

3.7 Biological Resources

This section addresses the potential direct and indirect effects of implementation of the proposed General Plan on biological resources in Pacifica. The setting descriptions and impact analyses presented in this section are based on the review of existing documentation and biological databases.

Environmental Setting

Pacifica's varied topography creates a wide range of habitats in the City, including intertidal areas, beaches, ridges, coastal headlands, woodlands, grasslands, scrub, creeks, and wetlands. Most natural vegetation in the valley and canyon bottoms has been converted to development. However, intact native habitats persist along the riparian corridors of San Pedro, Calera, Rockaway, and Milagra Creeks, and on steep slopes.

PLANT COMMUNITIES AND WILDLIFE HABITATS

Plant communities are assemblages of plant species that recur in the landscape according to soil, climate, hydrological, and other conditions. The basis for the vegetation classification system utilized in this analysis relies on the currently accepted California Department of Fish and Wildlife¹ List of Vegetation Alliances and Associations (also known as the Natural Communities List).² Plant communities generally correlate with wildlife habitat types, and these typically are classified and evaluated using CDFW's California Wildlife Habitat Relationship classification system.³ Plant communities and wildlife habitats are described below and depicted in **Figure 3.7-1, Vegetation**.

¹ The California Department of Fish and Game (CDFG) changed its name on January 1, 2013 to The California Department of Fish and Wildlife (CDFW). In this document, references to literature or databases published by CDFW prior to Jan. 1, 2013 are cited as 'CDFG, [year]'. The agency is otherwise referred to by its new name, CDFW.

² Sawyer, J.O. and T. Keeler-Wolf. A Manual of California Vegetation, California Native Plant Society, Sacramento, CA, 1995.

³ Mayer, K.E. and W.F. Laudenslayer (eds.). A Guide to Wildlife Habitats of California, California Department of Fish and Game, Sacramento, CA, 1988.

Annual Grasslands

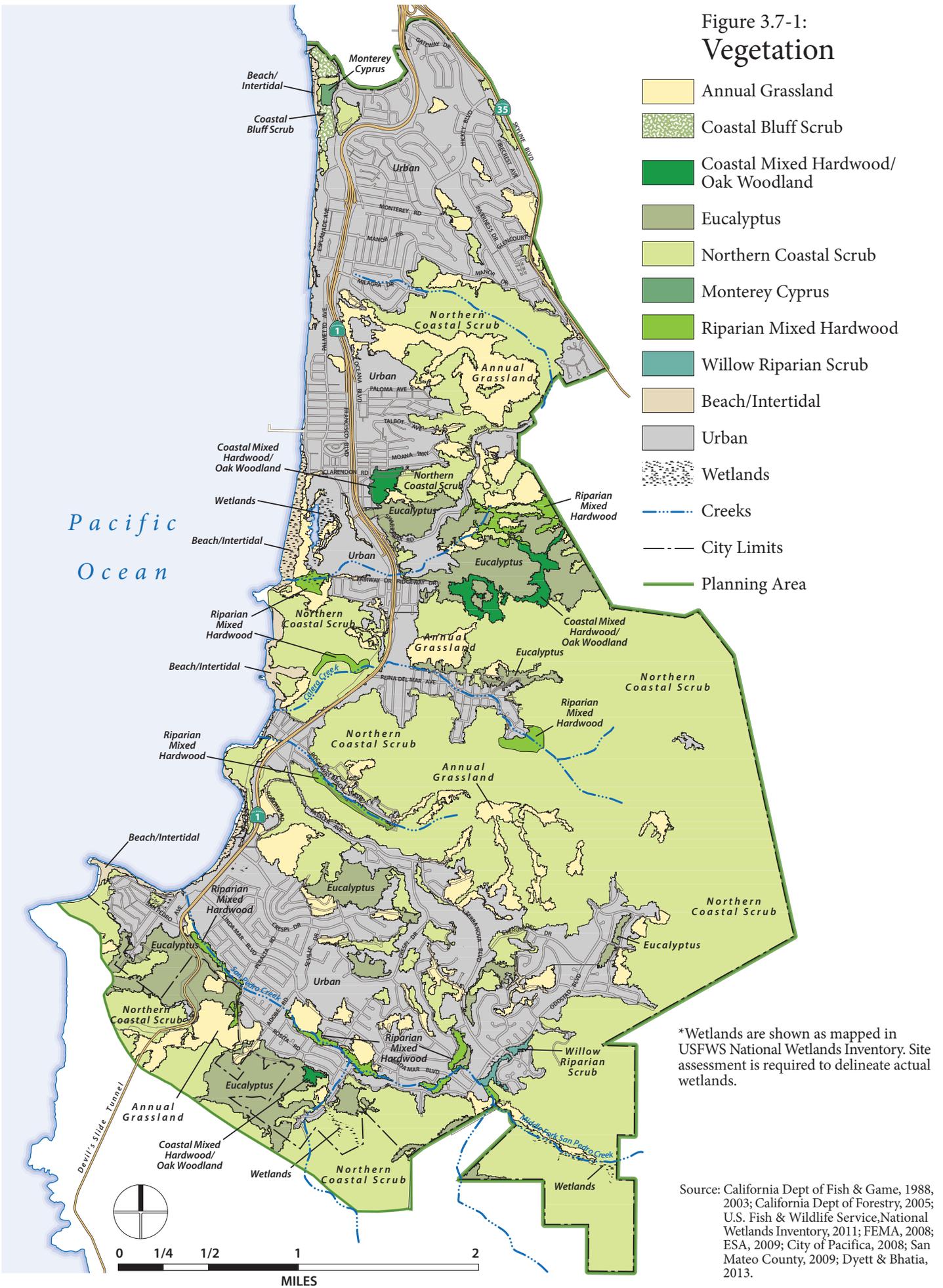
Annual grasslands in Pacifica occur most often in a mosaic pattern with coastal scrub and are dominated by non-native annual grass species and a variety of other non-native weeds. The presence of these grasslands in Pacifica is limited and generally occurs in highly disturbed areas. Damage to grasslands is a result of unauthorized vehicle activity, which resulting in off-road trails on hillsides. Common dominants of grasslands include ripgut brome (*Bromus diandrus*), rattail fescue (*Festuca myuros*), and wild oat (*Avena barbata*). Associated forbs include filaree (*Erodium botrys*), sweet clover (*Melilotus indicus*), plantain (*Plantago lanceolata*), and wild radish (*Raphanus sativus*). Weedy species include foxtail (*Hordeum murinum* ssp. *leporinum*), Italian ryegrass (*Festuca perennis*), French broom (*Genista monspessulanus*), pampas grass (*Cortaderia selloana*), cape ivy (*Delairea odorata*), Bermuda buttercup (*Oxalis pes-caprae*), black mustard (*Brassica nigra*), and sweet alyssum (*Lobularia maritima*). Native species include wild iris (*Iris douglasiana*), blue-eyed grass (*Sisyrinchium bellum*), and California poppy (*Eschscholzia californica*).^{4,5}

Grasslands attract reptiles and amphibians, such as western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis*), northern alligator lizard (*Elgaria coerulea*), gopher snake (*Pituophis catenifer*), and western rattlesnake (*Crotalis viridis*). Bird species commonly found in this community include California quail (*Callipepla californica*), mourning dove (*Zenaidura macroura*), Brewer's blackbird (*Euphagus cyanocephalus*), robin (*Turdus migratorius*), American goldfinch (*Carduelis tristis*), western meadowlark (*Sturnella neglecta*), song sparrow (*Melospiza melodia*), and red-winged blackbird (*Agelaius phoeniceus*). Annual grasslands are important foraging grounds for aerial and ground-foraging insect eaters such as Myotis bat species and pallid bats (*Antrozous pallidus*). Mammals such as coyote (*Canis latrans*), black-tailed deer (*Odocoileus hemionus columbianus*), California ground squirrel (*Spermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), deer mouse (*Peromyscus maniculatus*), California meadow vole (*Microtus californicus*), and Botta's pocket gopher (*Thomomys bottae*) may browse and forage on grasslands in Pacifica. Small rodents attract raptors (birds of prey) including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*B. lineatus*), American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), turkey vulture (*Cathartes aura*), and white-tailed kite (*Elanus leucurus*). In urban situations, grassland patches tend to support more disturbance tolerant animals adapted to survive in impacted environments. These include eastern fox squirrels (*Sciurus niger*), skunks (*Mephitis mephitis*), raccoon (*Procyon lotor*), feral and domestic dogs (*Canis lupus familiaris*), feral and domestic cats (*Felis catus*), rats, and mice.

⁴ John Northmore Roberts & Associates, John B. Dykstra Associates, and John Thelan Steere Associates. Preliminary Pacifica Citywide Trails Master Plan. City of Pacifica, 1992.

⁵ State of California Department of Parks and Recreation, Pacifica State Beach General Plan, 1990.

Figure 3.7-1:
Vegetation



*Wetlands are shown as mapped in USFWS National Wetlands Inventory. Site assessment is required to delineate actual wetlands.

Source: California Dept of Fish & Game, 1988, 2003; California Dept of Forestry, 2005; U.S. Fish & Wildlife Service, National Wetlands Inventory, 2011; FEMA, 2008; ESA, 2009; City of Pacifica, 2008; San Mateo County, 2009; Dyett & Bhatia, 2013.

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Special-status species⁶ that have the potential to occur in grassland habitats around Pacifica include the Mission blue butterfly (*Plebejus icarioides missionensis*), San Bruno elfin butterfly (*Callophrys mossii bayensis*), Crystal Springs fountain thistle (*Cirsium fontinale* var. *fontinale*), Marin western flax (*Hesperolinon congestum*), San Mateo thorn-mint (*Acanthomintha duttonii*), white-rayed pentachaeta (*Pentachaeta bellidiflora*), Crystal Springs lessingia (*Lessingia arachnoidea*), pappose tarplant (*Centromadia parryi* ssp. *parryi*), and San Francisco owl's clover (*Triphysaria floribunda*). See Special-Status Species description below for descriptions of specific species.

Coastal Bluff Scrub

Coastal bluff scrub can be found along the immediate coast line to the west of Highway 1. It consists of a mosaic of native low growing shrubs and herbaceous perennials growing on rocky or poorly developed soils and on weakly consolidated sandstone. Much of this community has been disturbed through recreation and replaced by development. Coastal bluff scrub is also subject to erosion, blowouts, slope failures, and sand deposition. Planted, non-native iceplant (*Carpobrotus edulis*) has replaced much of the historical distribution of this vegetation type along the Pacifica coastline. New Zealand spinach (*Tetragonia tetragonioides*) and sea rocket (*Cakile maritima*) are also dominant, nonnative species. Native species present include dwarf coyote brush (*Baccharis pilularis* var. *consanguinea*), silver bush lupine (*Lupinus albifrons*), yellow bush lupine (*Lupinus arboreus*), seaside woolly sunflower (*Eriophyllum staechadifolium*), bunchgrass, buckhorn plantain (*Plantago coronopus*), pigweed (*Chenopodium californicum*), beach evening primrose (*Camissonia cheiranthifolia* ssp. *suffruticosa*), beach bur (*Franseria chamissonis*), yellow sand verbena (*Abronia latifolia*), beach saltbush (*Atriplex leucophylla*), and beach morning glory (*Calystegia soldanella*). Other exotic species on the Pacifica coastline include Italian ryegrass, bull thistle (*Cirsium vulgare*), and fennel (*Foeniculum vulgare*), as observed by surveys conducted by ESA in 2008..

Special-status that may be found in the coastline habitat of Pacifica include the bumblebee scarab beetle (*Lichnanthe ursina*), sandy beach tiger beetle (*Cicindela hirticollis gravida*), Hickman's cinquefoil (*Potentilla hickmanii*), blue coast gilia (*Gilia capitata* ssp. *chamissonis*), coast yellow leptosiphon (*Leptosiphon croceus*), coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*), coastal triquetrella (*Triquetrella californica*), compact cobwebby thistle (*Cirsium occidentale* var. *compactum*), Franciscan thistle (*Cirsium andrewsii*), Point Reyes horkelia (*Horkelia marinensis*), rose leptosiphon (*Leptosiphon rosaceus*), San

⁶ "Special-status" plant and animal species are defined in more detail in the Special-status Species section of this chapter. Briefly, they are:

Species listed under the Federal Endangered Species Act, Marine Mammal Protection Act, California Endangered Species Act, California Fish and Game Code, and the Native Plant Protection Act as endangered, threatened, or depleted; species that are candidates or proposed for listing; or species that are designated as rare or fully protected

Locally rare species defined by CEQA Guidelines Sections, which may include species that are designated as sensitive, declining, rare, locally endemic, or as having limited or restricted distribution by various federal, state, and local agencies, organizations, and watch lists.

Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*), and short-leaved evax (*Hesperexax sparsiflora* var. *brevifolia*). Bank swallows (*Riparia riparia*), double-crested cormorants (*Phalacrocorax auritus*), and big free-tailed bats (*Nyctinomops macrotis*) may use cliff sides for nesting. See Special-Status Species below for detailed species descriptions.

Northern Coastal Scrub

Northern coastal scrub habitat commonly occurs on undeveloped slopes throughout the Planning Area, often in a mosaic with annual grasslands. This category also includes northern maritime chaparral, a special-status community. (see Sensitive, Critical, and Special-Status Habitat below). Either Coyote brush (*Baccharis pilularis* ssp. *consanguinea*) or California sagebrush (*Artemisia californica*) dominates the northern coastal shrub, depending on slope aspect. North facing slopes support a greater diversity of shrub species and canopy cover than south facing slopes. Other species present in northern coastal shrub habitats include the sea-side woolly sunflower (*Eriophyllum staechadifolium*), arroyo willow (*Salix lasiolepis*), California blackberry (*Rubus ursinus*), California bee plant (*Scrophularia californica*), yarrow (*Achillea millefolium*), cudweed (*Gnaphalium* sp.), and blueblossom (*Ceanothus thyrisflorus*).

Coastal scrub habitat, often interspersed with other habitats, provides foraging and nesting habitat for species that are attracted to edges of plant communities. Bird species that use the scrub habitat include bushtits (*Psaltriparus minimus*), wrentits (*Chamaea fasciata*), California quail (*Callipepla californica*), California towhee (*Pipilo crissalis*), white-crowned sparrow (*Zonotrichia leucophrys*), and California thrasher (*Toxostoma redivivum*). Flowering scrub vegetation (e.g., *Ceanothus* spp.) attracts nectar drinkers such as Anna's hummingbird (*Calypte anna*). Mammals, including striped skunk, may use this habitat for protection and foraging grounds. Reptiles and small mammals that occur within scrub habitats include western fence lizard, brush rabbit (*Sylvilagus bachmani*), Botta's pocket gopher (*Thomomys bottae*), and deer mouse. Small mammals attract predators such as coyote (*Canis latrans*), bobcat (*Lynx rufus*), and gray fox (*Urocyon cinereoargenteus*).

Special-status animals that may use northern coastal scrub around Pacifica include merlins (*Falco columbarius*), dusky-footed woodrat (*Neotoma fuscipes*), Mission blue butterfly, and San Bruno elfin butterflies. Special-status plants with the potential to occur include: Pacific manzanita (*Arctostaphylos pacifica*), Presidio manzanita (*A. hookeri* ssp. *ravenii*), San Bruno manzanita (*A. imbricata*), San Francisco lessingia (*Lessingia germanorum*), Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*), Davidson's bush-mallow (*Malacothamnus davidsonii*), fragrant fritillary (*Fritillaria liliacea*), Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*), Montara manzanita (*A. montaraensis*), Oregon polemonium (*Polemonium carneum*), pale yellow hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), San Francisco campion (*Silene verecunda* ssp. *verecunda*), San Francisco collinsia (*Collinsia multicolor*), and San Francisco gumplant (*Grindelia hirsutula* var. *maritima*). See Special-Status Species below for detailed species descriptions.

Coastal Mixed Hardwood/Oak Woodland

This habitat type includes woodlands dominated by coast live oak (*Quercus agrifolia*), black oak (*Q. kelloggii*), blue oak (*Q. douglasi*), as well as other hardwood species. Wildlife commonly associated with woodlands in general are western flycatcher (*Empidonax difficilis*), chestnut-backed chickadee (*Poecile rufescens*), oak titmouse (*Baeolophus inornatus*), ruby-crowned kinglet (*Regulus calendula*), bushtit (*Psaltripus minimus*), ringneck snake (*Diadophis punctatus*), California newt (*Taricha torosa*), and California slender salamander (*Batrachoseps attenuatus*). Seeds and fruit provide food for black-tailed deer (*Odocoileus hemionus*), scrub and Stellar's jays (*Cyanocitta aphelocoma* and *C. stelleri*), and woodpeckers, while tree branches and cavities can provide areas for nesting.

Special-status species that are likely to use coastal mixed hardwood/oak woodland habitat in Pacifica are the hoary bat (*Lasiurus cinereus*), San Mateo woolly sunflower (*Eriophyllum latilobum*), bent-flowered fiddleneck (*Amsinckia lunaris*), Diablo helianthella (*Helianthella castanea*), Franciscan onion (*Allium peninsulare* var. *franciscanum*), Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*), and Indian Valley bush-mallow (*Malacothamnus aboriginum*). See Special-Status Species below for detailed species descriptions.

Eucalyptus

Blue-gum eucalyptus (*Eucalyptus globulus*), and to a lesser extent other eucalyptus species, form forests with closed canopies that restrict other native overstory trees to clearings. Eucalyptus trees release chemicals into the soil that reduce or inhibit growth of other plants. In addition, they produce abundant leaf and bark litter which further inhibits the growth of understory plants, but provides habitat for small vertebrates, mammals, and reptiles. Eucalyptus trees also provide perching, roosting, and nesting sites for larger birds such as crows (*Corvus brachyrhynchos*), ravens (*Corvus corax*), red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawks (*B. lineatus*), and barn owls (*Tyto alba*). The migratory monarch butterfly (*Danaus plexippus*) frequently roosts in eucalyptus trees in the winter.

Monterey Cypress

Small patches of Monterey cypress (*Hesperocyparis macrocarpa*) occur throughout the Planning Area in planted stands surrounded by a mosaic of scrub and grasslands. The largest stand occurs at the north end of the Planning Area (see **Figure 3.7-.1**, Vegetation). Although the small patches of Monterey cypress found in Pacifica are unlikely to support significant wildlife populations, they provide additional habitat complexity and complement surrounding habitats by providing nesting and roosting substrates for birds as well as shelter for other animals.

Riparian Mixed Hardwood

Vegetative cover in riparian areas in Pacifica can be characterized by dense thickets as well as open channels with sparse cover. Areas with riparian mixed hardwood habitat occur along San Pedro Creek, Rockaway Creek, Calera Creek, and Laguna Salada. Alder and willow dom-

inate the overstory. Native trees found in these areas include red alder (*Alnus rubra*), shining willow (*Salix lucida*), arroyo willow (*S. lasiolepis*), Sitka willow (*S. sitchensis*), and creek dogwood (*Cornus sericea*). Native herbs include yarrow (*Achillea millefolium*), coast iris (*Iris longipetala*), twinberry (*Lonicera involucrate*), red elderberry (*Sambucus racemosa*), bee plant (*Scrophularia californica*), thimbleberry (*Rubus parviflora*), giant horsetail (*Equisetum telmateia*), cow parsnip (*Heracleum lanatum*), Pacific oenanthe (*Oenanthe sarmentosa*), valley manroot (*Marah fabaceus*), and California blackberry (*Rubus ursinus*). Emergent vegetation includes paniced bulrush (*Schoenoplectus microcarpus*), Pacific bog rush (*Juncus effuses*), salt rush (*J. leseurii*), spreading rush (*J. patens*), and narrow-leaved cattail (*Typha angustifolia*). Non-native species include cape ivy, English ivy (*Hedera helix*), pampas grass, giant reed (*Arundo donax*), poison hemlock (*Conium maculatum*), wild radish (*Raphanus sativa*), French broom, bristly oxtongue (*Picris echioides*), Himalayan blackberry (*Rubus discolor*), black mustard, fennel, mallow (*Malva parviflora*), bull thistle, watercress (*Nasturtium aquaticum*), spurge (*Euphorbia pepus*), cutleaf geranium (*Geranium dissectum*), small flowered fumitory (*Fumaria parviflora*), and harding grass (*Phalaris aquatica*).⁷

Birds that forage for insects in riparian areas include Bewick's wren (*Thryomanes bewickii*), black phoebe (*Sayornis nigricans*), black-headed grosbeak (*Pheucticus melanocephalus*), dark-eyed juncos (*Junco hyemalis*), bushtits (*Psaltiriparus minimus*), oak titmouse (*Baeolophus inornatus*), chestnut-backed chickadees, and brown creepers (*Certhia americana*), and piscivorous birds such as the belted kingfisher (*Ceryle alcyon*). Bark-insect foraging birds such as the acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttalli*), and white-breasted nuthatch (*Sitta canadensis*) can be found in this habitat. Riparian woodlands also provide habitat for reptiles and amphibians including the western toad (*Bufo boreas*), California newt (*Taricha torosa*), Pacific tree frog (*Hyla regilla*), and Pacific slender salamander (*Batrachoseps pacificus*). Mammals such as the western harvest mouse (*Reithrodontomys megalotis*), deer mouse, western gray squirrel (*Sciurus griseus*), Virginia opossum (*Didelphis marsupialis*), and raccoon (*Procyon lotor*), utilize these habits for nesting and foraging.

Special-status wildlife that could be present in the riparian corridor, includes tricolored blackbirds (*Agelaius tricolor*), raptors such as Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*A. striatus*), great blue heron (*Ardea herodias*). See Special-Status Species below for detailed species descriptions.

Willow Riparian Scrub

Arroyo willow, red willow (*S. laevigata*), and dogwood (*Cornus sericea*) species dominate the willow riparian scrub areas in Pacifica. This habitat occurs in the upper reaches of San Pedro Creek, in San Pedro Valley County Park. Where an overstory is present it is dominated by non-native trees. Species found in upper reaches of San Pedro Creek include bluegum eucalyptus, Monterey pine, coast redwood (*Sequoia sempervirens*), French broom, cape ivy, com-

⁷ San Pedro Creek Watershed Coalition. Website. Last updated October 2005. <http://pedrocreek.org/>, 2005.

mon periwinkle (*Vinca major*), Algerian ivy (*Hedera canariensis*), and wax myrtle (*Myrica californica*). Species found in San Pedro Valley County Park include arroyo and red willow, red alder, coastal wood fern (*Dryopteris arguta*), lady fern (*Athyrium felix-femina*), western sword fern (*Polystichum munitum*), and alumroot (*Heuchera micrantha*).

Riparian areas are under CDFW jurisdiction pursuant to Sections 1600–1616 of the California Fish and Game Code.

Urban/Developed

Residential developments and other areas with ornamental landscaping can provide habitat for wildlife species adapted to human habitation, such as striped skunk, Virginia opossum (*Didelphis virginiana*), raccoon, European starling (*Sturnus vulgaris*), American robin, and mourning dove. Bat species, including Myotis species, pallid bats, and Townsend’s big-eared bats (*Corynorhinus townsendii*), may roost in larger trees or buildings within the Planning Area. In addition, larger trees can provide roosting and nesting habitat for raptors and other birds. Areas classified as Urban/Developed are where most human impacts have already occurred, and thus are *not* considered sensitive. Most of the species that utilize this habitat are relatively tolerant to at least certain types of human disturbances.

Seasonal Wetlands and Ponds

Seasonal wetlands occur in smaller drainages and localized depressions, forming ponds or flowing water, and are underlain by saturated soils during the winter and spring. Seasonal wetlands also occur along the banks and sediments that accumulate in creeks. Wetlands in Pacifica occur along riparian areas, drainages, along the coast, and as fresh and brackish water marshes (such as on the Sharp Park Golf Course).

The National Wetlands Inventory⁸ identifies different types of seasonal wetlands and ponds, as well as other wetland types, within the Planning Area,⁹ including marine wetlands at the ocean shoreline, riparian (streamside) wetlands, marshes, springs and seep (See **Figure 3.7-2**).¹⁰

⁸ U. S. Fish and Wildlife Service. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C., <http://www.fws.gov/wetlands/>, 2005.

⁹ Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. Classification of Wetlands and

¹⁰ The NWI maps are based on interpretation of high-altitude aerial photographs. Most wetlands shown on the map are not field-verified. The minimum mapping resolution is 2 acres; many smaller wetlands will not appear on the map. Wetland maps are a snapshot in time, reflecting the conditions at the time the aerial photographs were taken. Dynamic systems like wetlands may vary seasonally and annually. The NWI was also not designed to be a map of regulated wetlands and waterways. Subsequent projects within the Planning Area may be subject to site-specific wetland delineations that identify the location and extent of federal, state, and locally jurisdictional wetlands and other waters.

The brackish water marsh at the north end of Pacifica State Beach is known to contain gumplant (*Grindelia stricta*), sneezeweed (*Gnaphalium microphalum*), coyote brush, salt grass (*Distichlis spicata*), arroyo willow, common tule (*Schoenoplectus acutus*), and cattails (*Typha latifolia*). Wildlife found there includes black phoebe, red-winged blackbird, white-crowned sparrows, and snowy egret. Vegetation and wildlife found in other wetlands around Pacifica varies with water characteristics, inundation patterns, surrounding habitat, and level of disturbance.

California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), Leech's skyline diving beetle (*Hydroporus leechi*), San Francisco fork-tail damselfly (*Ischnura gemina*), Tomales isopod (*Caecidotea tomalensis*), western pond turtle (*Actinemys marmorata*), and bristly sedge (*Carex comosa*) are special-status species that may occur in wetlands around Pacifica. The wetlands in Sharp Park are also known to support salt-marsh common yellowthroat. See Special-Status Species below for detailed species descriptions. The Regulatory Settings section below provides a detailed description of the regulatory protections given to wetlands.

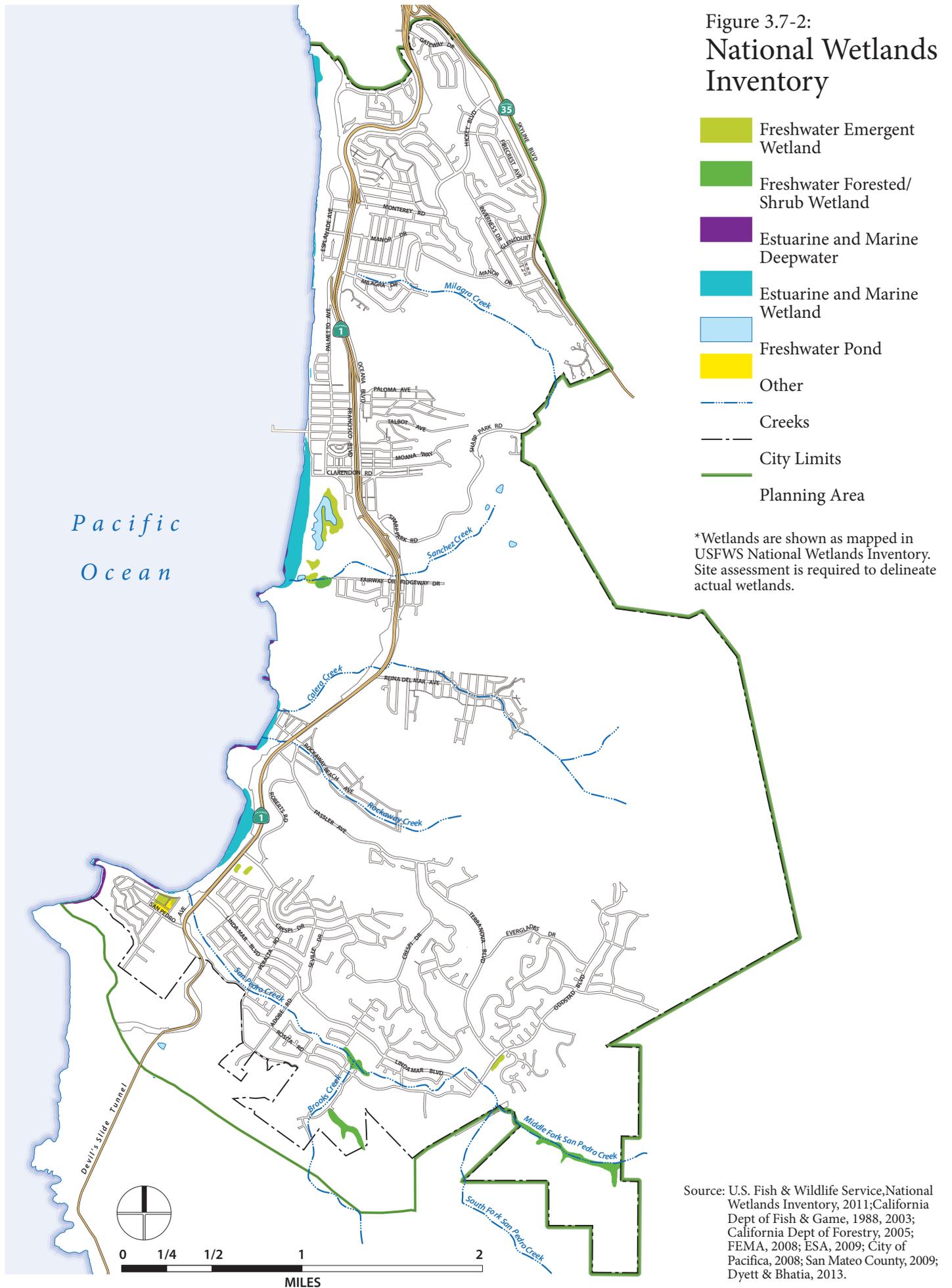
Streams

Streams are important habitat features in Pacifica as they can function as wildlife movement corridors and provide protective cover. There are several creeks in Pacifica, all of which flow west into the Pacific Ocean. The only perennial creek is San Pedro Creek, located in the southern part of the City. San Pedro Creek and its five main tributaries drain a basin of 5,114 acres. The San Pedro Creek Watershed comprises approximately 13 percent impervious cover and one-third of the watershed is developed¹¹. The stream suffers from water quality issues, most notably, coliform bacteria (*Escherichia coli* and *Streptococcus spp.*). The north fork and the mouth of San Pedro Creek are the most polluted. Overall, San Pedro Creek is well-oxygenated, with water quality somewhat alkaline, moderately conductive, relatively hard, and maintains a relatively stable temperature.¹² All of these factors affect the aquatic biota in the creek. There has been a long history of human alterations (direct and indirect) to the creek and watershed, including substantial channelization.

¹¹ EOA, Inc. Impervious cover as a watershed management tool for San Mateo County watersheds, 1410 Jackson St., Oakland, CA 94612, 8 p and Appendices, 1998.

¹² Matuk, V. Water Quality in San Pedro Creek Watershed, Pacifica, California. MA Thesis, San Francisco State University, Geography: Resource Management and Environmental Planning. San Francisco, California, 2001.

Figure 3.7-2:
National Wetlands
Inventory



*Wetlands are shown as mapped in USFWS National Wetlands Inventory. Site assessment is required to delineate actual wetlands.

Source: U.S. Fish & Wildlife Service, National Wetlands Inventory, 2011; California Dept of Fish & Game, 1988, 2003; California Dept of Forestry, 2005; FEMA, 2008; ESA, 2009; City of Pacifica, 2008; San Mateo County, 2009; Dyett & Bhatia, 2013.

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Wildlife species associated with stream habitat include the river otters (*Lontra canadensis*), great blue heron (*Ardea herodias*), snowy egret, belted kingfisher (*Ceryle alcyon*), dark-eyed junco, and black phoebe. Black-tailed deer, raccoon, opossum, and grey fox may use the creeks as movement corridors. Fish species present include the prickly sculpin (*Cottus asper*), the Pacific lamprey (*Lampetra tridentate*), and the threespine stickleback (*Gasterosteus aculeatus*). The federally threatened steelhead trout (*Oncorhynchus mykiss* – Central California Coast Evolutionarily Significant Unit [ESU]) use parts of the stream for spawning, including the main portion parallel to Linda Mar Boulevard, as well as the middle and south forks in San Pedro County Park. This is the only stream with a steelhead population between the Golden Gate Bridge and Half Moon Bay.

Streams within the Planning Area are subject to the U.S. Army Corps of Engineers (Corps) and Regional Water Quality Control Board (RWQCB) jurisdictions under Sections 404 and 401 of the Clean Water Act, respectively, and CDFG jurisdiction pursuant to Sections 1600–1616 of the California Fish and Game Code.

Beach/Intertidal

Significant expanses of continuous sandy shoreline occur along the San Mateo County coastline. Beaches are dynamic systems that change with wind and waves; generally, sand is eroded from beaches in the winter and redeposited in the summer, resulting in annual changes in beach slope and width. Fine to medium-grained sand beaches are the most common type in the north central coast of California.¹³

Beach habitats can be divided into three zones: the upper tidal, intertidal, and subtidal. The upper tidal beach fauna consists of sand crabs (such as the sand-burrowing Pacific mole crab [*Emerita* spp.]), California beach flea (*Megalorchestia californiana*), amphipods, polychaete worms, flies, and isopods which feed on detritus. These are fed on by birds such as sandpeeps (*Calidris alba*), marbled godwits (*Limosa fedoa*), Brewer's blackbird, killdeer, mourning doves, song sparrows, and willets (*Catoptrophorus semipalmatus*). The by-the-wind sailor (*Velella velella*), a jellyfish-like colony of organisms, are frequently washed into the upper tidal beach areas. Exposed rocks or cobble, especially at the lower intertidal areas, can have attached algae, mussels, and barnacles. Intertidal areas are home to the Pacific egg cockle (*Laevicardium substriatum*) and spiny mole crab (*Blepharipoda occidentalis*). The subtidal zone is primarily inhabited by fish such as surf perch, striped bass, salmon, anchovies, sanddabs (*Citharichthys* spp.), California halibut, and the starry flounder.

Some special-status species may be found in the shallow waters off of Pacifica. Pinnipeds such as harbor seals (*Phoca vitulina*) and sea lions (*Zalophus californianus*) haul out on isolated

¹³ Bureau of Land Management (BLM). An Ecological Characterization of the Central and Northern California Coastal Region, Volume III, Part1 Habitats. FWS/OBS-80/47.1 Prepared by the Bureau of Land Management, Pacific Outer Continental Shelf Office and Fish and Wildlife Service. October 1981.

beaches and sands spits.¹⁴ The endangered black abalone (*Haliotes cracherodii*) can be found in intertidal areas attached to rocks. The threatened green sturgeon (*Acipenser medirostris*) also forages in the shallow waters off the Pacifica coastline. Both the gray whale (*Eshrichtius robustus*) and southern sea otter (*Enhydra lutris nereis*) can be found in the nearshore waters. The California brown pelican (*Pelecanus occidentalis californicus*) is also frequently observed. See Special-Status Species below for detailed species descriptions.

Critical Habitat, Special-Status¹⁵ Communities and Special-Status Species

Critical Habitat

Critical habitat areas are designated by the USFWS for species listed under the Federal Endangered Species Act (FESA). These areas contain features that are essential for the conservation of the species and may require special management and protection outside that which is already provided by FESA.

Critical habitat for California red-legged frog (CRLF) has been designated in the southern and eastern portions of the Planning Boundary (see **Figure 3.7-3**, Sensitive and Critical Habitat). This area contains both aquatic and upland areas with suitable breeding and non-breeding habitat. USFWS originally designated some 450,000 acres of CRLF critical habitat in 2006, including 13,283 acres in San Mateo County, including about 100 acres in Pacifica.¹⁶ In 2010, USFWS revised the designation of CRLF critical habitat to encompass 1.64 million acres, of which 131,090 acres are in San Mateo County and some 2,900 acres are in Pacifica.¹⁷ There is currently no critical habitat designated for the San Francisco garter snake (SFGS).

San Pedro Creek is known to support steelhead trout, which is a federally listed threatened species. In 2005, the National Marine Fisheries Service (NMFS) designated the creek as critical habitat for Central California Coast steelhead under Section 3(5)(A) of the federal ESA (16 U.S.C. 1532 (5)). They spawn in the main portion of the creek that runs parallel to Linda Mar Boulevard, as well as the middle and south forks in San Pedro County Park. However, conditions in parts of the creek limit its suitability for steelhead habitat. Hagar Environmental Science (2002) identified that the major limiting factors to steelhead include fish passage at main

¹⁴ Ibid.

¹⁵ A “special-status natural community” is a natural habitat community that is unique in its constituent components, restricted in distribution, supported by distinctive soil conditions, considered locally rare, potentially supporting special-status plant or wildlife species, and/or that receives regulatory recognition from municipal, county, state, and/or federal entities such as the California Natural Diversity Database (CNDDB).

¹⁶ USFWS. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Red-Legged Frog, and Special Rule Exemption Associated With Final Listing for Existing Routine Ranching Activities; Final Rule, Federal Register, Vol. 71, No. 71, April 13, 2006. <http://www.gpo.gov/fdsys/pkg/FR-2006-04-13/pdf/06-3344.pdf>

¹⁷ USFWS. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for California Red-Legged Frog; Final Rule, Federal Register Vol. 75, No. 51, March 17, 2010. <http://www.gpo.gov/fdsys/pkg/FR-2010-03-17/pdf/2010-4656.pdf>

stem road crossings, low base flows, mobilization and accumulation of fine sediments in the main stem, deterioration of water quality, disturbance, and exploitation.

The nearshore marine areas off of Pacifica are part of Green Sturgeon Critical Habitat designated by the National Oceanic and Atmospheric Administration (NOAA) on October 9, 2009.¹⁸ This includes offshore areas up to 110 m in depth.

Special-Status Communities

The California Natural Diversity Database (CNDDDB)¹⁹ indicates that there is an area of northern maritime chaparral at the south end of the Planning Area, at the edge of San Pedro Valley County Park, on Whiting Ridge, and on Montara Mountain (in the Lake Pilarcitos drainage). This community is fairly open chaparral, with about 50–80 percent cover. It is dominated by Manzanita or Ceanothus species. It occurs on sandy soil, usually on rolling or hilly terrain. It requires fire for continued reproduction and is also subject to coastal fog. This has not been verified or delineated in the field, but it is presumed extant.

Based on information from the California Department of Forestry²⁰ as well as on the ground verification by ESA, an area of coastal bluff scrub was identified at the north end of Pacifica. Coastal bluff scrub communities are found on steep, exposed bluffs along the ocean and are dominated by low shrubs and ground-hugging herbaceous species; and can also be found on either sandy or serpentine soil. Species overlap with coastal scrub; however, coastal bluff species are necessarily more tolerant of wind, salt spray, and steep slopes. Coastal bluff scrub is particularly important for stabilizing sand dunes. In addition to the area indicated on **Figure 3.7-3**, smaller patches may be present in the northern parts of Pacifica State, Rockaway, and Sharp Park beaches. Unauthorized vehicle activity and pedestrian use have damaged both bluff and northern coastal scrub.

In the Pacifica Boundary Study for the Golden Gate National Recreation Area, the National Parks Service²¹ describes San Pedro Point as containing northern coastal prairie habitat. As this habitat may have changed since the time of the study, it is unknown if this habitat type is still found there. Northern coastal prairie is the most diverse type of grassland found in North America, however less than 1 percent of it is still intact. Coastal prairies are dominated by

¹⁸ National Oceanic and Atmospheric Administration (NOAA). NOAA Designates Critical Habitat for Southern Population of North American Green Sturgeon. http://swr.nmfs.noaa.gov/gs/GS_Critical_habitat_files/NewsRelease_GSCHD_Oct2009.pdf, October, 2009.

¹⁹ California Natural Diversity Database (CNDDDB). Rarefind version 4, data request for U.S. Geological Survey San Francisco South, Montara Mountain, and San Mateo 7.5-minute topographic quadrangles, August, 2013.

²⁰ California Department of Forestry and Fire Protection, California Land Cover Mapping and Monitoring Program, Vegetation Data (CALVEG), 2005, <http://frap.cdf.ca.gov/data/frapgisdata/download.asp?rec=cveg>, accessed January 2009.

²¹ NPS, Pacific West Region. Draft Pacifica Boundary Study Golden Gate National Recreation Area San Mateo County, California, May 1997.

perennial bunchgrasses such as purple needlegrass (*Stipa pulchra*), California fescue (*Festuca californica*), and California oatgrass (*Danthonia californica*).²²

Environmentally Sensitive Habitat Areas (ESHA)

Environmentally Sensitive Habitat Areas (ESHA) are defined by the California Coastal Act²³ as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (California Public Resources Code Section 30107.5). Article 5 Section 30240 of the California Coastal Act states that:

Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

An area around Mori Point and Sharp Park Golf Course supports both CRLF as well as SFGS. Portions or all of this area likely qualify as an ESHA, under Section 30240; Development within or adjacent to an ESHA is expressly and severely limited to avoid substantially degrading such areas.

Wildlife Movement Corridors

Wildlife movement corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or by areas of human disturbance or urban development. These corridors allow wildlife to access additional areas with food, water, and other resources such as shelter that would otherwise be blocked by impenetrable barriers such as highways. Topography and other natural factors, along with urbanization, can fragment or separate large open-space areas. Fragmentation of natural habitat creates isolated “islands” of vegetation that may not be sufficient to accommodate sustainable populations of animals or plants. Fragmentation can also adversely impact genetic and species diversity as well as population survival of species. Movement corridors mitigate the effects of fragmentation by allowing animals to shift between remaining habitats. These corridors allow depleted populations to be replenished and promote genetic exchange with separate populations, thereby increasing genetic resources within the population.

²² NPS, Point Reyes National Seashore, Prairies and Grasslands, <http://www.nps.gov/pore/naturescience/prairies.htm>, Last updated April 30, 2007.

²³ California Coastal Commission. California Coastal Act, Public Resources Code Division 20, 2009.

Figure 3.7-3:
Sensitive and
Critical Habitat

Special Status Communities

-  Northern Maritime Chaparral
-  Coastal Bluff Scrub (High Value/
Further Analysis Needed Prior
to Development)

Critical Habitat

-  Steelhead
-  California Red-legged Frog

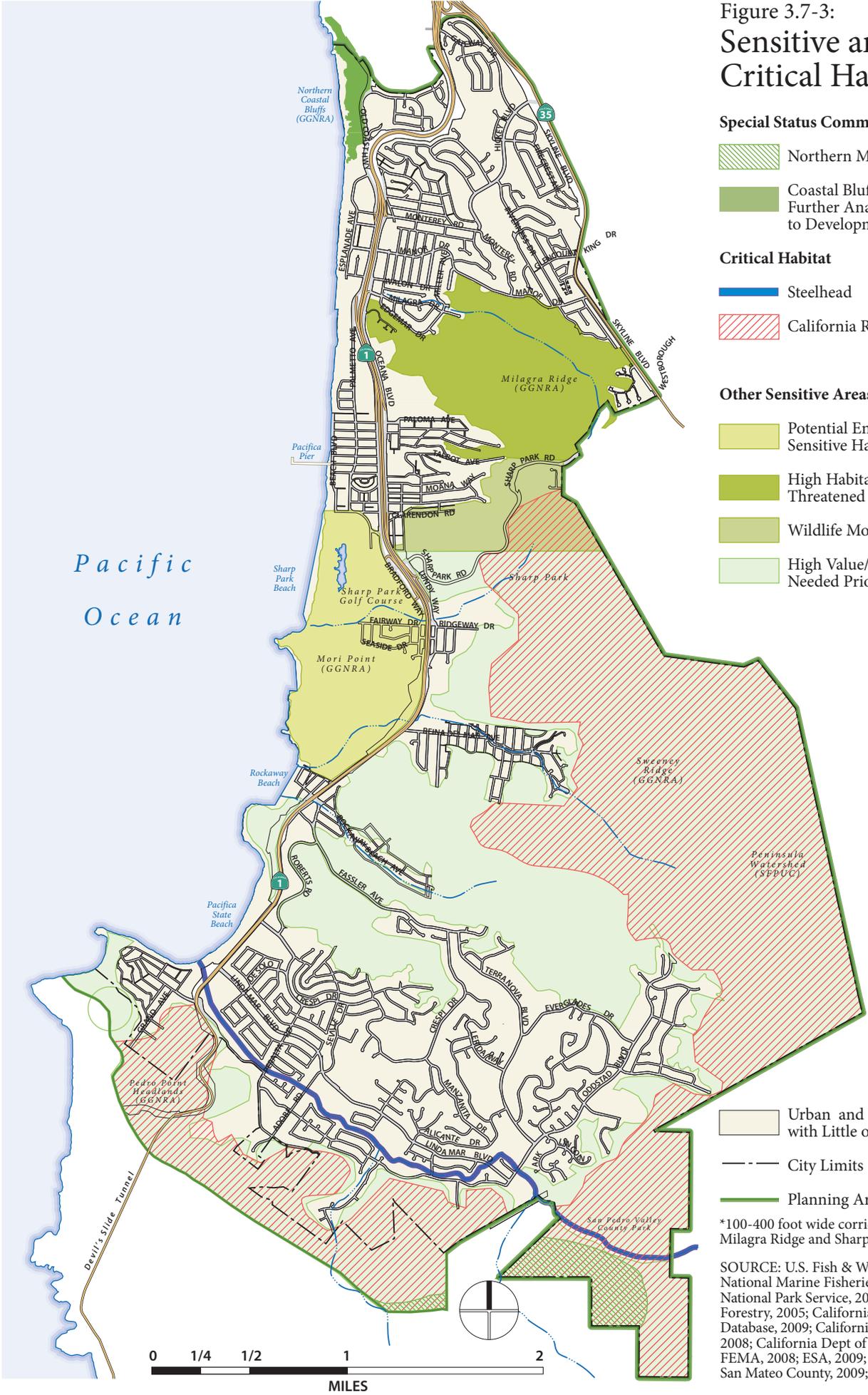
Other Sensitive Areas

-  Potential Environmentally
Sensitive Habitat Areas
-  High Habitat Value/
Threatened by Fragmentation
-  Wildlife Movement Corridor*
-  High Value/Further Analysis
Needed Prior to Development

-  Urban and Non Urban Land
with Little or No Habitat Value
-  City Limits
-  Planning Area

*100-400 foot wide corridor needed between
Milagra Ridge and Sharp Park/Sweeney Ridge

SOURCE: U.S. Fish & Wildlife Service 2008;
National Marine Fisheries Service, 2005;
National Park Service, 2005; California Dept of
Forestry, 2005; California Natural Diversity
Database, 2009; California Native Plant Society,
2008; California Dept of Fish & Game, 2008;
FEMA, 2008; ESA, 2009; City of Pacifica, 2008;
San Mateo County, 2009; Dyett & Bhatia, 2012.



Pacific
Ocean



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Natural wildlife corridors in Pacifica include riparian corridors and drainages such as San Pedro Creek, canyons, ridgelines, and corridors across valley floors where impermeable barriers (such as dense urban development, exclusionary fencing, and heavily traveled roadways) have not yet eliminated options for wildlife movement and plant dispersal. An area on the south side of Sharp Park Road functions as a wildlife corridor between Milagra and Sweeney Ridges. It is a sensitive wildlife area because of the link it provides between populations of CRLF, SFGS, and other plants and animals. This area has also been identified as part of the Mission Blue butterfly migration corridor.²⁴

While a wildlife movement corridor is needed somewhere within the area designated in **Figure 3.7-3**; the entire area would not be designated as a wildlife movement corridor. Corridors typically range from 100 to 400 feet in width, within which habitat is continuous and suitable for wildlife movement.

High Habitat Value Areas Threatened by Fragmentation or Requiring Further Analysis

Two other sensitive habitat categories are shown in **Figure 3.7-3**. SFGS and CRLF are also known to occur on Milagra Ridge (depicted as “High Habitat Value/Threatened by Fragmentation” in **Figure 3.7-3**). This area is also threatened by fragmentation into smaller areas. This means that the ridge could become a biological island, which would isolate its inhabitants from other populations of the same species, and prevent access to suitable habitat. Isolated populations are at greater risk of population losses due to a lack of genetic diversity or catastrophic events (including environmental, human-induced, and genetic).

As shown in **Figure 3.7-3**, High Value/Further Analysis areas are those occupied by special-status species or containing sensitive natural communities, but sufficiently dispersed to accommodate some degree of impact if, in project specific environmental documents, sufficient mitigation measures are applied.

Special-Status Species

Several species known to occur in the project vicinity are accorded “special-status” due to their recognized rarity or vulnerability to various causes of habitat loss or population decline. Some of these receive specific protection, as defined in federal or state endangered species legislation (see Regulatory Settings for a further description of legislation). Other species have been designated as “sensitive” based on adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies in order to meet local conservation objectives. The latter category is recognized by Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines. This sec-

²⁴ National Parks Service, Milagra Ridge, Golden Gate Recreation Area. U.S. Department of the Interior. <http://www.nps.gov/goga/upload/sb-miri.pdf>, 2005.

tion of the CEQA Guidelines provides a more broad definition of rare, endangered or threatened species than the definitions included in federal and state endangered species regulations. “Special-status species” in this document refers to ones included in the definitions under the CEQA Guidelines, as well as the federal and state definitions for endangered species, following a convention that has developed in practice but has no official sanction. The various categories encompassed by the term “special-status species” and the legal status of each species, are discussed in Regulatory Settings below. For purposes of this EIR, “special-status species” include:

- Plant and animal species designated as rare, threatened or endangered under the federal or state Endangered Species Acts (ESA);
- Species that are candidates for listing under either federal or state law;
- Species designated by the USFWS as species of concern or species of local concern, or by CDFG as species of special concern;
- Species protected by the federal Migratory Bird Treaty Act (16 U.S.C. 703-711);
- Bald and golden eagles protected by the federal Bald Eagle Protection Act (16 U.S.C. 668); and
- Species such as candidate species and CNPS List 1 and 2 species that may be considered rare or endangered pursuant to Section 15380(b) of the CEQA Guidelines.

Figure 3.7-4 displays known records of the occurrence of special-status species in the project area.

Appendix C presents a more comprehensive list of species which are either known or likely found in the Planning Area based on suitable habitat, including 51 special-status plant species and 45 special-status animal species reported to based on data in the CNDDDB, CNPS Electronic Inventory²⁵), special-status species information from the USFWS²⁶ and biological literature of the region. Due to Pacifica’s location on USGS topographic quadrangle (“quad”) maps, which depict 7.5 minute series, only 3 quads (Montara Mountain, San Mateo, and San Francisco South) were determined to be appropriate for database searches. As shown in the table and based on special-species analysis, species with a high potential are known to occur in Pacifica. A moderate potential indicates that there is suitable habitat for the species, though presence has not been confirmed. A low potential indicates that there is insufficient suitable habitat present in Pacifica to support the species.

²⁵ California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed on Thursday, August 01, 2013.

²⁶ U.S. Fish and Wildlife Service (USFWS), Species List for U.S. Geological Survey Montara Mountain 7.5-minute topographic quadrangle, 2013.

Chapter Three: Settings, Impacts, and Mitigation Measures
3.7: Biological Resources

The following species were determined to have a medium to high potential-to-occur in Pacifica:

Animals

Bank swallows
Big free-tailed bat
Black abalone
Bumblebee scarab beetle
California red-legged-frog
Double-crested cormorant
Fringed myotis
Green sturgeon
Hoary bat
Leech's skyline diving beetle
Merlin
Mission blue butterfly
Monarch butterflies
Pallid bat.
Saltmarsh common yellowthroat
San Bruno elfin butterfly
San Francisco forktail damselfly
San Francisco garter snake
Sandy beach tiger beetle
Steelhead - Central California Coast ESU
Tomales isopod
Western pond turtle
Western snowy plover

Plants

Arcuate bush mallow
Bent-flowered fiddleneck
Blue coast gilia
Bristly sedge
Choris' popcorn-flower
Coast yellow leptosiphon
Coastal marsh milk-vetch
Coastal triquetrella

Compact cobwebby thistle
Crystal Springs fountain thistle
Crystal Springs lessingia
Davidson's bush-mallow
Diablo helianthella
Fragrant fritillary
Franciscan onion
Franciscan thistle
Hickman's cinquefoil
Hillsborough chocolate lily
Indian Valley bush-mallow
Kellogg's horkelia
Marin western flax
Montara manzanita
Oregon polemonium
Pacific manzanita
Pale yellow hayfield tarplant
Pappose tarplant
Point Reyes horkelia
Presidio manzanita
Robust spineflower
Rose leptosiphon
San Bruno Mountain manzanita
San Francisco Bay spineflower
San Francisco campion
San Francisco collinsia
San Francisco gumplant
San Francisco lessingia
San Francisco owl's clover
San Mateo thorn-mint
San Mateo woolly sunflower
Short-leaved evax
White-rayed pentachaeta.

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Figure 3.7-4:
Special Status Species

Federally Listed - Endangered Species

-  Mission Blue Butterfly
-  Myrtle's Silverspot
-  San Bruno Elfin Butterfly
-  San Francisco Garter Snake¹

Federally Listed - Threatened Species

-  Central California Coast Steelhead
-  California Red-legged Frog

Other Species

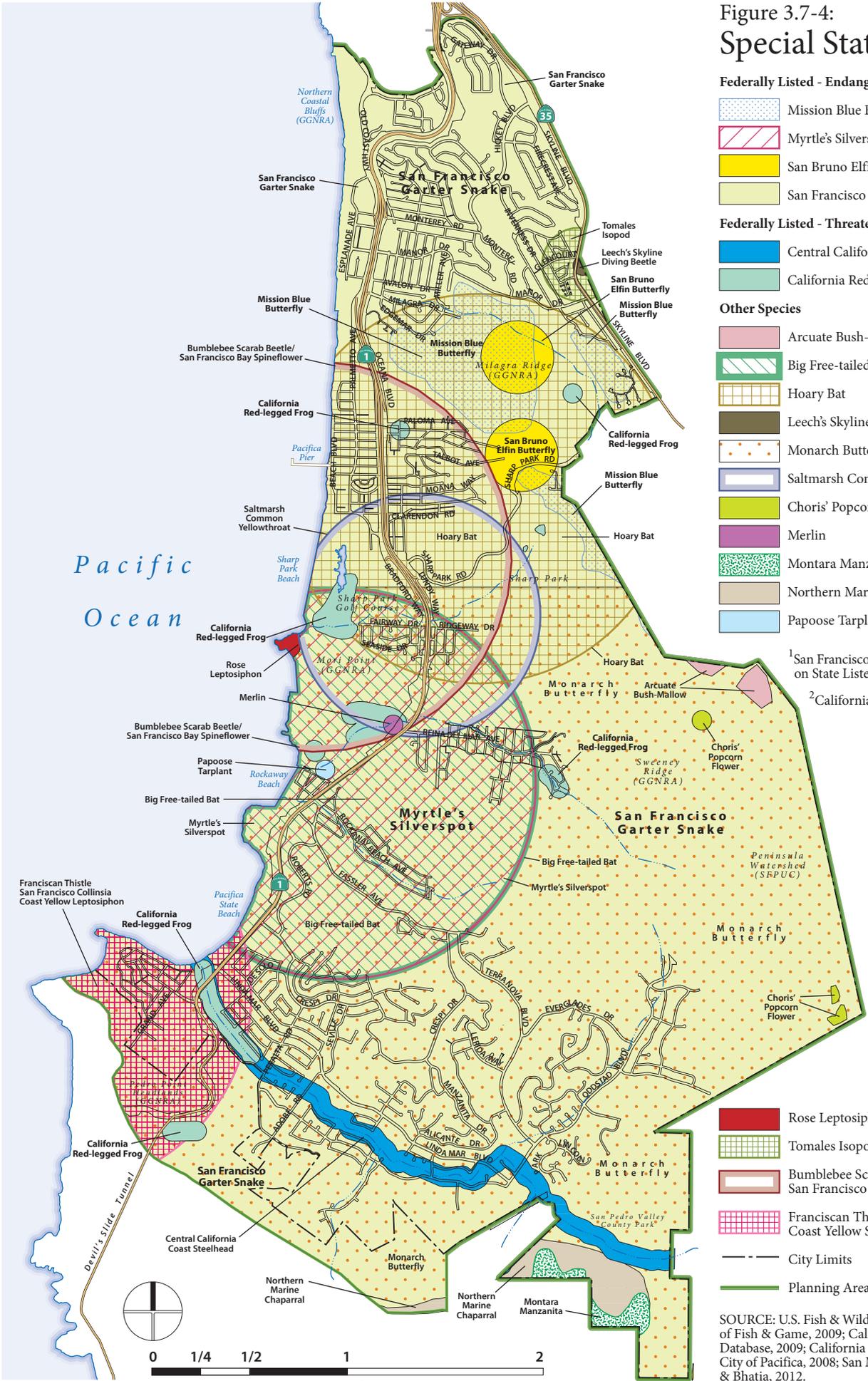
-  Arcuate Bush-Mallow
-  Big Free-tailed Bat²
-  Hoary Bat
-  Leech's Skyline Diving Beetle
-  Monarch Butterfly
-  Saltmarsh Common Yellowthroat
-  Choris' Popcorn Flower
-  Merlin
-  Montara Manzanita
-  Northern Maritime Chaparral
-  Papoose Tarplant

¹ San Francisco Garter Snake is also listed on State Listed Endangered Species

² California species of special concern.

-  Rose Leptosiphon
-  Tomales Isopod
-  Bumblebee Scarab Beetle
San Francisco Bay Spineflower
-  Franciscan Thistle, San Francisco Collinsia
Coast Yellow Spineflower
-  City Limits
-  Planning Area

SOURCE: U.S. Fish & Wildlife Service 2009; CA Dept of Fish & Game, 2009; California Natural Diversity Database, 2009; California Native Plant Society, 2008; City of Pacifica, 2008; San Mateo County, 2009; Dyett & Bhatia, 2012.



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Special-Status Wildlife Species Descriptions

In addition to these 23 animal species, migratory birds, raptors, and common bat species, are subject to general protections provided by state and federal regulations and are therefore considered in the impact analysis. For a discussion of these general protections, please see the Regulatory Setting below.

Bank swallows (*Riparia riparia*) are listed as threatened under the state ESA. They nest in colonies along rivers, lakes, and major streams, typically adjacent to open grasslands. This species requires vertical cliffs and banks with fine-textured or sandy soils for construction of nesting holes. These nesting holes are lined with plant material and measure one to two inches in width and up to 54 inches in depth. Bank swallows arrive in California in April and May, breeding from May through July (peak in mid-May to mid-June), and departing by mid-September. This species is known to desert its colony if there is too much human disturbance in the area. They are threatened by habitat loss from erosion and flood control projects.²⁷

Big free-tailed bat (*Nyctinomops macrotis*) is a Species of Special Concern in California. They are generally found in rugged, rocky habitats and arid landscapes, in desert shrub, woodlands, and evergreen forests. They roost in crevices of rocks in cliffs and occasionally in buildings, caves, and tree cavities. They primarily consume moths, but also eat grasshoppers, beetles, crickets, leafhoppers, and flying ants. Owls are the only documented predators of this bat species, and they also suffer from the same general threats as other bats, such as grazing, riparian management, pesticides, and roost disturbance.²⁸

Black abalone (*Haliotis cracherodii*) is a large marine mollusk that is federally listed as endangered. They have a smooth black or slate blue shell with a pearly white interior and can be found in rocky intertidal and subtidal habitats, ranging from Point Arena in northern California to Mexico. At low tides they can be found wedged in cracks, crevices, and holes in rocks. When they are submerged, they are able to move over rock surfaces and can withstand large fluctuations in temperature, salinity, moisture, and wave action. Overfishing and disease threaten black abalone.²⁹

Bumblebee scarab beetle (*Lichnanthe ursina*). These scarab beetles are patchily distributed along the coast and are restricted to dunes. They are typically 12.9-17.22mm long and are most active between May and June. Male beetles fly close to the surface of the sand in search of mates. They are hairy and brightly colored as well as fast fliers, and may be mistaken for a

²⁷Garrison, B. A. Bank Swallow (*Riparia riparia*). In *The Birds of North America*, No. 414 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA., 1999.

²⁸ Western Bat Working Group. Species Accounts: *Nyctinomops macrotis* Big Free Tailed Bat. http://www.wbwg.org/speciesinfo/species_accounts/molossidae/nyma.pdf, 2005a.

²⁹ NMFS. Black Abalone (*Haliotis cracherodii*). <http://www.nmfs.noaa.gov/pr/species/invertebrates/blackabalone.htm>, 2009.

bumble bee.³⁰ This beetle was previously a Federal Species of Concern, but is now included on the CDFG's Special Animals List. It has been collected on the dunes at Salada Beach.³¹

California red-legged frog (Rana draytonii). California red-legged frog (CRLF) is a federally Threatened species and a California Species of Special Concern. CRLF typically occur in perennial streams with deep pools and stands of overhanging willows and an intermixed fringe of cattails.³² However, CRLF also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. During winter rain events, juvenile and adult CRLF are known to disperse up to 1 to 2 kilometers (0.6 to 1.2 miles).³³ Suitable breeding and dispersal habitat exists for this species in Pacifica, and known populations in the Planning Area and the Sharp Park Golf Course, particularly around Horse Stable Pond, and the connecting canal.³⁴ The USFWS designated critical habitat for this species in 2006, some of which is in Pacifica, and expanded the designated critical habitat in 2010, substantially increasing the area within Pacifica.

Double-crested cormorant (Phalacrocorax auritus). Rookery sites for double-crested cormorants are protected under section 3503 of CDFG Code. Double-crested cormorants are colonial breeders. They are year-long residents of California and rest and roost on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, transmission lines, bridges, and marine terminals.³⁵

Fringed myotis (Myotis thysanodes) is a California Species of Special Concern. This species of bat is most common in drier woodlands, but they may roost in crevices in buildings, mines, rocks, cliff faces, bridges, trees, and snags. They feed on a variety of invertebrates but most frequently beetles and moths. They are threatened by loss or modifications of roosting habitat, such as: closure or renewed activity at abandoned mines, spelunking, loss of large trees, and replacement of buildings and structures with non- bat friendly structures. Other general

³⁰ Evans, A.V., and J.N. Hogue. Field guide to beetles of California. University of California Press, Berkeley, p 104, 2006.

³¹ California Department of Fish and Game. Biogeographic Data Branch: California Natural Diversity Database, Special Animals. January 2011.

³² Jennings, M.R., Natural History and Decline of Native Ranids in California, In: H.F. De Lisle, P.R. Brown, B. Kaufman, and B.M. McGurty (Eds.), Proceedings of the Conference on California Herpetology, Southwestern Herpetological Society, 1988.

³³ Rathburn, G.B., M.R. Jennings, T.G. Murphey, and N.R. Siepel. Status and ecology of sensitive aquatic vertebrates in lower San Simeon and Pico Creeks, San Luis Obispo County, California. Unpublished report, National Ecology Research Center, Piedras Blancas Research Station, San Simeon, California, under Cooperative Agreement (14-16-0009-91-1909), 1993.

³⁴ Philip Williams & Associates and Wetlands Research Associates, Laguna Salada Resource Enhancement Plan, 1992.

³⁵ Mayer, K.E. and W.F. Laudenslayer (eds.). A Guide to Wildlife Habitats of California, California Department of Fish and Game, Sacramento, CA, 1988.

threats are loss of clean, open water, habitat modification, disturbance of hibernacula, and environmental chemicals.³⁶

Green sturgeon (Acipenser medirostris). This anadromous fish is the most widely distributed member of the sturgeon family and the most marine-oriented. It is a federally listed endangered species, a National Marine Fisheries Service Species of Concern, and a California Species of Special Concern. Green sturgeons are found in nearshore waters, ranging from Mexico to the Bering Sea and are common occupants of bays and estuaries along the western coast of the United States.³⁷ Adult green sturgeons migrate into freshwater beginning in late February with spawning occurring in March through July, with peak activity in April and June. After spawning, juveniles remain in fresh and estuarine waters for 1 to 4 years and then begin to migrate out to sea. Critical habitat has been proposed and includes water up to 110 m in depth of the coast of Pacifica.

Hoary bat (Lasiurus cinereus) is the most widespread of all North American bats, but has been identified by the Western Bat Working Group as Medium Priority. This species ranges from Canada to South America and is primarily associated with forested habitats. Hoary bats are solitary and roost primarily in foliage of both coniferous and deciduous trees, often at the edge of a clearing. The species is highly migratory, but neither wintering sites nor migratory routes are well documented. Hoary bats reportedly have a strong preference for moths, but are also known to eat beetles, flies, grasshoppers, termites, dragonflies, and wasps.³⁸

Leech's skyline diving beetle (Hydroporus leechi). This former Federal Species of Concern has been found in freshwater ponds, shallow waters of streams, marshes, and lakes. It was originally collected in a pond in Pacifica, but no other information about it is known other than its use of aquatic habitats. Other EIRs report that *H. leechi* may be widely distributed, but the original source of this has not been verified.³⁹

Merlin (Falco columbarius). This bird of prey is found most commonly on coastlines, open grasslands, savannahs, woodlands, lakes and wetlands. They feed primarily on small birds, but also on small mammals and insects. They do not breed in California, but winter here between September and May. They are threatened by habitat loss and the use of organochlorine

³⁶Western Bay Working Group. Species Accounts: *Myotis thysanodes* Fringed myotis. http://www.wbwg.org/speciesinfo/species_accounts/vesperilionidae/myth.pdf, 2005b.

³⁷Moyle, P. B., R. M. Yoshiyama, J. E. Williams, and E. D. Wikramanayake. Fish Species of Special Concern of California, Second Edition, University of California, Davis, Department of Wildlife and Fisheries Biology, prepared for the California Department of Fish and Game. Rancho Cordova, CA., 1995.

³⁸Western Bat Working Group. Species Accounts: *Lasiurus cinereus* Hoary bat. http://www.wbwg.org/speciesinfo/species_accounts/vesperilionidae/laci.pdf, 2005c.

³⁹National Parks Service. Yosemite Lodge Area Redevelopment Environmental Assessment. Department of the Interior. <http://www.nps.gov/archive/yose/planning/lodge/index.htm>, 2004.

pesticides.⁴⁰ Their wintering grounds are protected under section 3503 of the California Fish and Game Code, and as raptors, they are also protected under section 3503.5.

Mission blue butterfly. The Mission blue butterfly is listed as endangered by the federal Endangered Species Act. Male adults are light blue and females are brown with some blue. Adults are about the size of a quarter. This species is largely restricted to grasslands where its host plants (*Lupinus albifrons*, *L. variicolor*, and *L. formosus*) are found. Adults feed on the nectar of composite flowers (from the sunflower or Asteraceae family). They are threatened by habitat loss due to urban and agricultural expansion, exotic plant species (such as ice plant, pampas grass, French broom, gorse, and eucalyptus), and trampling.⁴¹ It has been found on Milagra and Sweeney Ridges.⁴²

Monarch butterflies (*Danaus plexippus*). Monarchs west of the continental divide migrate to the west coast to overwinter in about 200 sites between north of San Francisco south to Mexico. Although this is much smaller than the eastern migration to Mexico, it is still an important life history component for 1-2 million monarchs. Monarch larvae feed on milkweed plants (genus *Asclepius*), ingesting toxic compounds which make them unpalatable to predators. As adults they migrate north and east, eventually turning around to travel back to the overwintering grounds. In California, the overwintering grounds are threatened by coastal development as well as removal of nonnative eucalyptus trees for restoration of native habitat. In addition, milkweeds are often removed as weeds.⁴³

Pallid bat (*Antrozous pallidus*). The pallid bat is a California Species of Special Concern and is identified by the Western Bat Working Group as High Priority. Pallid bats range throughout western North America, from British Columbia to Mexico and east to Texas. This species is most abundant in arid lands, including deserts and canyonlands, shrub-steppe grasslands, and higher elevation coniferous forests. Therefore, it is only likely to occur within the Planning Area on a transient basis during spring and summer migrations. Pallid bats may roost alone or in groups in trees in cavities or under bark and structures such as bridges and buildings. Pallid bats forage over open areas and are opportunistic feeders on a wide variety of insects, foraging both on surfaces and in the air. Prey includes beetles, centipedes, crickets, moths, and rarely, lizards, and small rodents⁴⁴

⁴⁰ NatureServe. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>, Accessed: April 21, 2009.

⁴¹ Golden Gate National Recreation Area (GGNRA). Mission Blue Butterfly. http://www.parksconservancy.org/our_work/stewardship/endangered.asp?species=476, 2009.

⁴² May and Associates. Fire Management Plan Biological Assessment, Golden Gate National Recreation Area, October 24, 2005.

⁴³ Xerces. Milkweed butterflies: California monarchs (*Danaus plexippus*) <http://www.xerces.org/california-monarchs/>, 2009.

⁴⁴ Western Bay Working Group. Species Accounts: *Antrozous pallidus* Pallid Bat. http://www.wbwg.org/speciesinfo/species_accounts/vespertilionidae/anpa.pdf, 2005d.

Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) is a subspecies of the common yellowthroat endemic to the San Francisco Bay Area. It is found year-round and breeds from mid-March to late July. It is most common in brackish marshes, but can also be found in riparian woodlands/swamps, freshwater marshes, and salt marshes. It primarily consumes insects and spiders. Saltmarsh common yellowthroats are threatened by habitat loss (specifically, wetland loss).⁴⁵ It has been reported spotting have occurred in Sharp Park.

San Bruno elfin butterfly (*Callophrys mossii bayensis*). The San Bruno elfin butterfly is a small brownish butterfly in the gossamer wing family (*Lycaenidae*). Larvae require the broadleaf stonecrop (*Sedum spathulifolium*) as a food source. The butterflies also form a mutualistic relationship with ants, who feed on the “honeydew” produced by the larvae, in exchange for defending them against predators and parasitoids. The San Bruno elfin butterfly inhabits rocky outcrops and cliffs in coastal scrub. They prefer steep north-facing slopes with little direct sunlight. They are limited to a few small populations and have lost much of their habitat to quarrying, introduced species, off-road recreation, and urban development.⁴⁶ The San Bruno elfin butterfly is known to occur on Milagra and Sweeney Ridges as well as on Montara Mountain and Whiting Ridge, just southeast of Pacifica.

San Francisco forktail damselfly (*Ischnura gemina*). This species is a former federal Species of Concern. These damselflies in the narrow winged damselfly family (*Coenagrionidae*) are known for their large compound eyes that are separated by a distance greater than its own body width. They have muscular mandibles, short legs, slender body about 7-8cm long, and an elongate ten-segmented abdomen. In contrast to dragonflies which are in the same order, damselfly forewings are the same shape as the hindwings and are held vertically instead of horizontally. They are resident in the San Francisco Bay area and they are active on sunny, warm days near clean bodies of water. They eat other arthropods such as mosquitoes, annelids, crustaceans, and mollusks. They are in turn consumed by birds, bats, spiders, and wasps.⁴⁷ They are found in wetlands with emergent vegetation in the San Francisco Bay Area.

⁴⁵ Shuford, W. D., and Gardali, T., editors. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento, 2008.

⁴⁶ Black, S. H., and D. M. Vaughan. Species Profile: *Callophrys mossii bayensis*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). Red List of Pollinator Insects of North America. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation, 2005.

⁴⁷ Marshall, J. 2001. “*Ischnura gemina*” (On-line), Animal Diversity Web.
http://animaldiversity.ummz.umich.edu/site/accounts/information/Ischnura_gemina.html, Accessed April 23, 2009.

A population of this species was recently discovered in the wetlands at Sharp Park Golf Course and at Mori Point.⁴⁸

San Francisco garter snake (Thamnophis sirtalis tetrataenia). The San Francisco garter snake (SFGS) is a federal and state endangered species and is found on the San Francisco peninsula in San Mateo and Santa Cruz counties. It lives in marshlands that border ponds and sloughs, riparian cover along streams, and bordering meadows with scattered brush, and also uses up-land habitat for overwintering and feeding. Threats to this species include habitat loss, mowing operations, and mortality on roads. SFGS historically occurred and may still be present in the wetlands at Sharp Park Golf Course, and are presently known to occur at the Horse Stable Pond, GGNRA wetlands, Mori Point, and in the Pacifica Quarry.⁴⁹ The USFWS SFGS Recovery Plan⁵⁰ identifies Laguna Salada (Sharp Park) as one of six essential SFGS populations in need of a management plan to secure the future of the populations at this locale, and to provide for the recovery of the subspecies. Furthermore, Sharp Park is the northernmost extant known population of the SFGS. In addition, the Mori Point population is considered crucial for the survival of the species, as it is the northernmost population of the subspecies and is most similar to the originally described specimens. Other populations have hybridized more with other garter snakes.

Sandy beach tiger beetle (Cicindela hirticollis gravida). This species was historically widespread along the coast from north of San Francisco just south into Mexico. It is found in moist sand and dunes near the ocean, such as in swales behind dunes or upper beaches beyond normal high tide.

Steelhead (Oncorhynchus mykiss irideus). Steelhead from the Central California Coast ESU are listed as threatened under the Federal Endangered Species Act. Steelhead possesses the ability to spawn repeatedly, returning to the Pacific Ocean after spawning in freshwater. Juvenile steelhead may spend up to four years residing in freshwater prior to migrating to the ocean as smolts. The Steelhead species is known to spawn in several parts of San Pedro Creek at the south end of Pacifica. The main stem of the stream that runs parallel to Linda Mar Boulevard is home to known spawning areas for steelhead, as well as the south and middle forks in San Pedro County Park. While the upper reaches of the Creek have healthy riparian areas and sufficient winter flows, the lower reaches possess migration barriers which impede access to spawning habitat.⁵¹

⁴⁸ Rademacher, D. "Mori's Story: Creating Habitat and Community in Pacifica," Bay Nature, April-June 2009.

⁴⁹ Swaim Biological Consulting, Results of Surveys for the San Francisco Garter Snake and California Red-Legged Frog for the NCCWD Recycled Water Project in Pacifica, San Mateo County, California, 2005.

⁵⁰USFWS. Recovery Plan for the San Francisco Garter Snake, *Thamnophis sirtalis tetrataenia*. USFWS, Portland, Oregon, 1985.

⁵¹Hagar Environmental Science. Steelhead habitat assessment for the San Pedro Creek Watershed. Prepared for the San Pedro Creek Watershed Coalition. <http://pedrocreek.org/Steelhead%20Habitat%20Assessment.pdf>, 2002.

Tomales isopod (*Caecidotea tomalensis*) is a freshwater aquatic crustacean up to 10mm in length. It has been found in several locations from Sonoma to San Mateo. They prefer still to slow-moving, vegetated water such as spring-fed ponds. Little is known about their life history but they are detritivores like other members of the Asellid family of Crustaceans.⁵²

Western pond turtle (*Actinemys marmorata*). This California Species of Special Concern is found in a wide variety of permanent and nearly permanent aquatic habitats throughout California in areas west of the Sierra Cascades. They require basking sites such as partially submerged logs, rocks, floating vegetation, or mud banks. They feed on both aquatic plant material and a variety of aquatic invertebrates, fish, frogs, and carrion. Western pond turtles are consumed by fish, bullfrogs, garter snakes, wading birds, and some mammals.⁵³ They are brown to blackish with cream to yellow coloring on legs and head.⁵⁴ Threats to the western pond turtle include habitat loss and fragmentation due to the conversion to farmland, water diversion, and urbanization. They are also subject to overharvesting for the purposes of food and pets, predation from introduced species (such as the bullfrog), and motor vehicle collisions.⁵⁵

Western snowy plover (*Charadrius alexandrinus nivosus*). The western snowy plover is a federally threatened bird species and a California Species of Special Concern. The Pacific coast population of the western snowy plover breeds primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. In winter, western snowy plovers are found on many of beaches, some used for nesting, in man-made salt ponds, and on estuarine sand and mud flats. Pacifica Beach (CA-48) is identified in the species' Recovery Plan as supporting primarily wintering and/or migrating snowy plovers.⁵⁶

Special-Status Plant Species

The large number of special-status plants and the severity of their population declines are reflective of the degree of habitat loss that has occurred throughout the San Francisco Peninsula. Outside of San Bruno Mountain, Pacifica encompasses the northernmost natural habitat

⁵² CDFG. Species Account Tomales Isopod. http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/invert/Crustaceans/Caecidotea_tomalensis.pdf, 2006.

⁵³ Morey, S. Western Pond Turtle (*Actinemys marmorata*). California Wildlife Habitat Relationship System, California Department of Fish and Game, California Interagency Wildlife Task Group. <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=18106>, 2000.

⁵⁴ Stebbins, R.C. A Field Guide to Western Reptiles and Amphibians, Houghton Mifflin Company, Boston, MA, 236 pp., 2003.

⁵⁵ Ashton, D.T., A.J. Lind, and K.E. Schlick. Western pond turtle (*Clemmys marmorata*). Natural History. USDA Forest Service, Pacific Southwest Research Station. http://www.krisweb.com/biblio/gen_usfs_ashtonet_1997_turtle.pdf, 1997.

⁵⁶ U.S.F.W.S, Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*). Volume 1: Recovery Plan. 2007.

for these species on the peninsula. Due to extensive coastal development throughout neighboring counties, beach and bluff species have also become rare.

Of the special-status plant species listed in **Table 3.7-1**, 38 special-status plants have the potential to occur within the Planning Area. These species have been recorded in the vicinity of Pacifica and/or may be present in suitable habitat in Pacifica.

Certain trees within the City limits are also protected. The City of Pacifica supports numerous trees in the urbanized area, including heritage trees and street trees. Heritage trees include any trees in the City of Pacifica that have a trunk with a circumference of 50" or more, excluding eucalyptus. Protected trees require special permits from the City for removal (see Regulatory Settings).

Arcuate bush mallow (*Malacothamnus arcuatus*). This evergreen shrub in the mallow family is fairly endangered in California (CNPS List 1B.2). It blooms between April and September. It is found in chaparral and cismontane woodland habitats between 15 and 355 meters in elevation. It is threatened by the alteration of fire regimes. It was last observed on Sweeney Ridge over a decade ago.

Bent-flowered fiddleneck (*Amsinckia lunaris*) is on the CNPS list 1B.2 and is fairly endangered in California. This species is found in open grassland and woodland habitats of the Coast Ranges, and is commonly found on San Bruno Mountain near Pacifica. Between March and June, this member of the borage family (Boraginaceae) produces asymmetric, bilaterally marked orange-yellow flowers with a bent corolla tube.⁵⁷

Blue coast gilia (*Gilia capitata* ssp. *chamissonis*) is listed on the CNPS list 1B.1 and is seriously endangered. It has bright blue-violet flowers with a skunk-like odor that bloom between April and July. A population is extant on the coastal sandhills just north of Pacifica. Threats to this species include trampling, urbanization, recreational development, and nonnative plants.⁵⁸

Bristly sedge (*Carex comosa*) is considered by the CNPS to be seriously endangered in California, even though it is more common elsewhere (CNPS List 2.1). It is an herb in the sedge family (Cyperaceae) and can be found in marshes and swamps. It is threatened by marsh drainage and road maintenance. Historical records show the presence of this species just north of

⁵⁷ California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. <http://www.rareplants.cnps.org>. Accessed on Thursday, August 01, 2013.

⁵⁸ Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. The Jepson manual: vascular plants of California, second edition. University of California Press, Berkeley.

Pacifica in San Francisco, but these are possibly extirpated. Potential habitat includes wetland and riparian areas throughout Pacifica.

Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*) is an annual herb in the borage or forget-me-not family (Boraginaceae). It is considered to be fairly endangered in California (CNPS list 1B.2). It blooms white to yellow flowers between March and June. It is known to occur in the eastern side of Pacifica in coastal scrub habitat on Sweeney Ridge. It is threatened by development.

Coast yellow leptosiphon (*Leptosiphon croceus*). This annual in the phlox family (Polemoniaceae) is listed by the CNPS as seriously endangered (CNPSList 1B.1). It blooms yellow flowers between April and May, and is threatened by development. There is an historical occurrence at south end of Pacifica but it may be extirpated.

Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachys*) is a CNPS List 1B.2 species. This perennial herb in the legume family (Fabaceae) blooms greenish white or cream flowers between April and October. It is threatened by cattle trampling, erosion, and competition.

Coastal triquetrella (*Triquetrella californica*) is a fairly endangered moss species (CNPS List 1B.2). It grows in both coastal scrub and coastal bluff scrub, which are found in Pacifica. It is threatened by urbanization.

Compact cobwebby thistle (*Cirsium occidentale* var. *compactum*) is a perennial herb, considered to be fairly endangered in California (CNPS List 1B.2). It is a member of the sunflower family (Asteraceae). It is found in chaparral, coastal dunes, coastal prairies, and coastal scrub habitats. It blooms white, purple, or red flowers between April and June. It is threatened by grazing, insect predation, and possibly by road construction and development.⁵⁹

Crystal Springs fountain thistle (*Cirsium fontinale* var. *fontinale*) is a federally and state endangered herbaceous perennial in the aster family (Asteraceae). It is also listed by the CNPS as seriously endangered (CNPS List 1B.1). It has several reddish stems about 1-2 feet high. The basal leaves that occur at the base of the plant are larger with spiny lobes, with smaller leaves on the stems. It blooms dull white to pinkish flowers from June to October. This fountain thistle is found in moist clay openings in riparian areas or serpentine chaparral.⁶⁰ Although there are no known populations in Pacifica, due to its proximity to known populations and the potential for serpentine soils, there remains a possibility for the fountain thistle to be found within the Planning Area. The species is threatened by trail construction, modification of hydrological regimes, roadside maintenance, nonnative plants, and dumping.

⁵⁹ California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed on Thursday, August 01, 2013.

⁶⁰ USFWS. Species Account Fountain Thistle (*Cirsium fontinale* var. *fontinale*), http://www.fws.gov/sacramento/es/plant_spp_accts/fountain_thistle.htm, Last updated April 17, 2009a.

Crystal Springs lessingia (*Lessingia arachnoidea*) is an annual herb endemic to California. It is considered to be fairly endangered by the CNPS (CNPS List 1B.2). It is found in cismontane woodland, coastal scrub, and serpentine valley and foothill grasslands. It blooms pale to deep lavender flowers from July to October. It is threatened by nonnative plants and pipeline maintenance.

Davidson's bush-mallow (*Malacothamnus davidsonii*) is a deciduous shrub that is endemic to California. It is considered to be fairly endangered in California (CNPS List 1B.2).⁶¹ It is a member of the mallow family (Malvaceae). It is found in chaparral, cismontane woodland, coastal scrub, and riparian woodlands. It blooms pale pinkish purple or white from June to January and is threatened by urbanization and possibly by maintenance activities.

Diablo helianthella (*Helianthella castanea*) is a federal Species of Concern and CNPS List 1B.2 species. This perennial aster has yellow flowers and is found on open, grassy sites in broad-leaved forests, chaparral, cismontane woodlands, coastal scrub, riparian woodlands, and grasslands between 600 and 1,300 ft. It blooms between March and June. It is threatened by urbanization, grazing, fire suppression and potentially roadside maintenance.

Fragrant fritillary (*Fritillaria lilacea*). This fritillary is found on serpentine soils of the Coast Range in the vicinity of the San Francisco Bay. The species is a slender, herbaceous perennial lily developing from a bulb. The leaves are located opposite each other on the stems. The flowers, which appear from February to April are white, sometimes turning dull pink or red. This species is listed on CNPS List 1B.2.⁶²

Franciscan onion (*Allium peninsulare* var. *franciscanum*) is a bulbiferous herb of the lily family (Liliaceae). It is fairly endangered in California (CNPS List 1B.2). It is found in cismontane woodlands and valley and foothill grasslands with clay, volcanic, or serpentine soil. It blooms red-purple flowers between May and June. It is threatened by development, foot traffic, and nonnative plants.

Franciscan thistle (*Cirsium andrewsii*), also listed by the CNPS as a fairly endangered plant (list 1B.2), is member of the sunflower family (Asteraceae). This perennial produces solitary spiny flowers from June to July. It is found in moist places of northern coastal scrub, mixed evergreen forests, and bluffs and canyons, ranging from the coast from Sonoma County south to San Mateo. Threats to this species include development and nonnative plants.

Hickman's cinquefoil (*Potentilla hickmanii*) is a small perennial herb in the rose family (Rosaceae). It is both a federal and state endangered species and is also listed by the CNPS as seriously endangered (CNPS List 1B.1). It annually dies back to a woody taproot. The leaves

⁶¹ California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed on Thursday, August 01, 2013.

⁶² California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed on Thursday, August 01, 2013.

are pinnately compound, with six pairs of small leaflets. Flowers generally have five yellow petals. It has the potential to be found in the coastal bluff scrub in Pacifica. It is threatened by urbanization, recreational activities, nonnative grasses, grazing, and the Devil's Slide Bypass highway project.

Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*) a bulbiferous herb from the lily family (Lilaceae), this flower is endemic to California where it is seriously endangered (CNPS List 1B.1). It is found in cismontane woodland and serpentinite valley and foothill grasslands. It blooms from March to April with foul smelling purplish to greenish flowers.

Indian Valley bush-mallow (*Malacothamnus aboriginum*), a deciduous shrub in the mallow family (Malvaceae), is endemic and fairly endangered in California (CNPS List 1B.2). It is found in chaparral and cismontane woodlands, often in burned areas. It blooms from April to October, and appears in abundance after fires. It is threatened by grazing, vehicles, and road maintenance.

Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*) is a CNPS List 1B.1 species.⁶³ This horkelia is a perennial herb in the rose family. Its habitat includes old dunes, coastal sandhills, scrub, chaparral, and coniferous forests between 10 and 200 meters in elevation. It blooms white flowers from April to September. It is threatened by coastal development.

Marin western flax (*Hesperolinon congestum*), also known as the Marin dwarf flax, is a federal and state threatened species and is considered by the CNPS to be seriously endangered (CNPS List 1B.1). It is an herbaceous annual in the flax family (Linaceae). It has slender, threadlike stems about 4-16 inches tall. It blooms from May to July with rose to whitish petals and deep pink to purple anthers. It is restricted to serpentine soils and is known from seven populations in San Mateo County. It is threatened by residential and recreational development, foot traffic, and competition from non-native species.⁶⁴ It has the potential to be found in serpentine soils in Pacifica.

Montara manzanita (*Arctostaphylos regismontana*) is a tree-like scrub with distinct smooth blood-red bark growing to 15 or 20 feet with densely glandular twigs having both fine and bristly hairs. The leaves are strongly overlapping and light green with both sides the same. The stem produces no burl and does not stump sprout after a fire, but is likely dependent on fire for seed germination. It blooms white to pink flowers from January to March. The species occurs only on San Bruno Mountain and Montara Mountain, the latter of which is linked by contiguous natural habitat to the south end of Pacifica. It is known to occur just outside the Pacifica boundary. The species is listed on CNPS List 1B.2. It is threatened by development and vehicles.

⁶³ California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed on Thursday, August 01, 2013.

⁶⁴ USFWS. Species Account Marin Dwarf-flax (*Hesperolinon congestum*), http://www.fws.gov/sacramento/es/plant_spp_accts/marin_dwarf_flax.htm, Last updated April 17, 2009b.

Oregon polemonium (*Polemonium carneum*) is a perennial herb in the phlox family (Polemoniaceae). Although it is more common elsewhere, it is fairly endangered in California (CNPS List 2.2). It is found in coastal prairies, coastal scrub, and lower montane coniferous forest. It blooms pink to purple flowers between April and September, and is threatened by logging.

Pacific manzanita (*Arctostaphylos pacifica*) is a member of the heath family (Ericaceae) and is listed in California as an endangered species and is also considered by the CNPS to be fairly endangered (CNPS List 1B.2). It is a mat-like shrub with shiny dark green leaves. Flowers have five white to pink petals and blooms from February to April. It is potentially threatened by alteration of fire regimes and recreational activities. Although it has not been found in Pacifica, the proximity to San Bruno Mountain and availability of coastal scrub habitat indicates moderate potential for it to occur.

Pale yellow hayfield tarplant (*Hemizonia congesta* ssp. *congesta*). This plant is listed on CNPS List 1B.2 and is an annual herb in the sunflower family. It blooms yellow flowers between April and November. It is found in valley and foothill grasslands and sometimes on roadsides. It is threatened by agriculture, development, and possibly.

Pappose tarplant (*Centromadia parryi* ssp. *parryi*) is an annual herb in the sunflower family, and is fairly endangered in California (CNPS List 1B.2). It is found in valley and foothill grasslands and sometimes on roadsides. It blooms yellow flowers from May to November. It is threatened by agriculture and development.

Point Reyes horkelia (*Horkelia marinensis*), a perennial herb in the rose family, is fairly endangered and endemic to California (CNPS List 1B.2). It is found in sandy areas in coastal dunes, coastal prairies, and coastal scrub. It blooms white flowers between May and September. It is threatened by nonnative plants and residential development.

Presidio manzanita (*Arctostaphylos hookeri* ssp. *ravenii*), also known as Raven's manzanita, is a federal and state endangered species and is also considered by the CNPS to be seriously endangered (CNPS List 1B.1). It is a low growing, wood shrub in the heath family (Ericaceae). The leaves are sharply pointed, slick, and glossy. It is found on serpentine and rocky soils in chaparral, coastal prairies, and coastal scrub. It is threatened by nonnative plants, encroachment of native shrubs, and fungal pathogens.⁶⁵ Although it is not known to occur in Pacifica, suitable scrub habitat is found within the Planning Area.

Robust spineflower (*Chorizanthe robusta* var. *robusta*) is a federally endangered and CNPS List 1B.1 species in the buckwheat or knotweed family (Polygonaceae). It is found in scrub areas, sandy terraces and bluffs, or in loose sand. It blooms white to rosy flowers from April to September. There are historical occurrences just outside the Planning Area, although these are

⁶⁵ USFWS. Species Account Presidio Manzanita (*Arctostaphylos hookeri* ssp. *ravenii*), http://www.fws.gov/sacramento/es/plant_spp_accts/presidio_manzanita.htm, Last updated April 17, 2009c.

possibly extirpated. However, the coastal scrub and sandy bluffs in Pacifica may provide suitable habitat. It is threatened by development, recreation, mining, and nonnative plants.

Rose leptosiphon (*Leptosiphon rosaceus*) is an annual herb in the phlox family. This flower is seriously endangered and endemic to California (CNPS List 1B.1). It blooms pink or white flowers between April and July. It is possibly threatened by competition with nonnative plants.

San Bruno Mountain manzanita (*Arctostaphylos imbricata*) is endangered in the state of California and is listed by the CNPS as seriously endangered (CNPS List 1B.1). This evergreen shrub in the heath family is mat or mound-like. It blooms white to pink flowers between February and May. Although it is only known from San Bruno Mountain, suitable coastal scrub is found within Pacifica. It can be found in chaparral or coastal scrub, often on sandstone outcrops. It is threatened by fungal infection and alterations in fire regimes.

San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*) is a CNPS List 1B.2 species. This tall spineflower is an annual herb in the buckwheat family. It is found in sandy places under 250 meters of elevation such as coastal bluff scrub, dunes, prairies, and scrub. It blooms between April and July.

San Francisco campion (*Silene verecunda* ssp. *verecunda*). This species is a member of the pink family (Caryophyllaceae) and grows as a multi-stemmed perennial with dense gland-tipped hairs. Plants of this species are perennial, from 4 to 20 inches in height and branched from the base of upright and hairy stems. The flowers are white to rose in color, and have 5 petals that are fused into a tube and have 2 lobes on each petal blade. The San Francisco campion is native to sandy soils, coastal bluffs and in chaparral, and flowers from March to June. The species is a federal candidate (FC2) and is on CNPS List 1B.2.

San Francisco collinsia (*Collinsia multicolor*) is an annual herb in the figwort family (Scrophulariaceae). It is endemic to California and is fairly endangered (CNPS List 1B.2). It is found in closed-cone coniferous forests, coastal scrub, and sometimes on serpentinite soil. It blooms between March and May with the upper lip white and the lower lip of the flower lavender to bluish purple. It is threatened by nonnative plants and urbanization.

San Francisco gumplant (*Grindelia hirsutula* var. *maritima*) is listed on CNPS List 1B.2. This perennial, glandular-aromatic species is endemic to San Francisco and southern portions of Marin County. Gumplants received this common name for the milky, resinous substance produced around the enclosed heads of immature blooms prior to flowering. This member of the sunflower family produces terminal, solitary, showy yellow flowers from May to September (but is identifiable year-round). San Francisco gumplant typically occurs in open places within either coastal scrub or grassland communities. It is threatened by coastal development and nonnative plants.

San Francisco lessingia (*Lessingia germanorum*) is a federal and state listed endangered species and is considered by the CNPS to be seriously endangered (CNPS List 1B.1). It is a low-growing, slender-stemmed annual herb in the sunflower family (Asteraceae). Leaves are narrow, lance-shaped, and less than an inch long. The leaves and stems are covered by grayish

loosely interwoven hairs. Solitary flowers are yellow and bloom in late summer and fall. It is found historically in stabilized coastal sand dunes and sandy soils with open scrub and herbaceous vegetation. It is threatened by nonnative species, residential and commercial development, sand quarrying, trampling, recreational activities, inadequate regulatory mechanisms, bulldozing, use of fertilizers, and other urban land use.⁶⁶

San Francisco owl's clover (Triphysaria floribunda). This annual green root-parasite is found in coastal grasslands and on serpentine soils. The plant can grow up to 12 inches in height with creamy white, slender flowers and the leaves are often a yellowish-brown. The plant is listed on CNPS List 1B.2.

San Mateo thorn-mint (Acanthomintha duttonii). An annual native plant only found in San Mateo County's serpentine grasslands, this mint plant (in the Lamiaceae family) has stems less than 20 cm (10 inches) tall and white flowers tinged with lavender. The species flowers between April and June. It is named for the spines on the bracts that subtend the clusters of flowers surrounding the stem at the axils of the leaves. There are only two known areas where this species is found, including soils found in Pacifica.⁶⁷ This species is listed by both the federal and state resource agencies as endangered and is on the CNPS List 1B.

San Mateo woolly sunflower (Eriophyllum latilobum). This bushy perennial in the sunflower family grows to 1 to 2 feet in height and has oval leaves, The golden flowers grow in loose, flat clusters from May to June. The plant occurs in sparsely wooded, rocky or grassy slopes in the mixed evergreen forest/ coast live oak woodland and is commonly found growing under coast live oak. A species of limited distribution, the San Mateo woolly sunflower occurs only in the Crystal Springs region of San Mateo. Suitable woodland habitat may be found within the Study Area. The species is listed as endangered by both the USFWS and CDFG, and is listed on the CNPS List 1B.1.

Short-leaved evax (Hesperevax sparsiflora var. breviflora). This annual herb in the sunflower family is endemic and fairly endangered to California (List 1B.2). It is found in coastal bluff scrub with sandy soil and coastal dunes. It blooms from March to June. It is threatened by development, competition with nonnative plants, foot traffic, recreational activities, and potentially by trail construction.

White-rayed pentachaeta (Pentachaeta bellidiflora). This small annual of the sunflower family has 5 to 16 white or purple tinged ray flowers and hairy stems and leaves. The species flowers from March until May. This plant was identified in serpentine grassland, but it can also be found in northern coastal scrub and coastal prairie grassland. The species is federally and state listed as endangered and is listed on the CNPS List 1B.1. It has the potential to occur in

⁶⁶ USFWS. Species Account San Francisco lessingia (Lessingia germanorum), http://www.fws.gov/sacramento/es/plant_spp_accts/san_francisco_lessingia.htm, Last updated April 17, 2009d.

⁶⁷ U.S. Department of Agriculture, Natural Resources Conservation Service. Soil Survey of San Mateo County Eastern Part and San Francisco County, CA, <http://soil.datamart.nrcs.usda.gov>, 2006.

the grassland and coastal scrub areas in Pacifica. There is a historic occurrence documented in the east end of the Planning Area, although it has been extirpated. Other populations may be present in suitable habitat in the vicinity.

REGULATORY SETTING

Special-Status Species

Federal Endangered Species Act

Under the Federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 United States Code [USC] 1533[c]). Pursuant to the requirements of FESA, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally listed, threatened, or endangered species, or species proposed for federal listing may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the federal agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]).

Procedures for addressing federally listed species (hereafter called “listed species”) follow two principal pathways, both of which require consultation with the USFWS, which administers FESA for all terrestrial species, or the National Marine Fisheries Service (NMFS), which administers FESA for marine fish species, including anadromous salmonids. The first pathway (FESA, Section 10(a) Incidental Take Permit) is set up for situations where a non-federal government entity (or where no federal nexus exists) must resolve potential adverse impacts to species protected under FESA. The second pathway (FESA, Section 7 Consultation) involves projects with a federal connection or requirement; typically these are projects where a federal lead agency is sponsoring or permitting the proposed project. For example, a permit from the Corps may be required if a project will result in wetland impacts. In these instances, the federal lead agency (e.g., the Corps) initiates and coordinates the following steps: informal consultation with USFWS and/or NMFS to establish a list of target species; preparation of biological assessment assessing potential for the project to adversely affect listed species; coordination between state and federal biological resource agencies to assess impacts/proposed mitigation; and development of appropriate mitigation for all significant impacts on federally listed species.

The FESA administering agency ultimately issues a final Biological Opinion on whether the project will affect a federally listed species. Section 10(a) of FESA states that Endangered Species Incidental Take Permits are necessary when the “taking” or harming of a species is incidental to the lawful operation of a project.

The USFWS also publishes a list of candidate species. Species on this list receive “special attention” from federal agencies during environmental review, although they are not otherwise protected under FESA. Candidate species are taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened. In addition, the

USFWS maintains a list of species of concern. Federal species of concern receive no legal protection under FESA but may meet CEQA criteria for being considered rare or endangered (see below).

California Endangered Species Act

Section 2080 of the California Fish and Game Code prohibits the taking of plants and animals listed under the authority of the California Endangered Species Act of 1984 (CESA). Under CESA, CDFG maintains a list of threatened species and endangered species (California Fish and Game Code 2070). The CDFG also maintains a list of candidate species that CDFG has formally noticed as being under review for addition to either the list of endangered species, the list of threatened species, or the list of “species of special concern,” which all serve as “watch lists.”

Pursuant to the requirements of CESA, an agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) states that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code that deals with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not currently have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if a project will result in substantial losses. Natural communities listed by CNDDDB as sensitive are considered by CDFG to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Other Statutes, Codes, and Policies Affording Limited Species Protection

Birds

The federal Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations as prescribed by

the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. In California, birds of prey are protected under the State Fish and Game Code, Section 3503.5 (1992). Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Project impacts to these species would not be considered significant unless they are known or have a high potential to nest in the project area or to rely on it for primary foraging.

Bats

All bat species are protected under the California Fish and Game Code Section §4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as otherwise provided in the code or in accordance with regulations adopted by the commission.

Plants

The legal framework and authority for the state’s program to conserve plants are woven from various legislative sources, including CESA and CEQA Guidelines. In addition, the California Native Plant Protection Act of 1977 (Fish and Game Code Section 1900 – 1913) gives the CDFW authority to designate state endangered, threatened, and rare plants and provides specific protection measures for identified populations.

The California Native Plant Society (CNPS) maintains a list of special status plant species based on collected scientific information. Designation of these species by CNPS has no legal status or protection under federal or state endangered species legislation. CNPS designations are defined as List 1A (plants presumed extinct); List 1B (plants rare, threatened, or endangered in California and elsewhere); List 2 (plants rare, threatened, or endangered in California, but more numerous elsewhere); List 3 (plants about which more information is needed – a review list); and List 4 (plants of limited distribution - a watch list). There is a general agreement among biologists, ecologists and other resource specialists, that vascular plants listed as rare or endangered or as List 1A, 1B, or 2 by the CNPS meet the broader definition in CEQA Guidelines Section 15380(b). Thus, substantial adverse effects to these species would be considered significant. Additionally, plants constituting CNPS List 1A, 1B or 2 meet the definitions of CDFG Code Section 1901 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA).

Wetlands

U.S. Army Corps of Engineers

Wetlands and other waters, e.g., rivers, streams and natural ponds, are a subset of “waters of the U.S.” and receive protection under Section 404 of the Clean Water Act. The Corps has

primary federal responsibility for administering regulations that concern waters and wetlands on the project site under statutory authority of the Clean Water Act (Section 404). In addition, the regulations and policies of various federal agencies (e.g., U.S. Department of Agriculture, and Natural Resource Conservation Service [NRCS], U.S. EPA) mandate that the filling of wetlands be avoided to the extent possible.

The term “waters of the U.S.” as defined in Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]) includes: (1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) All interstate waters including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters which are or could be used by interstate or foreign travelers for recreational or other purposes; or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or which are used or could be used for industrial purposes by industries in interstate commerce; (4) All impoundments of waters otherwise defined as waters of the United States under the definition; (5) Tributaries of waters identified in paragraphs (1) through (4); (6) Territorial seas; and (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in statements (1) through (6). The Corps requires obtaining a permit if a project proposes placing structures within navigable waters and/or alteration of waters of the United States.

San Francisco Regional Water Quality Control Board

Under Section 401 of the federal Clean Water Act (CWA), the San Francisco Regional Water Quality Control Board (RWQCB) must certify that actions receiving authorization under section 404 of the CWA also meet state water quality standards. The RWQCB also regulates waters of the state under the Porter-Cologne Act Water Quality Control Act (Porter Cologne Act). The RWQCB requires projects to avoid impacts to wetlands if possible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the state. The RWQCB also has jurisdiction over waters deemed “isolated” or not subject to Section 404 jurisdiction under Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC). Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of the Porter-Cologne Water Quality Control Act.

California Department of Fish and Wildlife

Under Sections 1600-1616 of the California Fish and Game Code, the CDFW regulates activities that would substantially divert, obstruct the natural flow, or substantially change of rivers, streams and lakes. The jurisdictional authority of CDFW is defined in Section 1602 of the California Fish and Game Code as, “bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground

pavement where it may pass into any river, stream, or lake....” The CDFW requires a Lake or Streambed Alteration Agreement for activities within its jurisdictional area.

California Coastal Commission

The California Coastal Act (1976) defines wetlands 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, and fens” (Section 30121). Such areas are typically further designated Environmentally Sensitive Habitat Areas (ESHA), within or near which development activities are substantially limited. Specific provisions of the Coastal Act, as implemented within the Local Coastal Program, as they relate to wetlands and other ESHA are described in the section on Local Ordinances Plans and Policies, below.

Local Ordinances, Plans, and Policies

Pacifica General Plan 1980

The current Pacifica General Plan outlines a number of policies regarding biological resources. These are outlined below:

Conservation Element Policies

1. Conserve trees and encourage native forestation.
2. Require the protection and conservation of indigenous rare and endangered species.
3. Protect significant trees of neighborhood or area importance and encourage planting of appropriate trees and vegetation.
4. Protect and conserve the coastal environment, sand dunes, habitats, unique and endangered species and other natural resources and features which contribute to the coastal character.
5. Local year-round creeks and their riparian habitats shall be protected.
6. Develop policies and ordinances directed to energy conservation.
7. Promote the conservation of all water, soil, wildlife, vegetation, energy, minerals and other natural resources.

Open Space Element Policy

1. Retain open space which preserves natural resources, protects visual amenities, prevents inappropriate development, provides for the managed use of resources, and protects the public health and safety.

Land Use Element Policy

1. Development shall maximize beach and open space access and be oriented as much as possible to the carrying capacity of each particular coastal environment in use, design, and intensity.

Local Coastal Program, California Coastal Act

The California Coastal Act (1976) gives local government the duty to prepare and implement Local Coastal Programs (LCPs). An LCP is a local government's land use plans, zoning ordinances, zoning district maps, and other implementing actions within sensitive coastal resource areas. Together, these tools must adhere to and implement the California Coastal Act. LCPs carry out the mandate of the Coastal Act: to protect coastal resources and maximize public access to the shoreline. LCPs that are certified by the Coastal Commission issue permits for new development subject to standards outlined in the LCP. LCPs can address public access, recreation and visitor facilities, water quality, natural resources, agricultural resources, new development, scenic resources, coastal hazards, shoreline erosion, and other coastal development.

The California Coastal Act included 35 coastal policies which were intended to form the parameters for planning the State's Coastal Zone. Unlike the General Plan where the policies evolved from the public input (primarily workshops) and then formed the basis for land use decisions, in coastal planning the policies are given. These policies are used to justify the various proposed land uses. The coastal policies are included here. It is important to note that these policies are binding on the coastal portion of Pacifica's Plan; and can be amended only with the State Coastal Commission's approval. However, although they supplement the mandatory elements of the General Plan, the policies are not binding on the area east of Highway 1, which is outside the Coastal Zone.

Coastal Act Policies

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of wastewater discharge and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development of transportation of such materials. Effective

containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

The diking, filling or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this policy, where there is no feasible, less environmentally damaging, alternative and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

- New or expanded port, energy and coastal-dependent industrial facilities, including commercial fishing facilities.
- Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
- In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game for boating facilities if, in conjunction with such boating facilities, a substantial portion of degraded wetland is restored and maintained as a biologically productive wetland; provided, however, that in no event shall the size of the wetland area be used for such boating facility, including berthing space, turning basins, necessary navigational channels, and any necessary support service facilities, be greater than 25 percent of the total wetland area to be restored.
- In open coastal waters, other than wetlands, including streams, estuaries and lakes, new or expanded boating facilities.
- Incidental public services purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.
- Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
- Restoration purposes.
- Nature study, aquaculture, or similar resource-dependent activities.
- Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches, or into suitable longshore current systems.

In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game shall be limited to very minor incidental public facilities, restorative measures and nature study. Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where

feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fish industry.

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to: (1) necessary water supply projects; (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or; (3) developments where the primary function is the improvement of fish and wildlife habitat.

Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas and shall be compatible with the continuance of such habitat areas.

The long-term productivity of soils and timberlands shall be protected, and conversions of coastal commercial timberlands in units of commercial size to other uses of their division into units of noncommercial size shall be limited to providing for necessary timber processing and related facilities.

Pacifica State Beach General Plan

The purpose of the Pacifica State Beach General Plan is to protect, perpetuate, and make available to the public the natural, scenic and recreation resources of the ocean beach and wetlands. The Pacifica State Beach General Plan includes long range planning proposals for resource, land use and facilities, and interpretive elements.

City of Pacifica Strategic Plan

The Pacifica Strategic Plan describes the vision, mission, goals, and objectives for the City. These guiding principles include specific directives pertaining to biological resources. The vision statement states that in five years, Pacifica will be “economically and ecologically vibrant.” Pacifica is dedicated/committed to “the stewardship of its exceptional natural attributes.” Goal 1 is to “preserve and enhance Pacifica’s natural resources and open space to ensure an ecologically vibrant community.”

Heritage Tree Program, City of Pacifica

Heritage trees are any trees in the City of Pacifica that have a trunk with a circumference of 50 inches or more, excluding eucalyptus. Any removal, substantial trimming or new construction within the drip-line of a Heritage Tree requires approval by the City.

Impact Analysis

SIGNIFICANCE CRITERIA

Significant impacts would occur if implementation of the proposed General Plan and results in:

- Criterion 1:** Have a substantial adverse effect, either directly or through habitat modifications, on 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 Wildlife or U.S. Fish and Wildlife Service
- Criterion 2:** Have a substantial adverse effect on any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Criterion 3:** 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.
- Criterion 4:** 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
- Criterion 5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Criterion 6:** Conflict with the provisions of an adopted Habit Conservation Plan the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

METHODOLOGY AND ASSUMPTIONS

This analysis is based on a review of special-status species, sensitive natural communities, riparian habitat, wildlife corridors, and jurisdictional water bodies that occur within and adjacent to key sites, where land use changes will occur in the future, and which also occur within the greater Planning Area of the City of Pacifica. The following sources were reviewed for this analysis:

- U.S. Fish and Wildlife Service (USFWS), Species List for U.S. Geological Survey San Francisco South, Montara Mountain, and San Mateo 7.5-minute topographic quadrangles, 2013.;
- U.S. Fish and Wildlife Service (USFWS), Official List of Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Montara Mountain USGS 7.5-minute topographic quadrangle, Document No. 130801030759 (August 2013);
- California Natural Diversity Database (CNDDDB). Rarefind version 4, data request for U.S. Geological Survey San Francisco South, Montara Mountain, and San Mateo 7.5-minute topographic quadrangles, August, 2013;
- California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed on Thursday, August 01, 2013);
- California Department of Fish and Wildlife: Natural Community Conservation Planning: <http://www.dfg.ca.gov/habcon/nccp/> ;
- San Mateo County Local Coastal Program Policies, June 1998; and
- San Mateo County Heritage Tree Ordinance.

SUMMARY OF IMPACTS

Future land use changes proposed under the proposed General Plan could impact biological resources if sensitive natural communities, critical habitat, and special-status or sensitive species are disturbed or altered. However, potential impacts are reduced to a less than significant level by existing regulations and proposed General Plan policies.

IMPACTS AND MITIGATION MEASURES

Impact

- 3.7-1 Implementation of the proposed General Plan would not have a substantial adverse effect, either directly or through habitat modifications, on candidate, sensitive, or special status species identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (*Less than Significant*)**

Three special status wildlife species are known to occur within the Planning Area: California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) and steelhead trout (*Oncorhynchus mykiss irideus*). Red-legged frog and garter snake both

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3.7: Biological Resources

occur in Sharp Park,⁶⁸ which would remain a public open space managed for both public access and natural conservation under the proposed Plan. Both of these special status species also occur at Mori Point, which is a known breeding location for red-legged frog, and which is managed for conservation with limited public access.⁶⁹ Red-legged frog also occurs in lower Calera Creek west of Highway 1.⁷⁰ Red-legged frog critical habitat spans across much of the undeveloped land in the Planning Area; it exists throughout northeast Sharp Park, Sweeney Ridge, and the SFPUC Peninsula Watershed, as well as throughout the Pedro Point Headlands southeast of Grand Avenue and Pedro Valley County Park on the southern end of the Planning Area. The great majority of this area is preserved as open space. The third special status species which occurs in Pacifica is steelhead, and is known to spawn along the main stretch of San Pedro Creek in the area parallel to Linda Mar Boulevard.⁷¹ As such, there are several specific areas where proposed buildout could adversely affect this species and its habitat. While the great majority of Planning Area land where special status species occur is designated as park land or for conservation, the proposed General Plan calls for the development of new trails. The Sharp Park Trail and an unnamed trail that would run parallel to the west side of Highway 1 in the southern Planning Area near Devil's Slide Trail, would both occur within critical red-legged frog habitat.

Special-status species associated with riparian mixed hardwood habitat may occur at the Rockaway Quarry Site and the Sharp Park Golf Course Site, as well as along reaches of San Pedro Creek east of Highway 1. A complete listing of all special-status species considered for this project under their respective habitat categories is described above and listed in **Table 3.7-1**. This analysis addresses species that are either known to occur or are highly likely to occur within the key sites and Planning Area.

All federally and state threatened, endangered, and candidate wildlife species are protected under the Federal Endangered Species Act and the California Endangered Species Act, respectively. Nesting and migratory birds are afforded protection under the federal Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989), and birds of prey in the order Falconiformes or Strigiformes, are further protected under the California State Fish and Game Code,

⁶⁸ Center for Biological Diversity, 2013. Accessed at: http://www.biologicaldiversity.org/species/reptiles/San_Francisco_garter_snake/index.html

Golden Gate National Parks Conservancy, 2013. Accessed at: <http://www.parksconservancy.org/conservation/plants-animals/endangered-species/san-fancisco-garter-snake.html>

⁶⁵ Golden Gate National Parks Conservancy, 2013. Accessed at: <http://www.parksconservancy.org/conservation/plants-animals/endangered-species/san-fancisco-garter-snake.html>

National Park Service. Recovery of the San Francisco Garter Snake. San Francisco Bay Area Network Resource Briefing, July 2010. Accessed at: http://www.sfnpns.org/download_product/1892/0

⁶⁶ CDFW California Natural Diversity Data Base (CNDDB). Rarefind version 4 query of the Montara Mountain USGS 7.5-minute topographic quadrangle. August, 2013.

⁷¹ San Pedro Creek Watershed Coalition, 2013. Fish. Accessed at: <http://pedrocreek.org/fishcommittee.html>

Section 3503.5 (1992). Bat species are also protected under the California Fish and Game Code, under Section §4150. As described in the Setting section, rare plants with particular CNPS statuses are protected under CEQA and under the CDFG Code Section 1901 (Native Plant Protection Act). The proposed General Plan identifies multiple special-status plant species by their associated plant community and/or habitat type, which may be present within the Planning Area. However, none of these species are actually known to occur. Some of these species are also identified by CNDDDB (CNDDDB, 2013), USFWS (USFWS, 2013), and California Native Plant Society. **Table 3.7-1** above provides a complete list of all special-status plant species considered for the proposed Plan, all of which possess a moderate potential of occurring within the Planning Area.

For specific development projects under the proposed General Plan, consultation may be required with USFWS by FESA, and/or with the California DFW by CESA. Prior to project construction under the proposed General Plan, the applicant would be required to conduct biological resource assessments and pre-construction plant and wildlife surveys at development sites. Compensatory mitigation would also be required in order to offset the loss of or alteration to special status species' habitat.

Implementation of the following proposed General Plan policies would reduce potential impacts to special-status species to a less than significant level.

Proposed General Plan Policies that would Reduce Impacts

Land Use Element

LU-G-7 **Open Space Conservation and Habitat Protection.** Protect beaches, oceanfront bluffs, ridgelines, hillside areas adjacent to existing open space, and areas that support critical wildlife habitat and special status species.

Conservation Element

CO-G-7 **Wildlife and Critical Habitat.** Conserve and protect indigenous threatened, endangered, and other special status species by preserving critical habitat.

Habitat can be protected by allowing very limited or no development, by identifying habitat areas as top priorities for permanent conservation, and by managing public land to ensure species protection. Critical Habitat in the Coastal Zone is considered Environmentally Sensitive Habitat Area (ESHA).

CO-G-8 **Coastal Environment and Special Status Communities.** Conserve and protect beaches, sand dunes, coastal bluffs, and special status communities, particularly the Coastal bluff scrub on the northern bluffs.

Special status communities in the Coastal Zone are considered Environmentally Sensitive Habitat Area (ESHA).

CO-G-9 **Creeks and Riparian Areas.** Protect year-round creeks and their riparian habitats.

San Pedro Creek has been designated an “impaired waterway” by the Regional Water Quality Control Board and provides critical habitat to a federally-listed threatened species, the California coast population of steelhead.

CO-I-1 **Creek Protection and Restoration.** Maintain, protect, and restore Pacifica’s creeks, including San Pedro, Calera, Sanchez, and Milagra creeks, as environmental and aesthetic resources. Actions will include, but are not limited to:

- Continuing restoration efforts along San Pedro Creek to improve conditions for steelhead by removing obstacles to fish passage, placing rock weirs to facilitate fish passage, and by monitoring the effectiveness of these projects;
- Partnering with local organizations, such as the San Pedro Creek Watershed Coalition, Go Native, the Pacifica Land Trust, and others, on restoration efforts.
- Enforcing restrictions on the planting of invasive species near creek areas;
- Identifying and working with property owners to take advantage of unique opportunities where human active use (e.g., through trail development) would enhance creek appreciation without disrupting ecological function;
- Requiring minimum setbacks from the top of creek banks for development proposed adjacent to creeks, in keeping with City regulations and Best Management Practices.

CO-I-2 **Improvement of Impaired Waterways.** Strive to increase water quality in San Pedro Creek, and Impaired Waterway that is also habitat for the federally-listed Steelhead Trout, and any other waterway that may be listed as impaired in the future.

A study is being performed on San Pedro Creek by the San Pedro Creek Watershed Coalition, in which water samples will be analyzed to identify the sources of bacterial pollution.

CO-I-32 **Fencing.** Any fencing or barriers located within riparian ESHAs or wildlife corridors shall permit the free passage of wildlife.

CO-I-28 **Protection of Biological Resources with New Development.** Protect sensitive habitat areas and special-status species through implementation of the following measures:

- 1) The City shall avoid development and/or buildout in critical habitat of special status species.
- 2) Pre-construction plant and wildlife surveys: Project applicants shall engage a qualified biologist to conduct presence/absence biological surveys for sensitive plant and wildlife species prior to construction adjacent to or within identified

special status communities and other sensitive areas identified in Figure 7-3 of the proposed General Plan. If special status species are identified, the qualified biologist shall consult with the California Department of Fish and Wildlife (CDFW) and establish no-disturbance buffers around avian nests, bat roosts, and sensitive plants to avoid disturbance and direct impacts to these resources during construction. If no special status species are detected during surveys, then construction-related activities may proceed. Nesting birds, in particular, are protected by two means; they receive protection under the Migratory Bird Treaty Act, and nesting raptors (in the order Falconiformes or Strigiformes) are protected under the State Fish and Game Code, §3503.5.

- 3) Require biological resource assessments be conducted prior to approval for any development within 300 feet of creeks, wetlands, or other sensitive habitat areas shown on Figure 7-3 of the proposed General Plan [Figure 3.7-3 of the EIR].
- 4) Require on-site monitoring of biological resources by a qualified biologist throughout the duration of construction activity.
- 5) Require compensatory mitigation by means of habitat preservation, restoration, and enhancement; for the loss of any critical habitat and/or special status communities.

The City will coordinate with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, and Regional Water Quality Control Board in providing developers with the best guidance to avoid impacts to special status species and habitat areas including creeks, wetland features, woodlands, or other sensitive natural features.

CO-I-29 **Protection of Environmentally Sensitive Habitat Area (ESHA).** Update zoning regulations to protect all sensitive species with defined or potential habitat by establishing specific habitat survey requirements, development limitations, and other requirements to mitigate potential impacts.

CO-I-30 **Verification of ESHA.** Prior to any proposed development in an ESHA or potential ESHA, require that a habitat survey be conducted by a qualified botanist or biologist. The habitat survey will verify whether the site is an ESHA, and document the extent of the sensitive resources, document potential negative impacts to the habitat, and recommend appropriate mitigation measures. Verification of an ESHA shall be based on the following considerations:

- Presence of natural communities identified as rare by the California Department of Fish and Wildlife (determined by a state rarity ranking of S1 to S3).
- Recorded or potential presence of plant or animal species designated as rare, threatened or endangered under State or federal law.

- Recorded or potential presence of plant or animal species for which there is compelling evidence or rarity, such as a designation of 1B (rare or endangered in California or elsewhere) or 2 (rare, threatened, or endangered in California, but more common elsewhere) by the California Native Plant Society.
- Presence of coastal waterways.
- Integrity of the habitat and its connectivity to other natural areas.

CO-I-36 **Construction during Nesting Season.** If site work or construction occurs during the nesting season (February 1 through August 31), then pre-construction breeding bird surveys shall be performed by a qualified wildlife biologist prior to any site disturbance to ensure that no nests will be disturbed or destroyed during Project implementation. If an active nest is found sufficiently close to work areas to be disturbed by construction activities, then the biologist shall create a no-disturbance buffer of 250 feet around passerine nests and a 500 foot buffer around raptor nests. Work-free buffer zones shall be maintained until after the breeding season or until after the qualified biologist determines the young have fledged (usually late June through mid-July).

Nests initiated during construction activities would be presumed to be unaffected by the activity, and a buffer zone around such nests is not necessary. However, nests shall be flagged and construction activity shall avoid killing and/or injuring nesting birds.

CO-I-37 **Pre-Construction Bat Surveys.** Pre-construction surveys for special-status and non-listed bat species will be performed by a qualified biologist if large trees (>4 ft. diameter at breast height) are to be removed or underutilized or vacant buildings are to be demolished. A no-disturbance buffer of 100 feet shall be created around active bat roosts being used for maternity or hibernation purposes.

CO-I-38 **Protection of the California Red-Legged Frog During Construction and San Francisco Garter Snake during Construction.** To minimize disturbance, require all grading activity within 100 feet of aquatic habitat shall be conducted during the dry season (May 1 and October 15) to protect California red-legged frog and San Francisco garter snake. A qualified biologist shall conduct presence/absence surveys for California red-legged frog and San Francisco garter snake prior to construction in or adjacent to riparian areas, grasslands near ponds/wetlands, or other sensitive habitat. Any individuals identified shall be treated in consultation with USFWS. Construction shall follow accepted procedures for exclusion and avoidance of California red-legged frog and San Francisco garter snake and their habitat. Additionally, the biologist shall supervise the installation of exclusion fencing along the boundaries of the work area, shall conduct environmental awareness training for construction workers, and shall be present during initial vegetation clearing and ground-disturbing activities.

CO-I-39 **Invasive Plant Species.** Prohibit the use of invasive plant species, such as pampas grass, adjacent to wetlands, riparian areas, or other sensitive habitat.

CO-I-41 **Biological Productivity.** Maintain—and where feasible, restore—the biological productivity and the quality of coastal waters, streams, wetlands, and lakes in order to maintain optimum populations of marine organisms and to protect human health.

Techniques may include:

- *Minimizing adverse effects of wastewater discharge;*
- *Controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow;*
- *Encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats; and*
- *Minimizing alteration of natural streams.*

CO-I-44 **Protection of Sites by Land Acquisition or Conservation Easements.** Explore opportunities for public acquisition of land or conservation easements on parcels not currently designated for Conservation that have significant habitat value.

CO-I-45 **Public Land Management.** Coordinate with GGNRA, State and County Parks, and the City and County of San Francisco to ensure that public open space lands are managed to optimize habitat protection for special status species while also providing for public access and other goals.

Key issues include maintaining viable habitat for the Mission Blue butterfly on Milagra and Sweeney ridges; for the California red-legged frog and San Francisco garter snake populations associated with Mori Point and Laguna Salada; and supporting migrating Western snowy plover at Pacifica State Beach.

Mitigation Measures

None required.

Impact

3.7-2 Implementation of the proposed General Plan would not have a substantial adverse effect on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (*Less than Significant*)

The Planning Area consists of a variety of vegetation types and natural communities, some of which are considered sensitive (see **Figure 3.7-1** and **Figure 3.7-3**). Extensive riparian habitat exists within the Planning Area, as there are five creeks and one lagoon which connect to Sanchez Creek. Riparian habitat occurs within Rockaway Quarry and Sharp Park, two proposed key sites for development. Most of the new sites proposed for future development occur in previously undeveloped areas of grassland and Northern coastal scrub habitat. These two habitat types are not identified as sensitive natural communities. At the Quarry Site, riparian habitat includes Calera Creek and a patch of riparian mixed hardwood that begins

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along the eastern reaches of the creek and extends westward through the site. Riparian mixed hardwood also occurs along the eastern reaches of Sanchez Creek in the Golden Gate National Recreation Area, within Sweeney Ridge, and in the San Pedro Valley County Park in the south. Within the Sharp Park Site, riparian habitat includes Sanchez Creek and the lagoon to which it connects.

Other creeks within the Planning Area are Rockaway Creek, San Pedro Creek, Brooks Creek, and Middle Fork San Pedro Creek. Rockaway Creek and San Pedro Creek are both nearby two of the key sites; Rockaway Creek is just south of the Rockaway Quarry Site and San Pedro Creek is very close to the San Pedro Site. Brooks Creek and Middle Fork San Pedro Creek are both located in the southern end of the Planning Area, and are fairly removed from the key sites.

Other sensitive natural communities that exist within the Planning Area include northern maritime chaparral, coastal bluff scrub, and willow riparian scrub. Northern maritime chaparral is located at the southern end of the Planning Area within the San Pedro Valley County Park and will not be impacted by future development. Coastal bluff scrub occurs at the northern end of the Planning Area and will be largely unaffected by development except for several segments where residential/agricultural development is proposed. A small patch of willow riparian scrub occurs on the south end of the Planning Area within the San Pedro Valley County Park adjacent to a church, and will not be impacted by development.

Riparian habitat is protected under the California Coastal Act in instances when alterations to rivers and streams are proposed. If development or any land use changes are to occur in or around a river, stream, or lake then the project proponent would be required at a minimum, to submit a Notification of Lake or Streambed Alteration to CDFW. Through consultation with CDFW, a Lake or Streambed Alteration Agreement as per the California Fish and Game Code Section 1600-1616 would be required. Typically, no new grading or development at any site is allowed within 20 feet of the edge of riparian vegetation or top of bank, whichever is further from the creek centerline, as delineated by a qualified, City-approved biologist.

Additionally, if development or any land use changes are to occur in or around a river, stream, or lake then the project proponent would be required at a minimum, to submit a Notification of Lake or Streambed Alteration to CDFW. Through consultation with CDFW, a Lake or Streambed Alteration Agreement as per the California Fish and Game Code Section 1600-1616 would be required. Typically, no new grading or development at any site is allowed within 20 feet of the edge of riparian vegetation or top of bank, whichever is further from the creek centerline, as delineated by a qualified, City-approved biologist.

Implementation of the following proposed General Plan policies would help reduce potential impacts to riparian habitat or other sensitive natural communities to a less than significant level.

Proposed General Plan Policies that would Reduce Impacts

Land Use Element

LU-I-12 **Hillside Preservation.** Update the Hillside Preservation District on the zoning map to ensure that all steep and sensitive terrain is subject to these regulations. The Hillside Preservation map (Figure 4-4 of the proposed General Plan) should be used as a guide.

Conservation Element

Policies CO-G-8, CO-G-9, CO-I-28, CO-I-30, and CO-I-1, as listed above.

CO-G-1 **Water Quality.** Support the improvement of Pacifica’s water quality, including both surface water and groundwater, through Best Management Practices (BMPs) for stormwater management, stream restoration, and riparian habitat restoration.

CO-G-2 **Watershed Management.** Recognize the interrelated nature of Pacifica’s hydrology system, its watersheds, and development in the Planning Area, and protect water resources through comprehensive management of entire watersheds.

CO-I-5 **Wetlands Preservation.** Prohibit new development in existing wetlands except as allowed under the federal Clean Water Act and the California Coastal Act. Continue to require detailed assessments to delineate wetlands subject to State or federal regulations prior to any proposed development project in an area where wetlands have been potentially identified.

CO-I-13 **Infrastructure and Water Quality.** Ensure that the design and construction of new infrastructure elements does not contribute to stream bank or hillside erosion or creek or wetland siltation, and incorporates site design and source control BMPs, construction phase BMPs, and treatment control BMPs to minimize impacts to water quality, in compliance with the NPDES Permit.

CO-I-31 **Management of ESHA.** If the area qualifies as an ESHA under the California Coastal Act, the following regulations apply:

- No new development shall be allowed within primary habitat areas with the exception of resource-dependent uses that can be demonstrated to have no significant adverse impact.
- Buffer areas shall be established around all sensitive resources, providing a minimum of 100 feet, and varying as needed to account for feeding, breeding, nesting, and other habitat requirements. New buildings in buffer areas shall be allowed only if there are no other feasible development areas on the parcel.
- Development shall be sited and designed to prevent impacts that would degrade adjacent habitat areas, taking into account drainage, vegetation, topography, and other considerations.

- Alteration of landforms, removal of vegetation, impervious surfaces, noise, light, and glare shall be minimized.
- Exterior lighting shall be minimized through the use of low-intensity fixtures and shielding, and directed away from ESHA to have the lowest impact on wildlife.

CO-I-34 **Habitat Preservation.** Require a habitat survey be prepared by a qualified botanist or biologist for any development proposed for the following areas, as shown in Figure 7-3 of the proposed General Plan.

- Designated Critical Habitat for Endangered or Threatened Species;
- Potentially Environmentally Sensitive Habitat Area (ESHA);
- High Habitat Value/Threatened by Fragmentation;
- Wildlife Movement Corridor; and
- High Value/Further Analysis Needed Prior to Development.

The survey will be used to determine the exact location of habitat areas and to recommend mitigation measures that minimize potential impacts.

CO-I-43 **Regulations and Incentives to Preserve Habitat.** Ensure that sensitive or critical habitat is protected, maintained, enhanced, or restored.

Possible techniques include:

- *Zoning for very low density and clustered development where appropriate;*
- *Requiring the preparation of a habitat survey in certain areas; and*
- *Identifying appropriate “sending sites” in the City’s Transfer of Development Rights program.*

CO-I-47 **Shoreline Protection.** Continue to prohibit new development requiring shoreline alterations.

Shoreline-altering construction such as revetments, breakwaters, groins, channels, seawalls, cliff retaining walls, and similar structures is permitted only when required to serve coastal-dependent uses or to protect existing structures and public beaches in danger of erosion. Such structures, where permitted, must be designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

Mitigation Measures

None required.

Impact

3.7-3 Implementation of the proposed General Plan would not 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. (*Less than Significant*)

Several types of wetlands exist in the Planning Area which include freshwater emergent wetlands, freshwater forested/shrub wetlands, and freshwater ponds.⁷² Specifically, all three of these wetland types occur at the Sharp Park Golf Course site, in addition to freshwater emergent wetlands and ‘other’ wetlands which occur at the undeveloped San Pedro site. Outside of these potential development sites freshwater ponds occur around upper Sanchez Creek and adjacent to Devil’s Slide Tunnel at the southern end of the Planning Area. Freshwater emergent wetlands occur as well in the southern end of the Planning Area along Oddstad Boulevard and south of Crespi Drive.

Wetlands were delineated in two sections along Highway 1; one segment occurring east of Highway 1 from approximately north of Reina del Mar Avenue south to the proposed police station entrance, and the second occurring adjacent to the west side of Highway 1 between Fassler Avenue and Reina del Mar Avenue.⁷³ These wetlands were identified as Palustrine Scrub-Shrub, Waters of the U.S., and Palustrine Non Persistent Emergent types⁷⁴, and total to 0.604 acres⁸. Additional wetlands have been delineated in the Linda Mar district of the City from where the Highway 1 bridge crosses over San Pedro Creek downstream to where the San Pablo Avenue bridge crosses San Pedro Creek. Wetlands were identified as federal waters/wetlands and California Coastal Commission Wetlands, and total to 0.40 acres.⁷⁵

In Upper Calera Creek, 19 separate federal waters and wetlands were delineated, totaling approximately 1.6 acres, and two California Coastal Commission wetlands were delineated totaling approximately 1.0 acre.⁷⁶ Along Pacifica State Beach, seven separate wetlands totaling 1.39 acres under state jurisdictions, and five areas totaling 1.31 acres under federal jurisdiction.⁷⁷

⁷² National Wetland Inventory, 2011.

⁷³ L.C. Lee and Associates, Inc. January 29, 2011. An Analysis of the Geographic Extent of Waters of the United States, Including Wetlands, along the Proposed Highway 1 Expansion (Calera Creek Parkway), Pacifica, California.

⁷⁴ Cowardin *et al.* 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. US Fish and Wildlife Service, Washington DC.

⁷⁵ L.C. Lee and Associates, Inc. September 10, 2003. A Description and Characterization of the Geographic Extent of Waters of the U.S., Including Wetlands at the Highway 1 Crossing of San Pedro Creek, Pacifica, California.

⁷⁶ L.C. Lee and Associates, Inc. May 19, 2000. A Description and Characterization of the Geographic Extent of Waters of the U.S., Including Wetland in Upper Calera Creek, Pacifica, California.

⁷⁷ L.C. Lee and Associates, Inc. June 6, 2003. A Description and Characterization of the Geographic Extent of Water of the U.S., Including Wetlands in and Adjacent to Pacifica State Beach, Pacifica, California.

In addition to the wetland delineations that were performed, **Figure 3.7-2** shows freshwater emergent wetlands, freshwater forested/shrub wetlands, estuarine and marine deep-water wetlands, estuarine and marine wetlands, and freshwater ponds. The extent of these wetlands is based on information from the National Wetlands Inventory, which was obtained from aerial photographs reflecting the conditions at the time the photographs were taken. Dynamic systems like wetlands may vary seasonally and annually, and may have changed since these wetland maps were originally prepared.

All of these wetlands or potential wetlands are subject to federal regulations administered by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act (CWA), and are also protected under Section 401 of the CWA. As discussed under Impact 3.7-2, a Lake or Streambed Alteration Agreement is required for any work that would occur within or adjacent to a stream, river, or lake.

Implementation of the following proposed General Plan policies would help to further reduce potential impacts to federally protected wetlands to a *less than significant* level.

Proposed General Plan that would Reduce Impacts

Conservation Element

Policies CO-G-2, CO-I-13, CO-I-28, CO-I-5, CO-I-47, CO-I-13, and CO-I-34, as listed above.

Mitigation Measures

None required.

Impact

3.7-4 Implementation of the proposed General Plan would not 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. (*Less than Significant*)

Several wildlife movement corridors exist within the Planning Area, which include creeks, specifically designated corridors, ridgelines, and valleys. Sanchez Creek exists within the Sharp Park Golf Course and Calera Creek exists within the Rockaway Quarry Site. Rockaway Creek is located south of the Quarry site and San Pedro Creek is located very close to, but just north of the undeveloped San Pedro site. Other creeks within the larger Planning Area are Brooks Creek and Middle Fork San Pedro Creek. Riparian corridors are used in particular by steelhead, California red-legged frog, and San Francisco garter snake. Steelhead is known to occur along San Pedro Creek, and the entire portion of this creek within the Planning Area is designated as critical steelhead habitat. California red-legged frog and San Francisco garter snake are known to occur in and along lower Calera Creek which runs through the Quarry site. Both Milagra and Sweeney Ridges are considered corridors for wildlife as they are large areas of open space that animals can use for movement. In the middle of these two ridgelines

exists another important wildlife corridor which has been identified as a migration corridor for the Mission blue butterfly.

The proposed General Plan includes numerous trail improvements, several of which could adversely affect these wildlife movement corridors. The extension of the existing Milagra Ridge Trail westward would further fragment this ridgeline corridor, just as the development of the Sharp Park Trail would continue to fragment Sweeney Ridge.

Development at the undeveloped San Pedro site could potentially result in indirect impacts to the wildlife utilizing nearby creek habitat. This includes the possibility of fuel spills and/or leaks which could make their way into the riparian corridor of San Pedro Creek.

Although there are no regulations which protect wildlife movement corridors *per se*, migratory birds that may use riparian corridors for dispersal, are protected under the federal Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989). Implementation of the following proposed General Plan policies would help to reduce potential impacts to wildlife movement corridors and movement of fish or wildlife species to a less than significant level.

Proposed General Plan Policies that would Reduce Impacts

Land Use Element

Policies LU-G-7 and LU-I-12, as listed above.

Conservation Element

CO-G-11 **Other Environmentally Sensitive Areas.** Protect other potential Environmentally Sensitive Habitat Areas (ESHAs), High Value or High Habitat Value areas, and Wildlife Movement Corridors from development that would significantly disrupt habitat values.

In addition, implementation of proposed General Plan policies CO-I-28, CO-I-34, and CO-I-43, as listed above, will reduce the impact.

Mitigation Measures

None required.

Impact

3.7-5 Implementation of proposed General Plan would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (No Impact)

The City of Pacifica has a Heritage Tree Ordinance, which requires that any removal, substantial trimming, or new construction within the drip-line of a Heritage Tree needs a permit. Any such buildout activity under the proposed General Plan would need to follow these stipulations.

The San Mateo County Local Coastal Policy outlines measures for protecting biological resources including sensitive and coastal habitat, riparian corridors, wetlands, and special-status species. Buildout activities under the proposed General Plan would be required to follow the stipulations under this policy which protect such resources.

Implementation of the following proposed General Plan policies would reduce potential conflict with such local policies to no impact.

Proposed General Plan Policies that would Reduce Impacts

Land Use Element

Policy LU-G-7, as listed above.

Conservation Element

Policies CO-G-7, CO-G-9, CO-G-1, and CO-G-2. CO-I-30, CO-I-36, CO-I-38, CO-I-37, CO-I-34, CO-I-1, CO-I-2, CO-I-28, CO-I-29, CO-I-39, CO-I-5, CO-I-41, CO-I-43, CO-I-44 CO-I-47, and CO-I-13, as listed above.

CO-I-12 **Protect Water Quality through Best Management Practices.** Continue to require the use of best management practices to reduce water quality impacts from construction and development. Measures include:

- **Site Design and Source Control.** Ensure that all new development incorporates site design and source control BMPs into the project design in order to preserve the infiltration, purification, and retention functions of each site's natural drainage systems, and to prevent or minimize the runoff of pollutants, sediments, waste, and pathogens from the site.
- **Construction Pollution Control.** Require all construction projects to adopt measures to minimize erosion and runoff of pollutants and sediments from construction-related activities, and to limit activities that result in the disturbance of land or natural vegetation.

Construction projects will be required to use appropriate erosion prevention techniques, sediment control measures, and best management practices in accordance with City Specifications and General Conditions of Approval and the San Mateo Countywide Water Pollution Prevention Program.

- **Treatment Control.** Require that new development implement treatment control BMPs (or structural treatment BMPs) where the combination of site design and source control BMPs is not sufficient to protect water quality and comply with applicable water quality permits.

Stormwater treatment systems must meet the numeric sizing criteria established in the NPDES Permit, and must be operated and maintained in compliance with the NPDES Permit.

- CO-I-42 **Heritage Trees.** Protect trees designated by the City Council as having special value, according to the terms of the Heritage Tree Ordinance.

Mitigation Measures

None required.

Impact

- 3.7-6 Implementation of the proposed General Plan would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (*Less than Significant*)**

There are no adopted Habitat Conservation Plans which include land within the Planning Area. Moreover, there are no Natural Community Conservation Plans at the county level that include land within the Planning Area. Therefore, future development under the proposed General Plan and Local Coastal Land Use Plan would not conflict with provisions of these conservation plans. However, implementation of the following proposed General Plan policies would help to protect biological resources on a large scale.

Proposed General Plan Policies that would Reduce Impacts

Land Use Element

Implementation of proposed General Plan policy LU-G-7, as listed above, will reduce the impact.

Conservation Element

Policies CO-G-7, CO-G-9, CO-G-2, CO-I-45, CO-I-30, CO-I-34, CO-I-1, CO-I-2, CO-I-28, CO-I-29, CO-I-5, CO-I-43, CO-I-47, CO-I-13, CO-I-44 and CO-I-41, as listed above.

Mitigation Measures

None required.

Cumulative Impact

- 3.7-7 Implementation of the proposed General Plan in combination with other reasonably foreseeable projects would result in minimal direct mortality but would not result in significant loss of habitat for special-status species, wetlands, and waters of the U.S. Therefore, this impact may be considered cumulatively considerable. (*Less than Significant*)**

This analysis evaluates whether the impacts of development under the proposed Plan, together with the impacts of other cumulative development, would result in a cumulatively significant impact on special-status species, wetlands and other waters of the U.S., or other biological resources protected by federal, state, or local regulations or policies (based on the significance criteria and thresholds presented earlier). It then considers whether the incremental contribution of the proposed project to this cumulative impact would be considerable. Both conditions must apply in order for a project's cumulative effects to rise to the level of significance. The geographic context for analysis of cumulative impacts to biological resources includes sites within and adjacent to the Planning Area.

Environmentally protective laws and regulations have been applied with increasing rigor since the early 1970s and include the California Endangered Species Act, Federal Endangered Species Act, and the Clean Water Act, as described in the Regulatory Setting. Actions undertaken under the proposed General Plan, and other future projects within the cumulative geographic context, would be required to comply with local, State, and federal laws and policies and all applicable permitting requirements of the regulatory and oversight agencies intended to address potential impacts on biological resources, including wetlands, other waters of the U.S., and special-status species. Additionally, projects proposed under the proposed General Plan would be required to demonstrate that they would not have significant effects on these biological resources, although it is possible that some projects may be approved despite having significant and unavoidable impacts on biological resources.

San Mateo County's population is expected to increase in coming years, which could result in a decrease in habitat for native flora and fauna, increased indirect effects such as noise disturbance, increased night lighting, harassment from pets, increased mortality from automobiles, and increased fragmentation of habitat. In particular there will be population growth in Pacifica, which contains habitat for several special-status plants, insects, CRLF, and SFGS. Implementation of policies proposed in the proposed General Plan would reduce these cumulative impacts to biological resources to less than significant.

Implementation of the proposed General Plan may result in a considerable incremental contribution to cumulative impacts, because the majority of undeveloped areas in Pacifica (about 50 percent of the Planning Area), have habitat types known to support special-status species. Development other than intensification would be a substantial conversion of natural habitat conditions. However, implementation of the proposed General Plan policies, as outlined in the impact analysis above, would reduce potential cumulative impacts to biological resources to a *less than significant* level.

Mitigation Measures

None required.

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