			Napa	Napa County is within the range of chinook salmon, but outside the expected distribution of this species. Fall/late fall run chinook salmon are known to occur in the Napa River (federal species of concern).	Not Expected (spring run)
			San Mateo	See above.	Not Expected
			Solano	Sonoma County is within the range of chinook salmon, and the eastern portion of the County is within the range of this run (CalFish range maps). However, chinook salmon would not be expected to occur in the small channels potentially affected by the proposed work activities. CH designation in Sacramento River and Sacramento/San Joaquin River Delta. CH is east of proposed work areas.	Not Expected
			Sonoma	Sonoma County is within the range of chinook salmon, but outside of the expected distribution of this run (CalFish range maps). Additionally, chinook salmon would not be expected to occur in the small channels potentially affected by the proposed work activities.	Not Expected
<i>Spirinchus thaleichthys</i> Longfin smelt	C	Generally anadromous, spawning in freshwater and then move downstream to brackish water to rear, though some populations remain in freshwater throughout their entire lifespan. Longfin smelt are pelagic and therefore feed primarily in open water areas, away from shore. They feed primarily on copepods as juveniles and shifts to mysids as adults. Their distribution in the Bay-Delta has been strongly tied to Delta inflow and the location of X2 (USFWS 2009).	Alameda	Alameda County and San Francisco Bay are within the range of longfin smelt. Most recent documentation was from Oakland Harbor in 2005 and USFWS beach seins in 2010 (low numbers). Longfin smelt may use small tidal channels if accessible.	Possible
			Marin	Marin County and San Francisco Bay/San Pablo Bay within the range of longfin smelt. Longfin smelt may use small tidal channels if accessible.	Possible
			Napa	Napa County and the San Pablo Bay are within the range of longfin smelt and this species is known to occur in the Napa River. Longfin smelt may use small tidal channels if accessible.	Possible
			San Mateo	San Mateo County and South San Francisco Bay are within the range of longfin smelt. Longfin smelt may use small tidal channels if accessible.	Possible
			Solano	Solano County and San Pablo Bay are within the range of longfin smelt. This species is more common in Suisun Marsh. Longfin smelt may use small tidal channels if accessible.	Possible
			Sonoma	Sonoma County and San Pablo Bay are within the range of longfin	Possible
<b>Birds:</b>					
<i>Rallus longirostris obsoletus</i> California clapper rail	E	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. Associated with abundant pickleweed, but feeds away from cover on invertebrates from mud-bottom sloughs.	Alameda	Multiple occurrences documented in 2006 within and adjacent to proposed work areas including: Martin Luther King Regional Shoreline (also in 2010), along San Leandro Bay, San Lorenzo Shoreline Marshes, Newark Slough Marshes, Hayward Shoreline, and Emeryville Crescent Marsh. PRBO documented occurrences at Dumbarton Point in 2009 and 2010. May also occur at other marshes with suitable habitat.	Expected (within work areas where documented); Possible (other locations)
			Marin	Occurrences South of Gallinas Creek in 2004, China Camp Marsh in 2003, and several breeding adults in 2004 at Carl's Marsh and Toy Unit Marsh along the Petaluma River. PRBO documented CLRA at Hamilton South Marsh. May also occur at other marshes with suitable habitat.	Possible
			Napa	No CNDDDB occurrences listed within the last 10 years. PRBO documented occurrences within Coon Island and Napa Centennial Marsh in 2010. May also occur at other marshes with suitable habitat.	Expected (Coon Island); Possible (other locations)
			San Mateo	Several occurrences in marshes along the bay including: Confluence Marsh in Brisbane 2011 (1 adult), marsh just north of SFO airport in 2006 (4 adults), south of Coyote Point Marina in 2006 (1 adult), mouth of Seal Slough in 2003 (10 adults) and 2006 (1-4 adults), marshes surrounding San Francisco Creek in 2004 (5 adults) and 2006 (15 adults), Bair Island Marshes in 2006 (up to 4 individuals), and Greco Island in 2006 (1-2 adults). PRBO also documented occurrences within the Bair-Greco region, and many locations in Palo Alto. May also occur at other marshes with suitable habitat.	Expected (within work areas where documented); Possible (other locations)
			Solano	Most recent occurrences within Suisun Slough east of the proposed work areas. Occurrence on southwest tip of Mare Island (1996) within possible work areas. May also occur at other marshes with suitable habitat.	Possible
			Sonoma	Several breeding adult occurrences in 2004 at Carl's Marsh and Toy Unit Marsh along the Petaluma River. Several occurrences prior to the year 2000 along Napa Slough and Sonoma Creek. PRBO documented occurrences within several marshes and sloughs in Petaluma Marsh, lower Petaluma River, and Petaluma River mouth in 2009 and 2010. May also occur at other marshes with suitable	Expected (Petaluma Marsh); Possible (other locations)
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	T	Requires sandy, gravelly, or friable soils for nesting. Nesting generally occurs on sandy beaches, salt pond levees, and shores of large alkaline lakes.	Alameda	Nesting documented in 2009 in several ponds within Eden Landing Ecological Reserve, several ponds within Warm Spiring Ponds in Don Edwards National Wildlife Refuge, and in Hayward Regional Shoreline. While the species does not nest in tidal marshes, nesting does occur along levee tops and other nearby areas that could be used to access marshes.	Possible (access areas)
			Marin	Occurrence in 2013 within the Hamilton Army Airfield Wetland Restoration Site, with documented nesting. While the species does not nest in tidal marshes, nesting does occur along levee tops and other nearby areas that could be used to access marshes.	Possible (access areas)



**CNDDDB Occurrences in San Francisco Bay Area Tidal Marsh Habitats**

Species Name Common Name	Federal Listing Status <sup>1</sup>	Habitat Requirements & Additional Notes	County	Tidal Marsh Local Distribution	Potential for Occurrence in Tidal Marsh Work Areas
<b>Birds:</b>					
<i>Charadrius alexandrinus nivosus</i> Western snowy plover			Napa	Occurrence in 2009 nests along levees within Napa-Sonoma Marshes at ponds 7 and 7A and NW end of Fly Bay which is a proposed work area. Also documented nests within the restored Napa Plant Site or Green Island Unit. While the species does not nest in tidal marshes, nesting does occur along levee tops and other nearby areas that could be used to access marshes.	Possible (access areas)
			San Mateo	Occurrences in Ravenswood Complex within Don Edwards National	Possible (access areas)
			Solano	No known nesting occurrences	Not Expected
			Sonoma	No recent CNDDDB occurrences and no CNDDDB occurrences along San Francisco Bay, only along the coast. However, documented nesting at the Wingo Unit in the Napa Sonoma Marsh Wildlife Area near Steamboat Slough since 2009. While the species does not nest in tidal marshes, nesting does occur along levee tops and other nearby areas that could be used to access marshes.	Possible (access areas)
<i>Sternula antillarum browni</i> California least tern	E	Nests are situated on sparsely vegetated places near water, normally on sandy or gravelly substrate. In San Francisco Bay, breeding typically takes place on abandoned salt flats. Primarily forages over shallow estuaries and lagoons.	Alameda	Occurrence in Hayward within a proposed work area (polygon 17). Known breeding colony at Alameda Point adjacent to proposed work areas (polygon 2 and 3).	Possible (access areas)
			Marin	No known nesting occurrences.	Not Expected
			Napa	No CNDDDB occurrences, but known small nesting colony within Napa Sonoma Marshes Wildlife Area at the restored Napa Plant Site or Green Island Unit since 2009. Presence also documented at Fagan	Possible
			San Mateo	No CNDDDB documented nest sites since 1982.	Not Expected
			Solano	Nesting has occurred in Motezuma Wetland near Collinsville every year since 2006. However, nesting has not been documented within or near any proposed work areas.	Not Expected
			Sonoma	No documented occurrences in this County (CNDDDB).	Not Expected
<b>Mammals:</b>					
<i>Reithrodontomys raviventris</i> Salt marsh harvest mouse	E	Only in the saline emergent wetlands of the San Francisco Bay and its tributaries. Pickleweed is primary habitat, do not burrow, build loosely organized nests, require higher areas for flood escape.	Alameda	Occurrence at Warm Springs site just south of Fremont in 2006 (3 adults), a diked wetland adjacent to Roberts landing in 2003 (14 adults), and Newark Slough Marshes in 2001 (10 individuals). May also occur at other marshes with suitable habitat.	Possible
			Marin	Occurrence in Petaluma Marsh 2005, 0.5 miles north of highway 37 bridge (2-5 individuals). May also occur at other marshes with suitable habitat.	Possible
			Napa	Occurrences reported for Fagan Marsh in 2010 (CNDDDB) and more recently by Ducks Unlimited (2013 State of the Estuary Conference).	Possible
			San Mateo	No recent occurrences. All occurrences from 1992 or earlier include Bair Island and marshes in East Palo Alto and Redwood City. May also occur at other marshes with suitable habitat.	Possible
			Solano	Occurrence between Mare Island and Sonoma Creek in 2000 (captured about 30 individuals), one adult in Pond 2 in 2005, and several other occurrences in marshes along the Napa River prior to the year 2000. May also occur at other marshes with suitable habitat.	Possible
			Sonoma	Occurrences along Tolay Creek in 2002 (23 individuals in April, 14 in November), Petaluma Marsh in 2005 (2-5 individuals), and Sonoma Creek in 2000 (11 adults). May also occur at other marshes with suitable habitat.	Possible
<b>Plants:</b>					
<i>Suaeda californica</i> California seablite	E	Margins of coastal salt marshes from 0-15 meters, sandy salt marsh habitats which are nearly extirpated from the San Francisco Bay region (USFWS 2010a,b).	Alameda	Presently only known to occur in reintroduced locations within the San Francisco Bay region (USFWS 2010a,b), currently only present at the Emeryville Crescent State Marine Reserve in Alameda County (Peter Baye pers. comm. 2013).	Possible (limited)
			Marin	No documented occurrences in this County (CNDDDB).	Not Expected
			Napa	No documented occurrences in this County (CNDDDB).	Not Expected
			San Mateo	No documented occurrences in this County (CNDDDB).	Not Expected
			Solano	No documented occurrences in this County (CNDDDB).	Not Expected
			Sonoma	No documented occurrences in this County (CNDDDB).	Not Expected
<i>Chloropyron molle ssp. molle</i> Soft bird's-beak	E, CH	Coastal salt marsh/upland transition zone with <i>Distichlis spicata</i> , <i>Salicornia virginica</i> , and <i>Frankenia salina</i> .	Alameda	No documented occurrences in this County (CNDDDB).	Not Expected
			Marin	Historically known to occur in Marin County but currently presumed extirpated (CNDDDB, CNPS).	Not Expected
			Napa	Historically known to occur at Bently Marsh but may be extirpated, documented occurrences within Fagan Marsh and Fly Bay. CH designated within Fagan Marsh (USFWS 2007).	Expected (Fagan Marsh and Fly Bay), Possible (other locations)
			San Mateo	No documented occurrences in this County (CNDDDB).	Not Expected
			Solano	No reported occurrences with proposed work areas; two reported (CNDDDB) occurrences near proposed work areas but both presumed extirpated, historically known to occur at Mare Island.	Possible (limited)
			Sonoma	Previously known to occur at Petaluma Marsh but presumed extirpated (CNDDDB).	Possible (limited)
<i>Cirsium hydrophilum var. hydrophilum</i> Suisun thistle	E, CH	Upper reaches of tidal marsh habitats, commonly with bulrushes ( <i>Schoenoplectus</i> sp.) and saltgrass ( <i>Distichlis spicata</i> ).	Alameda	No documented occurrences in this County (CNDDDB).	Not Expected
			Marin	No documented occurrences in this County (CNDDDB).	Not Expected
			Napa	No documented occurrences in this County (CNDDDB).	Not Expected
			San Mateo	No documented occurrences in this County (CNDDDB).	Not Expected
			Solano	Occurs in Solano County but is geographically restricted and does not occur near proposed work areas; closest documented occurrences are in Suisun Marsh.	Not Expected
			Sonoma	No documented occurrences in this County (CNDDDB).	Not Expected

<sup>1</sup>Explanation of Federal listing codes:

- E = Endangered
- T = Threatened
- C = Candidate
- CH = Critical Habitat (Proposed or Final) is designated