

**Appendix E**  
**Special-Status Plant Species and Special-  
Status Wildlife Species Known to Occur  
Within Project Vicinity**



**Appendix A**  
**Special-Status Plant Species Known to Occur in the Vicinity of the North Connector Project**

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<b>Amaranthaceae</b>					
<i>Atriplex depressa</i> Brittlescale	Fed: - State: - CNPS: List 1B.2	May-October	Chenopod scrub; playas; meadows and seeps, vernal pools, valley and foothill grassland; [alkaline or clay]. Elevation 1-320 meters.	Record for this species located 6.3 miles east of the project site (Occurrence No. 55).	Suitable habitat present in project area, however it is unlikely that this species occurs onsite. Was not observed during appropriately-timed surveys.
<i>Atriplex joaquiniana</i> San Joaquin saltbush	Fed: - State: - CNPS: List 1B.2	April-October	Chenopod scrub; meadows; valley and foothill grassland; [alkaline]. Elevation 1-835 meters.	Record for this species located 2.3 miles south of the project site (Occurrence No. 57).	No suitable marsh habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Apiaceae</b>					
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	Fed: - State: CR CNPS: List 1B.1	April-November	Marshes and swamps (brackish or freshwater); riparian scrub. Elevation 0-10 m.	Record for this species located 2.4 miles southeast of the project site (Occurrence No. 18).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Asteraceae</b>					
<i>Balsamorhiza macrolepis macrolepis</i> Big-scale balsam-root	Fed: - State: - CNPS: List 1B.2	March-June	Chaparral; cismontane woodland; valley and foothill grassland; [sometimes serpentinite]. Elevation 90-1400 meters.	Record for this species located 2.0 miles northwest of the project site (Occurrence No. 15).	Suitable habitat present in project area, however it is unlikely that this species occurs onsite. Was not observed during appropriately-timed surveys.
<i>Centromadia parryi parryi</i> Pappose tarplant	Fed: - State: - CNPS: List 1B.2	May-November	Chaparral; coastal prairie; meadows and seeps; marshes and swamps; vernal wet grassland (often alkaline). Elevation 2-420 m.	Record for this species located 0.5 miles south of the project site (Occurrence No. 8).	Marginal habitat present in project area, however it is unlikely that this species occurs onsite. Was not observed during appropriately-timed surveys.

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Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<i>Cirsium hydrophilum hydrophilum</i> Suisun thistle	Fed: FE State: - CNPS: List 1B	July-September	Salt marshes. Grows with bulrushes and salt grass near small watercourses in the salt marsh. Very few known occurrences. Elevation 0-1 meters.	Record for this species located 2.7 miles east of the project site (Occurrence No. 1).	No suitable habitat within the study area (no salt marshes).
<i>Erigeron biolettii</i> Streamside daisy	Fed: - State: - CNPS: List 3	June-October	Broad-leaved upland forest; cismontane woodland; northern coniferous forest [rocky, mesic]. Elevation 30-1100 m.	This species was identified on the Mangel's property during the rare plant surveys.	This species occurs onsite
<i>Isocoma arguta</i> Carquinez goldenbush	Fed: - State: - CNPS: List 1B.1	August-December	Valley and foothill grassland (alkaline). Elevation 1-20 meters.	Record for this species located 8.7 miles northeast of the project site (Occurrence No. 8).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<i>Lasthenia conjugens</i> Contra Costa goldfields	Fed: FE State: - CNPS: List 1B.1	March-June	Valley and foothill grassland (mesic); vernal pools; cismontane woodlands; playas. Elevation 0-470 meters.	Record for this species located 1.1 miles south of the project site (Occurrence No. 33).	Suitable habitat present in project area, however it is unlikely that this species occurs onsite. Was not observed during appropriately-timed surveys.
<i>Symphotrichum lentum</i> Suisun Marsh aster	Fed: - State: - CNPS: List 1B.2	May-November	Marshes and swamps (brackish and fresh water). Elevation 0-3 m.	Record for this species located 1.5 miles south of the project site (Occurrence No. 104).	No suitable marsh habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Campanulaceae</b> <i>Downingia pusilla</i> Dwarf downingia	Fed: - State: - CNPS: List 2.2	March-May	Valley and foothill grassland (mesic); vernal pools. Elevation 1-445 m.	Record for this species located 6.0 miles west of the project site (Occurrence No. 108).	No suitable habitat present in project area. This species is not expected to occur onsite. No Vernal pools. Was not observed during appropriately-timed surveys.

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Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<i>Legenere limosa</i> Legenere	Fed: - State: - CNPS: List 1B.1	April-June	Vernal pools. Elevation 1-880 m.	Record for this species located 2.8 miles east of the project site (Occurrence No. 2).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Caprifoliaceae</b>					
<i>Viburnum ellipticum</i> Western viburnum	Fed: - State: - CNPS: List 2.3	May-June	Chaparral; cismontane woodland; lower montane coniferous forest. Elevation 215-1400 meters.	Record for this species located 5.6 miles northwest of the project site (Occurrence No. 7).	None. No suitable habitat within the study area (no chaparral). Was not observed during appropriately-timed surveys.
<b>Fabaceae</b>					
<i>Astragalus tener tener</i> Alkali milkvetch	Fed: - State: - CNPS: List 1B.2	March-June	Playas; valley and foothill grassland (adobe clay), vernal pools (alkaline). Elevation 1-60 meters.	Record for this species located 1.7 miles east of the project site (Occurrence No. 38).	Suitable habitat present in project area, however it is unlikely that this species occurs onsite. Was not observed during appropriately-timed surveys.
<i>Lathyrus jepsonii jepsonii</i> Delta tulle pea	Fed: - State: - CNPS: List 1B.2	May-September	Marshes and swamps (freshwater and brackish). Elevation 0-4 meters.	Record for this species located 1.8 miles south or southeast of the project site (Occurrence No. 109).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<i>Trifolium amoenum</i> Showy Indian clover	Fed: FE State: - CNPS: List 1B.1	April-June	Valley and foothill grassland (sometimes serpentinite)	Record for this species located 5.3 miles southeast of the project site (Occurrence No. 23).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.

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Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<i>Trifolium depauperatum hydrophilum</i> Saline clover	Fed: - State: - CNPS: List 1B.2	April-June	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. Elevation 0-300 m.	Record for this species located 6.4 miles west of the project site (Occurrence No. 13).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Iridaceae</b>					
<i>Iris longipetala</i> Coast iris	Fed: - State: - CNPS: List 4	March-May	Coastal prairie, lower montane coniferous forest, meadows and seeps (mesic). Elevation 0-600 meters.	This species was identified on the Mangel's property during the rare plant surveys.	This species occurs onsite.
<b>Juglandaceae</b>					
<i>Juglans hindsii</i> Northern California black walnut	Fed: - State: - CNPS: List 1B.1	April-May	Riparian forest; riparian woodland. Elevation 0-440 meters.	Record for this species located 3.5 miles northwest of the project site (Occurrence No. 6).	Suitable habitat present in project area in agricultural settings. California black walnut trees were observed onsite, however these trees are waifs, considered to be escapees.
<b>Liliaceae</b>					
<i>Calochortus pulchellus</i> Mt. Diablo fairy lantern	Fed: - State: - CNPS: List 1B.2	April-June	Chaparral; cismontane woodland; valley and foothill grassland; riparian woodland. Elevation 30-840 meters.	Record for this species located 2.5 miles northeast of the project site (Occurrence No. 32).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Linaceae</b>					
<i>Hesperolinon breweri</i> Brewer's dwarf flax	Fed: - State: - CNPS: List 1B.2	May-July	Chaparral; cismontane woodland; valley and foothill grassland; [usually serpentinite]. Elevation 30-900 meters.	Record for this species located 5.0 miles north of the project site (Occurrence No. 20).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.

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Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<i>Hesperolinon sp. nov. "serpentinum"</i> Napa dwarf flax	Fed: - State: - CNPS: List 1B.1	May-July	Chaparral (serpentine). Elevation 50-800 m.	Record for this species located 9.3 miles northwest of the project site (Occurrence No. 36).	None. No suitable habitat within the study area (no chaparral). Was not observed during appropriately-timed surveys.
<b>Malvaceae</b>					
<i>Sidalcea hickmanii viridis</i> Marin checkerbloom	Fed: - State: - CNPS: List 1B.3	May-June	Chaparral (serpentine). Elevation 50-430 m.	Record for this species located 9.2 miles northwest of the project site (Occurrence No. 4).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Polygonaceae</b>					
<i>Eriogonum truncatum</i> Mount Diablo buckwheat	Fed: - State: - CNPS: List 1B.1	April-December	Chaparral; coastal scrub; valley and foothill grassland; [sandy]. Elevation 3-350 meters.	Record for this species located 2.1 miles east of the project site (Occurrence No. 8).	Presumed extinct. None observed during appropriately-timed surveys.
<i>Polygonum marinense</i> Marin knotweed	Fed: - State: - CNPS: List 3.1	April-October	Marshes and swamps (coastal salt or brackish). Elevation 0-10 m.	Record for this species located 7.0 miles west of the project site (Occurrence No. 14).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.
<b>Rhamnaceae</b>					
<i>Ceanothus purpureus</i> Holly-leaf ceanothus	Fed: - State: - CNPS: List 1B.2	February-June	Chaparral; cismontane woodland (volcanic, rocky). Elevation 120-640 m.	Record for this species located 5.0 miles northeast of the project site (Occurrence No. 12).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.

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Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
<b>Scrophulariaceae</b>					
<i>Castilleja affinis neglecta</i> Tiburon Indian paintbrush	Fed: FE State: CT CNPS: List 1B.2	April-June	Valley and foothill grassland [serpentinite]. Elevation 60-400 m.	Record for this species located 4.1 miles southwest of the project site (Occurrence No. 5).	No suitable habitat present in project area. This species is not expected to occur onsite. No serpentine habitat. Was not observed during appropriately-timed surveys.
<i>Cordylanthus mollis mollis</i> Soft bird's-beak	Fed: FE State: CR CNPS: List 1B.2	July-November	Marshes and swamps (coastal salt). Elevation 0-3 m.	Record for this species located 4.6 miles southeast of the project site (Occurrence No. 29).	No suitable habitat within the study area (no salt marshes).
<b>Themidaceae</b>					
<i>Brodiaea californica leptandra</i> Brodiaea	Fed: - State: - CNPS: List 1B.2	May-July	Broadleaved upland forest; cismontane woodland; chaparral; lower montane coniferous forest; valley & foothill grassland (volcanic). Elevation 110-915 m.	Record for this species located 9.0 miles northwest of the project site (Occurrence No. 24).	No suitable habitat present in project area. This species is not expected to occur onsite. Was not observed during appropriately-timed surveys.

**\*Status**

Federal:  
 FE - Federal Endangered  
 FT - Federal Threatened  
 FPE - Federal Proposed Endangered  
 FPT - Federal Proposed Threatened  
 FC - Federal Candidate

State:  
 CE - California Endangered  
 CT - California Threatened  
 CR - California Rare  
 CC - California Candidate  
 CSC - California Species of Special Concern

CNPS:  
 List 1A - Presumed extinct in California  
 List 1B - Plants rare, threatened, or endangered in California and elsewhere  
 List 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)  
 List 1B.2 - Fairly endangered in California (20-80% occurrences threatened)  
 List 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:  
 List 2 - Plants rare, threatened, or endangered in California, but more common elsewhere  
 List 2.1 - Seriously endangered in California, but more common elsewhere  
 List 2.2 - Fairly endangered in California, but more common elsewhere  
 List 2.3 - Not very endangered in California, but more common elsewhere  
 List 3 - Plants about which we need more information (Review List)  
 List 3.1 - Plants about which we need more information (Review List)  
           Seriously endangered in California  
 List 3.2 - Plants about which we need more information (Review List)  
           Fairly endangered in California  
 List 4 - Plants of limited distribution - a watch list

## Appendix B

### Special-Status Wildlife Species Known to Occur in the Vicinity of the North Connector Project

Species	*Status	Habitat	Closest Locations	Probability on Project Site
<b>Invertebrates</b>				
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	Fed: FE State: - Other:	Endemic to the northern parts of the Central Valley. Prefers larger, turbid vernal pools located in alluvial swales.	Record for this species located approximately 6.2 miles east of the project site (Occurrence No. 14).	Suitable habitat is not present in project area. This species is unlikely to occur within the project area.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains. Inhabit static rain-filled/vernal pools, small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression	Record for this species located approximately 4.8 miles northeast of the project site (Occurrence No. 331).	Suitable habitat potentially present in the project area. All potential habitat is avoided by project. No impacts expected.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	Fed: FE State: - Other:	Inhabits vernal pools with turbid and/or silty water. Mud substrate typical.	Record for this species located approximately 6.0 miles northeast of the project site (Occurrence No. 158).	Suitable habitat potentially present in project area. All potential habitats avoided; no impacts expected.
California freshwater shrimp <i>Syncaris pacifica</i>	Fed: FE State: CE Other:	Endemic to Marin, Napa, and Sonoma counties in low gradient streams with moderate to heavy riparian canopy. Needs shallow pools away from the main stream flow. Prefers undercut banks with exposed roots.	Known from Huichica Creek, tributary to the Napa River, northwest of Napa (Napa quadrangle) approximately 19.2 kilometers (12 miles) northwest of the project area.	Unlikely to occur in Suisun Creek.; however, direct impacts to this creek are avoided.
<b>Insects</b>				
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	Fed: FT State: - Other:	Riparian and other habitats with blue elderberries ( <i>Sambucus mexicana</i> ). Prefers shrubs with stems 1 to 5 inches in diameter.	Record for this species located on and just north of the project site (Occurrence No. 211).	Suitable habitat present in project area (i.e., host plant present). Appropriately-sized holes were identified in elderberry shrubs along Suisun Creek. Elderberry also identified along Dan Wilson Creek. This species may be impacted by the project.

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Species	*Status	Habitat	Closest Locations	Probability on Project Site
Monarch butterfly <i>Danaus plexippus</i>	Fed: - State: - Other: *	Winters in tall trees along the coast. Prefers eucalyptus, Monterey pine, and Monterey cypress.	Winter roost site located approximately 0.5 miles east of the project site along the western edge of Fairfield (Occurrence No. 23). At this location the habitat is a long row of Eucalyptus trees.	Marginal roosting habitat is present in project area on the Mangels' property, however, this species is unlikely to occur here. None observed during multiple surveys of project site.
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	Fed: FE State: - Other:	Occurs in grassland habitats and shrubby woodlands around San Francisco Bay. <i>Viola pedunculata</i> is the host plant. Males congregate on hilltops.	Only known to occur in San Mateo County.	Suitable habitat present in project area (i.e., host plant is present). This species may occur onsite. All potential host plant populations are avoided by the project. No direct impacts anticipated.
<b>Fish</b>				
Steelhead - Central California Coast ESU <i>Oncorhynchus mykiss</i>	Fed: FT State: - Other: -	From Russian River south to Soquel Creek, and to Pajaro River. Also found in San Francisco & San Pablo Bay Basins. Spawn in clear, cool, well oxygenated streams greater than 18 cm deep.	Record for this species located approximately 6.7 miles west of the project site in North Slough (Occurrence No. 4).	Suitable habitat present in Suisun Creek and this species is known to occur within this reach of Suisun Creek, however, direct impacts to this creek are avoided.
Chinook salmon - Cent. Val. fall/late fall run <i>Oncorhynchus tshawytscha</i>	Fed: FC State: CSC Other:	Spawns in the Sacramento and San Joaquin Rivers and their tributaries, typically on the valley floor and lower foothills. Usually spawn soon after reaching natal streams.	No CNDDDB records within the CNDDDB search area. Historic records indicate fall-run Chinook salmon occurred in Suisun Creek (Boring, 2003)	Suitable habitat present in Suisun Creek and chinook salmon is known to occur within this reach of Suisun Creek, however, direct impacts to this creek are avoided.
Delta smelt <i>Hypomesus transpacificus</i>	Fed: FT State: CT Other:	Endemic to the Sacramento-San Joaquin Delta. Occurs seasonally in Suisun and San Pablo bays. Spawning usually occurs in dead-end sloughs and shallow channels.	Record for this species located approximately 7.7 miles west of the project site (Occurrence No. 1).	No suitable habitat within project area. This species is not expected to occur onsite.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	Fed: State: CSC Other:	Endemic to the lakes and rivers of the Central Valley; now confined to the delta, Suisun Bay, and associated marshes. Inhabits slow moving river sections and dead-end sloughs. Needs flooded vegetation for spawning.	Record for this species located approximately 4.3 miles southeast of the project site (Occurrence No. 4).	Project area outside known range of species. This species is unlikely to occur onsite.

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Species	*Status	Habitat	Closest Locations	Probability on Project Site
<b>Amphibians</b>				
California tiger salamander <i>Ambystoma californiense</i>	Fed: FT State: CSC Other:	Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose.	Record for this species located approximately 7.0 miles east of the project site (Occurrence No. 485).	Larval surveys (funnel trapping and dip-netting) was conducted in 2004 with negative findings. Species does not occur within the study area.
California red-legged frog <i>Rana aurora draytonii</i>	Fed: FT State: CSC Other:	Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Identified within the project corridor on the Mangels property (Occurrence No. 660 & 820).	This species is known to occur on the Mangels property, within the project area (see report text for further analysis).
Foothill yellow-legged frog <i>Rana boylei</i>	Fed: -- State: CSC Other:	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Record for this species located approximately 2.9 miles north of the project site (Occurrence No. 388).	No suitable habitat within project area. This species is unlikely to be found onsite.
<b>Reptiles</b>				
Pacific pond turtle (=western pond turtle) <i>Actinemys marmorata</i> (=Clemmys m.)	Fed: -- State: CSC Other:	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County.	Identified within the project corridor on the Mangels property (Occurrence No. 225).	Species known to occur in ponds on Mangels property (see report text for further analysis).
California horned lizard <i>Phrynosoma coronatum frontale</i>	Fed: -- State: CSC Other:	Found in a variety of habitats, but most common in sandy washes with scattered shrubs. Requires open areas for sunning, shrubs for cover, and sandy soil for hiding. Feeds on ants and other insects.	No CNDDDB records within the CNDDDB search area.	This species is unlikely to occur within the project area.

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Species	*Status	Habitat	Closest Locations	Probability on Project Site
Giant garter snake <i>Thamnophis gigas</i>	Fed: FT State: CT Other:	Inhabits freshwater marshes and low gradient streams. Also found in drainage canals and irrigation ditches.	No CNDDDB records within the CNDDDB search area.	Species associated with marshes and sloughs not present in project area. This species is unlikely to occur onsite.
<b>Birds</b>				
California brown pelican <i>Pelecanus occidentalis californicus</i>	Fed: FE State: CE Other: *	Nests colonially on coastal islands.	No CNDDDB records within the CNDDDB search area.	No suitable nesting or foraging habitat present in study area. This species is not expected to occur onsite.
Osprey <i>Pandion haliaetus</i>	Fed: State: CSC Other: *	Ocean Shore, bays, fresh-water lakes, and larger streams. Large nests built in tree-tops within 15 miles good fish producing body of water.	Record for this species located approximately 9.5 miles southwest of the project site (Occurrence No. 142)	No suitable nesting or foraging habitat present in study area. This species is not expected to occur onsite.
White-tailed kite <i>Elanus leucurus</i>	Fed: State: Other: *	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Record for this species located approximately 0.5 miles south of the project site (Occurrence No. 97).	Wetland and open grassland present on Mangels property provides potential habitat. This species may occur onsite (see text of report for further analysis).
Bald eagle <i>Haliaeetus leucocephalus</i>	Fed: FT State: CE Other: *	Ocean shorelines, lake margins, and river courses for both nesting and wintering. Most nests within one mile of water.	No CNDDDB records within the CNDDDB search area.	No suitable nesting or foraging habitat present in project area. This species is not expected to occur onsite.
Northern harrier <i>Circus cyaneus</i>	Fed: - State: CSC Other: *	Found in or near freshwater and salt marshes. Nests on the ground or in shrubby vegetation.	Record for this species located approximately 4.4 miles southeast of the project site (Occurrence No. 31).	The grassland community on the Mangels' property provides suitable foraging and nesting habitat for this species. This species could occur onsite (see text of report for further analysis).

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Cooper's hawk <i>Accipiter cooperii</i>	Fed: - State: CSC Other: *	Nests in heavily wooded areas along streams, rivers, or near springs/seeps. Prefers to nest in tall canopies with an open understory usually near openings. Oak and riparian woodlands are preferred habitats.	Nesting site located east of Hercules (Benicia quadrangle), approximately 23 kilometers (14 miles) south of the project area.	Riparian habitat found along Suisun Creek provides potential habitat. This species may occur onsite (see report text for further analysis).
Swainson's hawk <i>Buteo swainsoni</i>	Fed: - State: CT Other: *	Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging.	Record for this species located approximately 1.1 miles south of the project site (Occurrence No. 1372).	Foraging habitat found within the project area. Potential to nest in the project area (see text of report for further analysis).
Ferruginous hawk <i>Buteo regalis</i>	Fed: -- State: CSC Other: *	Winter migrant to California where they prefer grasslands, cultivated fields and arid areas with an abundance of prey species, such as pocket gophers, black-tailed hares, and cottontails.	Record for this species located approximately 5.4 miles west of the project site (Occurrence No. 28).	Suitable foraging habitat exists on Mangles property. Impacts to foraging habitat is considered less than significant. Does not nest in California.
Golden eagle <i>Aquila chrysaetos</i>	Fed: - State: CSC Other: *	Found in rolling foothill grassland with scattered trees. Nests on cliffs and in large trees in open areas.	Record for this species located approximately 4.7 miles southwest of the project site (Occurrence No. 40).	Rolling grassland suitable for foraging found on Mangles property. Impacts to foraging habitat is considered less than significant. Low potential nest sites within the project area (few large eucalyptus trees on site).
American peregrine falcon <i>Falco peregrinus anatum</i>	Fed: - State: CE Other: *	Nests on high cliffs. Also nests on human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	No CNDDDB records within the CNDDDB search area.	No suitable nesting habitat present; foraging habitat potentially present in project area. This species is not expected to nest but could forage onsite. Impacts to foraging habitat is considered less than significant.
California black rail <i>Laterallus jamaicensis coturniculus</i>	Fed: -- State: CT Other: *	Inhabits salt marshes bordering larger bays. Prefers tidal salt marshes of pickleweed. May also occur in fresh to brackish marshes.	Record for this species located approximately 1.7 miles east of the project site (Occurrence No. 20).	None. Suitable habitat is not present in project area.

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Species	*Status	Habitat	Closest Locations	Probability on Project Site
California clapper rail <i>Rallus longirostris obsoletus</i>	Fed: FE State: CE Other: *	Inhabits salt water and brackish marshes with tidal sloughs in San Francisco Bay. Prefers dense pickleweed for cover, but forages for invertebrates along mud-bottomed sloughs.	Record for this species located approximately 3.5 miles southeast of the project site (Occurrence No. 80).	None. Suitable habitat is not present in project area.
Greater sandhill crane <i>Grus canadensis tabida</i>	Fed: - State: CT Other: *	Nests in wetland habitats in northeastern California and winters in the Central Valley. Prefers grain fields within 4 miles of water for nest sites. Uses irrigated pasture for loafing.	No CNDDDB records within the CNDDDB search area.	No suitable nesting or wintering habitat present in project area. Project site is outside of nesting range. This species is not expected to nest but may forage onsite. Impacts to foraging habitat is considered less than significant.
Long-billed curlew <i>Numenius americanus</i>	Fed: -- State: CSC Other:	Breeds in short grass prairies and wet meadows in northeastern California. Sometimes a visitor to coastal areas. Non-breeders may be found in the Central Valley during the summer.	No CNDDDB records within the CNDDDB search area.	No suitable nesting habitat present; potential wintering foraging habitat present in project area. Project area outside of breeding range. This species could forage onsite during the winter migration period. Impacts considered less than significant.
Western burrowing owl <i>Athene cunicularia hypugaea</i>	Fed: -- State: CSC Other: *	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Record for this species located approximately 1.6 miles west of the project site (Occurrence No. 70).	This species was observed on Mangles property. This species may occur onsite (see text of report for further analysis).
Short-eared owl <i>Asio flammeus</i>	Fed: -- State: CSC Other:	Found in fresh and saltwater marshes; lowland meadows; irrigated alfalfa fields. Tule patches/ tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	Record for this species located approximately 6.0 miles southeast of the project site (Occurrence No. 12).	Open annual grassland and freshwater marsh present on Mangles property. This species may occur onsite during winter migration period. Would not likely be found nesting in the project area.
Little willow flycatcher <i>Empidonax traillii brewsteri</i>	Fed: -- State: - Other: *	Breeds in riparian and mesic upland thickets in mountain meadows of the Sierra Nevada. Also breeds along the south fork of the Kern River, the Santa Margarita River, and the San Luis Rey River. Found at elevations ranging between 3,000 and 10,000 feet.	No CNDDDB records within the CNDDDB search area.	This species is not known to nest in Solano County. This species would not be expected to occur onsite.

## Appendix B

### Special-Status Wildlife Species Known to Occur in the Vicinity of the North Connector Project

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Loggerhead shrike <i>Lanius ludovicianus</i>	Fed: -- State: CSC Other:	Found in broken woodlands, shrubland, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No CNDDDB records within the CNDDDB search area.	Habitat found within project area. Open grasslands with posts and fences used for foraging are common throughout the project area. This species was observed on the Mangles' property (see report for further analysis).
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	Fed: -- State: CSC Other:	Resident of freshwater and salt water marshes in the San Francisco Bay region. Requires thick, continuous cover for foraging and tall grasses, tules, or willows for nesting.	Record for this species located approximately 2.3 miles west of the project site (Occurrence No. 116).	There are no areas of extensive marshes within the project area. This species is unlikely to occur onsite.
Grasshopper sparrow <i>Ammodramus savannarum</i>	Fed: -- State: Other: *	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	No CNDDDB records within the CNDDDB search area.	Grassland habitat suitable for nesting and foraging found on Mangles property. This species may occur onsite (see report text for further analysis).
Suisun song sparrow <i>Melospiza melodia maxillaris</i>	Fed: -- State: CSC Other: *	Resident of brackish marshes surrounding Suisun Bay. Prefers cattails, tules, sedges, and pickleweed. Also found in tangles bordering sloughs.	Record for this species located approximately 0.6 miles south of the project site (Occurrence No. 35).	None. No suitable habitat in project area.
San Pablo song sparrow <i>Melospiza melodia samuelis</i>	Fed: -- State: CSC Other:	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the California marshes; nests in grindelia bordering slough channels.	Record for this species located approximately 7.2 miles southwest of the project site (Occurrence No. 4).	None. Suitable habitat is not present in project area.
Tricolored blackbird <i>Agelaius tricolor</i>	Fed: -- State: CSC Other: *	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Record for this species located approximately 5.3 miles east of the project site (Occurrence No. 243).	Wetlands and grassland habitats found on the Mangles property provide potential habitat. This species could potentially nest onsite (see report text for further analysis).

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### Special-Status Wildlife Species Known to Occur in the Vicinity of the North Connector Project

Species	*Status	Habitat	Closest Locations	Probability on Project Site
<b>Mammals</b>				
Suisun shrew <i>Sorex ornatus sinuosus</i>	Fed: -- State: CSC Other:	Inhabits tidal marshes in the northern end of San Pablo and Suisun Bays. Requires dense, low cover of plants, driftwood, and other litter above the mean high tide line.	Record for this species located approximately 0.6 miles south of the project site (Occurrence No. 6).	None. Suitable habitat is not present in project area.
Western red bat <i>Lasiurus blossevillii</i>	Fed: State: CSC Other:	Prefers riparian areas where they roost in tree foliage. This bat is occasionally captured in riparian habitats dominated by cottonwoods, oaks, sycamores, and walnuts and is rarely found in desert habitats.	Record for this species located approximately 9.0 miles southeast of the project site (Occurrence No. 69).	Potential roost habitat is present within the project area. Species may also forage within the project area (see report text for further analysis).
Hoary bat <i>Lasiurus cinereus</i>	Fed: State: Other:	Generally found in wooded areas with access to open areas for foraging.	Record for this species located approximately 2.2 miles east of the project site (Occurrence No. 122).	Potential roost habitat is present within the project area. Species may also forage within the project area (see report text for further analysis).
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	Fed: -- State: CSC Other:	Occurs in humid coastal regions of northern and central California. Roosts in limestone caves, lava tubes, mines, and buildings. Extremely sensitive to disturbance.	No CNDDDB records within the CNDDDB search area.	Unlikely to occur within the project area.
Pallid bat <i>Antrozous pallidus</i>	Fed: - State: CSC Other:	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in dry habitats with rocky areas for roosting.	Record for this species located approximately 8.3 miles northwest of the project site (Occurrence No. 223).	Potential roost habitat is present within the project area. Species may also forage within the project area (see report text for further analysis).
Greater western mastiff bat <i>Eumops perotis californicus</i>	Fed: -- State: CSC Other:	Inhabits open habitats including conifer and broad-leaved woodlands, coastal scrub, chaparral, and grassland. Roosts in crevices, high buildings, trees, and tunnels.	No CNDDDB records within the CNDDDB search area.	Unlikely to occur within the project area.

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### Special-Status Wildlife Species Known to Occur in the Vicinity of the North Connector Project

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	Fed: FE State: CE Other: *	Inhabits saline emergent wetlands in the San Francisco Estuary. Prefers pickleweed marshes. Requires higher areas for escaping high water.	Record for this species located approximately 2.3 miles east of the project site (Occurrence No. 114).	None. Suitable habitat is not present in project area.
American badger <i>Taxidea taxus</i>	Fed: - State: CSC Other:	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils & open, uncultivated ground. Prey on burrowing rodents. Dig burrows.	Record for this species located approximately 7.8 miles northwest of the project site (Occurrence No. 203).	Low potential to occur on Mangels property.

**\*Status**

**Federal:**

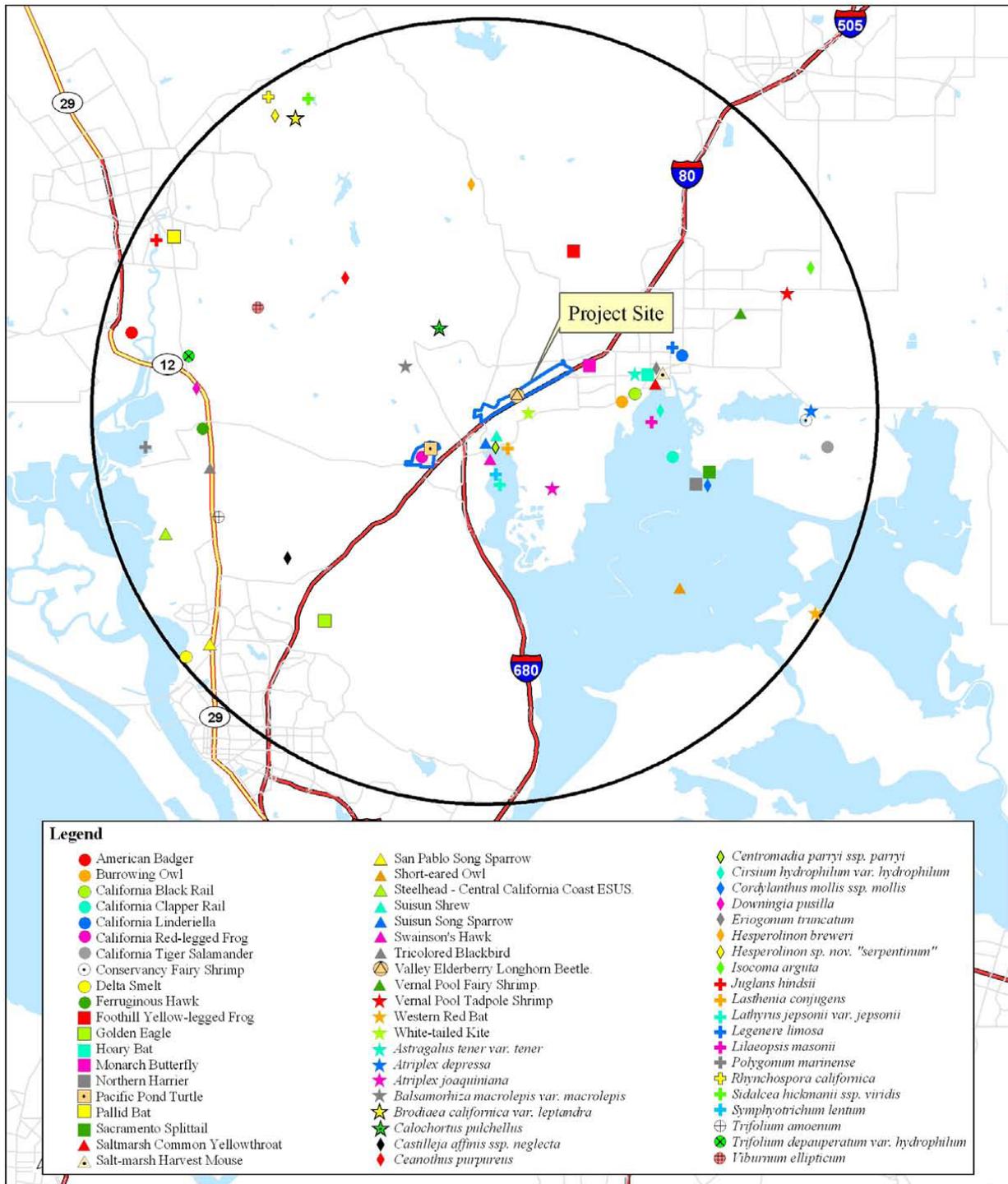
FE - Federal Endangered  
 FT - Federal Threatened  
 FPE - Federal Proposed Endangered  
 FPT - Federal Proposed Threatened  
 FC - Federal Candidate  
 FPD - Federally Proposed for delisting

**State:**

CE - California Endangered  
 CT - California Threatened  
 CR - California Rare  
 CC - California Candidate  
 CSC - California Species of Special Concern

**\*Other:**

Most birds have protection under the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. A few species, such as the monarch butterfly and "California Fully Protected Animals," may be protected by policies of the California Department of Fish and Game.



**Figure 1. Special-Status Species Within 10-miles of the North Connector Project Site**