4.8 BIOLOGICAL RESOURCES

4.8.1 ENVIRONMENTAL SETTING

IN THIS SECTION:

- Regulatory Setting
- Habitat Characteristics
- Special Status Species
- Sensitive Habitat Areas
- Wildlife Dispersal Corridors
- Resource Management Plans

This section is summarizes the biological background report prepared for the City of Santa Cruz by EcoSystems West Consulting Group (January, 2009) as part of the General Plan update and for this EIR. The technical report is included in Appendix F-1, which is available for review at the City of Santa Cruz Planning Department[1] and is also included on the Draft EIR CD and on the online version of the Draft EIR on the City's website at www.cityofsantacruz.com, Planning Department. The report provides information on special-status plant and wildlife species and sensitive habitats within the City's planning jurisdiction. The work effort included: review of all available documents; consultation with local experts; and conducting surveys of monarch butterfly habitat and coastal bird rookeries to update information on these resources. Additionally, a reconnaissance review was conducted on major vacant properties within the City. An accompanying geographic information system (GIS) database (geodatabase) provides spatial data created or updated as part of this work.

REGULATORY SETTING

Federal Regulations

The United States Fish and Wildlife Service (USFWS) is responsible for the protection of terrestrial and freshwater organisms through the federal Endangered Species Act and the Migratory Bird Treaty Act, while the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) is responsible for protection of anadromous fish (fish that live most of their adult life in saltwater but spawn in freshwater) and marine wildlife. The U.S. Army Corps of Engineers (ACOE) has primary responsibility for protecting wetlands and jurisdictional "other waters of the U.S." under Section 404 of the Clean Water Act.

[1] Located at 809 Center Street, Room 107, Santa Cruz, California during business hours: Monday through Thursday, 8 AM to 12 PM and 1 to 5 PM.

FEDERAL ENDANGERED SPECIES ACT

The federal Endangered Species Act (ESA) of 1973 (Title 16 United States Code, Section 1531 *et seq.*, as amended) prohibits federal agencies from authorizing, permitting or funding any action that would result in biological jeopardy to a species listed as Threatened or Endangered. Under the ESA, the USFWS's and NMFS's responsibilities include administering the ESA, which prohibits the "take" of federally listed endangered or threatened animal species without a permit. NMFS jurisdiction under the ESA is limited to the protection of marine mammals and fish and anadromous fish; all other species are within USFWS jurisdiction. ESA defines "take" to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Service regulations (50 CFR 17.3) define "harm" to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. "Harassment" is defined by the Service as an intentional or negligent action that creates the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

Exemptions to the prohibitions against take may be obtained through coordination with the USFWS through interagency consultation for projects with federal involvement (i.e., funded, authorized, or carried out by a Federal agency) pursuant to Section 7 of the ESA; or through the issuance of an incidental take permit under Section 10(a)(1)(B) of the ESA if the applicant submits a habitat conservation plan (HCP) that meets statutory requirements including components to minimize and mitigate impacts associated with the take. Section 7 of the ESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any listed species or result in the destruction of designated critical habitat. To ensure against jeopardy, each federal agency must consult with USFWS or NMFS, or both, if the federal agency determines that its action might affect a listed species. The ESA or its implementing regulations do not prohibit take of listed plant species. Designated "Critical Habitat" as published in the Federal Register as a formal rule, also receives protection under Section 7 of the ESA.

BIRDS OF CONSERVATION CONCERN

USFWS' *Birds of Conservation Concern* (BCC) (2008) was developed to fulfill the mandate of the 1988 amendment to the Fish and Wildlife Conservation Act (Public Law 100-653 (102 Stat. 3825) to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973" and to stimulate coordinated and proactive conservation actions among federal and state agencies and private entities (U.S. Fish and Wildlife Service, December 2008). The bird species included on the BCC lists include "nongame birds, gamebirds without hunting seasons, and Endangered Species Act candidate, proposed endangered or threatened, and recently delisted species".

MIGRATORY BIRD TREATY ACT

All migratory birds and their nests are federally protected under the Migratory Bird Treaty Act of 1918 (MBTA) (Title 16 United States Code, Section 703-712 as amended; 50 Code of Federal Regulations Section 21; and 50 Code of Federal Regulations Section 13) and by CDFG

codes that support the act. The MBTA makes it unlawful to "take" any migratory bird or raptor listed in the 50 Code of Federal Regulations Section 10, including their nests, eggs or products.

WETLANDS AND WATERS OF THE U.S.

The U.S. Army Corps of Engineers (ACOE) has regulatory authority for activities within wetlands under the Clean Water Act (CWA, 1977, as amended), which serves as the primary federal law protecting the quality of the nation's surface waters. Section 404 of the CWA establishes a program to regulate discharge of dredged or fill material into "waters of the United States," which is administered by the ACOE. The term "waters" includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations. In general, a permit must be obtained before fill can be placed in wetlands or other waters of the U.S. The type of permit depends on the amount of acreage and the purpose of the proposed fill, subject to discretion of the Corps. Under Section 404, general permits may be issued on a nationwide, regional, or state basis for particular types of activities that will have only minimal adverse impacts. Individual permits are required for projects with potentially significant impacts.

Under section 401 of the CWA, the California Regional Water Quality Control Boards RWQCB) have regulatory authority over actions in waters of the U.S. through issuance of water quality certifications, which are issued in combination with permits issued by the ACOE under section 404 of the Clean Water Act. A 401 Certification is required from the RWQCB whenever improvements are made within Jurisdictional Waters of the U.S.

State Regulations

The California Department of Fish and Game (CDFG) administers the California Endangered Species Act and protects streams and water bodies through the Streambed Alteration Agreement under Section 1600 of the California Fish and Game Code (CFGC 2005).

CALIFORNIA ENDANGERED SPECIES ACT

The 1984 California Endangered Species Act (CESA) (Fish & Game Code, Section 2050-2098) declares that deserving plant or animal species be given protection by the State because they are of ecological, historic, educational, recreational, aesthetic, economic, and scientific value to the people of the State. CESA establishes that it is state policy to conserve, protect, restore, and enhance endangered species and their habitats. Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the CDFG. Listed species are generally given greater attention during the land use planning process by local governments, public agencies, and landowners than are species that have not been listed.

CESA authorizes that "[p]rivate entities may take plant or wildlife species listed as endangered or threatened under FESA and CESA, pursuant to a federal incidental take permit issued in accordance with Section 10 of the FESA, if the CDFG certifies that the incidental take statement or incidental take permit is consistent with CESA (Fish & Game Code, Section 2080.1(a).

The Habitat Conservation Planning Branch of the CDFG administers the State's rare species program. The CDFG maintains lists of designated Endangered, Threatened and Rare plant and

animal species as designated by the California Fish and Game Commission or under the California Native Plant Protection Act (NPPA). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code; however, the CDFG has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification…."

Section 2081(b) and (c) of the CESA allows CDFG to issue an incidental take permit for a state-listed threatened and endangered species only if specific criteria are met. These criteria can be found in Title 14 CCR, Sections 783.4(a) and (b).

CDFG SPECIES OF SPECIAL CONCERN AND FULLY PROTECTED SPECIES

In addition to lists of designated Endangered, Threatened, and Rare plant and animal species, the CDFG maintains a list of animal "Species of Special Concern," most of which are species whose breeding populations in California may face extirpation. Although these species have no legal status under the CESA, the CDFG recommends considering these species during analysis of proposed project impacts to protect declining populations, and to avoid the need to list them as threatened or endangered in the future. These species may "be considered rare or endangered [under CEQA] if the species can be shown to meet the criteria". Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "Fully Protected" (California Fish & Game Code 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]. No Section 2081(b) permit may authorize the take of "fully protected" species and "specified birds." If a project is planned in an area where a species or specified bird occurs, an applicant must design the project to avoid all take; the CDFG cannot provide take authorization under CESA.

CDFG SENSITIVE HABITATS AND DESIGNATED ECOLOGICAL RESERVES

Sensitive habitats include: riparian habitat and corridors, wetlands, habitats for legally protected species and CDFG Species of Special Concern, areas of high biological diversity, areas providing important wildlife habitat, and unusual or regionally restricted habitat types. The California Natural Diversity Data Base (CNDDB), administered by CDFG, maintains a working list of "high priority" habitats for inventory (i.e., those habitats that are rare or endangered within the borders of California). CNDDB "high priority" habitats are generally considered sensitive habitats under CEQA.

Section 1580 of the Fish & Game Code presents the process and definition for Designated Ecological Reserves. Designated Ecological Reserves are significant wildlife habitats that are preserved in natural condition for the general public to observe and study.

CDFG STREAMBED ALTERATION AGREEMENTS

Jurisdictional authority of the CDFG over stream areas is established under Section 1600 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. Section 1602 of the Fish and Game Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake without notifying the CDFG, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. Typical activities that require a Streambed Alteration Agreement include excavation or fill placed

within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. The Wetlands Resources Policy of the CDFG states that the Fish and Game Commission will strongly discourage development in or conversion of wetlands, unless, at a minimum, project mitigation assures that there will be no net loss of either wetland habitat values or acreage.

NATIVE PLANT PROTECTION

The Native Plant Protection Act of 1977 (NPPA) and implementing regulations pursuant to Section 1900 et seq. of the Fish and Game Code designate rare and endangered plants, and provide specific protection measures for identified populations. It is administered by the CDFG. The NPPA was enacted to "preserve, protect and enhance endangered or rare native plants of this state." The NPPA defines a plant as endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes. A rare plant is defined as a plant species that, though not presently threatened with extinction, occurs in such small numbers throughout its range that it may become endangered if its present environment worsens. The NPPA prohibits the take or sale of rare and endangered species in California. However, the law includes broad exemptions to the prohibition of take, including emergency work necessary to protect life or property, agricultural operations, fire control measures, timber harvest operations authorized by a Timber Harvest Plan, removal of endangered or rare plants from a canal, lateral ditch, building site, road, or right-of-way, or the removal of endangered or rare plants by a public agency for the provision of public serves.

The California Native Plant Society has prepared and regularly updated an "Inventory of Rare and Endangered Vascular Plants of California." In general, the CDFG qualifies plant species on List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere) or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* for consideration under CEQA. Species on CNPS List 3 (Plants About Which We Need More Information--A Review List) or List 4 (Plants of Limited Distribution--A Watch List) may, but generally do not, qualify for consideration under CEQA.

Local Plans & Regulations

CITY AND STATE MANAGEMENT PLANS

Numerous resource management and park plans have been adopted by the City for management of City-owned open space areas. These include: management plans for Arana Gulch, Moore Creek Preserve, Neary Lagoon, and Pogonip; and plans prepared in conjunction with the California Department of Parks and Recreation: Natural Bridges State Beach, Twin Lakes State Beach, and Lighthouse Field State Beach. In addition the *City-Wide Creeks and Wetlands Management Plan* was adopted by the City in 2007 and certified by the California Coastal Commission as a Local Coastal Plan amendment in October 2007. The *San Lorenzo River Urban Management Plan* was adopted in 2003 for the portion of the river south of Highway 1. These plans are summarized further below in this section.

MUNICIPAL CODE REGULATIONS

Section 24.14.080 of the City's Municipal Code includes provisions to protect wildlife habitat and protected species for areas specified in the City's existing General Plan (Maps EQ-8 and EQ-9). Section 24.08.21 also regulates development adjacent to city watercourses, consistent with provisions of the adopted *City-Wide Creeks and Wetlands Management Plan*, including requirements for issuance of a "watercourse development permit."

The City of Santa Cruz also regulates heritage trees and shrubs through a Heritage Tree Ordinance. Chapter 9.56 of the City Municipal Code defines heritage trees, establishes permit requirements for the removal of a heritage tree, and sets forth tree replacement requirements as adopted by resolution by the City Council. City regulations require tree replacement for removal of a heritage tree to consist of replanting three 15-gallon size trees or one 24-inch size specimen for each heritage tree approved for removal.

HABITAT CHARACTERISTICS

The City of Santa Cruz is largely developed, but supports habitat areas primarily within the City-owned and managed greenbelt and open space areas and along creeks. Native trees such as coast live oak and redwood are widespread in developed areas, where they have often been planted. The key habitat types and locations within the City are summarized below. The classification and mapping follows generalized classification systems used by the CDFG and professionally recognized classification standards that are fully described in the technical biological report (EcoSystems West Consulting Group, January 2009). Vegetation types within the City are shown on Figure 4.8-1.[2]

In addition to developed areas, ruderal/landscaped/ornamental vegetation is found throughout the City, including some areas that are dominated by non-native tree groves with a dense canopy. The most widespread non-native tree in these stands is blue gum eucalyptus; other dominant, non-native trees include Monterey pine (native to small areas on the coast, including northwestern Santa Cruz County, but naturalized in the vicinity of Santa Cruz), Monterey cypress (native to the Monterey area, but naturalized in the vicinity of Santa Cruz), and acacias.

The City of Santa Cruz is situated along the Monterey Bay, which was designated a national marine sanctuary by the federal government in 1992. The Monterey Bay National Marine Sanctuary stretches from Cambria to the south to Marin County on the north, encompassing 276 miles of shoreline. It extends seaward an average of 30 miles from shore—covering more than 5,000 square miles of ocean. The Sanctuary—administered by the National Oceanic and Atmospheric Administration (NOAA)—was established to promote resource protection, research, education, and public use. It boasts one of the most diverse marine ecosystems in the world, including the nation's largest kelp forest and one of North America's largest underwater canyons.

[2] All EIR figures are included in Chapter 7.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.

Aquatic, Wetland and Riparian Habitats

There are 39 miles of watercourses and numerous wetland areas in the City that convey stormwater, protect water quality, and can support diverse natural habitats and aquatic and terrestrial resources. The *City-Wide Creeks and Wetland Management Plan* (described further below) includes 25 watercourses within five primary watersheds and four other watercourses. The primary watershed areas include: San Lorenzo River, Arana Gulch Creek, Neary Lagoon, Arroyo Seco, and Moore Creek. In addition there are several other miscellaneous drainages that do not fall within these primary watersheds, including Natural Bridges Creek, Lighthouse Drainage, Pilkington Creek and Bethany Creek. Table 4.8-1 summarizes the watercourses and wetlands addressed in the *City-Wide Creeks and Wetland Management Plan*, which is further described below. Figure 4.8-2 shows the major watercourses and wetlands in the City.

AQUATIC HABITAT

Aquatic habitats are areas of permanent fresh or brackish open water. The water may be either flowing (e.g. the San Lorenzo River) or ponded (e.g. Neary Lagoon, Antonelli Pond). Aquatic habitats generally lack vegetation other than algae except along the shorelines, where moisture-loving plant species may grow partially in the water.

The San Lorenzo River is the major aquatic habitat with flowing water within the city. Some segments of Branciforte Creek are also broad enough to be considered separately as aquatic habitat. Ponded or partially ponded aquatic habitats within the city include Younger Lagoon on the University of California, Santa Cruz (UCSC) Long Marine Laboratory site; Antonelli Pond and several other ponds and lagoons in the southwestern portion of the city, including Natural Bridges State Park and Neary Lagoon. The Santa Cruz Small Craft Harbor (formerly Woods Lagoon) also provides aquatic habitat, but it has been modified by construction and maintenance of the harbor.

WETLANDS

Wetlands are generally defined as areas that are permanently, or periodically, inundated by surface or groundwater and which support vegetation adapted to such hydrologic conditions. The specific criteria utilized to define wetlands vary depending on the agency. Wetlands are regulated by federal and state agencies, including the U.S. Army Corps of Engineers and the California Coastal Commission. Most recently, the California State Water Resources Control Board has proposed expanding wetland regulations.

Under the Federal Wetland Regulations (CFR33 Part 328.3(b)) the term "wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." The Army Corps of Engineers' *Wetlands Delineation Manual* (1987) and 2008 Regional Supplement for the Arid West Region are used to identify wetlands under the CWA Section 404 permit program. An area must meet the criteria for hydric soils, hydrophytic vegetation and wetland hydrology to be delineated as a wetland under ACOE jurisdiction.

TABLE 4.8-1: City Watercourses and Known Wetlands

Watershed - Watercourse	Watercourses Included	Known Wetlands Included
San Lorenzo River Watershed	San Lorenzo River Branciforte Creek Carbonera Creek, Glen Canyon Creek Redwood Creek Pogonip Creek Tick Drainage Arroyo de San Pedro Regaldo Wagner Seep Pasatiempo Creek Jessie Street Channel Ocean Villa Creek	 Salz Pond Jessie Street Marsh
Arana Gulch Creek Watershed	Arana Gulch Creek, Hagemann Creek Woods Creek	
Neary Lagoon Watershed	Laurel Creek Bay Avenue Creek Bayona Creek Chrystal Gulch Dodero Spring Creek Longview Creek Ojos de Agua Creek	Westlake Pond Neary Lagoon Kalkar Quarry Spring
Arroyo Seco Watershed	Arroyo Seco Creek	
Moore Creek Watershed	Moore Creek	Antonelli Pond
Other Watercourses	Natural Bridges Creek, Lighthouse Drainage Pilkington Creek Bethany Creek	

The California Coastal Act, Section 30121, broadly defines a wetland as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens." The California Coastal Commission (CCC) generally follows the CDFG's wetland definition and classification system for delineating wetlands. While all three wetland indicators (hydrophytic vegetation, hydric soils, and wetland hydrology) must be present for an area to be considered a wetland by the ACOE under the Clean Water Act, only one positive indicator must be present for an area to be delineated as a wetland according to CCC guidelines.

In April 2008, the State Water Resources Board adopted Resolution No. 2008-0026 that gave the Wetland Policy Development Team (State staff) direction to develop a statewide policy to protect wetland and riparian area. The Resolution indicates that due to recent U.S. Supreme Court rulings that have reduced the jurisdiction of the CWA over wetlands by limiting the definition of the "waters of the US," the State Water Board has acted to regulate wetlands under state law to "fill the gap" from the receding federal jurisdiction. As part of this effort, the State Water Board has been working to establish a new wetland protection policy. The Board has not yet formally adopted a new wetland definition.

The wetland types found in the City of Santa Cruz are described below.

Salt Marsh. Salt marshes occur in low-lying, relatively sheltered areas adjacent to the immediate coast that are subject to tidal inundation. Except around their uppermost margins, salt marshes are periodically inundated by salt water of variable frequency and duration. Salt marshes are dominated by salt-tolerant native herbs and subshrubs, including pickleweed, saltgrass, and alkali heath. The only mapped area of salt marsh in the city is within Natural Bridges State Beach on the west side of Moore Creek just inland of the beach. Topographic conditions suitable for salt marshes do not occur elsewhere in the City.

Freshwater Wetland. Freshwater wetland habitats are found on permanently or seasonally inundated sites. The water in freshwater wetland habitats is shallow enough to allow emergent vegetation to be rooted on the bottom. The species composition of freshwater wetlands is variable, in part due to variation in the length and depth of inundation. Where inundation is permanent or prolonged, the characteristic dominants of freshwater wetlands are tall perennial emergent plants, particularly cattails and tules.

Sizable freshwater wetland habitats occur in the extreme southwestern portion of the city (e.g. at Natural Bridges State Park and around the upper margins of Antonelli Pond) and at Neary Lagoon. Smaller, more localized freshwater wetlands occur at scattered locations elsewhere in the city; for example, in the small city park adjacent to Jessie Street, and in lower Hagemann Gulch near the upper end of the Small Craft Harbor.

RIPARIAN HABITAT

Riparian forest and scrub habitats are found on sites where the root systems of moisture-loving woody species (trees and shrubs) can obtain abundant subsurface moisture year-round. The largest and best developed riparian forest habitats are generally on floodplain alluvial terraces bordering permanent or intermittent streams. Riparian forest habitats are dominated by moisture-loving, mostly deciduous trees and large shrubs. The canopy is typically dense. In the Santa Cruz area, the most abundant and widespread dominant species in riparian forest stands is arroyo willow. Riparian scrub is generally relatively open with individuals of large woody species relatively well spaced.

Extensive riparian forests occur at and near the bottoms of larger canyons and along larger streams within the City, including Moore Creek and its tributaries; Meder Canyon and its tributaries; Carbonera Creek; Branciforte Creek; and Arana Gulch. Extensive riparian forests also occur adjacent to Neary Lagoon. Riparian forest stands along the San Lorenzo River occupy relatively narrow zones inside the levees along the river. The San Lorenzo River channel

also supports the only substantial areas of riparian scrub within the city. Smaller stands of riparian forest occur along smaller streams and drainages within the city, as well as at isolated upland locations.

Coastal Scrub

Coastal scrub is generally found on relatively exposed, coast-facing slopes. Coastal scrub habitats range from relatively dry to relatively moist, and are dominated by medium-sized to large, mostly evergreen shrubs. Species composition in coastal scrub stands varies considerably, largely in response to soil and moisture conditions and disturbance history. Shrub cover ranges from dense and more or less impenetrable to open. The most abundant and widespread shrub species in coastal scrub habitats in the Santa Cruz area is coyote brush. In addition to successionally stable coastal scrub habitats, scrub in which coyote brush is the only shrub species, or is overwhelmingly dominant, is widespread in and around Santa Cruz. This scrub type, which may be called "coyote brush scrub", appears to be early successional.

Within the city limits, successionally stable coastal scrub is largely confined to the western part of the City in and near the Moore Creek Preserve and in Meder Canyon. Elsewhere in the City, coastal scrub habitats are mostly small and fragmentary, and often represent the early successional "coyote brush scrub" type.

Forest and Woodland Habitats

REDWOOD FOREST

Redwood forest is the most extensive habitat type in the Santa Cruz Mountains. Redwood forests occur in areas that receive abundant summer fog, but generally do not occur along the immediate coast or on sites with direct coastal exposure. It should be noted that redwood forests intergrade so extensively with mixed evergreen forests in the Santa Cruz area that the boundaries between these habitat types are often indistinct. Where well developed, this habitat type is typically a dense forest, with the canopy closed or nearly so. The principal dominant tree is the coniferous species redwood (*Sequoia sempervirens*). All redwood forest stands within the Santa Cruz city limits are second-growth, having developed following heavy logging in the past. Individual old-growth redwood trees are, however, occasionally present.

Redwood forests occur only in the northern third of the city, on the lower slopes of the Santa Cruz Mountains. The most extensive redwood forest areas within the city limits are in the northern portion of the city in Pogonip, at DeLaveaga Park, Pogonip and upper Moore Creek. More limited, but still sizable, areas of redwood forest occur in the canyons of Branciforte and Carbonera creeks in the Isbel Drive-Carbonera Drive area and in DeLaveaga Park.

REDWOOD-DOUGLAS FIR / TANBARK OAK FOREST

This habitat type is an intermediate type between the redwood forest and mixed evergreen forest habitat types, and occurs on sites that are somewhat drier than those supporting typical redwood forests. Compared to typical redwood forest, the proportion of redwood in the forest canopy is lower and the proportion of Douglas-fir is higher. Broadleaved evergreen species

such as tanbark oak, coast live oak, Shreve oak, and California bay are also more abundant than in typical redwood forest.

The only mapped area of redwood – Douglas-fir/tanbark oak forest within the city limits is located in the northern portion of the Moore Creek Preserve. Other areas referable to this habitat type may occur in Pogonip and elsewhere in the northern portion of the City, mapped as redwood forest or mixed evergreen forest.

MIXED EVERGREEN FOREST

The mixed evergreen forest habitat type is developed on slopes, typically on drier sites than those supporting redwood forests. Mixed evergreen forests are more extensive on south- and west-facing slopes. They range from dense, closed-canopy forests to relatively open forest with large canopy gaps. The dominant trees are predominantly broadleaved evergreen species with coast live oak being the dominant species in Santa Cruz. In drier, more exposed areas, coast live oak may be essentially the only canopy species (see mixed evergreen forest [oak woodland] below). Shreve oak is also widespread in mixed evergreen forests in the Santa Cruz area, and locally replaces coast live oak in northern parts of the city, although the two species sometimes occur together. Other tree species that are often dominants or important associates in mixed evergreen forests, especially on relatively moist sites, include California bay, Pacific madrone, Douglas-fir, tanbark oak, and redwood. The shrub and vine component of mixed evergreen forests is typically similar to, but sometimes denser than, that of redwood forests. California hazelnut is frequent in the understory, and poison-oak, creeping snowberry, Pacific blackberry, and the woody vine hairy honeysuckle are widespread and often locally abundant.

Mixed evergreen forests are widespread in the northern portions of the City, especially in Pogonip, in the Isbel Drive-Carbonera Drive area, in DeLaveaga Park, and bordering Arana Gulch north of Highway 1. A large area of mixed evergreen forest extends southward from Pogonip into the area west of Harvey West Park and the Encinal Street area. Only fragmentary remnants of mixed evergreen forest occur elsewhere in the city.

MIXED EVERGREEN FOREST (OAK WOODLAND)

This habitat type is similar to mixed evergreen forest and may be regarded as a phase developed on relatively dry sites, often upper slopes. The tree canopy is overwhelmingly dominated by coast live oak, which may be virtually the only tree species present. Overall tree canopy density is typically less than in mixed evergreen forest with large openings between trees containing grassland species. The shrub, vine, and herb components of this habitat type are similar to that in mixed evergreen forest on moister sites, but is often less diverse.

A large area of mixed evergreen forest (oak woodland) is mapped on the slopes of a tributary canyon in the Moore Creek Preserve. Strips of coast live oak-dominated forest referable to this habitat type also occur bordering lower Arana Gulch and Hagemann Gulch.

Grassland

Grassland habitats within the City have two subtypes: coastal prairie and annual grassland/coastal prairie. Coastal prairie is characterized by dominance of native perennial

bunchgrasses with an assortment of native herb associates (non-native species are generally also present), while annual grassland is largely dominated by non-native, mostly annual grasses, although native grasses and herbs are often also present.

COASTAL PRAIRIE

Annual grassland (also referred to as California annual grassland and non-native grassland) is the predominant grassland type in the Santa Cruz area. It occurs on slopes and terraces and also occurs in nearly level upland areas and on coastal terraces. Coastal prairie is the original, native grassland type in the near-coastal areas of northern and central California. Coastal prairie is characterized by dominance of native perennial bunchgrasses, with a large suite of associated native annual and perennial herbs. However, grasses that are non-native and mostly annual have largely replaced the native perennial bunchgrasses in most of the remaining coastal grasslands. In the Santa Cruz area, the principal native perennial bunchgrasses are purple needlegrass and California oatgrass. A variety of native herbs are associated with these bunchgrasses, including, at Pogonip, the special-status species San Francisco popcorn flower, Santa Cruz clover, and Gairdner's yampah. Several areas of grassland in Pogonip are mapped as coastal prairie (also referred to as coastal terrace prairie).

ANNUAL GRASSLAND / COASTAL PRAIRIE

Most areas of grassland in the Santa Cruz area have been largely disturbed by heavy grazing at some time in the past. Large areas of grassland occur at Pogonip, Arana Gulch, Lighthouse Field, Delavega Park and the Moore Creek Preserve. The species composition of most of these grasslands has been greatly altered by grazing, other disturbances, and the introduction of weedy non-native species. Annual grassland is characterized by dominance of grasses that are primarily annual and non-native. In the Santa Cruz area, these include some combination of slender wild oat, Italian rye grass, soft chess, ripgut grass, rattlesnake grass, fescue, and others. A few non-native perennial grasses, such as Harding grass and tall fescue are occasionally dominant or abundant. Characteristic non-native herbs, found more or less throughout the grasslands in the Santa Cruz area, include hairy cat's-ear, filaree, English plantain, common vetch, wild radish, Italian thistle, black mustard, narrow-leaved clover and others.

The native perennial purple needlegrass and California oatgrass often occur in grassland areas mapped as annual grassland and annual grassland/coastal terrace prairie, and occasionally one or both of these grasses is dominant. Purple needlegrass is the more abundant and widespread of these native bunchgrasses. Areas dominated by one or both of these grasses may be regarded as remnants of the original perennial bunchgrass-dominated coastal prairie grassland or as degraded coastal prairie, especially if the diversity of native coastal prairie-associated herbs is high. Where the grasslands have less disturbance history, an assortment of native herb species, many of them more or less associated with coastal prairie, is often present. Characteristic native species, most abundant and most diverse in larger, less disturbed grassland areas, include California poppy, blue-eyed grass, checker bloom, sky lupine, sun cups, coast tarplant, Johnny-jump-up, and golden brodiaea.

Coyote brush frequently invades grasslands in the Santa Cruz Mountains, and there are many areas intermediate between grassland and the coyote brush scrub phase of coastal scrub. Some of these areas may be actively succeeding from grassland to scrub as coyote brush expands in

cover and density. This successional trend may be related to prolonged absence of fire, which would largely eliminate invading coyote brush.

Coastal Habitats

SANDY BEACH

Sandy beaches are often unvegetated. Where vegetated and if native species are present, the coastal strand habitat type is found. There is a nearly continuous strip of sandy beach over a mile long in the eastern portion of the city, on both sides of the mouth of the San Lorenzo River. This includes the main city beach adjacent to the Boardwalk area. Small, isolated sandy beaches (pocket beaches) occur interspersed with sea cliffs in the western portion of the City, most notably at Natural Bridges State Park. Many of the beach areas within the City are used heavily for recreation, and are typically unvegetated or support mostly weedy non-native species. Some areas do support characteristic native coastal strand species, including beach-bur, beach evening-primrose, beach morning glory, and verbena.

COASTAL CLIFF HABITAT

The cliff habitat type is used for coastal bluffs directly facing the ocean and for areas of thin, sometimes rocky soil immediately adjacent to the tops of the coastal bluffs. Many areas of this habitat type within the city have a long history of extensive disturbance, and are often dominated by weedy non-native species. The mat-forming non-native ice plant (*Carpobrotus edulis*) and sea fig (*Carpobrotus chilensis*) dominate extensive areas. Native species characteristic of undisturbed coastal bluff habitats, such as the shrub lizard tail (*Eriophyllum staechadifolium*) and herb species such as seaside daisy (*Erigeron glaucus*), yarrow (*Achillea millefolium*), and sea lettuce (*Dudleya caespitosa*), are also often present and are locally dominant, especially in areas protected from disturbance by the steep topography.

The only areas mapped as "cliff" within the city are along the coastal bluffs in the extreme western portion of the city. Other areas referable to this habitat type may occur within areas mapped as "developed" in the vicinity of West Cliff Drive in the western portion of the city and East Cliff Drive in the eastern portion of the city.

SPECIAL STATUS SPECIES

Special-status species include species listed as Threatened or Endangered under provisions of the federal ESA and species listed as Rare, Threatened, or Endangered by the state of California under provisions of the CESA and NPPA. Species formally proposed for federal listing by the USFWS are afforded limited legal protection under ESA.

Other special-status plant species are those on List 1A, List 1B, or List 2 of the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California*. These species are subject to state regulatory authority under CEQA. Species included on List 3 and List 4 of the CNPS *Inventory* may also be considered special status species. These species are considered to be of lower sensitivity, and generally do not fall under specific state or federal

regulatory authority. Specific mitigation considerations are generally not required for species in these categories.

PLANTS

Eight special status plant species have been identified as occurring within City limits as summarized in Table 4.8-2 Three of these species are listed: robust spineflower (federally endangered); Santa Cruz tarplant (federally threatened and state endangered); and San Francisco popcornflower (state endangered). Most of the locations are within publicly protected lands (Pogonip, Arana Gulch, Delaveaga Park, and Moore Creek Preserve), although there are two known private sites that support the spineflower or popcornflower.

WILDLIFE

Thirty-nine special status wildlife species have been identified as occurring or potentially occurring within City limits as summarized in Table 4.8-3. Six of these species are listed: Ohlone tiger beetle (federally endangered); coho salmon (federally and state endangered); steelhead (federally threatened); tidewater goby (federally endangered and state "Species of Special Concern"); California red-legged frog (federally threatened and state "Species of Special Concern"); and brown pelican (state endangered). Most of the locations are within publicly protected lands, although there is one known private site that supports the Ohlone tiger beetle. The remaining 32 special status plant species are not federally or state listed species, but some are state "Species of Special Concern" or have a CNDDB rarity ranking. The remaining species are mostly bird species, except for five bat species and two mammal species (San Francisco dusky-footed woodrat and American badger). Most of the remaining non-bird species are identified due to potential habitat, although the woodrat has been found within City limits.

SENSITIVE HABITAT AREAS

Sensitive habitats are generally considered by local, state or federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. Habitat types considered sensitive include those listed on the California Natural Diversity Data Base (CNDDB) working list of working list as "high priority" habitats (i.e., those habitats that are rare or endangered within California). Generally, wetland and riparian communities are considered sensitive habitat due to their value to wildlife, limited distribution, and decreasing acreages statewide.

Four of the habitat types found within the City of Santa Cruz are recognized as sensitive habitat types: freshwater wetland, salt marsh, riparian forest and scrub, and coastal prairie portions of grassland habitats. Except for freshwater wetland, these habitat types correspond to habitat types that the CNDDB has designated as "high priority." In addition, coastal bird habitat is considered sensitive habitats because of high biological diversity.

Additionally, any area supporting a special status species would also be considered a sensitive habitat. Locally, the overwintering monarch butterfly habitat is considered sensitive due to its restricted range and CNDDB ranking as rare. Its habitat is also identified in the City's existing

General Plan as being a sensitive habitat. Existing known or potential monarch butterfly habitat is shown on Figure 4.8-3.

Freshwater Wetland

Wetlands are areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level because of their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Freshwater wetlands are recognized as sensitive habitats because they are wetlands subject to the jurisdiction of U.S. Army Corps of Engineers under Section 404 of the federal Clean Water Act and because they provide important wildlife habitat. In the classification scheme of CDFG (2003), the freshwater wetlands within the city mostly correspond to marsh habitat types that are not all designated as "high priority" by CNDDB. However, freshwater wetlands dominated by tules (bulrushes; *Scirpus* spp.) are referable to the bulrush alliance of CDFG (2003a), which is recognized as a CNDDB "high priority" habitat type.

Salt Marsh

The salt marsh located within the City corresponds mostly to the "pickleweed wetland" and is recognized as a "high priority" habitat type by CNDDB. The only mapped area of salt marsh in the city is within Natural Bridges State Beach, on the west side of Moore Creek just inland of the beach.

Riparian Forest and Scrub

The riparian forest and scrub habitats within the City mostly correspond to CNDDB "high priority" habitat types. The most widespread riparian forest type within the city, dominated by arroyo willow, is referenced in the CNDDB as "high priority" arroyo willow riparian forests and woodlands alliance. Depending on the dominant tree species, other riparian habitat includes mixed willow riparian forests and woodlands, black cottonwood riparian forests and woodlands, and red alder alliances. Riparian scrub within the city, which occurs mostly in the San Lorenzo River channel, corresponds to the central coast riparian scrub alliance of CDFG, which is not recognized as a "high priority" habitat type. Areas supporting riparian habitat as identified in the *City-Wide Creeks and Wetlands Management Plan* would also be considered sensitive habitat areas.

TABLE 4.8-2: Special-Status Plant Species Occurring in the City of Santa Cruz, California

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Flowering Period	Occurrence
Arctostaphylos andersonii Santa Cruz Manzanita	None	None	2-2-3 List 1B	Chaparral; openings in and edges of broadleafed upland forest and north coast coniferous forest	November-April	Kalkar QuarryPogonip (P) Delaveaga (P)
Chorizanthe robusta var. *robusta* robust spineflower	Endangered	None	3-3-3 List 1B	Coastal dunes, coastal scrub, openings in cismontane woodland, in sandy or gravelly soil	April-September	Pogonip Private Parcel-Market St
Holocarpha macradenia Santa Cruz tarplant	Threatened	Endangered	3-3-3 List 1B	Coastal prairie, valley and foothill grassland, coastal scrub, often in clay or sandy soils	June-October	Arana Gulch Delaveaga Park
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	None	None	1-2-3 List 4	Moist sites in coastal prairie, broadleafed upland forest, chaparral, valley and foothill grassland, vernal pools	June-October	Pogonip
Plagiobothrys chorisianus var. chorisianus Choris's popcorn-flower	None	None	2-2-3 List 1B	Moist places in chaparral, coastal prairie, coastal scrub	March-June	Lighthouse Field Arana Gulch
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcorn-flower	None	None	1-2-3 List 4	Moist places in closed-cone coniferous forest, chaparral, coastal scrub, marshes and swamps, vernal pools	April-June	Arana Gulch
Plagiobothrys diffusus San Francisco popcornflower	None	Endangered	3-3-3 List 1B	Coastal prairie; valley and foothill grassland	March-June	Moore Creek Preserve Private Parcel- Meder St Pogonip
Trifolium buckwestiorum Santa Cruz clover	None	None	3-3-3 List 1B	Coastal prairie; margins of broadleafed upland forest, cismontane woodland	April-October	Pogonip

Notes:
[1] Nomenclature follows Hickman (1993), Tibor (2001), and California Native Plant Society (2006).
[2] U.S. Fish and Wildlife Service (2006a,b,c).
[3] Section 1904, California Fish and Game Code (California Department of Fish and Game 2006a).
[4] Tibor (2001) and California Native Plant Society (2006).
Top line: CNPS R-E-D (Rarity-Endangerment-Distribution) code.
Rarity: 1=Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time; 2=Occurrence confined to several populations or to one extended population; 3=Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.
Endangerment: 1=Not endangered; 2=Endangered in a portion of its range; 3=Endangered throughout its range.
Distribution: 1=More or less widespread outside California; 2=Rare outside California; 3=Endemic to California.
Bottom Line: CNPS List. List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 2: Rare, Threatened, or Endangered in California, more common elsewhere. List 3: Plants about which more information is needed. List 4: Plants of limited distribution: a watch list.
[5] Thomas (1960), Munz and Keck (1973), Hickman (1993), Tibor (2001), Morgan et al. (2005), California Native Plant Society (2006), and unpublished information.

SOURCE: EcoSystems West Consulting Group, January 2009

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2]
Invertebrates			
Ohlone tiger beetle *Cicindela ohlone*	E/--/--	Coastal prairie and open grassland with barren areas for burrow construction.	Pogonip Moore Creek Preserve Private Parcels near Moore Creek Preserve and Meder St
Monarch butterfly (wintering sites) *Danaus plexippus*	--/--/S3	Eucalyptus, Monterey Pine, or Monterey Cypress tree groves.	Lighthouse Field Natural Bridges Lower Branciforte Creek
Fish			
Coho Salmon (Central CA ESU) *Oncorhynchus kisutch*	E/E/G4S2	Spends the first few years of its life in fresh water before migrating to the ocean. Adults will later return to the freshwater location where they were spawned to breed.	San Lorenzo River (H)
Steelhead (Central Coast DPS) *Oncorhynchus mykiss*	T/--/G5S2	Spends the first few years of its life in fresh water before migrating to the ocean. Adults will later return to the freshwater location where they were spawned to breed.	Carbonera Creek Branciforte Creek Arana Gulch San Lorenzo River
Tidewater goby *Eucyclogobius newberryi*	E/SC/G3S2S3	Coastal lagoons and creeks up to 3 miles with protected still water areas.	Moore Creek San Lorenzo River
North American green sturgeon (Southern DPS) *Acipenser medirostris*	FT/CSC/-	Spend the majority of their lives in nearshore oceanic waters, bays, and estuaries. Spawning and early life-history stages (less than 4 years old) occurs in fresh water.	HP, CHP
Amphibians and Reptiles			
California red-legged frog *Rana aurora draytonii*	T/SC/--	Requires the presence of surface water until mid to late summer for reproduction; occupies ephemeral and/or perennial water with standing or slow moving flows; upland habitat includes leaf litter and small mammal burrows; adults are known to travel up to 2 miles overland between aquatic sites.	Moore Creek (B) Antonelli Pond Natural Bridges Marsh
Southwestern pond turtle *Emmys [Clemmys] marmorata pallida*	--/SC/--	Found in ponds, marshes, rivers, streams, and irrigation ditches containing aquatic vegetation; usually seen sunning on logs, banks, or rocks. Moves up to 3-4 miles within a creek system, especially during "walk-abouts" before a female lays eggs; nests in burrows in upland areas up to several hundred feet away from aquatic habitat, in woodlands, grasslands, or open forest.	Antonelli Pond Neary Lagoon Moore Creek Natural Bridges Marsh Pogonip-San Lorenzo River
Birds (protected activity/habitat)			
Brown Pelican (communal roosts and rookeries) *Pelecanus occidentalis*	Delisted* /SE**, CFP/S1S2	Nest in large colonies mostly on small coastal islands. Preferred nesting sites provide protection from mammal predators, and sufficient elevation to prevent widescale flooding of nests (USFWS Division of Endangered Species 2007). The nests occur on the ground, in bushes, or in the tops of trees.	Cliffs from Lighthouse Point to Younger Lagoon Municipal Wharf San Lorenzo River
Double-crested Cormorant (rookeries) (*Phalacrocorax auritus*)	--/SC/G5S3	Marine and inland aquatic habitats, such as ponds, lakes, rivers, lagoons, estuaries, and open coastline.	San Lorenzo River(H) (Schwan Lagoon)

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2]
Black-crowned Night Heron (rookeries) (*Nycticorax nycticorax*)	--/--/G5S3	Roosts among the dense foliage of trees (that are not always adjacent to water). It will also roost within fresh or brackish emergent wetlands, as well as on piers, and pilings (Grinnell and Miller 1944).	Branciforte Creek (H) Neary Lagoon (P)
Sharp-shinned hawk (nesting) *Accipiter striatus*	--/SC/--	Nests in deciduous riparian forest associated with dense stands of smaller conifers.	Arana Gulch(P) Meder Canyon(P) Pogonip (P)
Cooper's hawk (nesting) *Accipiter cooperi*	--/SC/--	Nests in deciduous riparian forest, live oak, or second growth conifers usually near stream courses with dense canopy cover and open understory.	Moore Creek Pogonip Harvey West Park DeLaveaga
Golden eagle (nesting & wintering) Aquila chrysaetos	--/SC, FP/--	Resident in open mountains, foothills, canyons, or plains. Nests in a mass of sticks on cliffs or in trees. Is frequently observed foraging over nearby open fields of UCSC and Moore Creek Preserve lands.	Pogonip Rincon Gorge(unconfirmed)
Ferruginous Hawk (wintering) (*Buteo regalis*)	BCC/SC/--	Grasslands, agricultural areas, sagebrush flats, low foothills, and desert scrub (Garrett and Dunn 1981).	Antonelli Pond
White-tailed kite (nesting) *Elanus leucurus*	--/FP/--	Nests in conifers on the margins of open areas including grasslands and sloughs containing a high abundance of small mammals and lizards.	Pogonip Natural Bridges
Merlin (wintering) *Falco columbarius*	--/SC/G5S3	Utilizes a wide variety of habitats, from annual grasslands to ponderosa pine and montane hardwood-conifer habitats. Also favors coastlines, lakeshores, and wetlands. Forages along shorelines in winter, to hunt for shorebirds (CDFG 2005).	Arana Gulch Lighthouse Field Meder Canyon Antonelli Pond
Black Oystercatcher (nesting) *Haemotopus bachmani*	BCC/--/G5S2	Rocky shores of marine habitats, and on adjacent islands. Requires cliffs, rock outcrops, offshore rocky islets, jetties and similar features of coastal rocky intertidal habitats for roosting at high tide.	Natural Bridges/De Anza
Long-eared owl (nesting) *Asio otus*	--/SC/--	Utilizes abandoned stick nests of other large birds or squirrel nests in a variety of wooded areas, including orchards and usually near aquatic and open areas for foraging; forages mostly on rodents.	Neary Lagoon (P) Pogonip[3] (P)
Burrowing Owl (burrow and wintering sites) *Athene cunicularia*	--/SC/G5S2	Open grassland habitats for foraging and nesting. Suitable habitat has low-growing vegetation interspersed with bare ground; and hillocks, berms, fence posts or other slightly elevated objects available for resting/perching.	Pogonip (P) Moore Creek (P) Private parcels adjacent to Moore Creek (P)
Vaux's swift (nesting) *Chaetura vauxi*	--/SC/--	Nest in hollow trees in forested environments. Nest made of conifer needles are glued together with salvia and attached to inside wall of hallow tree usually near the bottom. Post breeding flocks up to several hundred may roost together in chimney like tree hollows.	Residential neighborhoods near Natural Bridges, Spring Street and
Black Swift (nesting) *Cypseloides niger*	--/SC/G4S2	Breeds along coastal bluffs and mountains.	Mitchell's Cove (H) Lighthouse Point (H)

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2]
Loggerhead shrike *Lanius ludovicianus*	--/SC/FWS	Grassland and shrub habitats with small reptiles and insects.	Pogonip (P) Moore Creek (P) Private parcels adjacent to Moore Creek (P)
California Horned Lark *Eremophila alpestris actia*	--/SC/G5T3S3	Open, level or gently-sloping California habitats, including sage scrub, grassland, chaparral, alkali playa, as well as agricultural and residential lands. (Grinnell and Miller 1944). Builds a grass-lined nest in a depression on the ground out in the open.	Pogonip Moore Creek (P) Private parcels adjacent to Moore Creek (P)
Oak Titmouse (nesting) *Baeolophus inornatus*	--/--/G5S3	Warm, dry oak, pine, or oak-pine woodlands. The breeding pair builds a nest of grass, moss, mud, hair, feathers, and fur (Harrison 1978) in a woodpecker hole, natural cavity, or nest box.	Lighthouse Field Neary Lagoon Garfield Park Westside residential areas lower Branciforte Creek Oceanview Park Jesse Street Marsh area San Lorenzo River (N of Hwy 1) Natural Bridges (unconfirmed)
Yellow warbler *Dendroica petechia brewsteri*	--/SC/--	Nests in deciduous riparian woodland with open canopy along streams or other watercourses; forages in dense understory of riparian woodland.	Arana Gulch Neary Lagoon Moore Creek Preserve Antonelli Pond Carbonera Creek Branciforte Creek Westlake Pond San Lorenzo River (H) (P)
Hermit Warbler (nesting) *Dendroica occidentali*	--/--/G4G5S3?	Mature stands of conifers (ie., Douglas-fir, redwood, and montane hardwood-conifer habitats), with open to dense canopy for breeding and other activities.	Pogonip
Saltmarsh Common Yellowthroat[38] *Geothlypis trichas sinuosa*	--/--/G5T2S2	Nests in overgrown fields with scrub, on the margins of woodlands, and freshwater and saltwater marshes. Builds well-concealed open-cup nests, typically near the ground in grasses, herbaceous vegetation, cattails, tules, and scrub (including coyote brush) (Gardali and Evens date).	Neary Lagoon San Lorenzo River (Younger Lagoon)
Yellow-breasted chat (nesting) *Icteria virens*	--/--/G5S3	Dense riparian vegetation 1-8 ft. above the ground, with a well-developed understory.	San Lorenzo River (H)
Chipping Sparrow (nesting) *Spizella passerina*	--/--/G5S3S4	Open wooded habitats with a sparse or low herbaceous layer and few shrubs. Prefers trees for nesting, resting, singing, and other cover, but will also utilize shrubs and ground herbage. Also known to breed or winter in orchards (Grinnell and Miller 1944, McCaskie et al. 1979, Garrett and Dunn 1981).	Moore Creek Pogonip
Grasshopper Sparrow *Ammodramus savannarum*	--/--/G5S2	Occurs in dry, dense grasslands, especially in those with a variety of grasses, tall forbs, and scattered shrubs (Grinnell and Miller 1944; McCaskie et al. 1979 and Garrett and Dunn 1981). Builds nests composed of grasses and forbs, located in a slight depression in ground at the base of an overhanging clump of grasses or forbs (Harrison 1978).	Moore Creek Pogonip

TABLE 4.8-3: Special-Status Wildlife Species Occurring in the City of Santa Cruz, California

Common Name *Scientific Name*	Status[1] Federal/State/Other	Habitat Requirements	Location[2]
Tricolored Blackbird (nesting colonies) *Agelaius tricolor*	BCC/SC/G2G3S2	Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs. Their nests are usually located near fresh water, and tend to be hidden on the ground among low vegetation (Orians 1960).	Neary Lagoon (H) Antonelli Pond (H)
Mammals			
Townsend's western big-eared bat *Corynorhinus [Plecotus] townsendii townsendii*	--/SC/HP	Roost sites are highly associated w/ caves and mines; buildings must offer "cave-like" features; known to roost in tree hollows and under bridges.	Pogonip Clubhouse undeveloped lands and open spaces (P)
Pallid bat *Antrozous pallida*	--/SC/HP	Roost sites are primarily associated with oak, redwood, ponderosa pine, and giant sequoia forests. Will also roost under bridges and in buildings and rock outcrops.	undeveloped lands and open spaces (P)
Western red bat *Lasiurus blossevillii*	--/**/HP	Roosts in foliage primarily in riparian and wooded habitats.	Arana Gulch undeveloped lands and open spaces (P)
Fringed myotis *Myotis thysanoides*	--/**/HP	Roosts sites in California are primarily in buildings or mines; will also roost in large conifer snags and in caves.	undeveloped lands and open spaces (P)
Long-legged myotis *Myotis volans*	--/**/HP	Roosts primarily in large hollow tree snags, or live trees with exfoliating bark; also uses rock crevices, mines, and buildings.	undeveloped lands and open spaces (P)
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/SC/--	Associated with riparian, oak woodland and redwood forest habitats. Builds stick nests under or in buildings, hollow trees, or in tree canopy.	undeveloped lands and open spaces
American Badger *Taxidea taxus*	--/SC/--	Drier open stages of most shrub, forest, and herbaceous habitats, that are composed of friable soils. American badgers dig burrows in friable soil for cover, frequently reusing old burrows. They are also known to dig a new den each night (especially in summer) (Messick and Hornocker 1981).	undeveloped lands and open spaces (P)

Notes:

1 **Federal Status (USFWS 2007b, c, d; CDFG 2006)**

E = Endangered: Any species, which is in danger of extinction throughout all, or a significant portion of its range.

T = Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range.

BCC= Considered by Fish and Wildlife Service as a 'Bird of Conservation Concern' with a high priority to study and take action to protect.

State Status (CDFG 2006)

E = Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease.

T = Threatened: A native species or subspecies that, although no presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

SC = CDFG Species of Special Concern are taxa given special consideration because they are biologically rare, very restricted in distribution, declining throughout their range, or at a critical stage in their life cycle when residing in California or taxa that are closely associated with a habitat that is declining in California (e.g., wetlands)

FP = Fully Protected: This classification was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

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** = Included on preliminary list of revised CDFG Mammal Species of Special Concern (CDFG 1996)

Other
O = Protected by City and/or County ordinances
HP = Considered "High Priority" on the Western Bat Working Group's (WBWG) Western Bat Species Regional Priority Matrix (1998)

CNDDB Ranking (CDFG 2011):
G = Global (worldwide status of a full species): G1 to G5
T = Status of a subspecies throughout its range: T1 to T5
S = State (statewide status of a full species or a subspecies): S1 to S5
where:

1 = Extremely endangered
2 = Endangered
3 = Restricted Range, Rare
4 = Apparently secure
5 = Demonstrably secure: commonly found throughout its historical range

2 ( ) = Locations outside of the city limits.
H = Historical Observation

B = Breeding Habitat (except birds—locations correspond to protected activity only—listed by species name)
P = Potential Habitat

HP]- Habitat Present - habitat is, or may be present. The species may be present.
CH] - Critical Habitat - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

*On November 17, 2009 the brown pelican was removed from the Federal List of Endangered and Threatened Wildlife (USFWS 2009).
**On February 5, 2009 the Fish and Game Commission adopted the proposed changes to remove the brown pelican from the CESA list of endangered species. The Commission's decision to delist the brown pelican will now be reviewed by the Office of Administrative Law before the bird is officially removed from the state list (California Fish and Game Commission 2009).

SOURCE: EcoSystems West Consulting Group, January 2009

Coastal Prairie

Coastal prairie in the Santa Cruz area corresponds to the coastal terrace prairie alliance of CDFG, which is designated as a CNDDB "high priority" habitat type. The only areas within the city specifically mapped as coastal prairie by any previous study are those mapped in Pogonip (Santa Cruz Parks and Recreation Department 1998). Other coastal prairie areas may occur in grassland areas within the city, but have not been mapped. Distinguishing coastal prairie from annual grassland is often problematical because some local grassland areas may be partly dominated by native perennial bunchgrasses and contain other native coastal prairie species, but also be heavily invaded by non-native species. To be considered coastal prairie, a stand of grassland should be essentially dominated by native perennial bunchgrasses and have a predominance of native over non-native herb species.

Coastal Bird Habitat

The bluffs, cliffs, seastacks and rock outcrops, and small coastal islands along the shoreline from Cowell's Beach to Younger Lagoon provide roosting and perching, foraging, and breeding habitat for numerous coastal bird species. Structures on the Santa Cruz Municipal Wharf and Santa Cruz Yacht Harbor also provide communal roosting habitat, while other shorebirds nest in the trees and scrub that line the city's aquatic environments. These areas provide suitable breeding habitat because they lie beyond the reach of waves and high tide marks, offer protection from predators, and provide perches for resting and drying out. They are located near the biologically diverse surroundings of estuarine and riverine environments, lagoons and ponds, sandy beaches, and shallow ocean waters. A variety of food sources are available, including insects, fish, crustaceans, mollusks, and aquatic invertebrates, as well as amphibians, small birds and mammals.

A number of bird species are known to roost and breed within the coastal habitat of the City of Santa Cruz, including the following special-status birds: brown pelican, double-crested cormorant, black-crowned night heron, and black oystercatcher, as well as other cormorant and heron species, gulls, the great egret, the common merganser, and the pigeon guillemot. Table 4.8-4 summarizes birds known to use coastal habitat for breeding. The biological review identified 28 nest colonies and communal roost locations. Thirteen of the sites observed in 2006 support breeding seabirds. The remaining sites were observed to support roosting seabirds.

WILDLIFE DISPERSAL CORRIDORS

Wildlife dispersal corridors, also called dispersal movement corridors, wildlife corridors or landscape linkages, are features whose primary wildlife function is to connect at least two significant or core habitat areas and which facilitate movement of animals and plants between two or more otherwise disjunct habitats. Many undeveloped or natural areas serve as core habitats for a variety of wildlife species. Providing functional connectivity between core habitats is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species.

In the urban/open space interface, corridors provide links between different types of habitat areas, including core habitat, supportive natural landscapes or habitat patches, and linear habitats. Core habitat areas are generally considered to support the viability of a special status plant or animal species or consist of exemplary natural communities. Providing functional connectivity between core habitats through corridors is essential to sustaining healthy plants and wildlife populations and allowing for the continued dispersal of native plant and animal species. Other areas may lack the requisite structural or spatial heterogeneity to be considered core habitat; but still provide habitat for rare plants as well as opportunities to wildlife for forage, cover, and shelter. These areas may be considered habitat patches or supportive natural landscapes. Links between core habitats and supportive natural landscapes also serve as dispersal corridors for plant species, through seed and vegetative dissemination or wildlife transport. Together, corridors, linear habitats, and supportive natural landscape areas help maintain ecological integrity and enhance core habitat (EcoSystems West Consulting Group, January 2009).

Riparian corridors and streamside buffers provide canopy cover, opportunities for foraging, refuge from predators, and, in addition, offer wildlife the opportunity to disperse. In these ways, creeks and creekside buffers serve as both linear habitats and corridors. Because riparian corridors support a disproportionate amount of biodiversity compared to other landscapes, retaining adequate riparian buffers enhances species richness by providing additional habitat with high quality habitat features. Often the boundaries between riparian corridors and buffers are ecotones or edge habitats, where two or more habitat types share a common boundary, potentially increasing available resources for wildlife. When riparian corridors and buffers serve to link core habitats (and thus allow movement among otherwise separate populations), the persistence of wildlife populations increases.

Core habitats within the City of Santa Cruz include the open, undeveloped, and natural areas, such as Moore Creek Preserve and Meder Canyon, Pogonip, Delaveaga Park, and Arana Gulch. Arana Gulch is considered a supportive natural landscape or habitat patch. Many of the undeveloped parcels within the City provide linear habitat or supportive natural landscapes for plants and animals and may fall within dispersal corridors. The City's watercourses serve both as linear habitats and provide dispersal to and from the core habitats listed above. Three main corridors were identified that could provide connectivity between core habitats within or adjacent to the city: western corridor (Moore Creek), central corridor (San Lorenzo River and major tributaries), and eastern corridor (Arana Gulch). These corridors, which are further described below, may or may not provide effective linkages for any one species. No studies have been conducted to determine which species utilize the linear habitats and dispersal corridors within the City, the frequency of wildlife movement through corridors, or the buffer width necessary to maintain corridor utility. More research would be needed to obtain this data.

TABLE 4.8-4
Birds Known to Utilize Coastal Habitat for Roosting and/or Breeding Within City of Santa Cruz

Common Name *Scientific Name*	Special-Status	General Location
Brown Pelican *Pelecanus occidentalis*	X	Shoreline from Lighthouse Point to Younger Lagoon Municipal Wharf San Lorenzo River
Pelagic Cormorant *Phalacrocoraxpelagicus*		Natural Bridges Younger Lagoon
Brandt's Cormorant *Phalacrocorax penicillatus*		Natural Bridges Lighthouse Point Are
Double-crested Cormorant *Phalacrocorax auritus*	X	Shoreline from Lighthouse Point to Natural Bridges Antonelli Pond Neary Lagoon Westlake Pond San Lorenzo River Arana Gulch Santa Cruz Yacht Harbor (Schwan Lagoon)
Great Egret *Ardea albus*		lower Branciforte Arana Gulch Santa Cruz Yacht Harbor
Great Blue Heron *Ardea herodias*		Pogonip lower Branciforte Creek Arana Gulch Santa Cruz Yacht Harbor
Green Heron *Butorides virescens*		Antonelli Pond lower Moore Creek San Lorenzo River lower Branciforte Creek
Black-crowned Night Heron *Nycticorax nycticorax*	X	Antonelli Pond Neary Lagoon lower San Lorenzo River Branciforte Creek Upper Santa Cruz Yacht Harbor
Common Merganser *Mergus merganser*		lower San Lorenzo River
Black Oystercatcher *Haemotopus bachmani*	X	Shoreline from Cowell's Beach to Younger Lagoon
Heerman's Gull *Larus heermanni*		Natural Bridges Lighthouse Point Area
Western Gull *Larus occidentalis*		Shoreline and private residences from Cowell's Beach to Younger Lagoon Municipal Wharf
Pigeon Guillemot *Cepphus Columba*		Shoreline from Cowell's Beach to Younger Lagoon Municipal Wharf

Notes: ( ) = Locations outside of the city limits.
SOURCE: EcoSystems West Consulting Group, January 2009

Western Corridor

Intact riparian vegetation along Moore Creek, along with adjacent intact grasslands and forests, could provide a link between core habitat areas on the western portion of the City, including habitat located on UC Santa Cruz campus, Moore Creek Preserve, Natural Bridges and Younger Lagoon (also a part of the UC Santa Cruz Campus). This nearly area includes a mosaic of largely intact vegetation located along the adjacent drainage east of the upper reach portion of Moore Creek. For some wildlife species, Highway 1 could present a barrier to migration, while other species might find this relatively narrow section of the Highway somewhat permeable.

Central Corridor

The San Lorenzo River and two of its main tributaries, Branciforte Creek and Carbonera Creek, create a potential wildlife corridor in the central portion of the City. Here, a relatively narrow strip of riparian habitat could provide opportunities for wildlife movement between the San Lorenzo River lagoon region and core habitat located within and adjacent Pogonip, UC Santa Cruz, and Henry Cowell (via the San Lorenzo River) and DeLaveaga Park, via Branciforte and Carbonera Creeks. The majority of this area occurs mostly near the western portion of DeLaveaga Park around Carbonera and Branciforte Creeks.

Eastern Corridor

Intact riparian, grassland, and other native forest along with dense eucalyptus groves located along Arana Gulch create a potential corridor for wildlife movement on the eastern portion of the city. For some species, such as birds, this corridor could link habitat near the mouth of the yacht harbor with core habitat on the eastern edge of DeLaveaga Park. Other species, including most mammals, are unlikely to be able to migrate between the northern and southern portions of this corridor, which is bisected by Highway 1—a two-lane highway that is currently being widened to three lanes in this region.

RESOURCE MANAGEMENT PLANS

Habitat Conservation Plan (HCP)

Federal agencies have requested that the City prepare a Habitat Conservation Plan (HCP) for all City activities or projects with the potential to "take" species listed under the Federal Endangered Species Act (ESA) in order to obtain federal permits (Section 10 "incidental take" authorization) for continued Citywide operations and maintenance needs. The permit and plan must be approved by the USFWS and NOAA's National Marine Fisheries Service (NMFS). The goal of the HCP is to minimize and mitigate to the maximum extent practicable the effects of City activities on listed and other sensitive species. The City entered into the HCP process in 2004, and over the past seven years, the City has coordinated and met with USFWS and NMFS on HCP-related issues. City departments involved with the HCP include Water and Public Works.

The species addressed include anadromous salmonids (coho and steelhead), Mount Hermon June Beetle (found at the Graham Hill Water Treatment Plant), California red-legged frog, and Pacific (formerly Western) pond turtle. Facilities include the City's water supply and facility sites, the Dimeo Lane landfill and Resource Recovery Facility, flood control and storm drainage maintenance projects and parks and recreational facilities. Many of the technical species' assessments are complete.

On April 5, 2011, the Santa Cruz City Council authorized the Water Director to enter into negotiations with NOAA Fisheries Service for completing the HCP and obtaining an Incidental Take Permit. At this meeting, City staff presented a proposed phased conservation strategy that improves instream flow for anadromous salmonids while recognizing that the limitations of the existing water supply system do not allow consistent achievement of optimal flows. Given potential existing take to study species, the strategy would result in less available water, resulting in a need to draw more heavily on the storage and Loch Lomond and that some augmentation of the City's existing water supply will be necessary (City of Santa Cruz Water Department. March 28, 2001).

A Draft Conservation Strategy was submitted to the NMFS in August 2011. The primary focus of the strategy is to avoid or minimize existing and potential effects of the City's activities to the maximum extent practicable as required by the Federal Endangered Species Act. A major element of the strategy is identification of minimum in-stream flows at City diversions to minimize the effect of diversions on habitat conditions for steelhead and coho salmon. Three alternatives, or tiers, of instream flow targets are specified which represent increasing levels of habitat protection. These targets vary by location, hydrologic year type and month. The three tiers represent increasing levels of habitat protection. The strategy guarantees minimum flows that ensure no further degradation of habitat (known as Tier 1). The strategy attempts to provide further protection of habitat by offering Tier 2 minimum flows under most hydrologic conditions, reverting to Tier 1 in dry years. With increasing water demand, the City will be able to provide Tier 2 flows less frequently. As the City moves toward augmenting its supply to include additional sources such as some mix of desalination, reclamation, conservation, or additional storage, over the course of the HCP further instream reservations will be possible (City of Santa Cruz, August 2011). Addition of new supply (2.5 mgd desalination, reclamation) would allow Tier 2 flows to be provided in 70% of years. Tier 3 flows would provide approximately 80% habitat value and could be provided in as much as 21% of years well into the future with the addition of 2.5 mgd of desalination.

With the Draft Conservation Strategy now submitted, negotiations can begin with NMFS. When a final strategy has been agreed upon, the Habitat Conservation Plan will be prepared. The HCP will be subject to environmental review, public review, and considered by City Council. The process could take more than two years.

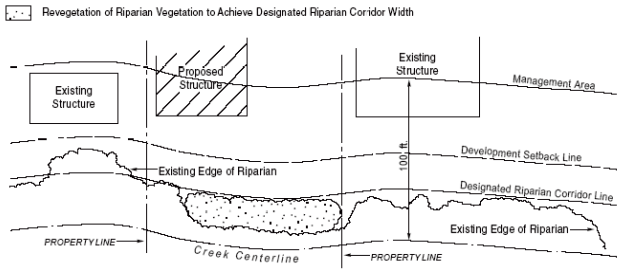
City-Wide Creeks and Wetlands Management Plan

The *City-Wide Creeks and Wetlands Management Plan* (Santa Cruz Department of Planning and Community Development 2006) was adopted by the City Council to provide a comprehensive approach to managing all creeks and wetlands within the City. The Plan was certified by the

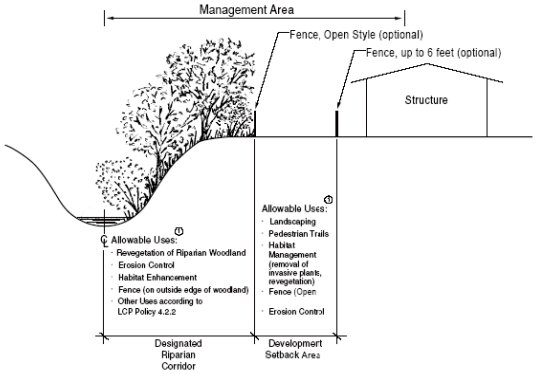
California Coastal Commission in October 2007 as a LCP amendment. Long-term goals to manage these resources include:

- Reduce and/or eliminate pollutants discharged to aquatic bodies,
- Improve water quality,
- Improve and restore natural habitat,
- Increase biodiversity,
- Lower water temperatures,
- Increase public awareness of the value of watershed quality.

The *Management Plan* recommends specific setback requirements based on biological, hydrological, and land use characteristics for various watercourse types within the City. The recommended setbacks within a designated management area include a riparian corridor, a development setback area, and an additional area that extends from the outward edge of the development area. The riparian corridor[3] is adjacent to the watercourse and is the width of a riparian and/or immediate watercourse influence area and is measured from the centerline of the watercourse. The development setback area[4] is the area outward from the edge of the designated riparian corridor where development is restricted, providing a buffer between the riparian corridor and development. The management area, riparian corridor, and development setback area distances vary depending on the watercourse area and its categorization.[5] All distances are measured from the centerline of the watercourse outward as shown on the above schematic.



PLAN VIEW (Sample Development Plan Layout)



CROSS-SECTION

[3] The riparian corridor is intended to provide an adequate riparian width to maintain or enhance habitat and water quality values. Allowable uses within the riparian corridor are limited.

[4] The development setback width is intended to provide an appropriate water quality and habitat buffer between the riparian corridor and development within the remaining management area. New development generally would be limited in this area to landscaping and limited pervious surfaces.

[5] The 25 feet outward from the edge of the development setback is intended to provide an adequate area for permit review and to be consistent with the *Management Plan* goals and City of Santa General Plan/LCP policies to maintain or enhance water quality or riparian habitat values.

The *Management Plan* outlines a process for permitting development adjacent to watercourses. In order to determine the level of permit review required for the variety of watercourse types within the city, all watercourse reaches are categorized as an "A", "B" or "C" watercourse as further described below. These categories are based on the quality, continuity, and enhancement potential of the riparian habitat associated with the watercourse, the potential for the watercourse to support special status species, and the ability of the habitat to be expanded based upon existing development.

> CATEGORY "A" includes watercourses and/or watercourse reaches that support high quality riparian habitat, with a vegetated corridor that is continuous and with few gaps. Category "A" watercourses abut undeveloped lands or rural residential yard areas, and this category generally has the known presence of or high potential for a special status species. The goals of this category include protecting and restoring existing vegetated watercourses as wildlife movement corridors through removal of invasive non-native plant species and restoration of native vegetation, as well as protection and improvement of water quality with implementation of proper erosion control and best management practices, and planting of appropriate species. Category A watercourses include all segments of the San Lorenzo River, all segments of Carbonera, Glen Canyon, Moore, and Redwood Creeks, and a segment or segments of Arana Gulch, Arroyo Seco, Branciforte, Pasatiempo, and Pogonip Creeks.
>
> CATEGORY "B" includes watercourses and/or watercourse reaches that are located in urban areas and that function primarily as a drainage system. This category includes watercourses with limited riparian habitat that is generally confined by adjacent land uses which limits its ability for the corridor to expand. Issues of water quality and flow conveyance are the focus for this category. The goals of this category include improving habitat by voluntary removal of invasive, non-native plant species and improving water quality and flow with implementation of proper erosion control and best management practices, and planting of appropriate species. Most of the watercourse segments are within this category except for those identified above in Category A and below in Category C.
>
> CATEGORY "C" includes drainage channels that are concrete or man-made, above or below ground culverts with very low to no habitat value. The corridor is fragmented or non-existent, with little to no room for restoration without significant land acquisition or easements. Category "C" watercourses are exempt from these watercourse regulations. Category C watercourses include one or more segments of Arana Gulch, Arroyo de San Pedro Regaldo, Arroyo Seco, Dodero Spring, Laurel, Longview, Ojos de Agua, Pasatiempo, and Pogonip Creeks.

The *Management Plan* establishes the requirements for obtaining a Watercourse Development Permit, and specifies uses permitted within the designated management area, development setback area and riparian corridor. The *management area* is the area where the watercourse regulations would apply. Any development located outside of the *management area* would not be subject to watercourse regulations. Generally, Watercourse Development Permits would be

required for allowed uses within any *setback area* of a Category A watercourse and for allowed uses within the *riparian corridor* and *development setback* areas of a Category B watercourses. Development activities within Category C watercourses are exempt. Allowable projects or activities would be required to comply with the applicable Watercourse Development Standards, and management guidelines are identified that property owners will be encouraged to implement. The standards address the issues identified below.

- Use of permeable paving;
- Drainage and water quality protection;
- Use of suitable plant materials;
- Use of appropriate lighting;
- Habitat enhancement;
- Construction Best Management Practices;
- Management in High Fire Hazard Areas; and
- Erosion control and bank protection measures.

San Lorenzo Urban River Plan

The San Lorenzo River drains a 138 square mile watershed, featuring forested and urbanized areas within the City and Santa Cruz County. Within the City limits, the lower San Lorenzo River flows southward from the Sycamore Grove area of Pogonip, through the center of Santa Cruz, to Monterey Bay. This lower reach of the San Lorenzo River encompasses much of the river's historic floodplain. Branciforte Creek and Jessie Street Marsh are tributaries to the San Lorenzo River.

The *San Lorenzo Urban River Plan* is the outcome of a planning process initiated by City Council in 1999 to update previous plans for the San Lorenzo River, Jessie Street Marsh, and Branciforte Creek that guided flood control, vegetation restoration and public access improvements along the San Lorenzo River. The need for updated plans was a result of the river levee improvement project in the late 1990s, listing of steelhead and coho salmon as federally threatened species, and federal designation of the San Lorenzo River as critical habitat for these species. The plan, adopted by City Council in 2003, articulates a community vision for the corridor encompassing the lower Lorenzo River, Branciforte Creek and Jessie Street Marsh as both a wildlife area and as a community recreation and public open space amenity. It contains recommendations for habitat enhancement, as well as public access and ideas to promote river-oriented development. Recommendations regarding land use and public access are addressed in the LAND USE (Chapter 4.1) and PUBLIC SERVICES-Parks and Recreation (Chapter 4.6) sections of this EIR, respectively.

One of the key goals of the plan is to enhance and restore biotic values of the river, creek and marsh fish and wildlife habitat. The "Lower San Lorenzo River and Lagoon Management Plan" is included as an appendix in the San Lorenzo Urban River Plan and provides resource management and restoration recommendations within the constraints of providing flood protection. Management and restoration recommendations address: annual vegetation management; summer lagoon water level management; enhancement of the aquatic, shoreline and riparian habitats; and marsh restoration. Resource management recommendations for Branciforte Creek, the largest tributary to the River within the City limits, and Jessie Street

March are also included in the *San Lorenzo Urban River Plan*. These recommendations address vegetation management, native tree and riparian planting, and non-native tree removal.

Management Plans for City-Owned Land

ARANA GULCH MASTER PLAN

Arana Gulch is a City-owned greenbelt property situated along the City's eastern boundary, to the north of the Santa Cruz Harbor. This 67.7-acre open space site, purchased by the City in 1994, features coastal prairie, riparian and oak woodland, seasonal wetlands, and the lower reaches of Arana Gulch Creek. The *Arana Gulch Master Plan* was adopted by City Council in July 2006 as a Park Master Plan with certification of an accompanying EIR. In addition to public access and use recommendations, which are addressed in the PUBLIC SERVICES – Parks and Recreation (Chapter 4.6) section of this EIR, the *Arana Gulch Master Plan* identifies resource management areas and management guidelines for each of following areas:

- Coastal Prairie/Santa Cruz Tarplant (30.2 acres)
- Arana Gulch Creek Riparian and Wetland (34.5 acres)
- Hagemann Gulch Riparian Woodland (3.0 acres)

Arana Gulch also supports three types of Environmentally Sensitive Habitat Areas (ESHAs), as defined under the California Coastal Act. These areas include the tarplant habitat areas, riparian wetlands and seasonal wetlands.

The "Santa Cruz Tarplant Adaptive Management Program," which aims to enlarge the tarplant population by improving the quality of the coastal prairie habitat, is included as an appendix to the Master Plan. The Santa Cruz tarplant (*Holocarpha macradenia*) is a state listed endangered species and a federally-listed threatened species. In 2002, the Arana Gulch property was designated by the USFWS as critical habitat for Santa Cruz tarplant. Specific tarplant management strategies include mowing and raking, soil scraping, controlled burns, grazing, and removal/restoration of unauthorized pathways.

The Arana Gulch Creek Riparian and Wetland Management Area is limited in public access to minimize impacts to wildlife species. Management strategies focus on non-native vegetation removal, closure of unauthorized pathways, and further hydrologic analysis regarding bank erosion along the tidal reach of Arana Gulch Creek.

JESSIE STREET MARSH MANAGEMENT PLAN

Jessie Street Marsh is a City-owned wetland and open space site located just to the north of the San Lorenzo River lagoon that was purchased by the City as part of the mitigation for the City's wastewater treatment plant expansion project. The marsh area is bounded by a bluff to the east, residential properties to the west and north, and East Cliff Drive/San Lorenzo River levee to the south. Freshwater flows into the marsh area from stormwater runoff and springs along the bluff. Historically, Jessie Street Marsh was part of a large tidal estuary open to the San Lorenzo River. After construction of the San Lorenzo River levee system in 1955, river tidal flows and most saltwater circulation were blocked from entering the marsh. Water circulation was significantly limited and a cat-tail dominated freshwater marsh replaced a more

ecologically valuable salt marsh. The southern portion of the marsh was also filled and reduced to a small, narrow drainage channel. The habitat value was further reduced by the spread of non-native plant species.

The *Jessie Street Marsh Management Plan* was adopted by City Council in 1999 to provide a long-term plan to preserve and enhance the natural resources of the marsh, improve water quality, manage flood waters, and provide appropriate public access. The plan includes specific management actions for both City-owned lands and recommendations for adjacent privately-owned properties. In addition to public access and use recommendations, which are addressed in the PUBLIC SERVICES – Parks and Recreation (Chapter 4.6) section of this EIR, the Management Plan proposes to modify the marsh area to increase the tidal exchange with the San Lorenzo River and enhance salt/brackish marsh and freshwater marsh habitat areas. Both marsh and upland woodland habitats would also be enhanced by removing invasive, non-native plants and revegetation of degraded areas. The management approach is to maximize the biodiversity of the marsh areas and enhance the biotic resources.

MOORE CREEK CORRIDOR ACCESS AND MANAGEMENT PLAN

The Moore Creek corridor is located along the western boundary of the City, extending from the University of California campus lands southward to Monterey Bay. Moore Creek, an intermittent stream, includes two main branches (east and west) which flow through steep sided canyons before joining together just north of Highway 1. To the south of Highway 1, the main stem flows through Antonelli Pond, an artificially created pond, and Natural Bridges State Beach to Monterey Bay. The corridor includes private property and public lands, and a mix of land uses. Habitat types within natural areas include riparian, grassland, and woodlands. Antonelli Pond is an artificial freshwater pond that was created in the early 1900s as a holding basin for logs to be milled at a sawmill on the eastern shores of the pond that is currently owned by The Land Trust of Santa Cruz County. The City purchased the upper west branch 246-acre greenbelt property in 1998 (see Moore Creek Preserve discussion below).

The *Moore Creek Corridor Access and Management Plan* was adopted by City Council in 1987 and incorporated into the City's General Plan as an area plan. This management plan was prepared as a focused effort to bring together the then existing policies from the City's General Plan and Western Drive Plan into a comprehensive document. Recommendations are included for public access, land dedication and open space easements, and resource management. In 2002, the City approved the *Moore Creek Interim Management Plan* which more specifically addresses management of the 246-acre Moore Creek Preserve area of the corridor. The *Moore Creek Corridor Access and Management Plan* provides recommendations regarding management of vegetation, water quality, and soil erosion and sedimentation. Public access and use recommendations are addressed in the PUBLIC SERVICES – Parks and Recreation (Chapter 4.6) section of this EIR.

MOORE CREEK PRESERVE INTERIM MANAGEMENT PLAN

Moore Creek Preserve is a City-owned greenbelt property located on the western edge of the City, to the north of Highway 1. This 246-acre natural area was purchased by the City in 1998. The State of California holds two easements over the property. One of the easements (85 acres) encompasses the canyon and oak woodlands along the Moore Creek (west branch)

corridor. The second easement (160 acres) includes the uplands, featuring primarily coastal prairie. Numerous threatened and endangered plant and wildlife species have been documented within the Preserve.

The *Moore Creek Preserve Interim Management Plan* was adopted by City Council in June 2002 as an "Interim Management Plan", not as a Park Master Plan. The document is intended to guide management of the Moore Creek Preserve until preparation/approval of a long term Park Master Plan for the property. The Plan identifies three plant community resource management areas with specific management guidelines for habitat areas for three special status species as identified below. Resource Management Guidelines are included in the Interim Plan for each of these areas. Specific management strategies include cattle grazing, mowing, non-native plant species removal, installation of grazing fencing, monitoring trail use for impacts, and conducting annual surveys.

Plant Communities
- Coastal Prairie
- Riparian and oak woodland (Moore Creek canyon and Wilder Creek canyon)
- Mixed eucalyptus and Monterey cypress grove (Monarch butterfly over-wintering habitat)

Special Status Species
- Ohlone Tiger Beetle Habitat
- San Francisco popcorn flower habitat
- California red-legged frog habitat

NEARY LAGOON MANAGEMENT PLAN

Neary Lagoon is a City-owned wetland and natural area situated in the central part of the City (see Figure 4.6-2). Acquired by the City in 1967, the 14-acre lagoon and surrounding riparian and woodland habitat within the management area total 44 acres. The City's wastewater treatment plant is located adjacent to the lagoon. The outlet from the lagoon to Monterey Bay is located at Cowell Beach.

Neary Lagoon was originally an oxbow of the San Lorenzo River that was gradually isolated from the main river channel. During the 1850s, the lagoon covered approximately 75 acres extending to what is now Pacific Avenue in downtown. The property was used for farming with a small dairy in the late 1800s, and there were several attempts made to drain the lagoon. By the 1930s the lagoon was primarily a marsh with little open water. In the 1970s, the City designated the Neary Lagoon Park and Wildlife Refuge as a community facility.

The *Neary Lagoon Management Plan* was adopted by City Council in July 1992 and the Coastal Commission in August 1992 in fulfillment of a condition of Coastal Commission approval in 1975 of a coastal permit for the City to construct park and wildlife refuge improvements. The Plan is a comprehensive guide that addresses public access and use, hydrology, water quality, vegetation management and habitat restoration, wildlife and fishery management, cultural resources and aesthetics. Public access and use recommendations are addressed in the PUBLIC SERVICES – Parks and Recreation (Chapter 4.6) section of this EIR. The plan also addresses management of water lagoon levels, important for flood protection, water quality, management of vegetation and wildlife habitat, and mosquito control. Specific management

actions are included for each of these elements. The plan also identifies habitat types and Management Zones A through J. The habitat areas include:

- Freshwater Marsh
- Open Water
- Riparian and Mixed Oak Woodland
- Grassland, Recreational and Ruderal Areas

Habitat and wildlife/fisheries management actions include removal of non-native plant and wildlife species, maintaining a balance between freshwater marsh and open water habitat through removal of tules and cattails, establishing and enhancing islands within the lagoon for waterfowl, grassland restoration, and conducting annual surveys and monitoring.

POGONIP MASTER PLAN

Pogonip is a City-owned greenbelt property located approximately one mile north of downtown Santa Cruz between the University of California campus and the San Lorenzo River corridor. This property features coastal prairie, woodlands, creeks, springs and a reach of the San Lorenzo River known as Sycamore Grove. Pogonip was once part of the Cowell Ranch landholdings. The property was extensively logged and features historic resources associated with the lime production industry in the mid-to-late 18th century.

The *Pogonip Master Plan* was adopted by City Council in July 1998 as a Park Master Plan. This long-range plan addresses public access, recreational uses, historic resource rehabilitation and preservation, and natural resource management and protection. Public access and use recommendations are addressed in the PUBLIC SERVICES – Parks and Recreation (Chapter 4.6) section of this EIR. The *Pogonip Master Plan* identifies six resource management areas where sensitive habitat areas, plant communities, and plant and wildlife species occur. These areas include:

- Coastal Prairie
- Wetland/Freshwater Marsh
- Central Coast Cottonwood-Sycamore Riparian Forest
- Central Coast Riparian Scrub
- Robust Spineflower Habitat
- Ohlone Tiger Beetle Habitat

Resource Management Guidelines are included in the Master Plan for each of these areas. Specific management strategies include grazing, mowing, non-native plant species removal, prescribed burns, closure of unauthorized trails, monitoring trail use for impacts, and conducting annual surveys. Within the mixed evergreen forest, upland redwood forest, and coast live oak forest, the focus is to prevent future degradation due to invasive non-native species, visitor related impacts, and illegal uses such as camping. The Master Plan also includes a Fire Management Element, which addresses values at risk from fire, fire hazards, risk of ignition, methods of fuel management, and fire management actions.

State Park General Plans

LIGHTHOUSE FIELD STATE BEACH GENERAL PLAN

Lighthouse Field State Beach (SB) is a 36-acre open space situated along Monterey Bay, featuring coastal terrace, ocean cliffs, and Its Beach. The open space features grassland (primarily non-native), willows, Monterey cypress trees, and eucalyptus groves. The State of California owns the field area and the western coastline, while the City owns Lighthouse Point and the eastern coastline. Lighthouse Field is classified as a State Beach, which consist of areas with frontage on the ocean, or bays, and are designed to provide beach-oriented recreational activities.

The *Lighthouse Field State Beach General Plan* was adopted in 1984 by the state. A general plan is the primary management document for a State Park unit. The plan evaluates and defines proposed land use, facilities, operations, and management of resources. In addition to public access and use recommendations, which are addressed in the PUBLIC SERVICES – Parks and Recreation (Chapter 4.6) section of this EIR, the Resource Management Plan component of the *Lighthouse Field State Beach General Plan* addresses hydrologic, geologic, plant, wildlife and aesthetic resources. An overview of some of the management recommendations includes:

- Convey stormwater primarily via existing surface channels and encourage established willows and other native species by allowing natural propagation.
- Remove invasive non-native vegetation and plant native vegetation where exotic species are removed.
- Maintain existing Monterey cypress and plant young cypress to replace declining trees.
- Allow the existing grassland to undergo natural succession.
- Prohibit the taking of marine or terrestrial life.
- Place additional rip-rap at the base of eroding coastal bluffs only when deemed necessary to reduce a severe erosion hazard. Plant native groundcover vegetation on bluffs.

NATURAL BRIDGES STATE BEACH PLAN

Natural Bridges State Beach (SB) is a 65-acre open space and wetland situated on Monterey Bay, on the western boundary of the City. Primary resources include the natural rock bridge, a beach, Monarch butterfly overwintering habitat and the Moore Creek wetland. Natural Bridges was formally classified as a State Beach in 1962.

The preliminary *Natural Bridges State Beach General Plan* was adopted by the State Parks Commission in 1988. The final general plan document, dated 1992, is the primary management document for this State Park unit. The Resource Element of the *Natural Bridges State Beach General Plan* addresses management of wetlands, riparian vegetation, Monarch butterfly habitat, paleontological resources, marine and animal life. An overview of some of the management recommendations includes:

- Prepare management plans for the Moore Creek wetland and Monarch Butterfly habitat.

- Remove invasive exotic vegetation, except eucalyptus trees used by Monarch butterflies, and replace with native species from local population sources.

TWIN LAKES STATE BEACH GENERAL PLAN

Twin Lakes State Beach (SB), totaling 91.6 acres, is located within the eastern portion of the City and the unincorporated area of Santa Cruz County. Within the City limits, the State Beach lands include Seabright Beach and San Lorenzo Point along the eastern mouth of the San Lorenzo River. The preliminary *Twin Lakes State Beach General Plan* was adopted by the State Parks Commission in 1988. The final general plan document is dated 1992.

The Resource Element of the *Twin Lakes State Beach General Plan* pertaining to Seabright Beach and San Lorenzo Point primarily address resource management of bluffs, paleontological resources, shoreline protection, and marine life.

4.8.2 RELEVANT PROJECT ELEMENTS

PROPOSED GOALS, POLICIES & ACTIONS

The NATURAL RESOURCES AND CONSERVATION chapter of the draft *General Plan 2030* includes the required conservation element. Three goals and 13 accompanying policies and associated actions address riparian and wetland habitat, special status species, sensitive habitat areas, wildlife movement, tree protection, and open space management. The three natural resources goals related to biological resources are:

NRC1 *Protected, enhanced, and sustainably managed creek systems, riparian environments, and wetlands*

NRC2 *Protected, enhanced, and sustainable native and natural plant and animal communities and habitats*

NRC3 *Conservation and stewardship of resources*

Several policies and actions in other chapters of the proposed General Plan also seek to protect, preserve and/or manage open space and natural areas throughout the City (CD 1.1.3, LU 2.3, LU 3.11), including the Monterey Bay National Marine Sanctuary. Biotic monitoring and fisheries conservation strategies are proposed to protect watersheds that supply water to the City (CC 3.3.6, CC 3.3.7).

FUTURE DEVELOPMENT POTENTIAL

The *General Plan 2030* Land Use Map and land use designations are largely unchanged from the 1990-2005 General Plan / Local Coastal Program, except for three new mixed use land designations have been developed and applied to the following major transportation corridors: Mission Street, Ocean Street, Soquel, Avenue, and Water Street. Additionally, some of the

General Plan 2030 policies and actions also support mixed use districts and/or intensified redevelopment, such as a Mixed Use River District, expansion of the High Density Overlay on Front and lower Pacific, and additional height and intensity along Pacific north of Cathcart.

Land Use actions LU1.1.4 and LU1.1.5 address development and land use for specific sites: the Swenson property and the Golf Club Drive property, respectively. LU2.2.3 also includes addition of a 5.5-acre parcel adjacent to the Dimeo Lane landfill and Resource Recovery Center, but specific uses haven't been identified, although the site will not be used as part of expansion of the landfill disposal area. In addition, the proposed *General Plan 2030* supports development of a desalination plant (Policy CC3.1.3), but a specific site is not identified.

The proposed plan further calls for evaluation and mitigation of potential impacts from new development (NRC2.2.1). Table 4.8-6 at the end of this chapter is taken from the proposed *General Plan 2030*. It summarizes assessment protocols to be used by the City to determine if a sensitive biological resource is present on a proposed development site, and identifies general avoidance or management strategies to be employed when sensitive biological resources occur.

4.8.3 IMPACTS AND MITIGATION MEASURES

CRITERIA FOR DETERMINING SIGNIFICANCE

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines (including Appendix G), City of Santa Cruz plans, policies and/or guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

8a Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service;

8b Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

8c Have a substantial adverse effect, either directly or through habitat modifications on; or substantially reduce the number or restrict the range of any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

8d Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

8e Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate a plant or animal community;

8f Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

8g Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan;

IMPACT ANALYSIS

Based on the significance criteria identified above, there are no currently adopted or approved Habitat Conservation[6] or Natural Community Conservation Plans (8g) that apply to lands within the City planning area. The following impact analyses address riparian, wetland and sensitive habitats (8a, 8b); special status species (8c); wildlife movement and breeding (8d); wildlife habitat reduction (8f); and conflicts with local policies and ordinances protecting biological resources (8e).

Potential Future Development & Buildout

Adoption and implementation of the proposed *General Plan 2030* would not directly result in increased new development. However, the draft General Plan includes policies and a land use map that support additional development as summarized in subsection 4.8.2 above. Buildout projections indicate that potential new development accommodated by the draft general plan to the year 2030 could total 3,350 residential units, 3,140,000 square feet of commercial, office and industrial development and new hotel rooms, primarily on infill and underutilized lots, as described in the PROJECT DESCRIPTION (Chapter 3.0) and LAND USE (Chapter 4.1) sections of this EIR.

Development under the proposed General Plan would primarily occur on vacant infill sites, on underutilized properties that could redeveloped at higher densities and/or land use intensities, and in the new mixed-use districts along the City's four major street corridors: Mission Street, Ocean Street, Soquel Avenue, and Water Street. Based on the estimated development occurring under the proposed plan,[7] approximately 55 percent of all new housing, 45 percent of new commercial development and 52 percent of new office development would located along these corridors.

[6] As discussed in the subsection 4.8.1, the City is in the process of developing a HCP, but a draft document has not been completed. See discussion on pages 4.8-25 and 26.

[7] See Table 3-3 in the PROJECT DESCRIPTION (Chapter 3.0) section of this EIR and Figure 2-3 for estimated distribution of new development per specific areas in the City.

Sensitive Habitats

Impact 4.8-1: Riparian and Wetland Habitats
Adoption and Implementation of the proposed *General Plan 2030* would accommodate future development that could directly or indirectly impact riparian and/or wetland habitat areas within and adjacent to the City. With implementation of the proposed policies and actions for resource protection and adherence to other City's plans and regulations protecting these habitat areas, this is considered a *less-than-significant impact*.

The City is primarily developed, and as indicated above, new development would predominantly occur within developed areas. However, there are a few remaining vacant lots and underdeveloped properties located within developed areas that are also located adjacent to water bodies, watercourses and/or riparian habitat areas. These areas include:

- The Swenson Site adjacent to Antonelli Pond;
- The Golf Club Drive area adjacent to Pogonip Creek; and
- Portions of the area along Seventh Avenue that is within the City's Sphere of Influence, but outside City limits; portions of which border Arana Gulch and the Small Craft Harbor area.

Development in these areas or other parcels adjacent to streams and riparian habitats could result in impacts to sensitive riparian habitat areas with future development accommodated by the *General Plan 2030*. Riparian habitat and specific development setbacks are specified in the City's adopted *City-Wide Creeks and Wetlands Management Plan*. Future development, including the areas identified above, would be required to provide riparian setbacks and implement best management practices and development standards as set forth in this Plan, and included in the City's Zoning Ordinance (section 24.08, Part 12-Watercourse Development Permit). Requirements for allowed uses also are provided. Future development also would be reviewed for compliance with City policies and plans, in addition to being subject to site-specific environmental review under CEQA. Furthermore, Action LU1.1.5 sets for specific development/design directives for the Golf Club Drive area, which includes preservation of up to five acres of open space that include riparian corridors.

Known wetlands are identified in the City's adopted *City-Wide Creeks and Wetlands Management Plan*, and shown on Table 4.8-1. However, only known wetlands are mapped, and other wetlands may occur within future development areas. Of the major vacant sites, the Swenson property is located adjacent to Antonelli Pond. However, proposed Action LU1.1.4 sets forth specific development/design directives for the Swenson parcel, which include: wetland buffers, locating parking away from Antonelli Pond and preserving public access to Antonelli Pond.

In addition, to these specified properties identified for development, the proposed General Plan also includes some policies that support access and/or other passive uses in or near sensitive habitat areas. Action NRC1.1.2 does support access improvements in riparian areas, such as unpaved narrow trails, boardwalks, and vista points that could result in potential direct or indirect impacts on riparian and wetland resource. However, the action is qualified by

indicating these improvements be provided "where consistent with riparian and wetland protection,", and to this end ensures that the sensitive habitat would be protected. While trails and public access may result in indirect impacts, but the General Plan includes policies to protect riparian resources where access is provided. Similarly, the proposed Plan includes policies to encourage low-impact uses in areas upstream of City watercourses. (NRC1.2).

The General Plan policies and actions outlined in Table 4.8-5 and existing City regulations will serve to protect biological resources that may be present or encountered as part of future development accommodated by the proposed General Plan. The proposed *General Plan 2030* includes a number of policies that serve to protect riparian habitat areas, and thus, avoid or mitigate potential impacts to riparian habitat that may occur as a result of development under the General Plan. Policy NRC1.1 and its accompanying five actions seek to protect river and wetland areas. The General Plan policies and actions (summarized in Table 4.8-5) will protect riparian habitats through implementation of the *City-wide Creeks and Wetlands Management Plan* with specified development setbacks (NRC1.3.1), encouraging riparian revegetation and restoration efforts (NRC1.1.4), and protecting and managing natural and open space areas (CD1.1.3, LU2.3.3, LU3.11, LU3.11.3, NRC6.1, NRC6.3.).

The proposed plan further calls for evaluation and mitigation of potential impacts from new development (NRC2.2.1). Furthermore, the proposed *General Plan 2030* includes a table that identifies habitat assessment and management protocols for sensitive riparian and wetland habitats, including the type of reviews/studies that will be required as part of development/management of riparian habitat areas, including wetland delineations and buffer determinations, along with potential mitigation and/or management (see Table 4.8-6 at the end of this chapter). In addition to compliance with the City's Creek Management Plan and Watercourse Development zoning regulations, development adjacent to watercourses may also be subject to review and approval by the California Department of Fish and Game (CDFG) pursuant to section 1602 of the state Fish and Game Code that requires a Streambed Alteration Agreement with CDFG for any work within a creek channel.

Conclusion. Adoption and implementation of the proposed *General Plan 2030* would not directly result in new development, but new development and increased population accommodated by the plan could result in adverse impacts to sensitive habitat areas. With implementation of the proposed *General Plan 2030* goals, policies and actions that set forth measures to avoid and minimize adverse impacts on sensitive riparian and wetland habitats as summarized on Table 4.8-5, as well as future environmental review of specific development projects and compliance with local regulations and plans, particularly the *City-Wide Creeks and Wetlands Management Plan*, the proposed *General Plan 2030*'s indirect impact on sensitive habitats would be considered less-than-significant.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Impact 4.8-2: Other Sensitive Habitat Areas
Implementation of the proposed *General Plan 2030* would result in future development that could directly or indirectly impact sensitive habitat areas within and adjacent to the City (other than riparian and wetland habitats). Within implementation of the proposed policies and actions for resource protection, this is considered a *less-than-significant impact*.

In addition to sensitive riparian and wetland habitat areas, coastal prairie and coastal bird habitat along coastal bluffs would be considered sensitive habitat areas. The City of Santa Cruz is primarily developed; the majority of sensitive habitat (other than riparian and wetland) are protected within the City-owned and managed greenbelt and open space areas and along creeks and watercourses as depicted on Figure 4.8-2. Of the specific vacant sites identified for future development, the Swenson site contains potential coastal prairie habitat. Generally, there is no development that would be located along the coast that would affect coastal bird habitat, although some public works or infrastructure maintenance/repairs in the future may be located in this area.

The proposed *General Plan 2030* includes a number of policies that serve to protect sensitive habitat areas (other than riparian and wetland habitats that are addressed above in Impact 4.8-1), and thus, avoid or mitigate potential impacts to sensitive habitat that may occur as a result of development accommodated by the draft the *General Plan 2030*. These policies include protection of sensitive habitat areas; management of vegetation and grading within sensitive habitats; protection of tree groves that provide habitat for monarch butterflies; and review of future development proposals for impacts and mitigation. The General Plan policies and actions (summarized in Table 4.8-5) will protect sensitive habitat areas and important vegetation communities and wildlife habitat, particularly sensitive and edge habitats ("ecotones"), which specifically includes protecting coastal roosts and rookeries to prevent disturbance during breeding or loss of habitat due to construction, recreational activities or special events (NRC2.2.2). Additionally, the proposed plan seeks to minimize grading and control pests and non-native invasive species in sensitive habitat areas (NRC2.3.4, NC3.3.5). Revegetation and restoration of native plant areas also is supported (NRC2.2.3, NRC2.2.5). Policy NRC2.4 also seeks to protect, manage, and enhance tree groves and understory that provide sensitive habitat features, specifically calling for maintenance of a Monarch Butterfly Management Plan (NRC2.4.1).

The proposed plan further indicates that as part of the CEQA review process, future development projects will be required to evaluate and mitigate potential impacts to sensitive habitat (including special-status species) for sites located within or adjacent to these areas (NRC2.2.1). Furthermore, the proposed *General Plan 2030* includes a table that identifies habitat assessment and management protocols for sensitive habitat areas, including the type of reviews/studies that will be required along with potential mitigation and/or management (see Table 4.8-6 at the end of this chapter. In addition, compliance with Section 24.14.080 of the City's Municipal Code includes provisions to protect wildlife habitat and protected species for areas specified in the City's existing General Plan (Maps EQ-8 and EQ-9). (This section of the Zoning Ordinance will require updating to reflect new maps developed as part of the *General Plan 2030*.)

TABLE 4.8-5
Proposed General Plan Policies & Actions that Avoid or Reduce Biotic Resource Impacts

Type of Measure / Action	Policies / Actions
PROTECT RIPARIAN, WETLAND & OTHER SENSITIVE HABITATS	• Protect river and wetland areas: NRC1.1, NRC1.1.2, NRC1.3.1 • Conserve riparian & wetland resources in accordance with Creeks Plan and San Lorenzo River Plan: NRC1.3.1, CD3.1.2 (update San Lorenzo River Plan) • Require riparian & wetland setbacks set forth in City's Creek Plan: NRC1.1.1 • Encourage restoration and enhancement of riparian and wetland resources: NRC1.3, NRC1.1.4 (revegetation in buffer areas)
PROTECT OTHER SENSITIVE HABITATS	• Protect sensitive habitat areas: NRC2.2, NRC2.4 (tree groves that provide sensitive habitat features) • Vegetation, grading and pest control management in sensitive habitats: NRC2.2.3, NRC2.2.4, NRC2.2.5 • Protect coastal roosts and rookeries: NRC2.2.2 • Support protection of Monterey Bay National Marine Sanctuary & its environs: NRC6.2, CD1.1.2
PROTECT SPECIAL STATUS SPECIES	• Protect, enhance or restore special status species habitat: NRC2.1 • Maintain up-to-date list, map, inventory of special status species: NRC2.1.1, NRC2.1.2, NRC2.1.5 • Protect sensitive tree groves and maintain Monarch Butterfly Management Plan: NRC2.4.1 • Biotic monitoring & habitat protection in watersheds: CC3.3.6
NATIVE REVEGETATION	• Native revegetation in riparian & wetland setbacks: NRC1.1.4 • Encourage planting and restoration of native vegetation: NRC2.2.3 • Encourage eradication and control of non-native, invasive species: NRC2.2.5
PROTECT WILDLIFE DISPERSAL CORRIDORS	• Protect, enhance significant dispersal corridors: NRC2.3, NRC2.3.1
OPEN SPACE & RESOURCE PROTECTIN and MANAGEMENT	• Protect & manage open space / native habitat areas: LU2.3.3, LU3.11, LU3.11.3, CD1.1.3 (management plans), NRC6.1, NRC6.3. • Preserve/ manage woodland areas within open spaces: NRC3.2 • Encourage continued preservation of UCSC open space uses pursuant to LRDP: LU2.3.4
ENCOURAGE LOW-IMPACT USES & MITIGATE IMPACTS OF DEVELOPMENT	• Encourage Low-Impact Uses Upstream of City's River & Riparian Habitats: NRC1.2 • Evaluate & Mitigate new uses in watershed and riparian areas: NRC1.2.1, NRC1.2.2. • Evaluate & Mitigate Future Development Impacts: NRC2.1.3 (special status species), NRC2.2.1 (CEQA process), • Implement strategies to reduce impacts: NRC2.1.4 • Appropriate land uses & development standards that don't adversely impact open spaces: LU3.11.2
TREE PROTECTION	• Protect tree resources & heritage trees: NRC5.1, CD4.3.4 • Maintain & increase urban tree canopy & tree diversity: NRC5.1.2, NRC5.2, NRC5.2.1 (additional street trees) • Educational programs to promote urban forest: NRC5.1.1

The Monterey Bay could be deemed a sensitive habitat due to its designation as a federal marine sanctuary. The proposed *General Plan 2030* supports protection of the Monterey Bay National Marine Sanctuary and its environs (Policy 6.2), and numerous policies seek to protect water quality as further described in the HYDROLOGY, STORM DRAINAGE & WATER QUALITY (Chapter 4.7) section of this EIR. The draft general plan does support development of a desalination plant that could result in impacts to the marine environment due to intake systems and/or discharge into the ocean. Potential impacts associated with the construction and operation of a desalination facility are summarized in the WATER SUPPLY (Chapter 4.4.5) section of this EIR.

Conclusion. Adoption and implementation of the proposed *General Plan 2030* would not directly result in new development, but new development and increased population accommodated by the plan could result in adverse impacts to sensitive habitat areas. With implementation of the proposed *General Plan 2030* goals, policies and actions as summarized on Table 4.8-5, as well as future environmental review of specific development projects and compliance with local regulations and plans, the proposed *General Plan 2030*'s indirect impact on sensitive habitats would be considered less-than-significant.

Mitigation Measures

No mitigation measures are required, but revision of the following *General Plan 2030* actions are recommended to strengthen the identification of sensitive habitat areas that will be subject to project-level reviews in the future.

Recommended Revisions to the *Draft General Plan 2030*

Revise or add policies/actions as indicated below. Deleted text is shown in ~~strikeout~~ typeface, and new text is shown in underlined typeface.

NRC2.2 Protect sensitive habitat areas and important vegetation communities and wildlife habitat, to include riparian, wetland (salt marsh and freshwater wetland), coastal prairie, coastal bird habitat, and habitat that supports special status species, as well as, ~~particularly~~ sensitive and edge habitats ("ecotones").

NRC2.2.6 Amend Zoning Ordinance section 24.14.080 to provide an updated reference the sensitive habitats identified in the *General Plan 2030*.

Special Status Species

Impact 4.8-3: Special Status Species
Implementation of the proposed *General Plan 2030* would result in future development that could directly or indirectly impact special status species. With implementation of the proposed policies and actions for resource protection, this is considered a *less-than-significant impact*.

The proposed *General Plan 2030* would accommodate future development pursuant to planned land use designations contained in the Plan. Development under the proposed General Plan would primarily occur on vacant infill sites, on underutilized properties that could redeveloped at higher densities and/or land use intensities, and in the new mixed-use districts along the City's four major street corridors: Mission Street, Ocean Street, Soquel Avenue, and Water Street. Based on the estimated development occurring under the proposed plan,[8] approximately 55 percent of all new housing, 45 percent of new commercial development and 52 percent of new office development would located along these corridors.

The City of Santa Cruz is primarily developed, except for a few remaining vacant lots located within developed areas, the following three areas within the planning area are primarily undeveloped or underdeveloped. These areas are located adjacent to water bodies and/or watercourses.

- The Swenson Site adjacent to Antonelli Pond;
- The Golf Club Drive area adjacent to Pogonip Creek; and
- Portions of the area along Seventh Avenue that is within the City's Sphere of Influence, but outside City limits; portions of which border Arana Gulch.

Known locations of special status species have been incorporated into the City's GIS mapping system. According to the proposed General Plan assessment protocols, future species surveys and assessments will be required as part of the CEQA-review process in order to evaluate and mitigate potential impacts related to future development (see Table 4.8-6 at the end of this chapter). Additionally, the proposed *General Plan 2030* includes several policies, outlined below, that serve to protect special status species, and thus, mitigate potential impacts to sensitive habitat that may occur as a result of development under the General Plan. These policies include protection of sensitive habitat areas; management of vegetation and grading within sensitive habitats; protection of tree groves that provide habitat for monarch butterflies; and review of future development proposals for impacts and mitigation. Policy NRC2.1 and its five accompanying actions seek to protect, enhance, or restore habitat for special-status plant and animal species through maintaining up-to-date species list, map and inventory (NRC2.1.1, NRC2.1.2, NRC2.1.5) and evaluating and mitigating impacts associated with new development (NRC2.1.3, NRC2.1.4).

Conclusion. Adoption and implementation of the proposed *General Plan 2030* would not directly result in new development, but new development and increased

[8] See Table 2-3 in the PROJECT DESCRIPTION (Chapter 3.0) section of this EIR and Figure 3-2 for estimated distribution of new development per specific areas in the City.

population accommodated by the plan could result in adverse impacts to special status species if present at a particular development site. With implementation of the proposed *General Plan 2030* goals, policies and actions as summarized on Table 4.8-5, as well as future environmental review of specific development projects and compliance with local regulations and plans, the proposed *General Plan 2030*'s indirect impact on sensitive habitats would be considered less-than-significant.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Wildlife Movement & Breeding

Impact 4.8-4: Wildlife Movement & Breeding
Implementation of the proposed *General Plan 2030* would result in future development that could directly or indirectly interfere with wildlife movement and/or breeding. With implementation of the proposed policies and actions for resource protection, this is considered a *less-than-significant impact*.

The proposed *General Plan 2030* would accommodate future development pursuant to planned land use designations contained in the Plan. Development under the proposed General Plan would primarily occur on vacant infill sites, on underutilized properties, and in the new mixed-use districts along the City's four major street corridors: The primary wildlife movement corridors are located along major watercourses and within City-owned open space lands, which would be protected from future development impacts. Projects adjacent to watercourses would be subject to setback requirements set forth in the City's Creeks and Wetlands Management Plan.

The proposed *General Plan 2030* includes several policies, as summarized on Table 4.8-5, that seek to protect, enhance and maintain significant wildlife dispersal corridors and buffers (NRC2.3, NRC2.3.1). The draft plan also calls for protection of coastal roost and rookeries (NRC2.2.2). Additionally, according to the proposed General Plan assessment protocols, future species surveys and assessments will be required as part of the CEQA-review process in order to evaluate and mitigate potential impacts related to future development (see Table 4.8-6 at the end of this chapter). Additionally, LU1.1.5 requires that future development in the Golf Club Drive area preserve up to five acres of open space as an urban wildlife interface zone, community garden and riparian corridor area.

Conclusion. Adoption and implementation of the proposed *General Plan 2030* would not directly result in new development, but new development accommodated could interfere with wildlife movement or breeding. However, with implementation of the proposed *General Plan 2030* goals, policies and actions as summarized on Table 4.8-5, as well as future environmental review of specific development projects and compliance with local regulations and plans, the proposed *General Plan 2030*'s indirect impact on sensitive habitats would be considered less-than-significant.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Habitat Reduction

Impact 4.8-5: Habitat Reduction
Implementation of the proposed *General Plan 2030* would result in future development that would be considered urban infill development and would not result in significant reduction of wildlife habitat or cause a wildlife or plant population to drop below self-sustaining levels or become eliminated. Therefore, there is *no impact* related to substantial habitat reduction.

As previously indicated, future development accommodated by the *General Plan 2030* would primarily occur on vacant urbanized infill sites, on underutilized properties, and in the new mixed-use districts along the City's four major street corridors. Based on the estimated development occurring under the proposed plan, approximately one-half of new development would be located along these transportation corridors. The majority of significant habitat areas within the City are found within City-owned greenbelt and open space properties. Given that future development of infill sites is surrounded by other urban development, future development accommodated by the proposed general plan would not substantially reduce the habitat of a fish or wildlife species or cause a fish or wildlife species to drop below self-sustaining levels. The protection and enhancement of habitat areas within the greenbelt and open spaces within the City are further supported (NRC6.3). Furthermore, the proposed policies and actions support protection and management of open space and natural habitat areas (LU2.3,3 LU3.11), protection and management of woodland areas within open spaces (NRC3.1), and biotic monitoring and fishery protection in watersheds (CC3.6, CC3.3.7), as summarized on Table 4.8-5.

Conflicts with Local Policies or Regulations

Impact 4.8-6: Tree Protection
Implementation of the proposed *General Plan 2030* would result in future development that could directly or indirectly adversely affect heritage trees in conflict with local tree protection regulations. With implementation of the proposed policies and actions for resource protection, this is considered a *less-than-significant impact*.

Future development accommodated by the proposed plan could result in removal of trees. However, existing City regulations (Municipal Code Chapter 9.56) protect heritage trees. Removal of a heritage tree that is consistent with the criteria, provisions and requirements set forth in City ordinances is not considered a significant impact. Furthermore, the proposed *General Plan 2030* includes policies and actions to protect trees. Policy NRC5.1 and its two accompanying actions seek to protect and manage tree resources in the urban environment, with emphasis on significant and heritage trees, including maintenance and expansion of the City's

urban tree canopy (NRC5.1.2), planting additional street trees (NRC5.2), and continued educational programs to promote the City's urban forest (NRC5.1.1).

Conclusion. Adoption and implementation of the proposed *General Plan 2030* would not directly result in new development, but new development accommodated could result in removal of heritage trees. However, with implementation of the proposed *General Plan 2030* goals, policies and actions as summarized on Table 4.8-5, as well as compliance with local regulations and plans, the proposed *General Plan 2030*'s indirect impact on heritage trees would be considered less-than-significant.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Impact 4.8-7: Conflicts with Local Plans and Policies
Adoption and implementation of the proposed *General Plan 2030* would not result in conflicts or inconsistencies with policies adopted to protect biological resources. Thus, there is *no impact* related to this issue.

The City has adopted a number of management plans for open space areas, as well a Creeks and Wetlands Management Plan. The existing open space and resource management plans include management guidelines for resource protection, as well as recommendations for land use development and provision of access, in some cases. These plans do not include specific policies to protect biological resources. The proposed General Plan does not include goals, policies or actions that would conflict with the management directives of these plans. The proposed General Plan supports development and maintenance of a master plan for the long-term preservation and maintenance of each of the City's greenbelt lands (LU2.3.3), and maintenance and protection of existing open space through management plans (LU3.11). Additionally, the draft *General Plan 2030* in some instances supports these plans and/or includes broad policies or actions consistent with recommendations in these plans as summarized below:

- ***City-wide Creeks and Wetlands Management Plan.*** As previously indicated, this plan sets forth riparian setback requirements and development standards and guidelines for all watercourses in the City. The draft general plan Action NRC1.1.1 requires setbacks and implementation of standards and guidelines for development and improvements within the City and adjacent to creeks and wetlands as set forth in the *Citywide Creeks and Wetlands Management Plan*. Action NRC1.3.1 further affirms that creek, riparian, and wetland resources will be conserved in accordance with the adopted Creek Plan. Additional policies and actions summarized in Table 4.8-5 also serve to protect riparian and wetland protection. Thus, the proposed *General Plan 2030* does not result in conflicts with this plan.
- ***San Lorenzo River Urban Management Plan.*** Action NRC1.3.1 indicates that that creek, riparian, and wetland resources will be conserved in accordance with the adopted the San Lorenzo River Plan. The maintenance, updated and implementation of

the San Lorenzo Urban River Plan is explicitly supported in the draft general plan (CD3.1.2). Thus, the proposed *General Plan 2030* does not result in conflicts with this plan.

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TABLE 4.8-6. Assessment and Management Protocols for Sensitive Species and Habitat

RESOURCE	REGULATORY AUTHORITY	ASSESSMENT (to determine presence)	MITIGATION/ MANAGEMENT* (if resource is present)
Sensitive Habitats			
Freshwater Wetland & Salt Marsh	City Ordinance & Plans CDFG Wetlands Resources Policy U.S. Army Corps of Engineers	Wetland Delineation	• Permit from Corps (for fill) • Avoidance and/or Mitigation, such as buffers, restoration or enhancement, and water quality protection
Riparian Habitat	City Ordinance & Plans CEQA Review	Citywide Creeks & Wetlands Management Plan or Habitat Assessment	• Comply with Creeks Plan setback requirements & development standards and guidelines • Streambed Alteration Agreement from CDFG if required
Coastal Prairie	CEQA Review	Habitat Characterization	• Avoid direct impacts and buffer • Mitigation for indirect impacts
Coastal Bird Rookeries	CEQA Review Division of Migratory Birds- MBTA (USFWS)	Habitat Characterization Breeding bird surveys	• Avoid direct impacts • Conduct construction activities outside of nesting season and/or establish appropriate buffers
Special Status Species			
Listed Special-Status Plant Species ▪ Robust spineflower ▪ Santa Cruz tarplant ▪ San Francisco popcornflower	CEQA Review CESA and NPPA (CFGC)	Botanical survey during flowering period	• Avoidance – design to avoid removal of individuals and habitat • Provide appropriate buffers to protect from indirect impacts • Mitigation and/or Management to protect from indirect impacts and maintain long-term viability of species • Consultation with and MOU from CDFG
Other Special-Status Plant Species ▪ Santa Cruz manzanita ▪ Gardner's yampah ▪ Cloris' popcornflower ▪ Santa Cruz clover ▪ Hickman's popcorn flower	CEQA Review	Botanical survey during flowering period	Avoidance and/or Mitigation – see above.

TABLE 4.8-6. Assessment and Management Protocols for Sensitive Species and Habitat

RESOURCE	REGULATORY AUTHORITY	ASSESSMENT (to determine presence)	MITIGATION/ MANAGEMENT* (if resource is present)
Listed Special-Status Wildlife Species ▪ Ohlone tiger beetle	ESA (USFWS)	Survey during emergence season	• Avoidance – design plans to avoid take of individuals and habitat • Mitigation and Management to protect from indirect impacts • USFWS Take permit through HCP process (no federal nexus) or Section 7 (federal nexus)
▪ Coho Salmon (Central CA ESU)	ESA (NOAA NMFS) CESA (CDFG)	Habitat assessment	• Consultation with NMFS • Avoidance of instream construction during migration period • Mitigation for indirect impacts
▪ Steelhead (Central CA ESU)	ESA (NOAA NMFS)	Habitat assessment	• Consultation with NMFS • Avoidance of instream construction during migration period • Mitigation for indirect impacts
▪ Tidewater goby	ESA (USFWS)	Habitat assessment Protocol level survey during sandbar formation (permit required)	• Consultation with USFWS • Avoidance and/or Mitigation
▪ California red-legged frog	ESA (USFWS)	Habitat Assessment Protocol Level Survey (USFWS 2005b) Pre-construction Survey	• Avoid take of individuals and impacts to aquatic habitat • USFWS Take permit through HCP process (no federal nexus) or Section 7 (federal nexus) • Mitigation to protect from indirect impacts
▪ Brown pelican (communal roosts and rookeries)	ESA (USFWS) CESA (CDFG)	Habitat assessment Communal roosting/ breeding bird survey	• Avoid take of individuals and impacts to roosting and nesting habitat • Consultation with USFWS through HCP process (no federal nexus) or Section 7 (federal nexus) • Conduct construction activities outside of nesting season
Other Special-Status Wildlife Species ▪ Monarch butterfly (wintering sites)	City Ordinance CEQA Review	Habitat Assessment Multi-year surveys during winter roosting season	• Avoidance – design plans to avoid take of individuals and habitat • Buffers to maintain suitable habitat conditions • Conduct construction activities outside of winter roosting season or develop appropriate mitigation such as buffers to avoid disturbance such as smoke and fumes

TABLE 4.8-6. Assessment and Management Protocols for Sensitive Species and Habitat

RESOURCE	REGULATORY AUTHORITY	ASSESSMENT (to determine presence)	MITIGATION/ MANAGEMENT* (if resource is present)
			Management to protect from indirect impacts
▪ Western pond turtle	CEQA Review (CDFG)	Habitat assessment Focused Surveys	• Avoid take of individuals in aquatic and upland habitat. • Mitigation to protect from indirect impacts such as barrier to movement
<u>Breeding Birds</u> ▪ Double-crested cormorant (rookeries) ▪ Black-crowned night heron (rookeries) ▪ Sharp-shinned hawk ▪ Cooper's hawk ▪ Golden eagle (nesting and/or wintering) ▪ Ferruginous hawk ▪ White-tailed kite (nesting) ▪ Merlin ▪ Black oystercatcher ▪ Long-eared owl ▪ Burrowing owl ▪ Vaux' swift ▪ Black swift ▪ Loggerhead shrike ▪ California horned lark ▪ Oak titmouse ▪ Yellow warbler ▪ Hermit warbler ▪ Saltmarsh common yellowthroat ▪ Yellow-breasted chat ▪ Chipping sparrow ▪ Tricolored blackbird	CEQA Review (CDFG)	Habitat assessment Breeding bird survey Wintering survey for golden eagle, ferruginous hawk, white-tailed kite, merlin, burrowing owl, saltmarsh common yellowthroat, grasshopper sparrow	• Avoid direct impacts to nesting birds, occupied nests, eggs and young • Conduct construction activities outside of nesting season or develop appropriate mitigation, such as buffers • Consultation with USFWS (golden eagle-unoccupied nest)
Special-status Bats	CEQA Review (CDFG)	Habitat Assessment Emergence and nighttime	Avoidance and/or Mitigation

TABLE 4.8-6. Assessment and Management Protocols for Sensitive Species and Habitat

RESOURCE	REGULATORY AUTHORITY	ASSESSMENT (to determine presence)	MITIGATION/ MANAGEMENT* (if resource is present)
		acoustic surveys	
San Francisco dusky-footed woodrat	CEQA Review (CDFG)	Habitat Assessment Nest survey	Avoidance and/or Mitigation
American Badger	CEQA Review (CDFG)	Habitat Assessment Focused survey (burrow, sign, and prey base)	Avoidance and/or Mitigation
Nesting Raptors & Birds	Division of Migratory Birds- MBTA (USFWS) Fish and Game Codes (CDFG)	Habitat assessment Breeding bird survey	Avoidance during nesting season and/or Buffer Mitigation
Dispersal Corridors	**City of Santa Cruz CEQA Review**	**Wildlife movement study. Determine buffer width for corridor utility.**	• **Comply with Creeks Plan setback requirements & development standards and guidelines** • **Buffer from disturbances such as noise land light,**