

Creek. USACE jurisdictional other waters were identified within the BSA along a drainage ditch with connectivity to SLO Creek near the northern section of the proposed project. A small amount of other waters were also delineated for stormwater drainage features (typically culverted outlets) that convey water to SLO Creek and exhibited OHWMs. CDFG jurisdictional areas were also identified and mapped along the SLO Creek riparian corridor and its tributaries as well as the aforementioned drainage ditch. Jurisdictional wetlands and other waters in the BSA have been mapped in the Wetland Assessment (refer to Appendices F and K) and quantified in this NES in Table 4. Note that these quantities may not match the habitat impacts quantified in Table 3 due to differences between which SWCA mapped habitats by absolute cover and the parameters by which the various regulatory agencies delineate their jurisdiction in the field.

Table 4. Jurisdictional Areas in the BSA

Jurisdictional Areas	ft ²	m ²	ac
Grand Totals (SLO Creek and Drainage Ditch)			
USACE Jurisdictional Wetlands (SLO Creek)	251,292	23,345	5.77
USACE Jurisdictional Other Waters	4,415	410.2	0.10
CDFG Jurisdictional Areas ¹	1,097,241	101,937	25.2

¹ CDFG jurisdiction includes USACE areas up to the ordinary high water mark and typically extends to the top of bank or outer edge of riparian vegetation, whichever is greater.

Riparian Corridors

Riparian corridors are considered sensitive and important habitats by various regulatory agencies. Within the BSA, riparian corridor areas include SLO Creek and sections of tributaries. The diversity of wildlife species occurring within riparian habitats is typically high and these habitats are sensitive to disturbance. Riparian vegetation provides important roosting and foraging habitat for migratory bird species, regulates water temperatures, and provides, directly or indirectly, food sources for aquatic organisms. Riparian habitats serve as migratory corridors for wildlife, and as such, are important in linking non-contiguous or fragmented wildlife habitats. CDFG jurisdictional areas have been mapped in the Wetland Assessment (refer to Appendices F and K) and quantified in this NES in Table 4. Portions of these riparian areas may be considered jurisdictional by USACE up to the OHWM of drainage channels.

3.1.4.3. MIGRATION AND TRAVEL CORRIDORS

SLO Creek provides a migration and travel corridor for steelhead trout and other aquatic species. The riparian corridor of SLO Creek contains sufficient tree canopy that provides suitable travel corridors for various birds and terrestrial wildlife species passing through surrounding developed areas. More mobile animal species may traverse surrounding developed areas, but at a greater risk of exposure. No apparent barriers to aquatic species migration were observed within the BSA.

3.1.4.4. INVASIVE SPECIES

A total of 36 invasive plant species as identified by the California Invasive Plant Council (Cal-IPC) Inventory (2007) were observed within the BSA. Four exotic plant species were identified with an invasiveness rating of High were observed in the BSA (refer to List of Species Observed in Appendix J): giant reed (*Arundo donax*), red brome (*Bromus madritensis*), iceplant (*Carpobrotus edulis*), and fennel (*Foeniculum vulgare*). A total of 20 plant species observed within the BSA with a Cal-IPC invasiveness rating of Moderate and 12 species with an invasiveness rating of Limited were also observed in the BSA. The distribution of these invasive plant species is scattered throughout the BSA, with notable concentrations of giant reed along particular areas of the SLO Creek riparian corridor. LCSLO has been actively eradicating giant reed along the project pathway in recent years.

3.2. Regional Species and Habitats of Concern

“Regional species” and “habitats of concern,” as used within this NES, are terms synonymous with “special-status” or “sensitive” species and habitats. Special-status species include taxa that are 1) federally or state listed as endangered, threatened, or rare; 2) candidates for federal or state listing as endangered, threatened or rare; 3) proposed for federal or state listing as endangered, threatened, or rare; or, 4) considered special concern species by the federal government [i.e., former USFWS Federal Species of Concern (FSC)] or the CDFG (i.e., California Special Concern species) (Caltrans, 2000), such as those that appear on the CNDDDB Special Animals List (CDFG, 2006-2008). Sensitive species also include taxa afforded protection or considered sensitive under various laws (e.g., CEQA, MBTA) or under sections of the California Fish and Game Code (e.g., nesting birds), and those taxa recognized as locally important or sensitive by the CNPS (Tibor, 2001; CNPS, 2006-2008) or the scientific community. Sensitive habitats include those that are regulated or considered sensitive by federal, state, and/or local agencies or CEQA.

The San Luis Obispo area is recognized by regulatory agencies, public and private interest groups, academics, and various biologists as a region of substantial biological importance. Numerous marine, freshwater, anadromous, and terrestrial special-status species are extant in the region or known to have once occurred in the region based on historical records. Several special-status plants are endemic to San Luis Obispo County and outlying areas. Coastal areas, streams, wetlands, riparian zones, and oak woodlands are recognized as especially sensitive. Because of the effects resulting from development in the region associated with the construction of buildings, roads, and highway improvements, special-status species can be particularly susceptible to the pressures of habitat loss and disturbance.

The known occurrences of sensitive species and sensitive habitats have been inventoried and mapped, to varying degrees of accuracy, by the CNDDDB (2006-2008). Ecological and life history information for sensitive species treated within this NES were summarized by referencing the pertinent literature (cited in text).

3.2.1. Regional Plant Species of Concern

The CNDDDB (2006-2008) documents 58 special-status (federally listed, state listed, and/or CNPS List 1B or 2) plant taxa as occurring within the U.S. Geological Survey (USGS) Pismo Beach quadrangle and the surrounding quadrangles. No additional federally listed plant species were included on the federal species list provided by the USFWS for the project area in December 2012. Southern California black walnut, a CNPS List 4 species (a watch list for species of limited distribution) was also observed in the BSA. Monterey pine, a CNPS List 1B species, was observed in landscaped areas of the BSA but these are planted specimens and not considered sensitive for this NES.

A total of 65 special-status plant taxa have been considered for this NES. The names and legal status of each of these special-status plant taxa are identified in Table 5, as well as a general description of the habitat requirements for each, and whether suitable habitat is present (P) or absent (A) in the BSA. The rationale section summarizes the potential for each to occur within the BSA or be affected by the project.

3.2.2. Regional Animal Species of Concern

The CNDDDB (2006-2008) documents 45 special-status animal taxa (federally listed, state-listed, California Fully Protected, California Special Concern species, CNDDDB Special Animals, and/or protected by the MBTA and California Fish and Game Code)

as occurring within the USGS Pismo Beach quadrangle and surrounding quadrangles. One additional federally listed wildlife species, southwestern willow flycatcher (*Empidonax traillii extimus*), was present on the federal species list provided by the USFWS for the project area in December 2012. Other sensitive animal species known to have potential to occur in the vicinity of the BSA were also added, including two-striped garter snake (*Thamnophis hammondi*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia brewsteri*), and yellow-breasted chat (*Icteria virens*). In addition, the “other nesting birds” category has been added for the numerous species of birds with potential for occurrence in the BSA protected by the MBTA and California Fish and Game Code Section 3503, and the “other roosting bats” category has been added for the various bat species that could potentially roost within the BSA.

A total of 67 special-status animal taxa have been considered for this NES. The names and legal status of each of these special-status animal taxa are identified in Table 6, including a general description of the habitat requirements for each, and whether suitable habitat is present (P) or absent (A) in the BSA. The rationale section summarizes the potential for each to occur within the BSA or be affected by the project.

3.2.3. Regional Habitats of Concern

The CNDDDB (2006-2008) documents nine sensitive habitats as occurring within the USGS Pismo Beach quadrangle and the surrounding quadrangles. The names of each of these sensitive habitats are identified in Table 7, including a general description of each habitat. The rationale section summarizes whether these habitats of concern have potential for occurrence within the BSA.

Table 5. Special-status Plant Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
Hoover's bent grass	<i>Agrostis hooveri</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Chaparral, cismontane woodland, and valley and foothill grassland habitats on usually sandy soil Flowers April-July 60-600 meters 	A	<ul style="list-style-type: none"> BSA elevation is likely low for the species. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Arroyo de la Cruz manzanita	<i>Arctostaphylos cruzensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Broad-leaved upland forest, coastal bluff scrub, closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grassland habitats; sandy soil bluffs Flowers December-March 30-310 meters 	A	<ul style="list-style-type: none"> No suitable sandy bluff habitat occurs within the BSA. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Santa Lucia manzanita	<i>Arctostaphylos luciana</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Chaparral and cismontane woodland habitats on shale soil Flowers February-March 350-850 meters 	A	<ul style="list-style-type: none"> No suitable shale soil habitat occurs within the BSA and the BSA elevation is too low. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Morro manzanita	<i>Arctostaphylos morroensis</i>	FT / -- / 1B.1	<ul style="list-style-type: none"> Chaparral, cismontane woodland, coastal dune, and coastal scrub habitats on sandy loam soil Flowers December-March 5-205 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
Oso manzanita	<i>Arctostaphylos osoensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral, cismontane woodland (dacite porphyry buttes) • Flowers February-March • 300-500 meters 	A	<ul style="list-style-type: none"> • No suitable dacite soil habitat occurs within the BSA and the BSA elevation is too low. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Pecho manzanita	<i>Arctostaphylos pechoensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Closed-cone coniferous forest, chaparral, coastal scrub on siliceous shale soil • Flowers November-March • 125-850 meters 	A	<ul style="list-style-type: none"> • No suitable shale soil habitat occurs within the BSA and the BSA elevation is too low. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Santa Margarita manzanita	<i>Arctostaphylos pilosula</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Closed-cone coniferous forest, chaparral, cismontane woodland on shale soil • Flowers December-March • 170-1,100 meters 	A	<ul style="list-style-type: none"> • No suitable shale soil habitat occurs within the BSA and the BSA elevation is too low. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
sand mesa manzanita	<i>Arctostaphylos rudis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral (maritime) and coastal scrub habitats in coastal areas on sandy soil • Flowers November-February • 25-230 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
dacite manzanita	<i>Arctostaphylos tomentosa</i> ssp. <i>daciticola</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Chaparral, cismontane woodland (dacite porphyry buttes) • Flowers in March • 100-300 meters 	A	<ul style="list-style-type: none"> • No suitable dacite soil habitat occurs within the BSA and the BSA elevation is too low. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
Wells's manzanita	<i>Arctostaphylos wellsii</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Closed-cone coniferous forest and chaparral habitats on sandstone • Flowers December-April • 30-400 meters 	A	<ul style="list-style-type: none"> • No suitable sandstone soil habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
marsh sandwort	<i>Arenaria paludicola</i>	FE / SE / 1B.1	<ul style="list-style-type: none"> • Bogs and ferns along with freshwater marshes and swamps • Flowers May-August • 3-170 meters 	P	<ul style="list-style-type: none"> • Marginal marsh habitat occurs within the BSA along the streambed of SLO Creek. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Miles's milk-vetch	<i>Astragalus didymocarpus</i> var. <i>milesianus</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Coastal scrub habitat • Flowers March-June • 20-90 meters 	P	<ul style="list-style-type: none"> • Suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chenopod scrub, meadows and seeps, playas, and valley and foothill grassland (alkaline soil) • Flowers April-October • 1-835 meters 	A	<ul style="list-style-type: none"> • No suitable alkaline soil habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Luis mariposa lily	<i>Calochortus obispoensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral, coastal scrub, and valley and foothill grassland habitats on serpentine soil • Flowers May-July • 75-730 meters 	A	<ul style="list-style-type: none"> • BSA elevation likely too low for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Luis Obispo mariposa lily	<i>Calochortus simulans</i>	-- / -- / 1B.3	<ul style="list-style-type: none"> • Chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland habitats on sandy, often granitic, sometimes serpentine soil • Flowers April-May • 395-1,100 meters 	A	<ul style="list-style-type: none"> • BSA elevation is too low for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
Cambria morning glory	<i>Calystegia subacaulis</i> ssp. <i>episcopalis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral and cismontane woodland habitats • Flowers April-May • 60-500 meters 	A	<ul style="list-style-type: none"> • BSA elevation likely too low for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Luis Obispo sedge	<i>Carex obispoensis</i>	--/--/1B.2	<ul style="list-style-type: none"> • Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland habitats with serpentine seeps • Flowers April-June • 10-790 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Obispo Indian paintbrush	<i>Castilleja densiflora</i> ssp. <i>obispoensis</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Valley and foothill grassland habitat • Flowers April-May • 10-400 meters 	P	<ul style="list-style-type: none"> • Suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
California jewel-flower	<i>Caulanthus californicus</i>	FE / SE / 1B.1	<ul style="list-style-type: none"> • Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; non-alkaline soils • Flowers February-May • 70-1,000 meters 	A	<ul style="list-style-type: none"> • Grassland habitat occurs within the BSA, but it is outside of the range for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Congdon's tarplant	<i>Centromadia parryi</i> ssp. <i>congdonii</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Valley and foothill grassland habitat on alkaline soil • Flowers May-November • 1-230 meters 	A	<ul style="list-style-type: none"> • No suitable alkaline soil habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
dwarf soaproot	<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral habitat on serpentine soil • Flowers May-August • 45-800 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
purple amole	<i>Chlorogalum purpureum</i> var. <i>purpureum</i>	FT / -- / 1B.1	<ul style="list-style-type: none"> • Chaparral, cismontane woodland, valley and foothill grassland; gravelly, clay • Flowers April-June • 205-350 meters 	A	<ul style="list-style-type: none"> • Grassland habitat occurs within the BSA, but it is outside of the range for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Camatta Canyon amole	<i>Chlorogalum purpureum</i> var. <i>reductum</i>	FT / -- / 1B.1	<ul style="list-style-type: none"> • Cismontane woodland • Flowers April-May • 600-620 meters 	A	<ul style="list-style-type: none"> • Woodland habitat occurs within the BSA, but it is outside of the range for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Brewer's spineflower	<i>Chorizanthe breweri</i>	-- / -- / 1B.3	<ul style="list-style-type: none"> • Closed coniferous forest, chaparral, cismontane woodland, and coastal scrub habitats on gravelly or rocky serpentine soil • Flowers May-August • 45-800 meters 	A	<ul style="list-style-type: none"> • No suitable habitat on appropriate soils occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Monterey spineflower	<i>Chorizanthe pungens</i> var. <i>pungens</i>	FT / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral (maritime), cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland in sandy soils • Flowers April-June (July) • 3-450 meters 	A	<ul style="list-style-type: none"> • Woodland, coastal scrub, and grassland habitats occur within the BSA, but are outside of the range for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
straight-awned spineflower	<i>Chorizanthe rectispina</i>	-- / -- / 1B.3	<ul style="list-style-type: none"> • Chaparral, cismontane woodland, and coastal scrub habitats • Flowers May-July • 85-1,035 meters 	A	<ul style="list-style-type: none"> • BSA elevation likely too low for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
Chorro Creek bog thistle	<i>Cirsium fontinale</i> var. <i>obispoense</i>	FE / SE / 1B.2	<ul style="list-style-type: none"> • Chaparral and cismontane woodland habitats in association with serpentine seeps • Flowers February-July • 35-380 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
La Graciosa thistle	<i>Cirsium lonchloepis</i>	FE / ST / 1B.1	<ul style="list-style-type: none"> • Cismontane woodland, coastal dunes, coastal scrub, marshes and swamps, and valley and foothill grasslands on sandy, mesic soil • Flowers May-August • 4-220 meters 	P	<ul style="list-style-type: none"> • Marginal marsh habitat occurs in the BSA. • Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
surf thistle	<i>Cirsium rhotophilum</i>	-- / ST / 1B.2	<ul style="list-style-type: none"> • Coastal bluff scrub and coastal dune habitats • Flowers April-June • 3-60 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
California saw-grass	<i>Cladium californicum</i>	-- / -- / 2.2	<ul style="list-style-type: none"> • Meadows and seeps, marshes and swamps; alkaline or freshwater • Flowers June-September • 60-600 meters 	A	<ul style="list-style-type: none"> • BSA elevation likely too low for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Pismo clarkia	<i>Clarkia speciosa</i> ssp. <i>immaculata</i>	FE / SR / 1B.1	<ul style="list-style-type: none"> • Cismontane woodland, valley foothill grasslands, and in openings along the margins of chaparral on sandy soil • Flowers May-July • 25-185 meters 	P	<ul style="list-style-type: none"> • Marginal habitat occurs within the BSA but the species is not known to occur in the vicinity of San Luis Obispo. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
salt marsh bird's-beak	<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	FE / SE / 1B.2	<ul style="list-style-type: none"> Coastal dunes, marshes and swamps (coastal salt) Flowers May-October 0-30 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
leafy tarplant	<i>Deinandra increscens</i> ssp. <i>foliosa</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Valley and foothill grasslands Flowers June-September 300-500 meters 	A	<ul style="list-style-type: none"> BSA elevation is too low for the species. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
dune larkspur	<i>Delphinium parryi</i> ssp. <i>foliosa</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Maritime chaparral and coastal dune habitats Flowers April-May 0-200 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
beach spectaclepod	<i>Dithyrea maritime</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Coastal dune and coastal scrub habitats with sandy soil Flowers March-May 3-50 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
San Luis Obispo serpentine dudleya	<i>Dudleya abramsii</i> ssp. <i>bettinae</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Chaparral, coastal scrub and valley and foothill grassland habitats on serpentinite and rocky soil Flowers May-July 20-180 meters 	P	<ul style="list-style-type: none"> Suitable habitat occurs within the BSA. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
San Luis Obispo dudleya	<i>Dudleya abramsii</i> ssp. <i>murina</i>	-- / -- / 1B.3	<ul style="list-style-type: none"> • Chaparral, cismontane woodland, and valley and foothill grassland habitats on serpentinite soil • Flowers May-June • 90-440 meters 	A	<ul style="list-style-type: none"> • BSA elevation likely too low for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Blochman's dudleya	<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland habitats on rocky soil, often clay or serpentine • Flowers April-June • 5-450 meters 	P	<ul style="list-style-type: none"> • Suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Blochman's leafy daisy	<i>Erigeron blochmaniae</i>	--/--/1B.2	<ul style="list-style-type: none"> • Coastal dune and coastal scrub habitats (coastal areas) • Flowers July-August • 3-45 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Indian Knob mountainbalm	<i>Eriodictyon altissimum</i>	FE / SE / 1B.1	<ul style="list-style-type: none"> • Maritime chaparral, cismontane woodland, coastal scrub habitats on sandstone • Flowers March-June • 80-270 meters 	A	<ul style="list-style-type: none"> • BSA elevation likely too low for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Hoover's button-celery	<i>Eryngium aristulatum</i> var. <i>hooveri</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Vernal pools • Flowers in July • 3-45 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
San Benito fritillary	<i>Fritillaria viridea</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral on serpentine soil • Flowers March-May • 200-1,525 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA and the BSA elevation is too low. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
mesa horkelia	<i>Horkelia cuneata</i> <i>ssp. puberula</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Chaparral, cismontane woodland, and coastal scrub habitats on sandy or gravelly soil • Flowers February-September • 70-810 meters 	A	<ul style="list-style-type: none"> • Elevation of the BSA is likely too low for the species. • Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Kellogg's horkelia	<i>Horkelia cuneata</i> <i>ssp. sericea</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Closed cone coniferous forest, coastal scrub, and maritime chaparral habitats on openings of sandy or gravelly soil • Flowers April-September • 10-200 meters 	P	<ul style="list-style-type: none"> • Suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
southern California black walnut	<i>Juglans californica</i> <i>var. californica</i>	-- / -- / 4.2	<ul style="list-style-type: none"> • Chaparral, cismontane woodland, coastal scrub (alluvial) • Flowers March-May • 50-900 meters 	P	<ul style="list-style-type: none"> • Suitable habitat occurs within the BSA. • Species was observed along the riparian corridor of SLO Creek during floristic surveys and may be impacted. • Measures to avoid or minimize impacts have been recommended. • No further studies recommended.
Coulter's goldfields	<i>Lasthenia glabrata</i> <i>ssp. coulteri</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Marshes and swamps (coastal salt), playas, vernal pools • Flowers February-June • 1-1220 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
Jones's layia	<i>Layia jonesii</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral and valley and foothill grassland habitats on clay or serpentine soils • Flowers March-May • 5-400 meters 	P	<ul style="list-style-type: none"> • Suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Joaquin wooly-threads	<i>Lembertia congdonii</i>	FE / -- / 1B.2	<ul style="list-style-type: none"> • Chenopod scrub and valley and foothill grassland; alkaline or loamy plains; sandy soils with grasses. • Flowers February-May • 60-800 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA, which is outside of the range for the species. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Luis Obispo County lupine	<i>Lupinus ludovicianus</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Chaparral and cismontane woodland habitats on sandstone or sandy soils • Flowers April-July • 50-525 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
Nipomo Mesa lupine	<i>Lupinus nipomensis</i>	FE / SE / 1B.1	<ul style="list-style-type: none"> • Coastal dune • Flowers March-May • 10-50 meters 	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
crisp monardella	<i>Monardella crispera</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Coastal dune and coastal scrub habitats • Flowers April-August • 10-120 meters 	A	<ul style="list-style-type: none"> • Coastal scrub within the BSA is inland and not suitable. • Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
San Luis Obispo monardella	<i>Monardella frutescens</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Coastal dune and coastal scrub habitats on sandy soil Flowers May-September 10-200 meters 	A	<ul style="list-style-type: none"> Coastal scrub within the BSA is inland and not suitable. Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Palmer's monardella	<i>Monardella palmeri</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Chaparral and cismontane woodland habitats on serpentine soil Flowers June-August 200-800 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA and the BSA elevation is too low. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Gambel's water cress	<i>Rorippa gambelii</i>	FE / ST / 1B.1	<ul style="list-style-type: none"> Freshwater or brackish marshes and swamps Flowers April-September 5-330 meters 	P	<ul style="list-style-type: none"> Suitable habitat occurs within the BSA. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Diablo Canyon blue grass	<i>Poa diaboli</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub/shale; sometimes burned areas Flowers March-April 120-400 meters 	A	<ul style="list-style-type: none"> BSA elevation is too low for the species. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
adobe sanicle	<i>Sanicula maritima</i>	-- / SR / 1B.1	<ul style="list-style-type: none"> Chaparral, coastal prairie, meadows and seeps, and valley and foothill grassland habitats on clay and serpentine soil. Flowers February-May 30-240 meters 	P	<ul style="list-style-type: none"> Suitable habitat occurs within the BSA. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
black-flowered figwort	<i>Scrophularia atrata</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, and riparian scrub habitats on diatomaceous soils Flowers March-July 10-500 meters 	A	<ul style="list-style-type: none"> No suitable diatomaceous soil habitat occurs within the BSA. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/ Absent in BSA	Rationale
rayless ragwort	<i>Senecio aphanactis</i>	-- / -- / 2.2	<ul style="list-style-type: none"> Chaparral, cismontane woodland, and coastal scrub habitats on alkaline soil January-April 15-800 meters 	A	<ul style="list-style-type: none"> No suitable alkaline soil habitat occurs within the BSA. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Parish's checkerbloom	<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	FC / -- / 1B.2	<ul style="list-style-type: none"> Chaparral, cismontane woodland, lower montane coniferous forest Flowers June-August 1000-2135 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA and the BSA elevation is too low. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
Cuesta Pass checkerbloom	<i>Sidalcea hickmanii</i> ssp. <i>anomala</i>	-- / SR / 1B.2	<ul style="list-style-type: none"> Closed-cone coniferous forest on serpentine soil Flowers May-June 600-800 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA and the BSA elevation is too low. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
most beautiful jewel-flower	<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> Chaparral, cismontane woodland, and valley and foothill grassland habitats on serpentinite soil Flowers (March) April-September (October) 94-1,000 meters 	A	<ul style="list-style-type: none"> Serpentinite habitat occurs within the BSA but the BSA elevation is likely too low. Species was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.
California seablite	<i>Suaeda californica</i>	FE / -- / 1B.1	<ul style="list-style-type: none"> Marshes and swamps (coastal salt) Flowers July-October 0-15 meters 	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species is not known to occur in or near the project area and was not observed during appropriately timed floristic surveys. Not expected to occur within the BSA. No further studies recommended.

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description,	Habitat Present/Absent in BSA	Rationale
San Bernardino aster	<i>Symphyotrichum defoliatum</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Cismontane woodland, coastal scrub coniferous forest, meadows and seeps, marshes and swamps, grasslands / near ditches, streams, springs • Flowers July-November • 2-2,040 meters 	P	<ul style="list-style-type: none"> • Suitable habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
saline clover	<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	-- / -- / 1B.2	<ul style="list-style-type: none"> • Marshes and swamps, valley and foothill grassland (mesic, alkaline), and vernal pools • Flowers April-June • 0-300 meters 	A	<ul style="list-style-type: none"> • No suitable mesic/alkaline soil habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.
caper-fruited tropidocarpum	<i>Tropidocarpum capparideum</i>	-- / -- / 1B.1	<ul style="list-style-type: none"> • Valley and foothill grassland habitats on alkaline hills • Flowers March-April • 1-455 meters 	A	<ul style="list-style-type: none"> • No suitable alkaline soil habitat occurs within the BSA. • Species was not observed during appropriately timed floristic surveys. • Not expected to occur within the BSA. • No further studies recommended.

Status Codes:**Federal:**

FE = Federally Endangered
 FT = Federally Threatened

State:

SE = State Endangered
 ST = State Threatened
 SR = State Rare

California Native Plant Society (CNPS):

List 1B = rare, threatened, or endangered in California and elsewhere.
 List 2 = rare, threatened, or endangered in California, but more common elsewhere.
 List 4 = limited distribution (watch list).

Threat Code:

.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
 .2 = Fairly endangered in California (20-80% occurrences threatened)
 .3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Habitat: Presence/Absence

A = absent; means no further work needed.
 P = present; general habitat is present and species may be present.

Table 6. Special-status Animal Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
Invertebrates					
Morro shoulderband (=banded dune) snail	<i>Helminthoglypta walkeriana</i>	FE / -- / --	Restricted to the coastal strand in the immediate vicinity of Morro Bay; inhabits the duff beneath <i>Happlopappus</i> , <i>Salvia</i> , <i>Dudleya</i> , and <i>Mesembryanthemum</i> .	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Not known to occur in or near the project area and was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Luis Obispo pyrg	<i>Pyrgulopsis taylori</i>	-- / -- / SA	Freshwater spring habitats in San Luis Obispo County.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Not known to occur in or near the project area and was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
mimic tryonia (=California brackishwater snail)	<i>Tryonia imitator</i>	-- / -- / SA	Coastal lagoons, estuaries, and salt marshes from Sonoma County, south to San Diego County.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	FE / -- / --	Clear to turbid vernal pools, including clear water depressions in sandstone, grass-bottom pools, and claypan pools.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT / -- / --	Vernal pools, usually less than 0.05 acres in size; swales or basalt flow depression pools in unplowed grasslands.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
California linderiella	<i>Linderiella occidentalis</i>	-- / -- / SA	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
sandy beach tiger beetle	<i>Cicindela hirticollis gravida</i>	-- / -- / SA	Areas adjacent to non-brackish water along the California coast to Mexico; inhabits sand in upper zone; larvae found in moist sand.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
globose dune beetle	<i>Coelus globosus</i>	-- / -- / SA	Inhabitant of coastal sand dunes from Sonoma County to Mexico. Inhabits foredunes and sand hummocks. Burrows beneath sand surface and most common beneath dune vegetation.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
white sand bear scarab beetle	<i>Lichnanthe albipilosa</i>	-- / -- / SA	Coastal sand dunes in the vicinity of dune lakes.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Rude's longhorn beetle	<i>Necydalis rudei</i>	-- / -- / SA	From sand dunes at Oso Flaco Lake; larvae live in root crown and lower stem area of mock heather (<i>Ericameria ericoides</i>).	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Atascadero June beetle	<i>Polyphylla nubila</i>	-- / -- / SA	Known only from sand dunes in San Luis Obispo County	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Oso Flaco robber fly	<i>Ablautus schlingeri</i>	-- / -- / SA	Occurs in sand dunes and other sandy areas in the vicinity of Oso Flaco Lake near the Oceano Dunes, California.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Oso Flaco flightless moth	<i>Areniscythis brachypteris</i>	-- / -- / SA	Open, coastal sand dune slopes in San Luis Obispo County; larvae live in tubes attached to buried plants at margin of active dunes.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
Oso Flaco patch butterfly	<i>Chlosyne leanira elegans</i>	-- / -- / SA	Sand dune habitat around Oso Flaco Lake, San Luis Obispo County; distribution corresponds to its food plant, Indian paintbrush (<i>Castilleja affinis</i>).	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
monarch butterfly	<i>Danaus plexippus</i>	-- / -- / SA	Coastal eucalyptus and Monterey cypress stands.	A	<ul style="list-style-type: none"> • No suitable winter roosting habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
El Segundo blue butterfly	<i>Euphilotes battoides allyni</i>	FE / -- / --	Occurs in coastal dune habitat in southern California. Host plant is <i>Eriogonum parviflorum</i> ; larvae feed on flowers and seeds; adults use it as major nectar source.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Smith's blue butterfly	<i>Euphilotes enoptes smithi</i>	FE / -- / --	Associated with coastal dunes and coastal sage scrub. Host plants for larvae and adult food plants are <i>Eriogonum latifolium</i> and <i>E. parviflorum</i> .	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Kern primrose sphinx moth	<i>Euproserpinus euterpe</i>	FT / -- / --	Found in the Walker Basin, Kern County, and several other locations (Carrizo Plain, Pinnacles National Monument). Host plant is <i>Camissonia contorta epilobioides</i> (evening primrose).	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Morro Bay blue butterfly	<i>Plebejus icarioides moroensis</i>	-- / -- / SA	Inhabits stabilized dunes and adjacent areas of coastal San Luis Obispo and Santa Barbara Counties; (<i>Lupinus chamissonis</i>) is larval food plant.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
Fish					
steelhead – south/central California coast ESU	<i>Oncorhynchus mykiss irideus</i>	FT, CH / -- / CSC	Optimally, clear, cool water with abundant instream cover, well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio.	P	<ul style="list-style-type: none"> Suitable habitat occurs within SLO Creek and marginal habitat may occur within its tributaries. Juvenile steelhead were observed during surveys. Impacts to riparian vegetation will occur, but there will be no in-stream impacts. Steelhead are not likely to be adversely affected.
arroyo chub	<i>Gila orcutti</i>	-- / -- / CSC	Occurs mainly in Los Angeles Basin south coastal streams; inhabits slow water stream sections of coastal streams with sand or mud substrate.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
tidewater goby	<i>Eucyclogobius newberryi</i>	FE / -- / CSC	Brackish shallow lagoons and lower stream reaches where water is fairly still, but not stagnant.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species was not observed during surveys. Known to occur near the mouth of SLO Creek to 2.5 miles upstream; therefore, not expected to occur within the BSA. No further studies recommended.
Amphibians					
California tiger salamander	<i>Ambystoma californiense</i>	FT / -- / CSC	Grassland or open woodland habitats, shallow ephemeral, semi-permanent, or occasionally permanent pools and ponds that fill during winter rains.	P (marginal upland habitat, unsuitable breeding habitat)	<ul style="list-style-type: none"> Marginal upland habitat may occur in and near the BSA, but SLO Creek has unsuitable breeding habitat and no vernal pool habitat is in the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
Coast Range newt	<i>Taricha torosa torosa</i>	-- / -- / CSC	Breed in ponds, reservoirs, and slow-moving streams. Frequent terrestrial habitats.	P	<ul style="list-style-type: none"> Marginal habitat occurs in SLO Creek. Species was not observed during surveys. Species has the potential to occur within the BSA. Avoidance and minimization measures have been recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
western spadefoot	<i>Spea (=Scaphiopus) hammondi</i>	-- / -- / CSC	Annual grassland habitats, open sandy floodplains, alluvial terraces.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
arroyo toad	<i>Bufo californicus</i>	FE / -- / CSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, with sandy banks, willows, cottonwoods, sycamores.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA, which is outside of the range for the species. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
California red-legged frog	<i>Rana aurora draytonii</i>	FT / -- / CSC	Aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 2.3 feet, and the presence of fairly sturdy underwater supports such as cattails.	P	<ul style="list-style-type: none"> Suitable habitat occurs year-round within the BSA in SLO Creek and uplands adjacent to SLO Creek. Suitable habitat may also occur within the tributaries to SLO Creek. Species was not observed during reconnaissance surveys. USFWS has indicated that protocol surveys are not necessary and presence can be inferred. Measures to avoid or minimize impacts have been recommended.
Reptiles					
southwestern pond turtle	<i>Actinemys marmorata pallida</i>	-- / -- / CSC	Quiet waters of ponds, lakes, streams, and marshes. Typically in the deepest parts with an abundance of basking sites.	P	<ul style="list-style-type: none"> Suitable habitat occurs year-round within the BSA in SLO Creek and may occur within the tributaries to SLO Creek after storm events. No pond turtles were observed during surveys, but the species is known to inhabit SLO Creek. Measures to avoid or minimize impacts have been recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
blunt-nosed leopard lizard	<i>Gambelia silus</i>	FE / SE, FP / --	Resident of sparsely vegetated alkali and desert scrub habitats in areas of low topographic relief; seeks cover in mammal burrows, under shrubs, or structures such as fence posts; does not excavate its own burrows.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA, which is outside of the range for the species. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
coast (California) horned lizard	<i>Phrynosoma coronatum (frontale)</i>	-- / -- / CSC	Frequents a wide variety of habitats; most commonly in lowlands along sandy washes with scattered low bushes.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
black legless lizard	<i>Anniella pulchra nigra</i>	-- / -- / CSC	Sand dunes and sandy soils in the Monterey Bay and Morro Bay regions. Inhabits sandy soil/dune areas with bush lupine and mock heather. Moist soil is essential.	A	<ul style="list-style-type: none"> No suitable habitat occurs within the BSA. Species is not known to occur in or near the project area and was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
silvery legless lizard	<i>Anniella pulchra pulchra</i>	-- / -- / CSC	Sandy or loose loamy soils under sparse vegetation. Soils with high moisture content.	P	<ul style="list-style-type: none"> Suitable habitat occurs within the BSA. Species was not observed during surveys. Species has the potential to occur within the BSA. Measures to avoid or minimize impacts have been recommended.
two-striped garter snake	<i>Thamnophis hammondi</i>	-- / -- / CSC	Coastal California from Salinas to Baja California, from sea level to 7,000 ft; highly aquatic; found in or near permanent freshwater, often along riparian streams with rocky beds and riparian growth.	P	<ul style="list-style-type: none"> Suitable habitat occurs within the BSA. Species was not observed during surveys. Species has the potential to occur within the BSA. Measures to avoid or minimize impacts have been recommended.
Birds					
brown pelican (nesting colony and communal roosts)	<i>Pelecanus occidentalis californicus</i>	FE, MBTA / SE, FP / --	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size.	A	<ul style="list-style-type: none"> No nesting habitat occurs within the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
California condor	<i>Gymnogyps californianus</i>	FE, MBTA / SE, FP / --	Nests in association with rocky cliffs. Forages in open savannah, grasslands, and foothill chaparral with cliffs, trees, and snags.	A	<ul style="list-style-type: none"> • No suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
Cooper's hawk	<i>Accipiter cooperii</i>	MBTA / -- / CSC	(Nesting) woodland, chiefly of open, interrupted, or marginal type; nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also nests in live oaks.	P	<ul style="list-style-type: none"> • Suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Species has the potential to occur within the BSA. • Measures to avoid or minimize impacts have been recommended.
sharp-shinned hawk	<i>Accipiter striatus</i>	MBTA / -- / CSC	(Nesting) ponderosa pine, black oak, riparian deciduous, mixed conifer, and pine habitats; prefers riparian areas; north-facing slopes with plucking perches are critical requirements; nests near water.	P	<ul style="list-style-type: none"> • Suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Species has the potential to occur within the BSA. • Measures to avoid or minimize impacts have been recommended.
ferruginous hawk	<i>Buteo regalis</i>	MBTA / -- / CSC	Open grasslands, sagebrush flats, desert scrub, low foothills and pinyon-juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice.	A	<ul style="list-style-type: none"> • No suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
white-tailed kite	<i>Elanus leucurus</i>	MBTA/ FP / --	Open grasslands, meadows, or marshlands for foraging close to isolated dense-topped trees for nesting and perching.	P	<ul style="list-style-type: none"> • Suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Species has the potential to occur within the BSA. • Measures to avoid or minimize impacts have been recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	Breeds in relatively dense riparian tree and shrub communities associated with rivers, swamps, wetlands, lakes, and reservoirs.	P	<ul style="list-style-type: none"> • Suitable riparian habitat occurs within the BSA along SLO Creek. • Species was not observed during surveys. • Nesting individuals are not expected to occur in the BSA. • Closest recent nesting was in 2010 in Kern County near Lake Isabella. • No further studies recommended.
bald eagle	<i>Haliaeetus leucocephalus</i>	FD / SE, FP / --	(Nesting and wintering) ocean shores, lake margins, and rivers for nesting and wintering. Most nests within one mile of water. Roosts communally in winter.	A	<ul style="list-style-type: none"> • No suitable nesting or wintering habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
prairie falcon	<i>Falco mexicanus</i>	MBTA / -- / CSC	Primarily perennial grasslands, savannahs, rangeland. Nests on sheltered ledges of cliffs. Not in coastal fog belt or coastline.	A	<ul style="list-style-type: none"> • No suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
California black rail	<i>Laterallus jamaicensis coturniculus</i>	MBTA / ST, FP	Mainly inhabits salt marshes bordering larger bays. Occurs in tidal salt marsh heavily grown with pickleweed; also in freshwater and brackish marshes, all at low elevation.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species is not known to occur in or near the project area and was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
California clapper rail	<i>Rallus longirostris obsoletus</i>	FE, MBTA / SE, FP	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species is not known to occur in or near the project area and was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
California least tern	<i>Sterna antillarum browni</i>	FE, MBTA / SE / --	Nests on open, sandy or gravelly shores near shallow-water feeding areas in estuaries.	A	<ul style="list-style-type: none"> No suitable nesting habitat occurs within the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FC, MBTA / SE / --	Forests to open riparian woodlands with thick understory.	P (riparian habitat present but not expected to nest in SLO County)	<ul style="list-style-type: none"> Riparian scrub habitat occurs within the BSA, but there are no known nesting populations or recent nesting records in SLO County. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
burrowing owl	<i>Athene cunicularia</i>	MBTA / -- / CSC	Open, dry grasslands, deserts and scrublands with low-growing vegetation. Subterranean nester, dependent upon burrowing mammals.	A	<ul style="list-style-type: none"> No suitable burrowing habitat occurs within the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
loggerhead shrike	<i>Lanius ludovicianus</i>	MBTA / -- / CSC	(Nesting) inhabits savannah, pinyon-juniper, and riparian woodlands, desert oases, scrub, and washes; prefers open country for hunting, perches for scanning, dense brush for nesting.	P	<ul style="list-style-type: none"> Suitable nesting habitat occurs within the BSA. Species was not observed during surveys. Species has the potential to occur within the BSA. Measures to avoid or minimize impacts have been recommended.
least Bell's vireo	<i>Vireo bellii pusillus</i> (nesting)	FE, MBTA / SE / --	(Nesting) summer resident of southern California in low riparian areas near water or river bottoms. Nests placed along margins of bushes or on twigs usually <i>Salix</i> , <i>Baccharis</i> , and mesquite.	P (riparian habitat present but not suitable)	<ul style="list-style-type: none"> Riparian scrub habitat occurs within the BSA, but is not suitable for this species. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.
California horned lark	<i>Eremophila alpestris actia</i>	MBTA / -- / CSC	Short grass prairie, hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	A	<ul style="list-style-type: none"> No suitable nesting habitat occurs within the BSA. Species was not observed during surveys. Not expected to occur within the BSA. No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
purple martin	<i>Progne subis</i>	MBTA / -- / CSC	Inhabits woodlands, low elevation coniferous forest of Douglas fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities and man-made structures.	P	<ul style="list-style-type: none"> • Suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Species has the potential to occur within the BSA • Measures to avoid or minimize impacts have been recommended.
yellow warbler	<i>Dendroica petechia brewsteri</i>	MBTA / -- / CSC	(Nesting) riparian plant associations; prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging; also nests in montane shrubbery in open conifer forests.	P	<ul style="list-style-type: none"> • Suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Species has the potential to occur within the BSA • Measures to avoid or minimize impacts have been recommended.
yellow-breasted chat	<i>Icteria virens</i>	MBTA / -- / CSC	(Nesting) summer resident of riparian thickets of willow and other vegetation near watercourses; nests in low, dense riparian habitats, consisting of willows, blackberry, and wild grape; forage and nest within 10 feet of the ground.	P	<ul style="list-style-type: none"> • Suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Species has the potential to occur within the BSA • Measures to avoid or minimize impacts have been recommended.
tricolored blackbird	<i>Agelaius tricolor</i>	MBTA / -- / CSC	Open water, tall and dense cattails or tules. Large nesting colonies near cropland and insect prey base.	A	<ul style="list-style-type: none"> • No suitable nesting habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
other nesting birds	Class Aves	MBTA / -- / CDFG Code Section 3503	Various habitats (nesting).	P	<ul style="list-style-type: none"> • Suitable nesting habitat occurs within the BSA. • Nesting birds were not observed during surveys. • Birds may nest within the BSA • Measures to avoid or minimize impacts have been recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
Mammals					
pallid bat	<i>Antrozous pallidus</i>	-- / -- / CSC	Deserts, grasslands, shrublands, woodlands, and forests; most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures.	P	<ul style="list-style-type: none"> • Marginal roosting habitat occurs in the BSA. • Roosting bats were not observed during surveys. • Bat species have the potential to occur within the BSA, but roosts are not likely to be impacted (Hillyard, pers. comm., 2006). • Measures to avoid or minimize impacts have been recommended.
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	-- / -- / CSC	Occurs throughout California in a variety of habitats. Most common in mesic sites. Roosts in the open hanging from walls and ceilings. Sensitive to disturbance.	A	<ul style="list-style-type: none"> • No suitable roosting habitat occurs in the BSA. • Roosting bats were not observed during surveys. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
western mastiff bat	<i>Eumops perotis californicus</i>	-- / -- / CSC	Occurs in many open arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	P	<ul style="list-style-type: none"> • Marginal roosting habitat occurs within the BSA. • Roosting bats were not observed during surveys. • Bat species have the potential to occur within the BSA, but roosts are not likely to be impacted. • Measures to avoid or minimize impacts have been recommended.
big free-tailed bat	<i>Nyctinomops macrotis</i>	-- / -- / CSC	Low-lying arid areas in southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	A	<ul style="list-style-type: none"> • No suitable roosting habitat occurs in the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
other roosting bats	Class Chiroptera	-- / -- / several CSC species	Roost in crevices, caves, mines, rock faces, bridges, and buildings.	P	<ul style="list-style-type: none"> • Marginal roosting habitat occurs within the BSA. • Roosting bats were not observed during surveys. • Bat species have the potential to occur within the BSA, but roosts are not likely to be impacted. • Measures to avoid or minimize impacts have been recommended.
Morro Bay kangaroo rat	<i>Dipodomys heermanni morroensis</i>	FE / SE, FP / --	Coastal sage scrub on the south side of Morro Bay. Needs sandy soil, but not active dunes; prefers early seral stages.	A	<ul style="list-style-type: none"> • Species was not observed during surveys. • No suitable coastal sage dune scrub habitat occurs within the BSA. • Not expected to occur within the BSA. • No further studies recommended.
giant kangaroo rat	<i>Dipodomys ingens</i>	FE / SE / --	Occurs in annual grasslands on the western side of the San Joaquin Valley; marginal habitat in alkali scrub. Needs level terrain and sandy loam soils for burrowing.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA, which is outside of the range for the species. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	-- / -- / CSC	Coastal scrub of southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. Particularly abundant in rock outcrops and rocky cliffs and slopes.	A	<ul style="list-style-type: none"> • Species was not observed during surveys. • No suitable coastal sage dune scrub habitat occurs within the BSA. • Not expected to occur within the BSA. • No further studies recommended.
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	FE / ST / --	Occurs in annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing and a suitable prey base.	A	<ul style="list-style-type: none"> • Grasslands and shrubby vegetation occur within the BSA, but are outside of the range for the species. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.

Common Name	Scientific Name	Federal / State / Other Status	General Habitat Description	Habitat Present/ Absent in BSA	Rationale
southern sea otter	<i>Enhydra lutris nereis</i>	FT / FP / --	Occurs in nearshore marine environments from about Año Nuevo, San Mateo County to Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	A	<ul style="list-style-type: none"> • No suitable habitat occurs within the BSA. • Species was not observed during surveys. • Not expected to occur within the BSA. • No further studies recommended.
American badger	<i>Taxidea taxus</i>	-- / -- / CSC	Occurs in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils; needs open, uncultivated ground; preys on burrowing rodents; digs burrows.	A	<ul style="list-style-type: none"> • Species was not observed during surveys. • No suitable habitat occurs within the BSA. • Not expected to occur within the BSA. • No further studies recommended.

Status Codes:**Federal:**

FE = Federal Endangered

FT = Federal Threatened

FC = Federal Candidate

FD = Federal Delisted

CH = Critical Habitat Designated in BSA

MBTA = Protected by Federal Migratory Bird Treaty Act

State:

SE = State Endangered

ST = State Threatened

FP = Fully Protected

California Department of Fish and Game:

CSC = California Special Concern species

CDFG Section 3503 = Protected by Section 3503 of CDFG code

SA = CNDDDB Special Animal

Table 7. Sensitive Habitats Potentially Occurring in the BSA

Name	General Description	Habitat Present / Absent	Rationale
CNDDB Sensitive Habitats			
Central Dune Scrub	A dense coastal scrub community of scattered shrubs, subshrubs, and herbs, generally less than one meter tall, often with considerable cover. Characteristic species include <i>Ericameria ericoides</i> , <i>Lupinus chamissonis</i> , and <i>Artemisia pycnocephala</i> .	A	The BSA is within an inland location and this habitat does not occur in the BSA.
Central Foredunes	Dominated by perennial grasses and low, often succulent, perennial herbs and subshrubs. Coverage is nearly complete to sparse/scattered. Typically with <i>Abronia</i> , <i>Ambrosia</i> , and <i>Cakile</i> occurring in exposed sites and <i>Calystegia</i> and <i>Camissonia</i> in sheltered sites.	A	The BSA is within an inland location and this habitat does not occur in the BSA.
Central Maritime Chaparral	A variable sclerophyllous (thick-leaved) scrub of moderate to high cover (50 to 100 percent) dominated by forms of <i>Arctostaphylos tomentosa</i> and other manzanita species.	A	This habitat does not occur within the BSA.
Coastal Brackish Marsh	Dominated by perennial, emergent, herbaceous monocots to 6 ft (2 m) tall. Cover is often complete and dense. Similar to salt and freshwater marshes with some plants characteristic of each. Usually at interior edges of coastal bays, estuaries, or lagoons.	A	The BSA is within an inland location and this habitat does not occur in the BSA.
Coastal and Valley Freshwater Marsh	Dominated by perennial, emergent monocots 13 to 16.5 ft (4.0 to 5.0 m) tall such as <i>Scirpus</i> and <i>Typha</i> , often forming closed canopies. Occurs in quiet sites (lacking current) permanently flooded by fresh water (rather than brackish, alkaline, or variable).	A	This habitat does not occur in the BSA.
Northern Coastal Salt Marsh	Highly productive, herbaceous, salt-tolerant hydrophytes forming moderate to dense cover up to 1 m tall. Usually with <i>Spartina</i> near the open water, <i>Salicornia</i> at mid-littoral elevations, and a richer mixture closer to high ground. Found along sheltered inland margins of bays, lagoons, and estuaries.	A	The BSA is within an inland location and this habitat does not occur in the BSA.
Northern Interior Cypress Forest	An open, fire-maintained scrubby forest dominated by one of several <i>Cupressus</i> spp.	A	This habitat does not occur in the BSA.
Serpentine Bunchgrass	Restricted to serpentinite rock sites. Open grassland dominated by perennial bunchgrasses. Cover is typically low, but markedly dominated by native species. Widely scattered throughout the Coast Ranges.	P	This habitat occurs just south of the East Fork of SLO Creek within the BSA but will be avoided and not impacted.

Name	General Description	Habitat Present / Absent	Rationale
Valley Needlegrass Grassland	A grassland to 2 ft (0.6 m) dominated by perennial <i>Nassella pulchra</i> . Native and introduced annuals occur between the perennials, often exceeding bunchgrasses in cover. Usually on fine-textured, often clay, soils, moist or waterlogged during winter, but dry in summer. Intergrades with Oak Woodlands on moister, better drained sites.	A	This habitat does not occur within the BSA.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

Impacts to habitats within the project BSA have been quantified based on the project Area of Direct Impact (ADI). The ADI was derived from the project plans presented as of March 2010 and includes the permanent and temporary impact areas listed below.

Permanent impact areas include the pathway trail including pavement and shoulders, graded bridge approaches, bridge piers and footings, retaining walls, traffic barriers, culverts, South Higuera widening and shoulders, and new permanent parking areas. Also quantified as permanent impacts are bridge spans where riparian trees must be removed for construction and on-going maintenance, landscape screen planting areas, and the entire trail ROW because permanent maintenance is assumed.

Temporary impact areas include all construction access routes and staging areas. Ten-foot (3-m) work buffers around riprap sites, parking lots, retaining walls, and traffic barrier installations have also been included in the temporary impact area.

The ADI was overlain with habitat mapping and with jurisdictional areas to quantify both permanent and temporary impacts. Estimated impacts to habitats characterized and described in Chapter 3.1.4.1 are quantified in Table 8.

Impacts to aquatic areas could result from hazardous material spills, and increased erosion and sedimentation. Construction of the new pathway and associated structures, the new bridges, and the State Route 101 overcrossing would permanently impact vegetation displaced by these structures and temporarily impact vegetation within the disturbance corridor needed by construction equipment and worker foot-traffic.

Table 8. Estimated Impacts to Habitats

Habitat Type	Permanent			Temporary			TOTAL		
	ft ²	m ²	ac	ft ²	m ²	ac	ft ²	m ²	ac
Agricultural Land	73,812	6,857	1.69	150,935	14,022	3.47	224,747	20,879	5.16
Ruderal (Disturbed)	63,619	5,910	1.46	193,611	17,987	4.44	257,230	23,897	5.9
Landscaping/Ornamental	4,025	374	0.09	14,758.13	1,371.07	0.34	18,783	1,745	0.43
Annual Grassland	32,339	3,004	0.74	138,678	12,884	3.18	171,017	15,888	3.92
Serpentine Bunchgrass	0	0	0	0	0	0	0	0	0
Coastal Scrub	22,625	2,102	0.52	60,379	5,609	1.39	83,004	7,711	1.91
Oak Woodland	0	0	0	305	28	0.01	305	28	0.01
Riparian	39,065	3,629	0.90	126,097	11,715	2.89	165,162	15,344	3.79
Seasonal Wetlands	2,483	231	0.06	2,030	189	0.05	4,513	420	0.11
Developed	29,399	2,731	0.67	127,213	11,818.44	2.92	156,612	14,549	3.59

4.1. Natural Communities of Special Concern

In this section, the discussion of natural communities of special concern has been organized according to regulatory jurisdiction, primarily with requirements relating to avoidance and minimization measures for habitat impacts that may be associated with conditions of various regulatory permits and federally designated critical habitats protected under FESA.

4.1.1. Discussion of Jurisdictional Wetlands, Other Waters, and Riparian Areas

Wetlands and other waters are considered sensitive and important habitats by USACE and other regulatory agencies. Wetlands function to improve water quality, detain storm water runoff, recharge groundwater, and provide wildlife habitats. Riparian areas are considered sensitive and important habitats by regulatory agencies. Riparian vegetation provides important roosting and foraging habitat for many migratory bird

species, regulates water temperatures, and provides food sources for aquatic organisms. These habitats serve as migratory corridors for wildlife, and as such, are important in linking non-contiguous or fragmented wildlife habitats. Wildlife species diversity within wetlands and riparian habitats can be high and these habitats are sensitive to disturbance.

Wetlands are typically within USACE jurisdiction if they support positive wetland indicators for all three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) below the OHWM or in areas that are hydrologically connected to a drainage or aquatic site. Jurisdictional other waters typically occur below the OHWM of a drainage channel and lack one or more of the three wetland parameters. As mentioned previously, riparian habitat may fall within USACE jurisdiction in areas below the OHWM along stream channels, and within CDFG jurisdiction toward the outer extent of riparian growth. Riparian habitat may also fall outside of the jurisdiction of these agencies if it occurs in isolated areas away from stream or other aquatic systems. Areas under USACE jurisdiction are also typically considered to be under jurisdiction of the RWQCB. The RWQCB may also include riparian areas and isolated aquatic areas supporting only one or two of the wetland parameters under their jurisdiction and permitting authority.

4.1.1.1. SURVEY RESULTS

As stated in Chapter 3.1.4.1, riparian and wetland habitats are present along the SLO Creek and its tributaries within the BSA. These riverine/freshwater marsh areas were delineated within the BSA as potential USACE jurisdictional wetlands, and a drainage ditch with connectivity to SLO Creek toward the northern section of the proposed project was delineated as potential other waters (refer to Appendix H). CDFG jurisdiction extends to the upper banks or outside edge of riparian vegetation for SLO Creek, whichever is greater. Seasonal wetlands mapped in the BSA did not exhibit all three necessary wetland parameters and were not delineated as USACE jurisdictional wetlands.

4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

The project has the potential to impact jurisdictional aquatic and riparian areas within the ADI. A variety of avoidance and minimization measures are recommended for any potential impacts to jurisdictional wetlands resulting from the project.

Recommended general avoidance and minimization measures include the following:

1. Prior to construction, the applicant will obtain a Section 1602 Streambed Alteration Agreement from CDFG, and coordinate with SWRCB/RWQCB

- regarding the need for a Section 13263(a) General WDR for project-related impacts that will occur in areas under the jurisdiction of these regulatory agencies. The bridges proposed for installation over SLO Creek and the agricultural drainage have been designed to avoid fill of the jurisdictional features. Considering this, a Section 404 Nationwide Permit from USACE and a Section 401 Water Quality Certification from RWQCB will not be required.
2. Prior to construction, the applicant will retain a qualified biological monitor(s) approved by all involved regulatory agencies to ensure compliance with avoidance and minimization measures within the project environmental documents. Monitoring will occur throughout the length of construction or as directed by the regulatory agencies. Full-time monitoring will occur during vegetation removal, and erosion control installation. Monitoring may be reduced to part time once construction activities are underway and the potential for additional impacts are reduced.
 3. Any construction activities across SLO Creek will take place between June 15 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Deviations from this work window will only be made with permission from the relevant regulatory agencies and Caltrans.
 4. Prior to construction, the project site will be clearly flagged or fenced so that the contractor is aware of the limits of allowable site access and disturbance. Areas within the designated project site that do not require regular access will be clearly flagged as off-limit areas to avoid/discourage unnecessary damage to sensitive habitats or existing vegetation within the project site.
 5. Prior to construction, an Erosion Control Plan and Stormwater Pollution Prevention Plan for the project will be prepared. Provisions of these plans shall be implemented during and after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.
 6. Prior to construction, the applicant will prepare a Hazardous Materials (HAZMAT) Response Plan to allow for a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

7. A conceptual Habitat Mitigation and Monitoring Plan (HMMP) has been prepared (refer to Appendix I). Prior to construction, the applicant shall prepare a comprehensive final HMMP to mitigate impacts to vegetation and natural habitats. The final HMMP will include the specific mitigation sites along the vicinity of the SLO Creek riparian corridor, based on the specific mitigation acreage required by regulatory agencies during the permitting process. The HMMP will be consistent with federal and state regulatory requirements and will be amended with any regulatory permit conditions, as required. The applicant will implement the HMMP as necessary during construction and immediately following project completion.
8. Prior to construction, plan for minimizing the trimming and removal of trees to the extent feasible. To avoid the potential for unnecessary removal or trimming of trees, any trees to be removed shall be marked with colored flagging or other suitable material. Trees to be trimmed shall be similarly marked but with a different color to differentiate them from trees to be removed. Unmarked trees shall not be removed or trimmed.
9. After construction, any loss of riparian trees shall be replaced at a minimum 3:1 replacement ratio, or as otherwise directed by regulatory agencies. Methods for riparian vegetation replacement shall be incorporated into the final HMMP.
10. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers (e.g., hay bales) will be installed between the project site and adjacent wetlands and other waters. No synthetic plastic mesh products shall be used in any erosion control materials. At a minimum, silt fencing will be checked and maintained on a daily basis throughout the construction period. The contractor will also apply adequate dust control techniques, such as site watering, during construction.
11. To control erosion during and after project implementation, the applicant will implement standard Caltrans Best Management Practices (BMPs).
12. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area and at least 65 ft (20 m) from wetlands, other waters, or other aquatic areas. This staging area will conform to BMPs applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills.

13. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Spill prevention and cleanup materials will be on-site at all times during construction.
14. During construction, the biological monitor(s) will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project site will be removed and properly disposed.
15. During construction, trash will be contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas. All vegetation removed from the construction site shall be taken to a certified landfill to prevent the spread of invasive species. If soil from weedy areas (such as areas with poison hemlock or other invasive exotic plant species) must be removed off-site, the top six inches containing the seed layer in areas with weedy species shall be disposed of at a certified landfill.
16. During construction, no pets will be allowed on the construction site.

4.1.1.3. PROJECT IMPACTS

Potential impacts to jurisdictional wetlands, other waters, and riparian areas were determined by overlaying project ADI were quantified by overlaying the project ADI with the delineation maps prepared for the Wetland Assessment (refer to Jurisdictional Area Impacts Maps in Appendix G).

All components of the new bridges, including the abutments and pilings, would avoid discharge of fill below the ordinary high water marks (OHWMs) of SLO Creek and the agricultural drainage. Riparian vegetation associated with the stream corridor under the jurisdiction of CDFG would be permanently impacted to accommodate the three proposed bridge crossings over SLO Creek. Temporary impacts to streamside vegetation could result from temporary worker foot-traffic, hazardous material spills, and the indirect effects of increased erosion and sedimentation.

Principal features of the project that would impact riparian areas include the construction of the proposed bridges, which would require the permanent removal of some trees and the trimming of others. Construction of the new trail alignment adjacent to sections of the riparian corridor may also require minimal trimming or removal of individual trees. Temporary impacts to riparian vegetation could result from unintentional limb injury from construction equipment. Indirect root zone

impacts from construction equipment are also a concern, but not expected as most cuts and fills associated with grading will be less than 1 to 2 feet.

Estimated impacts to jurisdictional wetlands, other waters, and riparian areas resulting from the Build Alternative are quantified in Table 9. Note that these quantities may not match the habitat impacts quantified in Table 8 due to differences between which SWCA mapped habitats by absolute cover and the parameters by which the various regulatory agencies delineate their jurisdiction in the field.

Table 9. Estimated Impacts to Jurisdictional Areas

Jurisdictional Area*	Permanent			Temporary			TOTAL		
	ft ²	m ²	ac	ft ²	m ²	ac	ft ²	m ²	ac
USACE Wetlands ¹	0	0	0	0	0	0	0	0	0
USACE Other Waters ²	0	0	0	0	0	0	0	0	0
CDFG/RWQCB jurisdiction ³	22,782	2,117	0.52	76,365	7,095	1.75	99,147	9,211	2.3

* Impact area = jurisdictional areas within the area of direct impact (ADI).

¹ Also includes RWQCB and CDFG jurisdictional areas below the ordinary high water mark (OHWM).

² Includes other non-wetland waters regulated by USACE, usually determined by limit of the OHWM.

³ CDFG jurisdiction extends from the thalweg of the channel to the top of bank or outer extent of riparian vegetation, whichever is greater. May also include areas under USACE jurisdiction (below the OHWM) and RWQCB jurisdiction (above the OHWM).

4.1.1.4. COMPENSATORY MITIGATION

The goal of compensatory mitigation is to prevent a net loss of wetlands or other aquatic resource acreage, function, and value. Several types of compensatory mitigation are available to offset impacts to jurisdictional areas, including creation, restoration, enhancement, and preservation. Compensatory mitigation can either be on-site or off-site, although on-site mitigation is typically preferred (Cylinder et al., 2004).

Onsite mitigation for impacts to wetlands is proposed at a 1:1 ratio for temporary impacts and at a 2:1 ratio for permanent impacts, unless otherwise directed by regulatory agencies. Off-site mitigation, if required, would be at a 3:1 replacement ratio. Temporary impacts to riparian vegetation would be mitigated at a 1:1 ratio and permanent impacts would be mitigated at a 2:1 ratio, unless otherwise directed by regulatory agencies. Mitigation is anticipated to be on-site and primarily in the form of restoration and enhancement. The HMMP will detail such mitigation and be

structured to be consistent with Caltrans approval standards and mitigation requirements from, RWQCB, and CDFG. The HMMP will be prepared when full construction plans are prepared, and will be finalized through the permit review process with regulatory agencies. An outline and preliminary discussion of compensatory mitigation is included in the Conceptual HMMP in Appendix I.

4.1.1.5. CUMULATIVE EFFECTS

It has been estimated that California has lost approximately 90 percent of its historic wetland and riparian resources to alternative land use. Regulatory agencies have sought to offset the additional loss of riparian areas and wetlands with restoration and revegetation requirements for projects within their respective jurisdictions. It is anticipated that any cumulative effects to jurisdictional aquatic and riparian areas within the ADI as a result of implementing the project will be minimal, as impacts to these resources will be mitigated with the previously mentioned avoidance, minimization, and/or compensation measures, as well as provisions provided in the HMMP, and the implementation of BMPs.

The cumulative effect area identified for this analysis is the SLO Creek Watershed. As mentioned previously, many changes have taken place in the SLO Creek watershed since 1960, including urban and agricultural development that has channelized the watershed and encroached upon the riparian corridor in (Tamagni, 1995).

Implementation of the WMP for SLO Creek (City of San Luis Obispo and County of San Luis Obispo, 2003) also contributes to cumulative effects along SLO Creek, but with the goal of identifying management problems and management needs of corridor, including restoration where needed. These effects, in connection with the proposed project and considered in a cumulative context, are not expected to threaten the riparian corridor of SLO Creek. Restoration plantings as mitigation to offset the necessary temporary loss of riparian vegetation to create space for the new bridge will be consistent with the effort to improve and enhance the SLO Creek riparian corridor.

4.1.2. Discussion of Serpentine Bunchgrass Habitat

4.1.2.1. SURVEY RESULTS

Serpentine bunchgrass is a CNDDDB Sensitive Habitat (CNDDDB, 2006-2008). As stated previously, a small patch of serpentine bunchgrass habitat was identified just south of the East Fork of SLO Creek, on the Filipponi Ecological Reserve (refer to Appendix F).