APPENDIX E:
BIOLOGICAL RESOURCES DATA

SAN RAFAEL GENERAL PLAN 2040 & DOWNTOWN PRECISE PLAN

BIOLOGICAL AND WETLAND RESOURCES BACKGROUND REPORT

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BIOLOGICAL RESOURCES

This Background Report has been prepared as part of the General Plan 2040 and Downtown Precise Plan being undertaken by the City of San Rafael. It provides a general description of the biological and wetland resources in and around the City of San Rafael and a summary of the regulatory framework that provides for protection of sensitive resources and habitat. It consists of the following sections: (1) a description of the methods used in preparing this Background Report; (2) descriptions of the vegetation and wildlife habitat types, special-status species, and sensitive habitats within the City Limits, Sphere of Influence (SOI), and Planning Area for the General Plan Update; (3) an overview of the existing federal and State regulations pertaining to biological and wetland resources; and (4) a listing of applicable existing San Rafael General Plan policies; and (5) a summary of planning considerations for use in updating the General Plan.

Biological Resources – Existing Conditions

METHODS

This Background Report was prepared by reviewing available information on biological and wetland resources in the San Rafael vicinity. This included: the *City of San Rafael General Plan 2020* and Environmental Impact Report (EIR, the Biological Resources section of the *Marin Countywide Plan Update Draft EIR,*[1] the California Native Plant Species (CNPS) *Inventory of Rare and Endangered Plants,*[2] and available Geographic Information System (GIS) data. The GIS data was used to map the existing vegetation and wildlife habitat, the known distribution of special-status species and sensitive natural communities, and the known distribution of wetlands in the Planning Area. GIS data on vegetation and wildlife habitat was obtained from the CALVEG mapping program maintained by the U.S. Department of Agricultural (USDA) Forest Service. GIS data on special-status species and sensitive natural communities was obtained from the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW). GIS data on wetlands was obtained from the National Wetland Inventory (NWI) mapping program maintained by the U.S. Fish and Wildlife Service (USFWS). This data was used in preparing maps contained in this report, consisting of the following:

- **Figure 1** shows the various vegetation cover types in the Planning Area vicinity according to the CALVEG mapping program.

- **Figure 2** shows the distribution of known occurrences of special-status plant and sensitive natural communities in the Planning Area vicinity as reported by the CNDDB.

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1 *Marin Countywide Plan Update Draft EIR*, Marin County and Nichols • Berman, 2007.

2 California Native Plant Society, 2019. *Inventory of rare and endangered plants in California* (online edition). Website: www.cnps.org/inventory (accessed February 10).

- **Figure 3** shows the distribution of known occurrences of special-status animals reported by the CNDDB and designated critical habitat as mapped by the USFWS in the Planning Area vicinity.

- **Figure 4** shows the extent of wetlands mapped as part of the NWI program as well as the occurrences of sensitive natural communities in the Planning Area according to records of the USFWS.

BIOLOGICAL RESOURCES WITHIN THE PLANNING AREA

The following section provides a description of vegetation types and associated wildlife, known distribution of special-status species, and sensitive habitats.

Habitat Types

The San Rafael Planning Area is largely developed, with urban uses occupying most of the valley floors and former marshlands that once bordered the San Francisco Bay. The valley floors are bordered by the remaining undeveloped woodlands, forests, grasslands, scrub and chaparral of the surrounding hillsides and ridges, traversed by bands of riparian woodland along the remaining unchannelized creeks and drainages. Marshlands remain along the shoreline of San Pablo Bay and the lower reaches of San Rafael, Gallinas, and Miller Creeks.

Figure 1 shows the extent of urbanization and various vegetative cover types in the Planning Area, based on the CALVEG GIS mapping data of the USDA Forest Service. Estimates of various vegetation cover types within the SOI and Planning Area are summarized in **Table 1**, based on the CALVEG GIS mapping data.

Although native vegetation within much of the Planning Area has been substantially altered, the presence of large areas of undeveloped lands to the west, the remaining marshlands and open water habitat along the shoreline of San Pablo Bay, and the freshwater marsh and riparian habitat along unchannelized creeks and drainages, contribute to a relatively diverse assemblage of resident and migrant wildlife species. In general, each habitat differs in its relative value to specific species and can be characterized by both vegetation and associated animal species that are dependent on that habitat, although some wildlife species may utilize more than one habitat type. The characteristic plant and wildlife species typically associated with each of these habitat types is summarized below.

Urban Development/Ornamental Landscaping

Urban development, ornamental landscaping and barren areas occupy most of the valley floors in the Planning Area. As indicated in **Figure 1**, an estimated 7,548.4 acres or roughly 38 percent of the land cover types in the Planning Area is mapped as urban development or barren, which includes impervious surfaces, structures, ornamental landscaping and areas of remnant native vegetation, and locations with no vegetative cover. Most plant species used in landscaping are non-native ornamentals, consisting of a wide variety of tree, shrub, groundcover, and turf species. Native trees are scattered throughout the established residential neighborhoods and urbanized areas, including specimen coast live oaks (*Quercus agrifolia*), valley oaks (*Q. lobata*), California bay laurel (*Umbellularia californica*), California buckeye (*Aesculus californica*), coast redwood (*Sequoia sempervirens*), madrone (*Arbutus*

menziesii), and black oak (*Quercus kelloggii*), among others. Larger ornamental and non-indigenous native species include: Monterey pine (*Pinus radiata*), Monterey cypress (*Cupressus macrocarpa*), incense cedar (*Calocedrus decurrens*), deodar cedar (*Cedrus deodara*), American elm (*Ulmus americana*), Mexican fan palm (*Washingtonia robusta*) and Tasmanian blue gum (*Eucalyptus globulus*), among many others.

Blue gum occurs as scattered individuals and several groves in the southwestern portion of the Planning Area. Blue gum is relatively invasive and has formed dense forests on some of the hillsides in the Planning Area. As indicated in **Figure 1**, larger groves of blue gum occur on the southern slopes of San Pedro Mountain and Peacock Gap, collectively occupying an estimated 230.8 acres of the Planning Area.

Table 1
Estimates of Vegetation Cover/Habitat Type in Planning Area*

Vegetation Cover/Habitat Type	***SOI (acres)***	***Planning Area (acres)***
Annual grassland	1,323.9	2,773.2
Coastal scrub	195.5	195.5
Mixed chaparral	0.0	232.9
Oak woodland	4,462.8	5,302.4
Hardwood-conifer forest	268.0	2,295.6
Riparian woodland	12.3	107.1
Lacustrine	0.5	0.5
Freshwater marsh	0.0	5.1
Saline marsh	1,060.3	1,196.5
Eucalyptus	230.8	230.8
Cropland	12.4	40.2
Urban/Barren	7,078.8	7,548.4
TOTAL	14,645.3	19,928.3

- - Landcover types occupy an estimated 14,645.3 acres of the 26,193 acres of the SOI and 19,928 acres of the 34,586 acres of the Planning Area, with the remaining acreages being unvegetated open waters of the bay.

Source: CALVEG GIS data, USDA Forest Service, 2019.

Some non-native ornamental species are considered highly invasive because of their ability to spread and eventually dominate natural areas if unmanaged. Many of these are common in the Planning Area in urbanized areas, along riparian corridors, and in hillside open space and remaining undeveloped private lands. These include: silver wattle (*Acacia dealbata*), blackwood acacia (*Acacia melanoxylon*), several species of broom (*Genista monspessulana*; *G. juncea*; and *Cytisus scoparius*), pampasgrass (*Cortaderia selloana*), cotoneaster

(*Cotoneaster* spp.), bermudagrass (*Cynodon dactylon*), Germany ivy (*Delairea odorata*), English ivy (*Hedera helix*), bermuda buttercup (*Oxalis pes-caprae*), Himalaya blackberry (*Rubus armeniacus*), periwinkle (*Vinca major*), and Tasmanian blue gum. The California Invasive Plant Council (Cal-IPC) has developed a comprehensive data base, the *Invasive Plant Inventory*, which ranks invasive species based on the threat they pose to natural habitat. All of the above species and others known to exist in the vicinity of San Rafael, are considered to have a high to moderate ranking by Cal-IPC because of their invasive properties and the threat they pose to natural areas.

In general, urbanized areas tend to have low to poor wildlife habitat values due to replacement of natural communities, fragmentation of remaining open space areas and parks, and intensive human disturbance. The diversity of urban wildlife depends on the extent and type of landscaping and remaining open space, as well as the proximity to natural habitat. Trees and shrubs used for landscaping provide nest sites and cover for wildlife adapted to developed areas. Typical native bird species include: mourning dove, scrub jay, northern mockingbird, American robin, northern flicker, California towhee, and American kestrel. Introduced species include: rock dove, European starling, house finch, and house sparrow. Urban areas also provide habitat for several species of native mammals such as black-tailed deer, California ground squirrel, raccoon, gray fox, striped skunk, and coyote, as well as the introduced eastern fox squirrel and eastern red fox. Introduced pest species such as Norway rat, house mouse, and Virginia opossum are also abundant in developed areas.

Forest and Woodlands

Forest and woodlands occupy an estimated 7,598 acres or roughly 38 percent of the land cover types in the Planning Area, forming the dominant cover on San Pedro Mountain, along Southern Heights Ridge, and the upper Lucas Valley watershed. As summarized in **Table 1** and mapped in **Figure 1**, this includes areas of oak woodland dominated by coast live oak and other oak species, coniferous forest dominated by conifers, and montane forest dominated by a mixture of hardwoods and conifers. Oak woodlands form the dominant native cover in the largely developed hillside area in the northwestern portion of the Planning Area, with forest cover extending over much of the southwestern portion of the Planning Area. Dominant tree species varies and include: coast live oak, California bay laurel, coast redwood, Douglas fir (*Pseudotsuga menziesii*), tan oak (*Lithocarpus densiflorus*), and black oak. Other tree and shrub species found in the forest and woodland habitats include: madrone, valley oak, California buckeye, toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), and hazelnut (*Corylus cornuta* ssp. *californica*), among others. Understory cover varies depending on the amount of available sunlight and other factors. Where dense canopy is present, understory species in areas of forest cover are generally sparse, but do include sword fern (*Polystichum munitum*), redwood sorrel (*Oxalis oregano*), and creeping snowberry (*Symphoricarpos mollis*). In areas with higher light levels, the understory consists of non-native grassland species, miner's lettuce (*Claytonia perfoliata*), bedstraw (*Galium aparine*) and other herbaceous species. Highly invasive broom has spread through much of the understory of the forest and woodlands in the Planning Area, inhibiting foraging opportunities for wildlife and displacing native shrub and groundcover plant species. Much of the areas mapped as forest and woodland in the Planning Area have been developed with residential uses, preserving a broken canopy of mature trees interspersed with structures and ornamental landscaping.

The existing mature forests and woodlands provide nesting and foraging opportunities for numerous species of birds, including raptors. They also provide essential food resources for

eastern fox squirrels, native grey squirrels, acorn woodpeckers, scrub jay, and other birds. Wildlife commonly associated with well-developed forest and woodland habitats include: dusky-footed woodrat, deer mouse, western flycatcher, chestnut-backed chickadee, plain titmouse, Hutton vireo, orange-crowned kinglet, rufous-sided towhee, fox sparrow, bushtit, ringneck snake, California newt, and California slender salamander. Wildlife in the understory of the remaining forest and woodland varies depending on cover type and extent of development. In developed areas, the understory has typically been replaced by structures or landscaping, and supports wildlife common in urbanized habitats.

While most forests and woodlands are not considered to have a high priority for mapping and protection as a sensitive natural community type by the CNDDB, they should be recognized as an important habitat type due to their relatively high wildlife habitat value, continued threats due to further tree removal associated with development, and their vulnerability to the effects of Sudden Oak Death (SOD). Tanoaks and coast live oaks are dying in large numbers in Marin County, and black oaks, California buckeye, California bay, madrone, huckleberry, and rhododendron are suspected hosts or potential carriers of the fungus suspected to cause oak mortality. This fungus, a species of *Phytophthora*, and several beetle species are consistently associated with the dying oaks. SOD is contributing to significant changes in vegetative cover over large parts of Marin County, altering habitat for woodland-dependent species and exacerbating hazardous fire conditions where wildlands interface with developed areas.

Grasslands

Grasslands occupy parts of Big Rock Ridge in Lucas Valley, the margins of Santa Margarita Valley, the undeveloped valley floor around St. Vincent's School for Boys in the lower Gallinas Valley, and other hillside slopes in the Planning Area. The grasslands are generally composed of introduced grasses and broadleaf species. In locations where the ground surface has been disturbed, ruderal (weedy) species, which quickly recolonize disturbed areas, tend to dominate. As indicated in **Table 1**, an estimated 2,773.2 acres of the Planning Area supports grassland cover, according to the CALVEG mapping program. Intensive grazing and other disturbance factors have eliminated most of the native grasslands throughout California over the past 100 years, including the historic rangelands of the San Rafael vicinity. Common species in the grasslands today include: wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus mollis*), foxtail barley (*Hordeum leporinum*), field mustard (*Brassica campestris*), wild radish (*Rhaphanus sativus*), bindweed (*Convolvulus arvensis*), cheeseweed (*Malva parviflora*), bur clover (*Medicago polymorpha*), and yellow-star thistle (*Centaurea solstitialis*). The remaining native species are common perennials, such as California poppy (*Eschscholzia californica*), Douglas' lupine (*Lupinus nanus*), and soap plant (*Chlorogalum pomeridianum*).

Remnant native grasslands may still occur in some locations mapped as annual grassland, forming stands of needlegrass grassland. This natural community is characterized by several species of native grasses such as purple needlegrass (*Stipa pulchra*), California melic (*Melica californica*), blue wildrye (*Elymus glaucus*), and beardless wildrye (*Elymus triticoides*), together with common wildflowers such as California poppy, lupines, soap plant, and wild hyacinth (*Dichelostemma pulchellum*), and other native forbs. Most of the native grasslands throughout the state have been eliminated, which has led the CNDDB to now recognize native grasslands as a sensitive resource with a high inventory priority. The CNDDB typically considers grasslands containing ten percent or greater cover by native grass species to represent a natural grassland community. This ten percent threshold is a

loosely applied standard that has been used by the state for many years. As most of the remaining native grassland communities have been highly modified by past and on-going disturbance, the remaining native grassland communities generally form a mosaic of different cover classes, sometimes interspersed with areas dominated by non-native species.

Nonnative and native grasslands support a variety of mammals, birds, and reptiles, and provide foraging habitat for raptors. Many species use the grassland for only part of their habitat requirements, foraging in the grassland and seeking cover in the limited tree and scrub cover. Grassland cover provides foraging, nesting, and denning opportunities for resident species such as western fence lizard, northern alligator lizard, gopher snake, western meadowlark, goldfinch, ring-necked pheasant, red-winged blackbird, California ground squirrel, California vole, Bottae pocket gopher, black-tailed jackrabbit, and black-tailed deer. The rodent, bird, and reptile populations offer foraging opportunities for avian predators such as black-shouldered kite, northern harrier, American kestrel, red-tailed hawk, golden eagle, barn owl, and great horned owl, as well as mammalian predators such as striped skunk, grey fox, and coyote.

Riparian Woodland and Scrub

Riparian vegetation occurs along Miller Creek and segments of Gallinas Creek and other drainages in the Planning Area, with trees and shrubs often forming stands characteristic of riparian forest and willow scrub natural communities, occupying an estimated 107.1 acres in the Planning Area as indicated in **Table 1**. Dominant cover includes willows (*Salix* spp.), valley oak, coast live oak, California bay laurel, and California buckeye, together with shrub and vine species such as California blackberry (*Rubus ursinus*) and wild rose (*Rosa californica*). Stands of highly invasive non-native species such as Himalaya blackberry, ivy, arundo (*Arundo donax*), periwinkle, and broom have become particularly problematic in some reaches of the riparian corridors in the Planning Area, outcompeting and replacing native shrub and groundcover species, and severely limiting wildlife habitat values.

Surface water along riparian corridors is available for aquatic-dependent organisms, and as a source of drinking water for terrestrial mammals and birds. The creek channels serve as movement corridors for aquatic and terrestrial species which use the protective cover found along the creeks. Wildlife dependent on the cover provided by the riparian woodland and scrub include black-tailed deer, black-tailed jackrabbit, brush rabbit, red and grey fox, rufous-sided towhee, scrub jay, flycathers, and warblers. Mammals and birds typically found in the remaining adjacent grasslands most likely use areas of dense riparian growth as protective cover and refuge from summer heat and drought.

Freshwater/Brackish Marsh

Freshwater and brackish marsh habitat is also associated with the creeks and drainage channels, ponds and other waterbodies, and the fringe of tidally influenced reaches of San Rafael Creek, Gallinas Creek, Miller Creek and tributary drainages as indicated in **Figure 1**. As salinity levels increase, the marshlands transition into coastal salt marsh at the mouth of creeks and fringe of the Bay. Open water lakes and the larger unvegetated creek corridor are mapped as lacustrine in the CALVEG mapping program. Lacustrine features are typically defined as freshwater lakes and other open water bodies. Where salinity levels are relatively low, marshlands are typically dominated by emergent monocots such as narrow-leaf cattail (*Typha angustifolia*), but as salinity levels increase brackish and salt water hydrophytes tend to dominate, including bulrush (*Scirpus* spp.), pickleweed (*Salicornia*

pacifica) and saltgrass (*Distichlis spicata*) . Wetland indicator species characteristic of poorly developed freshwater marsh habitat include: curly dock (*Rumex crispus*), bristly ox-tongue (*Picris echioides*), and wild celery (*Apium graveolens*). Segments of the larger creeks in the Planning Area that do not support a canopy of woody riparian vegetation generally support some type of freshwater or brackish marsh cover along the margins of the active channel. Freshwater marsh species also dominate the ground cover at the remaining freshwater seeps and springs in the Planning Area.

Freshwater and brackish aquatic habitats and the associated marsh vegetation are of high value to wildlife, providing a source of drinking water, protective cover, nesting substrate, and serving as movement corridors. Species found in fresh and brackish marsh habitats include Virginia rail, sora, Wilson's snipe, marsh wren, Samuel's song sparrow, and red-winged blackbird, among others. Linear channels supporting marsh vegetation within the Planning Area provide foraging habitat for egrets and great blue herons, as well as mammalian predators such as northern raccoon, striped skunk, and coyote. Aquatic species found in freshwater ponds and waterbodies include: Pacific chorus frog, western toad, western pond turtle, western mosquito fish, green sunfish, blue gill, and largemouth bass.

Coastal Salt Marsh, Mudflats and Open Water

Tidal marsh is a highly productive community consisting of salt- tolerant, hydrophytic plants that form moderate to dense cover. **Figure 1** shows the extent of coastal salt marsh along the shoreline of San Francisco Bay and the associated lacustrine open water habitat in the lower reaches of San Rafael and Gallinas creeks according to the CALVEG mapping program. Plants are usually segregated vertically depending on their tolerance of inundation and saline soils. This habitat type is typically associated with and occurs adjacent to intertidal mudflats that are devoid of vegetation; during an ebb tide, the bottom is bare mud, cobble, or rock. Within the Planning Area, this habitat type occurs along the tidal sloughs and shorelines of the Bay, with large marshlands remaining near the mouth of Gallinas Creek, and smaller pockets at the mouth of San Rafael Creek and the Pickleweed Park area.

Tidal marsh habitats within the Planning Area are similar in vertical structure, starting at the low elevation mud flat to the upland vegetation on adjacent levees and remaining natural habitat. The lowest elevation vegetation strata contain pickleweed co-dominated in places by saltgrass, interspersed with areas of open water (or mudflat at low tide). Pickleweed and saltgrass are still dominant components on the elevated benches of the tidal marsh where patches of alkali heath (*Frankenia salina*), gumplant (*Grindelia stricta* ssp. *angustifolia*), and cordgrass (*Spartina* spp.) occur. The upland vegetation on the surrounding banks and levees is dominated by non-native grasses and ruderal herbaceous species such as mustard (*Brassica* sp.), iceplant (*Carpobrotus* sp.), English plantain (*Plantago lanceolata*), sweet fennel, and perennial pepperweed (*Lepidium latifolium*).

Tidal marsh, mudflat and open water habitats support a variety of wildlife species specifically adapted to the salt-tolerant vegetation, microhabitats (e.g., channels and sloughs), and tidal regimes that characterize these areas. Along with open water, these habitat types support the greatest diversity of wildlife within the Planning Area, as well as the majority of special-status species known or suspected to occur in the region, such as California Ridgway's rail, California black rail, and salt marsh harvest mouse. Tidal marshes also provide foraging habitat for special-status raptors such as white-tailed kite and marsh hawk. The mudflats support a diverse assemblage of benthic macro-invertebrates which in turn attracts large

numbers of migrating and wintering shorebirds such as willet, long-billed curlew, marbled godwit, dowitchers, and sandpipers. These species forage on mudflats as they are exposed by receding tides, often concentrating at the water's edge where worms, crustaceans, and bivalves are closer to the mud's surface. Vegetated portions of tidal marshes are not heavily used by shorebirds, although willets tend to forage next to pools created on the marsh plain during extremely high tides. Wading birds such as snowy egret, great egret, and great blue heron forage along the margins of tidal channels and marsh edges. Dabbling (i.e., surface-feeding) ducks, such as mallard, forage over inundated mudflats and tidal channels. When inundated by high tides, tidal channels and mudflats provide important foraging habitat for a variety of estuarine species, including bat ray, leopard shark, and various fish species.

Open water habitats within the Planning Area include the tidally influenced lower reaches of the larger creeks and the Bay. In addition to providing foraging and roosting habitat for wintering and migrating shorebirds and waterfowl, these areas provide habitat for American avocet, black-necked stilt, California gull, western gull, Caspian tern, and Forster's tern. Diving ducks such as canvas- back, greater scaup, lesser scaup, bufflehead, and ruddy duck, winter in large numbers in the open waters connected to the San Francisco Bay. Other waterbird species expected to use open water habitats within the Planning Area include: American coot, Canada goose, pied-billed grebe, horned grebe, eared grebe, American white pelican, California brown pelican, great egret, snowy egret, and great blue heron, among others.

Open water habitat in the Planning Area supports a variety of both native and introduced fish species. Native fish species known to occur disperse through open waters of the Bay include: steelhead, Chinook salmon, California roach, Sacramento pike minnow, Sacramento sucker, three spine stickleback, long jaw mudsucker, stag horn sculpin, prickly sculpin, riffle sculpin, starry flounder and possibly Pacific lamprey.[3] Introduced species commonly found in urbanized streams include common carp, rainwater killifish, western mosquito fish, and possibly black crappie.[4] Coho salmon, tule perch, and tide water goby are considered extirpated in the east Marin watersheds.[5]

Other Cover Types and Wildlife Habitat Features

A number of native and non-native vegetative cover types occur along the margins or just outside the Planning Area, such as mixed chaparral, coastal scrub, and stands of eucalyptus. Areas of chaparral and scrub are dominated by woody shrubs such as coyote brush (*Baccharis pilularis*), yerba santa (*Eriodictyon californicum*), toyon (*Heteromeles arbutifolia*), chamise (*Adonostoma fasciculatum*), poison oak, buckbrush (*Ceanothus cuneatus*), chaparral pea (*Pickeringia montana*), and California sagebrush (*Artemisia californica*). Chaparral occupies an estimated 232.9 acres of the Planning Area according to the CALVEG Mapping program, primarily along Big Rock Ridge in the upper Lucas Valley watershed. Coyote brush and other indicator species of coastal scrub occupy an estimated 195.5 acres of the Planning Area according to the CALVEG mapping program. Stands of non-native

3 Leidy, R.A., 2007, *Ecology, Assemblage Structure, Distribution, and Status of Fishes in Streams Tributary to the San Francisco Estuary, California*, San Francisco Estuary Institute Contribution No. 530, San Francisco Estuary Institute, Oakland, California .

4 Ibid.

5 Ibid.

eucalyptus, occupying an estimated 230.8 acres of the Planning Area are dominated by blue gum, typical with a sparse understory of non-native grasses, weedy species, and poison oak.

Several other landforms and cover types provide habitat for wildlife, such as rock outcrops and groves of non-native blue gum eucalyptus. Rock outcrops occur in the remaining grassland, woodland, chaparral and scrub habitats at the fringes of the Planning Area, which provide a unique habitat for wildlife. These landforms provide perches for raptors, while ledges may also serve as nests in more isolated locations. Crevices provide abundant hiding places for numerous lizards and snakes, and larger cavities may be used as shelter locations by mammals. Although eucalyptus is native to Australia, this naturalized species can provide important nesting habitat for raptors and other bird species, and cover for larger mammals. Colonies of Monarch butterfly (*Danaus plexippus*) are known to overwinter in some larger groves of eucalyptus in Marin County with appropriate habitat conditions, with at least two colonies reported from China Camp State Park in the Planning Area. The presence of eucalyptus in areas of open grasslands, where protective cover and perching habitat is scarce, emphasizes the importance of the dense tree stands to birds and larger mammals. However, eucalyptus is moderately invasive and can eventually replace grassland, scrub, and other natural habitats.

Special-Status Species

This section outlines special-status species and sensitive habitats within the Planning Area. Special-status species are plants and animals that are legally protected under the State and/or federal Endangered Species Acts or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat (see Regulatory Setting discussion below). Species with legal protection under the federal and State Endangered Species Acts often represent major constraints to development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take" of these species.[6]

The primary information source on the distribution of special-status species in California is the CNDDB inventory, which is maintained by the Biogeographic Data Branch of the CDFW. The CNDDB inventory provides the most comprehensive statewide information on the location and distribution of special-status species and sensitive natural communities. Occurrence data is obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The occurrence of a species of concern in a particular region is an indication that an additional population may occur at another location if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question; only that no data has been entered into the CNDDB inventory. Detailed field surveys are generally

[6] "Take" as defined by the federal Endangered Species Act (ESA) means "to harass, harm, pursue, hunt, shoot, would, kill, trap, capture, or collect" a threatened or endangered species. "Harm" is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e. breeding, feeding, or sheltering) through significant habitat modifications or degradation. The CDFW also considers the loss of listed species habitat as "take", although this policy lacks statutory authority and case law support under the California Endangered Species Act (CESA).

required to provide a conclusive determination on presence or absence of sensitive resources from a particular location, where there is evidence of potential occurrence.

For the purposes of this Background Report, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act (CESA);
- Plant species with a Rank of 1A, 1B and 2 in the CNPS *Inventory of Rare and Endangered Plants*;
- Animal species designated as "Species of Special Concern" or "Fully Protected" by the CDFW;
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA guidelines; or
- Species considered to be a taxon of special concern by the relevant local agencies.

Special-Status Plants

Review of the CNDDB and CNPS occurrence records indicate a total of 43 special-status plant species that have been reported from or in the vicinity of the Planning Area. These special-status plant species are listed in **Table 2**, together with information on their typical habitat characteristics, normal flowering season, and conclusion regarding potential for occurrence in the Planning Area based on distribution and presence or absence of suitable habitat.

The CNDDB records show occurrences of nine special-status plant species extending over portions of the Planning Area – congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), Marin knotweed (*Polygonum marinense*), Mt. Tamalpais bristly jewelflower (*Streptanthus glandulosus* ssp. *pulchellus*), Marin western flax (*Hesperolinon congestum*), Napa false indigo (*Amorpha californica* var. *napensis*), Point Reyes salty bird's-beak (*Chloropyron maritimum* ssp. *palustre*), Tiburon buckwheat (*Eriogonum luteolum* var. *caninum*), and white-rayed pentachaeta (*Pentachaeta bellidiflora*). The exact locations of most of these occurrences are unknown because of the vague descriptions and date of the historic records, so these are mapped as relatively broad occurrences on **Figure 2**. White-rayed pentachaeta is assumed to be extirpated from the Planning Area as a result of development in areas of grassland and woodland habitats that once supported the species, and displacement by non-native grasses and other invasive species. The occurrence of Marin knotweed from China Camp is from a much more specific location observed in 2006, and this species is still assumed to be present. Details on the location of most of the other special-status plant species are based on general occurrence records that are decades old, and their presence in the Planning Area today is uncertain.

Existing development limits the likelihood of continued occurrences of any populations of special-status plant species on the valley floors of the Planning Area, with the exception of brackish and saltmarsh associated species that could occur along the shorelines of San Francisco Bay, such as Point Reyes salty bird's-beak. Many of the special-status plant

species occurrences in the protected open space areas and undeveloped lands at the fringe of the Planning Area most like remain today, but are vulnerable to changes such as fire, competition with invasive species, and other threats. There remains a possibility that additional populations of one or more species occurs on the remaining undeveloped lands and the remaining coastal marshlands in the Planning Area. Detailed surveys would be required to provide confirmation on presence or absence from undeveloped portions of the Planning Area where thorough studies have not been conducted.

Special-Status Animals

Based on a review of the CNDDB and other sources, a total of 35 special-status animal species are known to occur or are considered to potentially occur in the vicinity of San Rafael, which are listed in **Table 3**. As indicated in **Figure 3**, a total of 15 occurrences of special-status animal species have been reported by the CNDDB within the Planning Area. These include: California black rail (*Laterallus jamaicensis*), California giant salamander (*Dicamptodon ensatus*), California red-legged frog (*Rana draytonii*), California Ridgeway's rail (*Rallus longirostris obsoletus*), monarch butterfly, mimic tryonia (*Tryonia imitator*), northern spotted owl (*Strix occidentalis caurina*), Opler's longhorn moth (*Adela oplerella*), pallid bat (*Antrozous pallidus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), San Pablo song sparrow (*Melospiza melodia samuelis*), western bumble bee (*Bombus occidentalis*), and western pond turtle (*Emys marmorata*). Nest activity centers of northern spotted owl are considered highly sensitive data, and are therefore not shared with the public. In addition, roosting colonies of more common great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), which are monitored by the CNDDB as sensitive habitat areas, are also reported from the Planning Area

Most of the special-status species in the San Rafael vicinity are bird species known or suspected to utilize suitable habitat in marsh and open water habitats, together with fish species that utilize the Miller Creek corridor and San Francisco Bay. Most of the species listed in **Table 3** that are not State and/or federally-listed species are not closely monitored by the CNDDB and therefore occurrence records are not generally included in the data base. These include species identified as "Species of Special Concern" by the CDFW. As indicated in **Figure 3**, no areas designated as Critical Habitat by the USFWS extend into the Planning Area.

Many of the special-status animal species listed in **Table 3** may occasionally pass through or forage within the Planning Area, but are not known or likely to breed in the Planning Area: Chinook salmon (*Oncorhynchus tshawytscha*), green sturgeon (*Acipenser medirostris*), redhead (*Aythya americana*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), American peregrine falcon (*Falco peregrinus anatum*), long-eared owl (*Asio otus*), olive-sided fly catcher (*Contopus cooperi*), purple martin (*Prognes ubis*), grasshopper sparrow (*Ammodramus savannarum*), tricolored blackbird (*Agelaius tricolor*), western red bat (*Lasiurus blossevillii*), and American badger (*Taxidea taxus*). American white pelican and California brown pelican are known to regularly forage over the open water and shoreline of San Francisco Bay, but do not breed in the San Francisco Bay Area. Coho salmon (*Oncorhynchus kisutch*) and tidewater goby are now considered extirpated from East Marin, including the Planning Area. Special-status animal species known from the Planning Area and of greatest concern from a planning standpoint because of their status or distribution are discussed in further detail below.

Steelhead–Central California Coast ESU (Federally Threatened). Steelhead is the anadromous form of rainbow trout, migrating from the ocean to freshwater streams to spawn. Juveniles spend one to three years in their natal streams before going to sea as smolts. Most steelhead return to freshwater streams after spending two to three years at sea. Important factors associated with preferred stream channel conditions include temperature, velocity, depth, gravel substrate, and water quality. Shaded banks with overhanging riparian vegetation (termed "shaded riverine aquatic cover" by the USFWS) are also beneficial to salmonids, providing foraging habitat and cover from predators. High water temperatures, low rates of streamflow, low levels of dissolved oxygen, low sediment input, and stream obstructions can be detrimental to steelhead populations.

Miller Creek through the Gallinas Valley in the northern portion of the Planning Area is known to support a resident steelhead population.[7] Fish were electrofished from Miller Creek as recently as 1997, and have been observed in previous studies but very little historic survey information is available for the watershed. Miller Creek is not designated critical habitat for the Central California Coast ESU of steelhead (see **Figure 3**), but likely constitutes a small but important production of steelhead to the regional fishery.

California Red-Legged Frog (Federally Threatened). California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Population declines of this species have been attributed to a variety of factors, with habitat loss and predation by non-native Aquatic predators (e.g., bullfrogs, crayfish, other non-native fishes) typically implicated as the primary factors. California red-legged frogs occur in and along freshwater marshes, streams, ponds, and other semi-permanent water sources. Optimal habitat contains dense emergent or shoreline riparian vegetation closely associated with deep (i.e., greater than 2.3 feet), still, or slowmoving water. Cattails, bulrushes, and willows provide the habitat structure that seems to be most suitable for California red-legged frogs. Although the species can occur in intermittent streams and ponds, they are unlikely to persist in streams in which all surface water disappears. Suitable breeding ponds and pools usually have a minimum depth of 20 inches, but California red-legged frogs do sometimes breed successfully in pools as shallow as 10 inches.[8] Regardless of water depth, suitable breeding habitat must contain water during the entire development period for eggs and tadpoles. Reproduction for red-legged frogs is also sensitive to salinity levels in the water.

According to the CNDDB records (see **Figure 3**), occurrences of California red-legged frogs have been reported from the Peacock Gap and San Rafael Point in the eastern portion of the Planning Area. Suitable habitat remains in other locations with freshwater bodies where salinity levels are low enough and in the upper watersheds if suitable breeding habitat is present.

Western Pond Turtle (California Species of Special Concern). Western pond turtles occur in a wide variety of aquatic habitats, including ponds, lakes, marshes, rivers, streams, and canals that typically have a rocky or muddy bottom and contain stands of aquatic vegetation. The presence or absence of pond turtles at a given aquatic site is largely dependent on the availability of suitable basking sites and adjacent upland habitat for egg-laying (e.g., sandy banks or grassy open fields) and over-wintering. Nests are typically dug in dry substrate with

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7 Leidy, R.A., G.S. Becker, and B.N. Harvey, 2005, op. cit.

8 Fellers, G.M., 2005. *California red-legged frog*. *In* M. Lannoo, editor. Amphibian Declines: The Conservation Status of Unites States Species.

a high clay or silt fraction since the female moistens the site where she will excavate the nest prior to egg-laying. Hatchlings require shallow water habitat with relatively dense submergent or short emergent vegetation in which to forage.

Western pond turtles have been recorded at John F McInnis Park in the northeastern portion of the Planning Area. Other freshwater bodies and streams with deep pools may provide suitable habitat for this species. Lower reaches of drainages under tidal influence are unlikely habitat for this species due to salinity levels, and the extent of adjacent development which limits the availability of upland locations for egg-laying.

Northern Spotted Owl (Federally and State Threatened). Northern spotted owl typically occurs in forest and dense woodland habitat along the Pacific coast from southern British Columbia to Marin County. It typically nests on platforms in large trees and will use abandoned stick nests of other bird species. In the southern part of its range through Marin County, dusky-footed woodrat tends to serve as the primary prey base for northern spotted owl.

The Spotted Owl Observations Database maintained by the CNDDB indicates a number of nest activity centers within and to the north and west of the Planning Area on San Pedro Mountain, in Marinwood Open Space along Big Rock Ridge, and along Southern Heights Ridge. However, this information is not shared with the public because of the vulnerability of nests to human disturbance. As indicated in **Figure 3**, designated critical habitat for northern spotted owl occurs about a mile and a half southwest of the Planning Area, where the majority of known activity centers have been reported within Marin County. Activity centers are locations where concentrated owl activity indicates a high likelihood of nesting, and where human disturbance during the nesting season could result in disruption and possible loss of the nesting young unless appropriate restrictions are implemented. Given the threatened federal and State status of northern spotted owl, disturbance in the vicinity of an activity center during the nesting season could be considered an incidental take in violation of the Endangered Species Acts (see Regulatory Framework below).

White-tailed Kite (California Fully Protected Species). Most white-tailed kites in California occur west of the Sierra Nevada in low lands and foothills, where they are often seen year-round. This species tends to nest in solitary trees and large shrubs located near suitable foraging habitat such as grasslands, marshes, and agricultural fields. Preferred prey items include California voles and mice.

The grasslands and tidal marsh habitats in the Planning Area provide foraging habitat for white- tailed kites, where scattered trees and large shrubs are present in the vicinity to provide suitable nesting locations. Nests of white-tailed kite in active use are fully-protected by the CDFW from any disturbance. Nests of native birds, including raptors such as white-tailed kite, are protected under the federal Migratory Bird Treaty Act and State Fish and Game code (see Regulatory Framework below).

Northern Harrier (California Species of Special Concern). Northern harriers are widespread in California, although they have become uncommon in the southern part of the State. Their preferred habitats are freshwater wetlands and saltmarshes, although they are also commonly found over grasslands and agricultural fields. Harriers breed from mid-March to September, building their nests on the ground and in low vegetation.

Suitable foraging habitat for northern harriers are present in the remaining grasslands and the tidal marsh habitats in the Planning Area, although nesting opportunities are limited because of the presence of human and dogs along the fringe of the marshland areas where most potential nesting habitat occurs.

California Black Rail (Federally Threatened; California Fully Protected Species). Around the San Francisco Bay Estuary, California black rails primarily inhabit tidal salt marsh dominated by pickleweed, but also occupy brackish marshes dominated by bulrush. California black rails prefer tidal marshes but will use high marshland zones during "wet" years.[9] Black rails build nests in tall grasses or marsh vegetation during the spring, with most nests constructed of pickleweed and placed on or slightly above the ground.

As indicated in **Figure 3**, California black rails have been detected along Gallinas Creek and the coastal salt marsh habitat in the northeastern portion of the Planning Area. This species may occupy or frequent the tidal marsh habitat at the mouth of San Rafael Creek and other shoreline areas of the Bay supporting tidal marsh habitat within the Planning Area.

California Ridgway's Rail (Federally and State Endangered; California Fully Protected Species). This secretive species prefers tidal salt marshes dominated by pickleweed and cordgrass with adjacent areas of high marsh cover dominated by pickleweed, gumplant, saltgrass, alkali heath, and/or fleshy jaumea (*Jaumea carnosa*). California Ridgway's rails also occupy tidal brackish marshes dominated by bulrush. The California subspecies is now restricted to the tidal marshlands around the San Francisco, San Pablo, and Suisun Bays. A Bay-wide survey in the early 1970s estimated a total population of between 4,000 and 6,000 birds.[10] Recent population estimates for California Ridgway's rails was approximately 1,040 to 1,264 individuals in San Francisco Bay.[11] Although habitat loss is implicated in population declines, predation of rails by the introduced red fox is also thought to be a major factor in the status of this species.

California Ridgway's rails have been detected in the tidal marsh along the mouths of Gallinas Creek and San Rafael Creek in the Planning Area, as indicated in **Figure 3**. This species may also occupy or frequent the tidal marsh habitat along the shoreline of the Bay were suitable coastal salt marsh is present within the Planning Area.

Samuels (San Pablo) Song Sparrow (California Species of Special Concern). This subspecies of the widely distributed song sparrow is restricted to the tidal marshes and adjacent uplands around the San Pablo Bay portion of San Francisco Bay. They occur primarily in tidal salt marshes, but may also nest or forage in other shoreline habitats such as

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9 Trulio, L.A., and J.G. Evens, 2000. *California Black Rail*. Pages 341-345 *in* Goals Project. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P. R. Olofson, ed. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

10 Gill, Jr., R., 1979. Status and distribution of the California clapper rail (Rallus longirostris obsoletus). California Fish and Game 65:36–49.

11 Albertson, J.D., and J.G. Evens, 2000. *California Clapper Rail*. Pages 332-340 *in* Goals Project. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P. R. Olofson, ed. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

seasonal wetlands, intertidal mudflats, and adjacent uplands.[12] Favored nesting substrate includes gumplant and cordgrass adjacent to tidal sloughs, although they also occur in stands of perennial pepperweed and bulrush. Suitable habitat for this species in the Planning Area includes the coastal salt marsh habitats near the mouths of Gallinas and San Rafael Creeks, other stands of suitable tidal marsh and adjacent uplands where natural habitat remains (see **Figure 3**).

Salt Marsh Harvest Mouse (Federally and State Endangered; California Fully Protected Species). Salt marsh harvest mouse are endemic to the tidal salt marshes of the San Francisco Bay Estuary. This species occurs primarily in marshes dominated by pickleweed, but also uses adjacent upland habitats during high tides. The presence of adequate peripheral halophyte plant cover adjacent to the pickleweed-dominated marsh plain is an important habitat component for this species, which depends on such cover for refuge from terrestrial predators during extremely high tides.

As indicated in **Figure 3**, salt marsh harvest mice have been reported from the salt marsh harvest mouse has been detected from the coastal salt marsh habitat near the mouth of San Rafael Creek, along the mouth of Gallinas Creek, and from the large area of coastal salt marsh habitat in the northeastern portion of the Planning Area.

Sensitive Habitats

Sensitive natural communities and jurisdictional waters are described below.

Sensitive Natural Communities

The CDFW tracks the occurrences of "special" plant communities that are either known or believed to be of high priority for inventory in the CNDDB. These plant communities are listed in the CDFW publication *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*.[13] These communities are sometimes addressed by lead or trustee agencies in CEQA documents, but generally are not afforded the same protection as CNPS Rank 1B and 2 plant species. Many sensitive natural community types support special-status plants and animals and are addressed under CEQA as essential habitat for those species.

As indicated in **Figure 2**, the CNDDB records indicate a large expanse of northern coastal salt marsh, a sensitive natural community type along the fringe of San Pablo Bay through the northeastern portion of the Planning Area. This sensitive natural community type occurs in other locations within the Planning Area along the fringe of the bay, including marshlands such as Pickleweed Park near the mouth of San Rafael Creek.

A number of other more widespread, but still sensitive natural community types are also known from the San Rafael vicinity but have not been mapped in the CNDDB inventory.

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12 Cogswell, H., 2000. *Song Sparrow*. Pages 374–385 *in* Goals Project. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P. R. Olofson, ed. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

13 California Department of Fish and Game, 2003. *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Data Base*. Wildlife and Habitat Data Analysis Branch, Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento.

Based on the *Manual of California Vegetation*[14] classification system and latest list of terrestrial natural communities prepared by CDFW, these include several associations of Black Oak Forests and Woodlands, Coastal and Montane Redwood Forests, several alliances and associations of Douglas Fir Forests, California Bay Forests and Woodlands, California Buckeye Woodlands, several associations of Coyote Brush Scrub, freshwater marsh, freshwater seeps and springs, and numerous alliances of native grasslands. Occurrences of these sensitive natural community types are most likely present within the remaining woodland, forest and grasslands in the Planning Area, but they have not been mapped as part of the CALVEG or CNDDB mapping programs. Detailed surveys would be required to provide confirmation on presence or absence from undeveloped portions of the Planning Area where thorough studies have not been conducted.

Jurisdictional Waters.

Although definitions vary to some degree, in general, wetlands are considered areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, and water recharge, filtration, and purification functions. The U.S. Army Corps of Engineers (Corps) and the USFWS developed technical standards for delineating wetlands that generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

A formal jurisdictional delineation of wetlands and other waters of the U.S. and State was not conducted for the Planning Area as part of this Background Report. However, based on information available from the NWI and familiarity with the Planning Area, numerous features can be assumed to fall under jurisdiction of the Corps and the Regional Water Quality Control Board (RWQCB) jurisdiction pursuant to Sections 401 and 404 of the federal Clean Water Act and as state waters regulated by the RWQCB under the Porter-Cologne Water Quality Control Act. Creeks and lakes are also regulated by the CDFW pursuant to Section 1600 of the California Fish and Wildlife Code, with jurisdiction extending to the top of bank or the outer dripline of riparian vegetation along these features, whichever is greater.

As indicated in **Figure 4**, features within the Planning Area that would likely be considered wetlands or other waters of the U.S. by the Corps include: the marshlands along the fringe of the Bay, mapped as estuarine and marine wetlands, freshwater wetlands, scattered waterbodies mapped as ponds or lakes, and riverine habitats along Miller Creek, Gallinas Creek, San Rafael Creek and the extensive network of tributary drainages in the upper watersheds. Additional jurisdictional other waters of the U.S. and wetlands maybe be present elsewhere in the Planning Area, but detailed site-specific assessments would be required to confirm presence or absence from undeveloped lands. As discussed under the Regulatory Setting below, the Corps, RWQCB and CDFW generally exercise authority over these various wetland habitat types.

A detailed wetland delineation and verification by the Corps would be required to determine the extent of jurisdictional wetlands on sites where modifications are proposed. Federally regulated waters along the numerous tributary drainages in the Planning Area (see **Figure 4**) are generally defined by the "Ordinary High Water Mark" rather than the band of adjacent

[14] Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento.

riparian vegetation, limiting Corps jurisdiction where dense willow riparian scrub and forest extend a considerable distance from the channel bank. However, the limits of State waters regulated by CDFW and RWQCB typically encompass both the bed and bank of a drainageway, as well as the limits of the associated riparian vegetation where it extends beyond the top of bank, and both agencies typically request that an adequate setback be provided to avoid both direct and indirect impacts on riparian corridors as part of environmental review for specific development plans.

Biological Resources – Regulatory Setting

Biological resources within the Planning Area are subject to agency jurisdiction and regulations, as described below.

STATE AND FEDERAL REGULATIONS

Endangered Species Act

The USFWS has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (ESA) and its implementing regulations prohibit the take of any fish or wildlife species that is federally listed as threatened or endangered without prior approval pursuant to either Section7 or Section 10 of the ESA. ESA defines "take" as "*harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct*." Federal regulation 50CFR17.3 defines the term "harass" as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering (50CFR§17.3). Furthermore, federal regulation 50CFR17.3 defines "harm" as an act that either kills or injures a listed species. By definition, "harm" includes habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering (50CFR217.12).

Section10(a) of the ESA establishes a process for obtaining an incidental take permit that authorizes nonfederal entities to incidentally take federally listed wildlife or fish. Incidental take is defined by ESA as take that is *"incidental to, and not the purpose of, the carrying out of another wise lawful activity*." Preparation of a habitat conservation plan, generally referred to as an HCP, is required for all Section 10(a) permit applications. The USFWS and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) have joint authority under the ESA for administering the incidental take program. NOAA Fisheries Service has jurisdiction over anadromous fish species and USFWS has jurisdiction over all other fish and wildlife species.

Section 7 of the ESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA, or result in the destruction or adverse modification of its habitat. Federal agencies are also required to minimize impacts to all listed species resulting from their actions, including issuance or permits or funding. Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat (ESA requires that the USFWS identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered). This consultation results in a Biological Opinion prepared by the USFWS stating whether implementation of the HCP will result in jeopardy to any HCP Covered Species or will adversely modify critical habitat and the measures necessary to avoid or minimize effects to listed species.

Although federally listed animals are legally protected from harm no matter where they occur, the Section 9 of the ESA provides protection for endangered plants by prohibiting the malicious destruction on federal land and other "take" that violates State law. Protection for plants not living on federal lands is provided by the California Endangered Species Act.

Clean Water Act

The Corps is responsible under Section 404 of the Clean Water Act to regulate the discharge of fill material into waters of the U.S. These waters, and their lateral limit, are defined in 33 CFR Part 328.3(a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark (33 CFR Part 328.3[e]) or the limit of adjacent wetlands (33 CFR Part 328.3[b]). Any permanent extension of the limits of an existing water of the U.S., whether natural or man-made, results in a similar extension of Corps jurisdiction (33 CFR Part 328.5).

Waters of the U.S. fall into two broad categories: wetlands and other waters. Other waters include waterbodies and watercourses generally lacking plant cover such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands are aquatic habitats that support hydrophytic wetland plants and include marshes, wet meadows, seeps, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally or intermittently inundated features, such as seasonal ponds, ephemeral streams, and tidal marshes, are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally inundated waterbodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the U.S.

Waters and wetlands that cannot trace a continuous hydrologic connection to a navigable water of the U.S. are not tributary to waters of the U.S. These are termed "isolated wetlands." Isolated wetlands are jurisdictional when their destruction or degradation can affect interstate or foreign commerce (33 CFR Part 328.3[a]). The Corps may or may not take jurisdiction over isolated wetlands depending on the specific circumstances.

In general, a project proponent must obtain a Section 404 permit from the Corps before placing fill or grading in wetlands or other waters of the U.S. Prior to issuing the permit, the Corps is required to consult with the USFWS under Section 7 of the ESA if the project may affect federally listed species.

All Corps permits require water quality certification under Section 401 of the Clean Water Act. In the San Francisco Bay Area, this regulatory program is administered by the San Francisco Bay RWQCB. Project proponents who propose to fill wetlands or other waters of the U.S. must apply for water quality certification from the RWQCB. The RWQCB has adopted a policy requiring mitigation for any loss of wetland, streambed, or other jurisdictional area.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act. In December 2017, the Department of the Interior (DOI) issued a memorandum reversing the incidental take

interpretation of the MBTA. Under the latest determination of the DOI, the take of a migratory bird or its active nest (i.e., with eggs or young) that is incidental to a lawful activity does not violate the MBTA. However, this opinion from the DOI is only the latest interpretation from the current Administration of the MBTA. This legal opinion is contrary to the long-standing interpretation for over 40 years that held the MBTA strictly prohibits the intentional or incidental killing of birds or destruction of their nests when in active use.

California Endangered Species Act

The CDFW has jurisdiction over State-listed endangered, threatened, and rare plant and animal species under the California Endangered Species Act (CESA). CESA is similar to the federal ESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFW for addition to the State list. Candidate species are protected by the provisions of CESA.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to "projects" proposed to be undertaken or requiring approval by State and local government agencies. Projects are defined as having the potential to have physical impact on the environment. Under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a "de facto" rare or endangered species.

California Fish and Game Code

The CDFW is also responsible for enforcing the California Fish and Game Code, which contains several provisions potentially relevant to construction projects. For example, Section 1602 of the Fish and Game Code governs the issuance of Lake and Streambed Alteration Agreements by the CDFW. Lake or Streambed Alteration Agreements are required whenever project activities substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as such by the CDFW.

The Fish and Game Code also lists animal species designated as Fully Protected or Protected, which may not be taken or possessed at any time. The CDFW does not issue licenses or permits for take of these species except for necessary scientific research, habitat restoration/species recovery actions, or live capture and relocation pursuant to a permit for the protection of livestock. Fully protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while Protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42.

Several provisions in the California Fish and Game code provide for the protection of birds and bird nests in active use. Unless the Fish and Game Code (FGC) or its implementing regulations provide otherwise, under California law it is unlawful to:

- Take a bird, mammal, fish, reptile, or amphibian (FGC Section2000);

- Take, possess, or needlessly destroy the nest or eggs of any bird (FGC Section3503);

- Take, possess, or destroy any bird of prey in the orders Strigiformes (owls) and Falconiformes (such as falcons, hawks and eagles) or the nests or eggs of such bird (FGC Section3503.5);

- Take or possess any of the thirteen fully protected bird species listed in FGC Section3511;

- Take any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird) (FGC Section3800);

- Take or possess any migratory non-game bird as designated in the MBTA or any part of such bird, except as provided by rules or regulations adopted by the DOI under the MBTA (FGC Section3513);

- Take, import, export, possess, purchase, or sell any bird (or products of a bird), listed as an endangered or threatened species under the CESA unless the person or entity possesses an Incidental Take Permit or equivalent authorization from CDFW (FGC Section2050 et seq.).

Non-native species, including European starling, house sparrow, and rock pigeon, are not afforded any protection under the MBTA or California Fish and Game Code.

Porter-Cologne Water Quality Control Act

Under this Act (California Water Code Sections 13000–14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. The RWQCB asserts jurisdiction over isolated waters and wetlands, as well as waters and wetlands that are regulated by the Corps. Therefore, even if a project does not require a federal permit, it still requires review and approval by the RWQCB. When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of waste discharge requirements (WDRs) into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction Best Management Practices (BMPs).

McAteer-Petris Act

The McAteer-Petris Act and Suisun Marsh Preservation Act were adopted to protect San Francisco Bay and Suisun Marsh as great natural resources for the benefit of the public and to encourage development compatible with this protection. The San Francisco Bay Conservation and Development Commission (BCDC) was established to carry out this Act. The two primary goals of the BCDC are (1) to prevent the unnecessary filling of San Francisco Bay, and (2) to increase public access to and along the Bay shoreline. BCDC approval is required for all projects within 100 feet of the Bay shoreline, as well as projects that propose any filling or dredging within Bay waters.

Other Statutes, Codes, and Policies Affording Species Protection

The CDFW maintains an administrative list of Species of Special Concern (SSC), defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated from the State, or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as federally, but not State-, threatened or endangered;
- Meets the State definition of threatened or endangered but has not formally been listed;
- Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s) that, if realized, could lead to declines that would qualify it for State threatened or endangered status."

The CDFW's Nongame Wildlife Program is responsible for producing and updating SSC publications for mammals, birds, and reptiles and amphibians. Section 15380 of the *CEQA Guidelines* clearly indicates that SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outline therein. In contrast to species listed under the federal ESA or CESA, however, SSC have no formal legal status.

The CNPS is a non-profit conservation organization dedicated to the preservation of native flora in California. The CNPS has been involved in assembling, evaluating, and distributing information on special-status plant species in the state, as listed in the *Inventory of Rare and Endangered Plants of California*. CNPS has recently updated their rating system for the rarity of special-status plants, and now include both a California Rare Plant Rank and a Threat Rank. CEQA requires government agencies to consider environmental impacts of discretionary projects and to avoid or mitigate them where possible. Under Section 15380, CEQA provides protection for both State-listed species and for any other species which can be shown to meet the criteria for State listing. The CDFW recognizes that special-status plants with a California Rare Plant Rank of 1A (Presumed extinct in California), 1B (Rare, threatened, or endangered in California and elsewhere), and 2 (Rare and endangered in California, but are more common elsewhere) in the CNPS Inventory consist of plants that, in a majority of cases, would qualify for listing and these species should be addressed under CEQA review. In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS California Rare Plant Rank of 3 (Plant species for which additional data is needed – a review list) and 4 (Plant species of limited distribution - a watch list).

SAN RAFAEL GENERAL PLAN POLICIES

The Open Space and Conservation Elements of the City of San Rafael General Plan 2020 contain goals and policies related to biological resources. These are listed below by Element.

Open Space Element

GOAL 32: PROTECTED OPEN SPACE

It is the goal of San Rafael to preserve and protect open space and the natural environment for all to enjoy. *Preservation of open space and the natural environment have been a priority for San Rafael residents for many years. Whenever possible, the natural terrain and vegetation of the community should be preserved and maintained.*

OS-1. Open Space Preservation.

Preserve, through a variety of methods, the open space areas identified in the Inventory of Potential Open Space Sites (See Appendix I). Retain and protect open space areas that serve as delineators between neighborhoods and between adjacent communities, as wildlife habitat, and as visual assets for the community. Open space areas can also function as connections between neighborhoods, for example with the creation of pathways in environmentally appropriate areas.

OS-1a. Open Space Inventory. Update the Inventory of Potential Open Space Sites. Identify and prioritize open space parcels for future protection. Maximize the use of available resources when assessing City involvement in securing open space by applying the following non-prioritized evaluation criteria:

a. Environmental health and safety issues (specifically geology and hydrology), and potential geoseismic hazards.

b. Resource Areas and Aesthetics (visual backdrop or edge, unique site features, shorelines/ridgelines, wetlands, wildlife habitat including wildlife movement corridors and habitat for endangered species).

c. Importance to the community as a whole or adjoining neighborhoods.

d. Merits of alternative uses.

e. Proximity to other open space areas.

f. Recreation potential.

g. Accessibility.

h. Availability of outside financial assistance.

i. Potential maintenance and management costs and liability exposure for the City.

OS-1b. Preservation Opportunities. Through the development review process, preserve open space areas identified on the Open Space Inventory. Encourage the dedication of open space areas that are adjacent to public open space. Possibilities also include acquisition of fee title or acquiring easements for preserving open space. When potential open space is not contiguous to existing public open space, the preference is to retain the open space in private ownership. When portions of a site are retained as private open space, ensure the preservation and management of that open space through appropriate means, including required maintenance, as determined though development review. Work with other public and non-profit agencies to identify sources for acquisition and maintenance of open space.

OS-1c. Cluster Development. As part of the development review process, encourage the clustering of development to preserve desired open space.

OS-2. Open Space Management.

Maintain and manage City Open Space lands. Designate appropriate uses to specific sites. Determine maintenance needs to address uses and the preservation of natural amenities. Address illegal camping and campfires, disease control, erosion control, urban/wildlife interface, recreation and other activities harmful to open space environment, as well as vegetation management and wildlife habitat protection issues.

OS-2a. Open Space Management Plan(s). Establish a committee with representatives from neighborhood associations, environmental organizations, user groups and other stakeholders to prepare an Open Space Management Plan(s). The plan should address use and ongoing maintenance of open space areas. The management plan should address appropriate access points, parking areas, public information signage, trail extensions, restoration of erosion and other degraded areas, and guidelines for the location of amenities such as picnic tables and benches. Amend zoning provisions as needed. Funding options should be explored and identified for open space management such as open space maintenance assessment districts, agreements with other public agencies for maintenance, neighborhood "adoption," volunteer programs, private funding and other means.

OS-2b. Removal of Invasive Species. Use volunteer and other types of work crews to remove selected invasive vegetation from open space areas.

OS-2c. Diseased Vegetation. Work with County and regional experts in finding solutions for the prevention and disposal of diseased vegetation, such as vegetation affected by Sudden Oak Death Syndrome.

OS-2d. Illegal Encampments. Continue to work with private and public property owners to identify and remove illegal encampments in open space areas.

OS-3. Open Space Use.

Protect and preserve the natural value of open space and wildlife habitat areas while permitting educational and recreational uses compatible with these resources. Specific use objectives include:

a. Open space areas should be maintained in a natural state.

b. Open space areas are a community resource for use and enjoyment by the residents of San Rafael.

c. Uses of open space areas shall be secondary to open space preservation, and limited to those uses with a minimal impact on the environment.

OS-3a. Management of Private Open Space. In designating open space as part of a development project or with the dedication of land for open space, identify limitations to uses in those areas, such as restrictions on ornamental landscaping, structures and fences.

OS-4. Access to Open Space.

Encourage provision of access to open space areas in the design of adjacent development. Secure access paths shown on Exhibit 34 as part of subdivision approvals and design access paths to avoid or minimize neighborhood and user conflicts with sensitive wildlife habitat areas.

OS-4a. Access Points. Through the development review process, identify access points and parking areas to be retained and required improvements.

OS-5. Coordination with Other Jurisdictions.

Coordinate San Rafael's open space system with adjacent cities, Marin County, the State, and regional and private open space systems.

OS-5a. Coordination with Other Jurisdictions. Continue to work with public agencies managing open space within the San Rafael Planning Area to ensure a coordinated system.

OS-6. Utilities in Open Space.

Discourage utilities in open space areas. Necessary utilities in open space should be located and designed to minimize harm to the area's environmental and visual quality.

OS-6a. Utilities in Open Space. Use zoning ordinance provisions and the design and environmental review processes to evaluate the location and design of public utilities.

OS-7. Public Education.

Provide education programs to residents about wildlife, fire hazard, watershed protection and open space habitat.

OS-7a. Public Education. Continue outreach and public education. Examples include the dissemination of educational materials and programs related to wildland fire prevention, feral cats, and Marin County Stormwater Pollution Prevention Program (MCSTOPPP) requirements.

Conservation Element

GOAL 33: PROTECTED HABITAT
It is the goal of San Rafael to have enhanced habitat for native plants and animals, and special protection for species that are listed as threatened or endangered. *San Rafael is rich in wildlife and native plant habitats, such as wetlands, creeks, shorelines, oak woodlands and riparian areas, as well as wildlife corridors between them, and these habitats are being protected or restored as necessary.*

CON-1. Protection of Environmental Resources.
Protect or enhance environmental resources, such as ridgelines, wetlands, diked baylands, creeks and drainageways, shorelines and habitat for threatened and endangered species.

CON-1a. Plans for Environmental Protection. Complete the implementation of Mahon Creek Final Conceptual Plan and the Shoreline Park Master Plan.

CON-2. Wetlands Preservation.
Require appropriate public and private wetlands preservation, restoration and/or rehabilitation through compensatory mitigation in the development process for unavoidable impacts. Support and promote acquisition of fee title and/or easements from willing property owners.

CON-2a. Wetlands Overlay District. Continue to implement wetlands policy through the Wetlands Overlay zoning district and development review.

CON-3. Wetland Protection and Mitigation.
In order to protect and preserve valued wetlands, loss of wetlands due to filling shall be avoided, unless it is not possible or practical. When it is demonstrated that it is not possible or practical to avoid filling a wetland because of site constraints and conditions such as the geographic location of the wetlands, site configuration and size, require that the wetland be replaced on-site, and in-kind at a minimum ratio of 2:1 (e.g., 2 acres for each acre lost). If it is determined that on-site mitigation is not possible or practical, off-site mitigation shall be required at a minimum replacement ratio of 3:1. As assessed and determined on a case-by-case basis, the City may waive this policy for fill of small wetlands (0.1 acre or less in size), provided that: (1) the wetland is isolated meaning that it is not within, a part of, directly connected with or hydrologically-linked by natural flow to a creek, drainageway, wetland or submerged tidelands; (2) it is demonstrated by a wetland expert that the preservation of the wetland is not practical as it would not result in a functioning, biological resource because of its isolation; (3) the City has determined that filling would result in a more appropriate and desirable site plan for the project; and (4) the City consults with and considers comments received from the appropriate resource agencies with wetland oversight (State of California Department of Fish and Game and/or the California Regional Water Quality Control Board).

a. **Creation of Wetlands**. The creation of wetlands shall be (1) of a similar habitat type to that of the existing wetlands and (2) of at least equal functional quality. The wetlands should be created or restored on or adjacent to the site, where possible. If on-site creation is infeasible due to technical constraints, compensatory habitat may be created off-site, preferably in the same drainage basin. Restoration of former filled, drained or diked wetland habitat is preferred over creation of wetlands on lands that were historically uplands. Plans for this habitat shall be prepared by a qualified wetland restoration ecologist in consultation with appropriate federal and state resource agencies. Mitigation plans shall require an annual monitoring for a period of time as specified by a qualified biologist to determine mitigation success. Contingency measures to deal with the potential for a lack of success should also be included in the plan.

b. **Timing of Restoration or Creation**. Restoration or creation of wetlands should be completed prior to construction of the development. Where construction activities would adversely impact wetland restoration or creation, wetlands restoration or creation may completed after construction of the development, as determined through development review.

> **CON-3a. Project Mitigation.** Continue the City's practice of requiring mitigation for projects that would affect wetlands, in conjunction with recommendations of State and Federal agencies.
>
> Maintain a minimum 50-foot development-free setback from wetlands, including, but not limited to, paving or structures. Setbacks of greater than 50 feet may be required on lots of two or more acres as determined through development review. The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the wetland to the maximum extent feasible and resulting values to the satisfaction of the City after review by the appropriate regulatory agencies.

CON-5. Diked Baylands.
Protect seasonal wetlands and associated upland habitat contained within undeveloped diked baylands, or restore to tidal action. Support and promote acquisition from willing property owners.

CON-6. Creek and Drainageway Setbacks.
Require development-free setbacks, except for specific access points as approved per policy CON-7 (Public Access to Creeks), from existing creeks and drainageways that will maintain the functions and resulting values of these habitats. Appropriate erosion control and roadway crossings may encroach into the development setback. In the absence of vegetation, promote new growth of natural habitat.

a. **Creek Setback.** Maintain a minimum 25-foot development-free setback from the top of creek banks for all new development (including, but not limited to, paving and structures), except for Miller Creek and its tributaries, where a minimum 50-foot setback shall be maintained. Setbacks up to 100 feet may be required on lots or development projects two or more acres in size where development review determines a wider setback is needed to maintain functions and resulting habitat values and in areas where high quality riparian habitat exists.

The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the creek to the maximum extent feasible and resulting values to the satisfaction of the City after review by the appropriate regulatory agencies.

b. **Drainageway Setbacks**. Drainageway setbacks shall be established through individual development review, taking into account existing habitat functions and resulting values.

CON-6a. Municipal Code Compliance. Ensure that the San Rafael Municipal Code complies with local, state, and federal regulatory agencies requirements for erosion control.

CON-7. Public Access to Creeks.
Provide pedestrian access to points along creeks throughout the City where such access will not adversely affect habitat values.

CON-7a. Creek Access Points. Proactively identify and create desirable access points to creeks on public lands.

CON-7b. Public Access. Through the development review process, identify and secure areas appropriate for access points to creeks.

CON-7c. Website Publicity. Use the City's website to publicize information about protecting and accessing San Rafael's creeks and waterways.

CON-7d. Creek Signage. Develop a program to provide attractive signage identifying creeks.

CON-8. Enhancement of Creeks and Drainageways.
Explore enhancement of, and support continuous upgrades to, drainageways to serve as wildlife habitat corridors for wildlife movement and to serve as flood control facilities to accommodate storm drainage. Require creek enhancement and associated riparian habitat restoration/creation for projects adjacent to creeks to maintain storm flows, reduce erosion and maintenance and improve habitat values, where feasible.

CON-8a. Creek Restoration. Encourage and support efforts by neighborhood associations, environmental organizations and other interested groups to fund creek enhancement, restoration and maintenance programs.

CON-8b. Tree Retention. Retain trees along creeks, where possible, for preservation of riparian habitat and to inhibit growth of algae.

CON-9. Native and/or Sensitive Habitats.
Protect habitats that are sensitive, rare, declining, unique or represent a valuable biological resource.

CON-9a. Steelhead Habitat. Support efforts to restore, preserve or enhance Central California Coast Steelhead habitat in Miller Creek and other creeks.

CON-9b. Feral Cats. To protect habitats, especially for birds and small animals, continue to fund programs of the Marin Humane Society including those to reduce the population of feral cats.

CON-10. Impacts to Sensitive Habitats.
Minimize impacts to sensitive natural habitats through careful planning. Require compliance with applicable laws and regulations.

CON-10a. Oak Savanna/Woodland Habitat Protection. Require that proposed developments with potential impacts to oak savanna/woodland habitat to either avoid, minimize, or compensate for the loss of oak savanna/woodland habitat. Avoidance would be the preferred measure where feasible. If it is deemed that an impact is unavoidable, minimization of direct and indirect impacts or compensation through habitat restoration, creation, or enhancement would be required.

CON-11. Wildlife Corridors.
Preserve and protect areas that function as wildlife corridors, particularly those areas that provide natural connections permitting wildlife movement between designated sensitive habitats.

CON-12. Preservation of Hillsides.
Encourage preservation of hillsides, ridgelines and other open areas that serve as habitat and erosion protection as well as visual backdrops to urban areas.

CON-12a. Hillside Design Guidelines. Continue to implement the Hillside Design Guidelines.

CON-13. Threatened and Endangered Species.
Preserve and protect threatened and endangered species of plants and animals formally listed consistent with the state and federal endangered species acts including protection of their habitat.

CON-13a. List of Species. Maintain a current list of threatened and endangered and special status species.

CON-14. Special Status Species.
Preserve and protect special status plants and animals, including candidate species for listing under the state and federal endangered species acts, California species of special concern, California Native Plant Society List 1B plants, and other species protected under provisions of California Fish and Game Code.

CON-14a. Surveys. Require that vacant sites be surveyed for the presence or absence of relevant special status species prior to development approval. Responsibility: Community Development,

CON-14b. Minimization. Require that where impacts to special status species are deemed unavoidable, potential impacts to the identified species are minimized through design, construction, and operation of the project. Compensation measures could include on-site set asides or off-site acquisitions (e.g. conservation easements, deed restrictions, etc.) that would be required if project

impacts result in direct loss or indirect impacts that cannot be mitigated in other ways. This might also involve species-specific enhancement restoration efforts for the mitigation lands.

CON-15. Invasive Non-Native Plant Species.
Remove and control selected undesirable invasive non-native plant species from City-owned open space and road right of ways, and encourage the removal and control of these invasive plant species from non-City owned ecologically-sensitive areas.

CON-15a. Invasive Plant Ordinance. Consider the legality, feasibility and enforceability of an Invasive Plant Ordinance addressing the removal of invasive species on private and public properties. As part of the ordinance, evaluate the benefits and impacts of using herbicide on invasive species where there are no other feasible controls.

CON-15b. Removal of Invasive Species on Public Property. Institute a program to remove invasive plant species on public properties. Consider the use of volunteers and private organizations to assist in this effort.

CON-16. Landscape with Native Plant Species.
Encourage landscaping with native and compatible non-native plant species, especially drought-resistant species.

CON-16a. Distribution of Information. Distribute Marin Municipal Water District and other organizations' educational materials about native plant landscaping.

Biological Resources – Summary of Key Issues and Opportunities

The current San Rafael General Plan 2020 serves as the principal planning document regulating development and providing for conservation of important resources on a local level. As listed above, the Open Space and Conservation Elements of the current General Plan contain numbered policies addressing the protection of sensitive biological and wetland resources. The Community Development Department is responsible for reviewing individual development applications to ensure compliance with CEQA and the National Environmental Policy Act (NEPA).

The San Rafael General Plan 2040 update process provides an opportunity to reevaluate the appropriateness and deficiencies of current policies and associated programs and determine any additional goals and policies necessary to provide a framework to adequately identify, protect, and manage natural resources within the Planning Area. Based on a review of the above policies from the Open Space and Conservation Elements of the current General Plan, this could include additional policies and programs related to:

- Protection of mature trees and other native vegetation, particularly along riparian corridors and in stands of native woodlands.
- Further control and eradication of non-native invasive species where they compromise native habitat values

- Participation in regional habitat restoration efforts such as the wetland restoration occurring around San Pablo Bay, and
- Conformance with State and federal regulations related to special-status species, wetlands, and other jurisdictional waters.

Biological Resources – Persons Responsible for Report Preparation

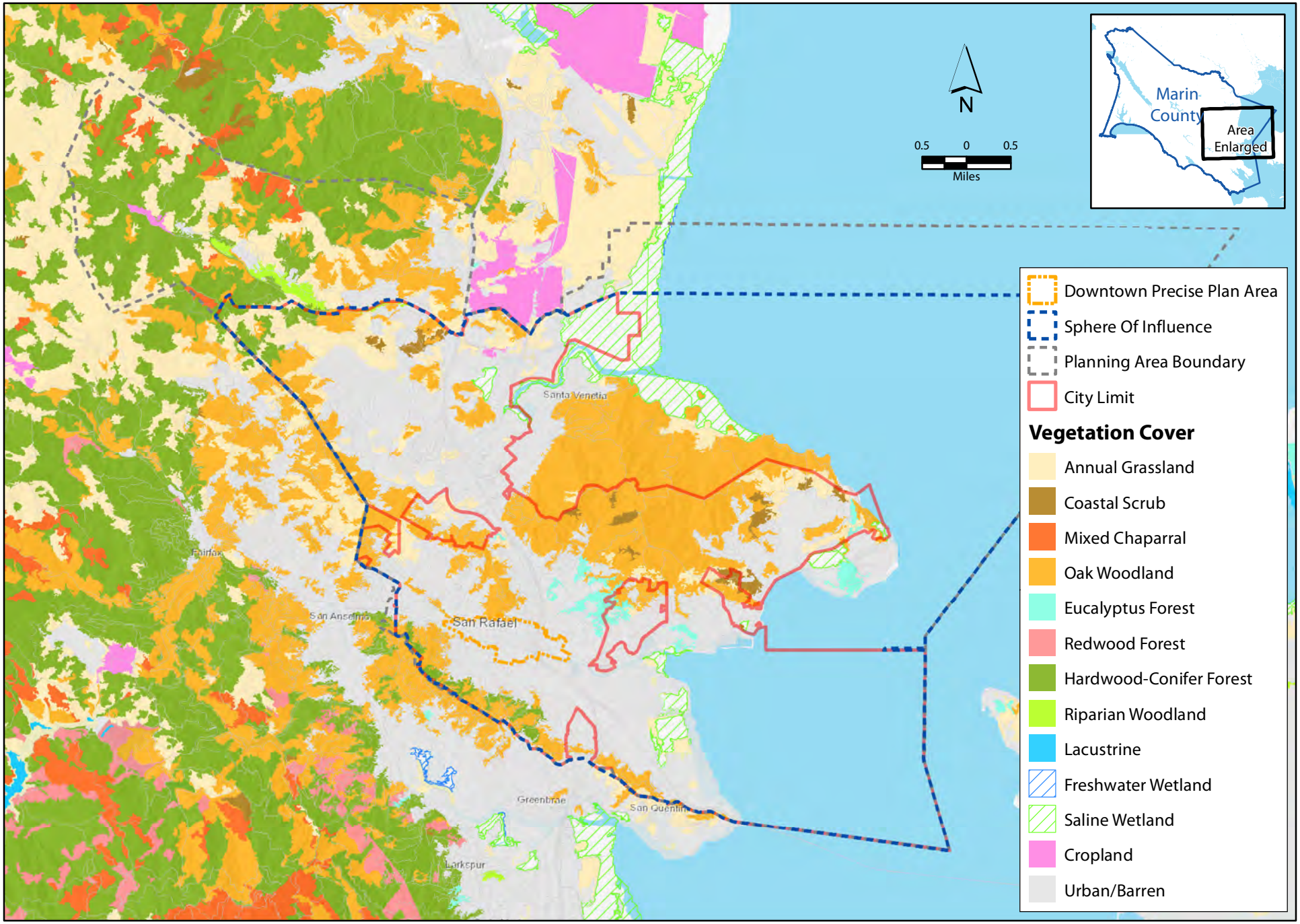
Environmental Collaborative – Project Biologist
Jim Martin, Principal

Digital Mapping Solutions - GIS Mapping
Esther Mandeno, GIS Specialist

PlaceWorks – Lead Consultant

Figure 1. Vegetative Cover

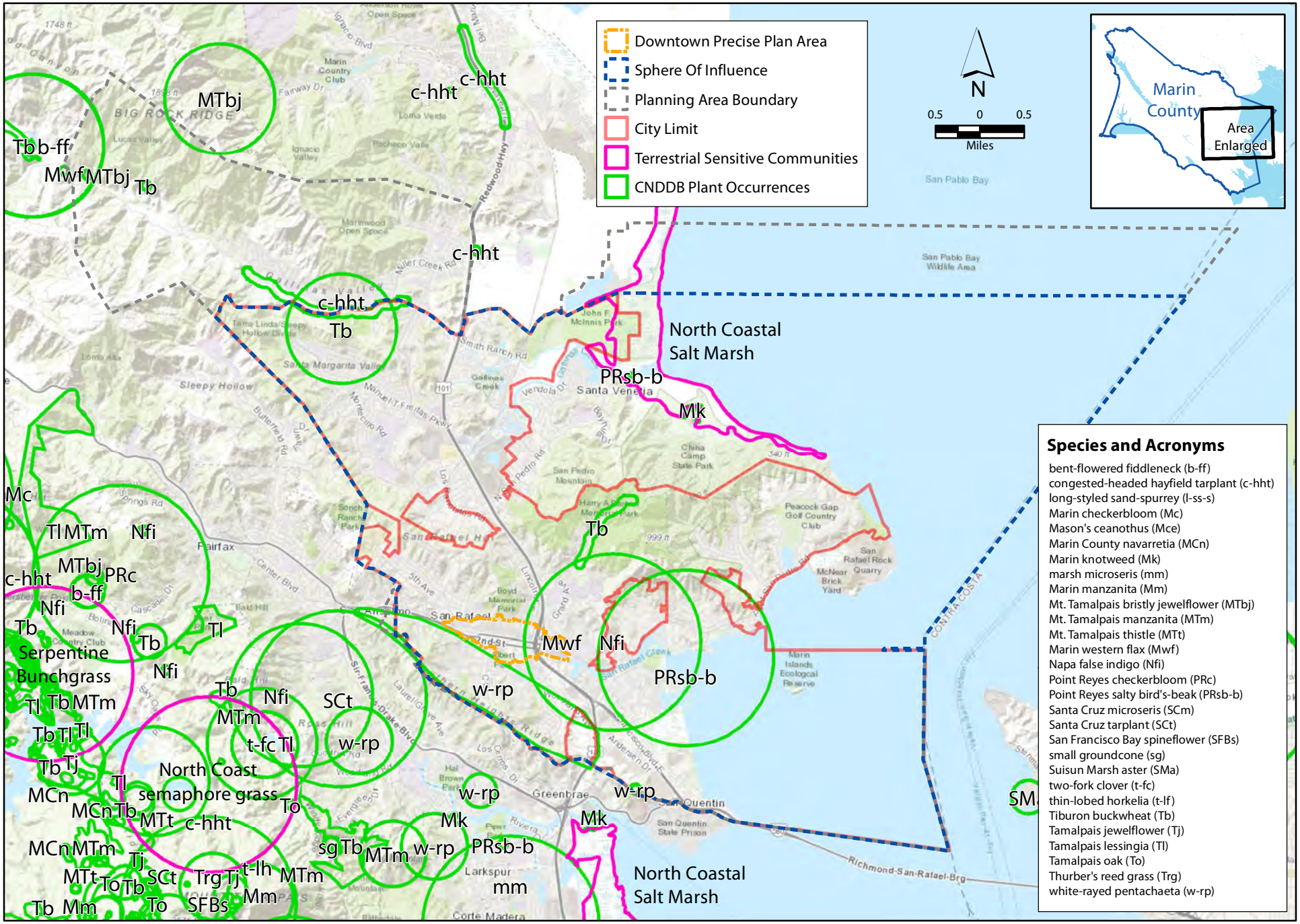
San Rafael General Plan Update



SOURCES: EVEG from USFS showing CALVEG CWHR Type (aggregated); accessed on April 23, 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 9/5/2019.

Figure 2. Special-Status Plant Species and Sensitive Natural Communities

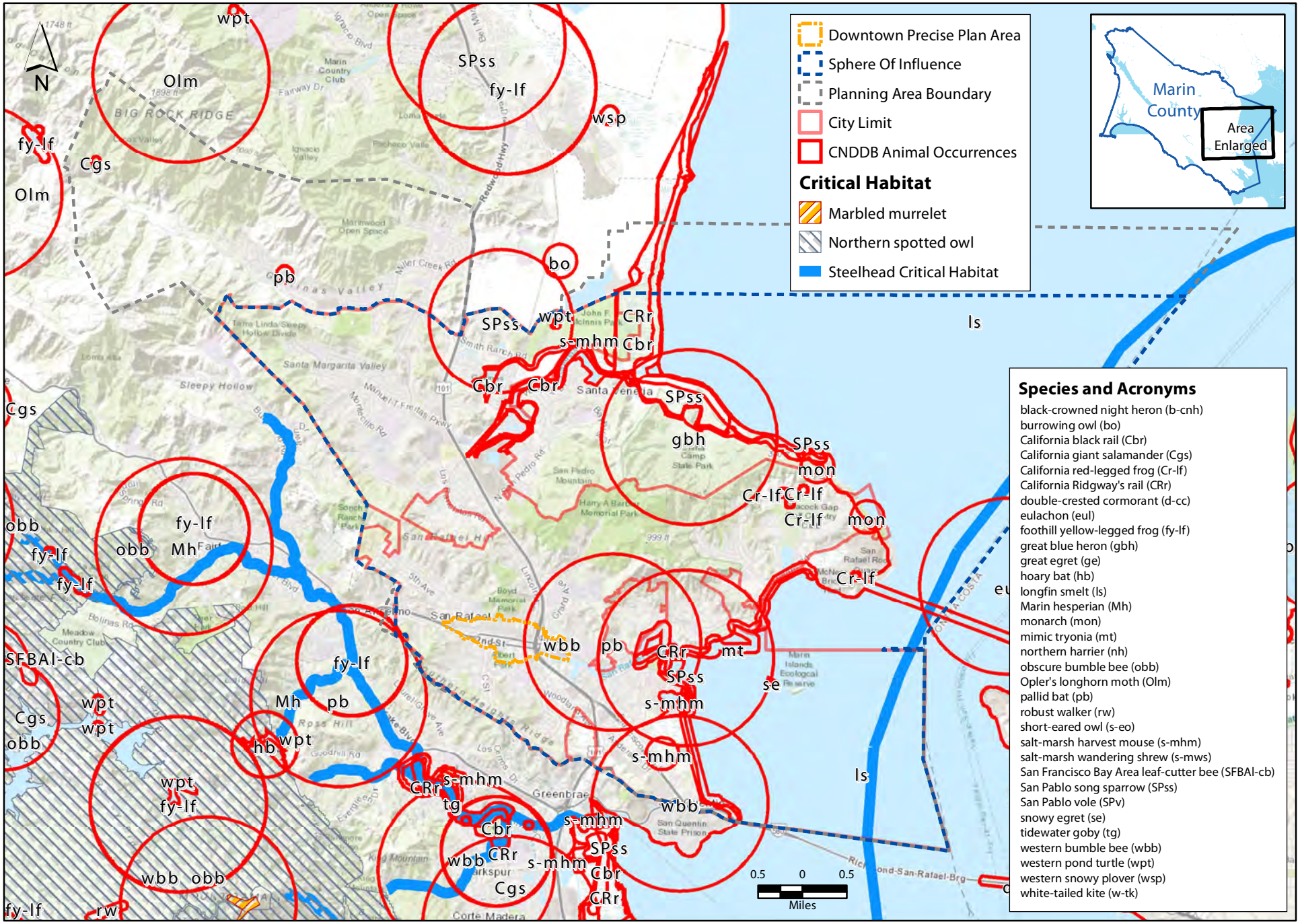
San Rafael General Plan Update



SOURCES: California Natural Diversity Database accessed August 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Figure 3. Special-Status Animal Species and Critical Habitat

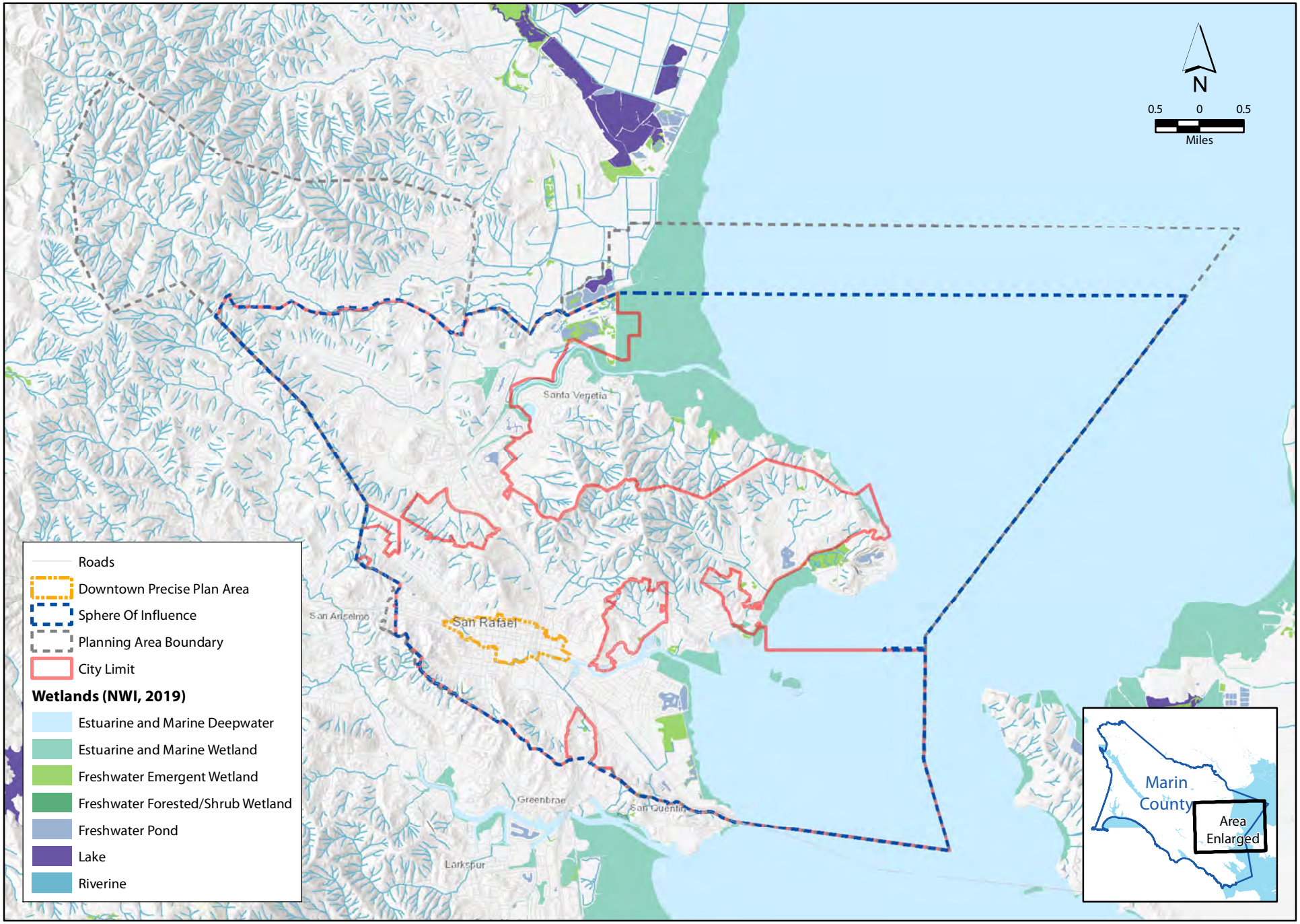
San Rafael General Plan Update



SOURCES: California Natural Diversity Database and USFWS Critical Habitat database accessed on April 16, 2019; USGS base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Figure 4. National Wetland Inventory Map

San Rafael General Plan Update



SOURCES: U.S. Fish & Wildlife Service National Wetlands Inventory accessed on April 28, 2019; Base map by ESRI and NGS. Map produced by www.digitalmappingsolutions.com on 8/29/2019.

Table 2: Special-Status Plant Species Known or Suspected to Possibly Occur in San Rafael Vicinity

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence in Planning Area
Amorpha californica var. napensis Napa false indigo	1B.2	Openings in broadleafed upland forest, chaparral, cismontane woodland. April-July	Moderate. CNDDB general occurrence from south San Rafael.
Amsinckia lunaris Bent-flowered fiddleneck	1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. March-June	Moderate. CNDDB general occurrence from west end of Lucas Valley.
Arctostaphylos montana ssp. montana Mt. Tamalpais manzanita	1B.3	Chaparral, valley and foothill grassland/serpentinite, rocky. February-April	Low. No known occurrences reported by CNDDB in Planning Area.
Arctostaphylos virgate Marin manzanita	1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, North Coast coniferous forest on sandstone, or granitic substrates. January-March	Low. No known occurrences reported by CNDDB in Planning Area.
Amorpha californica var. napensis Napa false indigo	1B.2	Broadleafed upland forest (openings); chaparral; cismontane woodland. April-July	Moderate. CNDDB general occurrences from San Rafael.
Calochortus tiburonensis Tiburon mariposa-lily	FT/ST/1B.1	Open, rocky slopes in serpentine grassland. March-June	Low. No known occurrences reported by CNDDB in Planning Area.
Calamagrostis crassiglumis Thurber's reed grass	2B.1	Coastal scrub (mesic); marshes and swamps (freshwater). May-August	Low. No known occurrences reported by CNDDB in Planning Area.
Castilleja affinis ssp. neglecta Tiburon paintbrush	FE/ST/1B.2	Rocky serpentine sites in grasslands. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Ceanothus masonii Mason's ceanothus	1B.2	Chaparral with serpentine affinity. March-April	Low. No known occurrences reported by CNDDB in Planning Area.
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	1B.2	Marshes and swamps (coastal salt), usually in coastal salt marsh with *Salicornia*, *Distichlis*, *Jaumea* and *Spartina*; 0-10 meters. June-October	Moderate. CNDDB general occurrence from San Rafael and Santa Venetia shoreline of Planning Area.
Chorizanthe cuspidata var. cuspidate San Francisco Bay spineflower	1B.2	Sandy soil on terraces and slopes in coastal bluff, coastal dunes, coastal scrub, and coastal prairie habitat. April-July (August rarely)	Low. No known occurrences reported by CNDDB in Planning Area..
Cirsium hydrophilum var. vaseyi Mt. Tamalpais thistle	1B.2	Serpentine seeps and streams in chaparral and woodland. May-August	Low. No known occurrences reported by CNDDB in Planning Area.
Dirca occidentalis Western leatherwood	1B.2	Broadleafed upland forest; closed-cone coniferous forest; chaparral; cismontane woodland, North Coast coniferous forest; riparian forest; riparian woodland. January-April	Low. No known occurrences reported by CNDDB in Planning Area.
Eriogonum luteolum var. caninum Tiburon buckwheat	1B.2	Serpentine soils; sandy to gravelly sites. May-September	Moderate. CNDDB general occurrence from Santa Margarita Valley.
Fissidens pauperculus Minute pocket moss	1B.2	Moss growing on damp soil in coniferous forests along the coast; in dry streambeds and stream banks.	Low. No known occurrences reported by CNDDB in Planning Area.
Fritillaria lanceolate var. tristulis Marin checker lily	1B.1	Coastal scrub, valley and foothill grassland, and coastal prairie; often on serpentine; various soils reported though usually clay. February-April	Low. No known occurrences reported by CNDDB in Planning Area.
Fritillaria liliacea Fragrant fritillary	1B.2	Often serpentinite; cismontane woodland, coastal prairie, coastal scrub; valley and foothill grassland. February-April	Low. No known occurrences reported by CNDDB in Planning Area.

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence in Planning Area
Gilia millefoliata Dark-eyed gilia	1B.2	Coastal dunes. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Helianthella castanea Diablo helianthella	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. March-June	Low. No known occurrences reported by CNDDB in Planning Area.
Hemizonia congesta ssp. congesta Congested-headed hayfield tarplant	1B.2	Valley and foothill grassland, sometimes roadsides. April-November	Moderate. CNDDB general occurrence from Santa Margarita Valley.
Hesperolinon congestum Marin western flax	FT/ST/1B.1	Serpentine barrens and serpentine grassland and chaparral. April-July	Moderate. CNDDB general occurrence from San Rafael and west end of Lucas Valley.
Holocarpha macradenia Santa Cruz tarplant	FT/SE/1B.1	Light, sandy soil or sandy clay, often with non-natives in coastal prairie and grasslands. June-October	Low. No known occurrences reported by CNDDB in Planning Area.
Horkelia tenuiloba Thin-lobed horkelia	1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland on sandy soils, mesic openings. May-July	Low. No known occurrences reported by CNDDB in Planning Area.
Kopsiopsis hookeri Small groundcone	2B.3	Open woods, shrubby places, generally on *Gaultheria shallon*. April-August	Low. No known occurrences reported by CNDDB in Planning Area.
Lessingia micradenia var. micradenia Tamalpais lessingia	1B.2	Usually on serpentine, in serpentine grassland or chaparral, often on roadsides. (June rarely) July-October	Low. No known occurrences reported by CNDDB in Planning Area.
Microseris paludosa Marsh microseris	1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Navarretia rosulata Marin County navarretia	1B.2	Closed-cone coniferous forest and chaparral on serpentinite. May-July	Low. No known occurrences reported by CNDDB in Planning Area.
Pentachaeta bellidiflora White-rayed pentachaeta	FE/SE/1B.1	Cismontane woodland, valley and foothill grassland on open, dry rocky slopes and grassy areas, often on serpentinite. March-May	Moderate. CNDDB general occurrences from south San Rafael.
Plagiobothrys glaber Hairless popcorn-flower	1A	Coastal salt marshes, alkaline meadows, and seeps. March-May	Low. No known occurrences reported by CNDDB in Planning Area.
Pleuropogon hooverianus North Coast semaphore grass	1B.1	Wet grassy, usually shady areas, sometimes in freshwater marsh, associated with forest environments. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Polypogon marinense Marin knotweed	3.1	Coastal salt marshes, brackish water marsh, and riparian wetlands. May-August	Moderate. CNDDB occurrence reported from Santa Venetia shoreline.
Quercus parvula var. tamalpaisensis Tamalpais oak	1B.3	Lower montane coniferous forest. March-April	Low. No known occurrences reported by CNDDB in Planning Area.
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	1B.2	Freshwater marshes near the coast. April-September	Low. No known occurrences reported by CNDDB in Planning Area.
Sidalcea hickmanii ssp. viridis Marin checkerbloom	1B.1	Chaparral, cismontane woodland; lower montane coniferous forest. May-August	Low. No known occurrences reported by CNDDB in Planning Area.
Spergularia macrotheca var. longistyla Long-styled sand-spurrey	1B.2	Meadows and seeps; marshes and swamps. February-June	Low. No known occurrences reported by CNDDB in Planning Area.

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence in Planning Area
Stebbinsoseris decipiens Santa Cruz microseris	1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland in open areas, sometimes on serpentinite. April-May	Low. No known occurrences reported by CNDDB in Planning Area.
Streptanthus batrachopus Tamalpais jewel-flower	1B.3	Closed-cone coniferous forest, chaparral, Talus serpentine outcrops. April-June	Low. No known occurrences reported by CNDDB in Planning Area.
Streptanthus glandulosus ssp. Niger Tiburon jewel-flower	FE/SE/1B.1	Shallow, rocky serpentine slopes in grasslands. May- June	Low. No known occurrences reported by CNDDB in Planning Area.
Streptanthus glandulosus ssp. pulchellus Mount Tamalpais bristly jewel-flower	1B.2	Serpentine slopes. May-July (August rarely)	Moderate. CNDDB general occurrence from west end of Lucas Valley.
Symphyotrichum lentum Suisun Marsh aster	1B.2	Marshes and swamps (brackish and freshwater); most often seen along sloughs with *Phragmites*, *Scirpus*, blackberry, *Typha*, etc. May-November	Low. No known occurrences reported by CNDDB in Planning Area.
Trifolium amoenum Two-fork clover	FE/1B.1	Coastal bluff scrub, valley and foothill grassland, sometimes on serpentinite. April-June	Low. No known occurrences reported by CNDDB in Planning Area..
Trifolium hydrophilum Saline clover	1B.1	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. April-June	Low. No known occurrences reported by CNDDB in Planning Area..
Triquetrella californica Coastal triquetrella	1B.2	Grows within 30 miles from the coast in coastal scrub, grasslands, and in open gravels on roadsides, hillsides, rocky slopes	Low. No known occurrences reported by CNDDB in Planning Area..

[a] Status: FE = federally endangered
SE = State endangered
FT = federally threatened
ST = State threatened
CNPS Ranking:
1A = Presumed extinct in California
1B = Rare, threatened or endangered in California and elsewhere
2 = Rare, threatened, or endangered in California, but more common elsewhere
3 = A review list

Source: Records based on California Native Plant Society's on-line *Inventory of Rare and Endangered Plants* and CNDDB occurrence data.

Table 3: Special-Status Animal Species Known or Suspected to Possibly Occur in San Rafael Vicinity

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Fish			
Coho salmon (Central California Coast ESU[b]) *Oncorhynchus kisutch*	FE, SE	Coastal streams from Punta Gorda in northern California down to and including the San Lorenzo River in central California, as well as some tributaries to San Francisco Bay	Moderate. Species historically occurred in larger drainages of east Marin County.[1] Species last recorded from San Francisco Bay tributary during early-to-mid 1980s.[2] Corte Madera Creek designated as critical habitat and essential fish habitat for this species.
Chinook salmon (Central Valley Spring-run ESU) *Oncorhynchus tshawytscha*	FT, ST	Requires clear, cool streams with pools and riffles, with coarse gravel beds for spawning. Sacramento River and its tributaries	Moderate. Known to occasionally occur in Corte Madera Creek and other drainages of east Marin County, but fish may be of hatchery origin.[3]
Steelhead (Central California Coast ESU) *Oncorhynchus mykiss*	FT	Coastal streams from Russian River south to Aptos Creek (Santa Cruz Co.), including streams tributary to San Francisco and San Pablo Bays	Moderate. Species historically occurred in larger drainages of east Marin County.[4] Corte Madera Creek and major tributaries are designated as critical habitat.
Green sturgeon *Acipenser medirostris*	FT, SSC	Oceanic waters, bays, and estuaries; spawns in deep pools in large, turbulent freshwater river mainstems; known to forage in estuaries and bays from San Francisco Bay to British Columbia	Moderate. Known from San Pablo Bay and may occur in lower reaches of major drainages.
Tidewater goby *Eucyclogobius newberryi*	FE, SSC	Brackish shallow lagoons and lower stream reaches where water is fairly still but not stagnant	Low. CNDDB record is of an extirpated population recorded in 1961 near the mouth of Corte Madera Creek. Species generally considered extirpated in the region.
Delta smelt *Hypomesus transpacificus*	FT	Found in the Sacramento-San Joaquin estuary in saltwater, brackish and freshwater habitats	Moderate. Known from San Pablo Bay.
Tomales roach *Lavinia symmetricus*	SSC	Known only from Walker Creek and Lagunitas Creek watersheds, in a variety of habitat conditions.	Low. No known occurrences reported by CNDDB in Planning Area.
Longfin smelt *Spirinchus thaleichthys*	FC, ST, SSC	Open water estuaries and bays, both in saltwater and freshwater areas	Moderate. Known from San Pablo Bay.

[1] Leidy, R.A., C.S. Becker, and B.N. Harvey, 2007, *Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary, California*.

[2] Ibid.

[3] Leidy, R.A., G.S. Becker, and B.N. Harvey, 2005. *Historical distribution and current status of steelhead/rainbow trout (Oncorhynchus mykiss) in streams of the San Francisco Estuary, California.* Center for Ecosystem and Restoration, Oakland, California.

[4] Ibid.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Eulachon (southern DPS[b]) *Thaleichthys pacificus*	FT	Open water estuaries and bays, both in saltwater and freshwater areas	Moderate. Known from San Pablo Bay.
Amphibians and Reptiles			
Foothill yellow-legged frog *Rana boylii*	SSC	Perennial streams and drainages with cobble substrate.	Moderate. CNDDB occurrences to the west and north of Lucas Valley.
California red-legged frog *Rana draytonii*	FT, SSC	Ponds, streams, drainages and associated uplands; requires areas of deep, still, and/or slow-moving water for breeding.	High. CNDDB occurrences from China Camp State Park vicinity in Planning Area.
California giant salamander *Dicampton ensatus*	SSC	Ponds, streams, drainages and associated uplands; prefers fast moving water in coastal forests and valley-foothill riparian habitats with cover.	High. CNDDB occurrence from Lucas Valley in Planning Area.
Western pond turtle *Actinemys marmorata*	SSC	Ponds, streams with deep pools, drainages and associated uplands for egg laying	High. CNDDB occurrence from John F McInnis Park in Planning Area.
Invertebrates			
Opler's longhorn moth *Adela oplerella*	none	Typically found on serperntine grasslands where larval host plant, *Platystemon californicus*, is present.	Moderate. CNDDB occurrence from Big Rock Ridge vicinity.
Obscure bumble bee *Bombus caliginosus*	none	Coastal areas from Santa Barbara County to Washington.	Low. No known occurrences reported by CNDDB from Planning Area.
Western bumble bee *Bombus occidentalis*	none	Found in a variety of habitats. Once common and widespread. Species has declined precipitously, perhaps from disease	High. CNDDB occurrences from San Rafael vicinity, and likely remains in a variety of habitats.
San Bruno elfin butterfly *Callophyrys mossil bayensis*	FE	Colonies are located on steep, north-facing slopes where larval host plant, *Sedum spathulifolium*, is present	Low. No known occurrences reported by CNDDB from Planning Area.
Monarch butterfly *Danaus plexippus*	none	Relatively common species in decline throughout its range. Overwintering colonies found in eucalyptus groves and conifer forests along coastal California. Overwintering colonies are of concern to CDFW	High. CNDDB occurrences from China Camp State Park vicinity.
Mission blue butterfly *Plebujus icarioides missionensis*	FE	Found in coastal chaparral, scrub and grassland habitat where larval host plant, *Lupinus* spp., are present	Low. No known occurrences reported by CNDDB from Planning Area.
Robust walker *Pomatiopsis binneyi*	none	Amphibious snail living in humid habitat along the Coast Range, on marshy ground and periodically flooded soil. Typically associated with perennial seeps and rivulets.	Low. No known occurrences reported by CNDDB from Planning Area.
Myrtle's silverspot butterfly *Speyeria zerene myrtleae*	FE	Found in coastal prairie, coastal scrub and sand dunes where larval host plant, *Viola adunca*, is present	Low. No known occurrences reported by CNDDB from Planning Area.
San Francisco Bay Area leaf-cutter bee *Trachusa gummifera*	none	A pollen-collecting bee known from grassland habitat and areas with suitable nectaring plants	Low. No known occurrences reported by CNDDB from Planning Area.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Mimic tryonia (California brackishwater snail) *Tryonia imitator*	none	Inhabits coastal lagoons, estuaries and salt marshes from Sonoma County to San Diego County, typically found in permanently submerged areas	High. CNDDB occurrence from shoreline north of San Rafael Creek in Planning Area.
Marin Hesperian *Vespericola marinensis*	none	Found in moist areas in coastal brushfields and chaparral, in riparian and mixed forest habitats	Low. No known occurrences reported by CNDDB from Planning Area.
Birds			
Redhead *Aythya americana*	SSC	Large, deep bodies of water; nests in freshwater emergent wetlands	Moderate. May winter in small numbers on open water habitats along major drainages and San Pablo Bay.
American white pelican *Pelecanus erythrorhynchos*	SSC	Forages over shallow inland waters and coastal marine habitats, nests on isolated islands or peninsulas	Moderate. May forage and roost in the open water habitat in San Pablo Bay from late summer through spring but does not breed in San Francisco Bay Area.
California brown pelican *Pelecanus occidentalis californicus*	FE, SE, CFP	Coastal shorelines and bays; rarely found on fresh water	Moderate. May forage and roost in the open water habitat in San Pablo Bay from late summer through spring but does not breed in San Francisco Bay Area.
California least tern (nesting colony) *Sterna antillarum browni*	FE, CE, CFP	Found along the Pacific coast, foraging in shallow estuaries and lagoons, and nesting on open beaches	Low. Not reported from eastern Marin County by CNDDB.
Western snowy plover *Charadrius alexandrines nivosus*	FT, SSC	Found along the Pacific coast and nests in barren to sparsely vegetated beaches and other shoreline areas	Low. No known occurrences reported by CNDDB from Planning Area.
Great egret (nesting colony) *Ardea alba*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Great blue heron (nesting colony) *Ardea herodias*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Snowy egret (nesting colony) *Egretta thula*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Black-crowned night heron (nesting colony) *Nycticorax nycticorax*	none	Relatively common species, found foraging in a variety of aquatic habitats including shorelines of lakes, ponds, and drainages. Colonial nesting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
Marbled murrelet *Brachyramphus marmoratus*	FT, CE	Forages at sea and utilizes mature conifer forest for nesting	Low. Suitable nesting and foraging habitat is absent from Planning Area.
White-tailed kite *Elanus leucurus*	CFP	Open grasslands, meadows, or marshes; require dense-topped trees or shrubs for nesting and perching	High. Observed in Marin County where suitable habitat is present.
Bald eagle *Haliaeetus leucocephalus*	SE	Ocean shorelines, lake margins, and rivers for both nesting and wintering; nests in large trees with open branches	High. Known to occasionally forage along lower reaches of major drainages and shoreline of San Pablo Bay during winter, but not likely to remain for long periods or breed in Planning Area.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
Northern harrier *Circus cyaneus*	SSC	Nests in wet meadows and marshes, forages over open grasslands and agricultural fields	High. Observed in Marin County where suitable habitat is present.
Golden eagle *Aquila chrysaetos*	SSC, CFP	Rolling foothills and mountain areas. Nests in cliff-walled canyons or large trees in open areas	High. Known to forage and nest in Planning Area.
American peregrine falcon *Falco peregrinus*	SE, CFP	A variety of open habitats including coastlines, mountains, marshes, bay shorelines, and urban areas. Nest on cliffs, bridges, and tall buildings	Low. May occasionally forage in Planning Area, but not likely to breed due to the lack of suitable nesting habitat.
California black rail *Laterallus jamaicensis coturniculus*	FT, CFP	Salt marshes bordering larger bays, also found in brackish and freshwater marshes	High. Reported by CNDDB from John F. McInnis Park in Planning Area.
Ridgway's rail/California clapper rail *Rallus longirostris obsoletus*	FE, SE, CFP	Tidal salt marshes with sloughs and substantial cordgrass (*Spartina* sp.) cover	High. Reported by CNDDB from shoreline of San Rafael and John F. McInnis Park in Planning Area.
Burrowing owl *Athene cunicularia*	SSC	Open, dry grasslands that contain abundant ground squirrel burrows	Moderate. Observed in Marin County where suitable habitat is present.
Short-eared owl *Asio flammeus*	SSC	Found in open country and grasslands.	Moderate. Observed in Marin County where suitable habitat is present.
Long-eared owl *Asio otus*	SSC	Conifer, oak, riparian, pinyon-juniper, and desert woodlands adjacent to grasslands, meadows, or shrublands	Moderate. Observed in Marin County where suitable habitat is present.
Northern spotted owl *Strix occidentalis caurina*	FT, SC, SSC	Dense forest and woodland, with suitable prey	High. CNDDB occurrences from China Camp State Park, Harry A Barber Memorial Park and Southern Heights Ridge in Planning Area.
Olive-sided flycatcher *Contopus cooperi*	SSC	Coniferous forests with open canopies	Moderate. Observed in Marin County where suitable habitat is present.
Loggerhead shrike *Lanius ludovicianus*	SSC	Open grasslands and woodlands with scattered shrubs, fence posts, utility lines, or other perches; nests in dense shrubs and lower branches of trees	Moderate. Observed in Marin County where suitable habitat is present.
Purple martin *Progne subis*	SSC	Woodlands; nests in tree snags and abandoned woodpecker cavities and human-made structures	Moderate. Observed in Marin County where suitable habitat is present.
Double-crested cormorant (nesting colony) *Phalacrocorax auritus*	none	Relatively common species, found foraging in a variety of aquatic habitats including open water and shorelines of San Pablo Bay. Colonial roosting areas are of concern to CDFW	High. Observed in Marin County where suitable habitat is present.
San Francisco (salt marsh) common yellowthroat *Geothlypis trichas sinuosa*	SSC	Salt, brackish, and freshwater marshes; and riparian woodlands; nests on or near ground in low vegetation	Moderate. Observed in Marin County where suitable habitat is present.
Bryant's savannah sparrow *Passerculus sandwichensis alaudinus*	SSC	Tidal marshes and adjacent ruderal habitat, moist grasslands in the coastal fog belt, and infrequently, drier grasslands further inland; in South Bay, nests primarily on levee tops overgrown with annual grasses and levee banks dominated by pickleweed	Moderate. Observed in in Marin County where suitable habitat is present.
Grasshopper sparrow *Ammodramus savannarum*	SSC	Grasslands with scattered shrubs.	Moderate. Observed in Marin County where suitable habitat is present.

Species	Status[a]	Habitat	Potential for Occurrence in Planning Area
San Pablo (Samuels) song sparrow *Melospiza melodia samuelis*	SSC	Tidal salt marshes dominated by pickleweed; nests primarily in pickleweed and marsh gumplant	High. CNDDB occurrences from shoreline of San Rafael, China Camp State Park, and John F. McInnis Park in Planning Area.
Tricolored blackbird *Agelaius tricolor*	SSC	Nests in dense vegetation near open water; forages in grasslands and agricultural fields.	Low. No known occurrences reported by CNDDB from Planning Area.
Mammals			
Salt marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP	Tidal salt marshes of San Francisco Bay and its tributaries. Requires tall, dense pickleweed for cover	High. CNDDB occurrences from shoreline of San Rafael and John F. McInnis Park in Planning Area.
Pallid bat *Antrozous pallidus*	SSC	A variety of open arid habitats (e.g., chaparral, open woodland, deserts); primary roost sites include bridges, old buildings, and in tree hollows and/or bark; sometimes roost in caves and rock crevices	High. Suitable habitat present and general occurrence reported by CNDDB from San Rafael in Planning Area.
Townsend's big-eared bat *Corynorhinus townsendii*	SC, SSC	Roots in the open in a variety of habitats, including tree cavities, caves and old buildings. Extremely sensitive to human disturbance.	Low. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.
Western red bat *Lasiurus blossevillii*	SSC	Forested canyons and riparian woodlands for roosting, a variety of open habitats for foraging; typically roosts in snags and trees with moderately dense canopies	Low. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.
Hoary bat *Lasiurus cinereus*	none	Prefers open habitats with access to trees for cover, roosting in dense foliage.	Low. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.
American badger *Taxidea taxus*	SSC	Open habitats with friable soils	Moderate. Suitable habitat present but no known occurrences reported by CNDDB from Planning Area.

[a] Status:
FE = federally endangered
FT = federally threatened
FC = federal candidate
ST = State endangered
SC = State candidate
SSC = California Species of Special Concern
CFP = California Fully Protected Species

[b] ESU = Evolutionarily Significant Unit
DPS = Distinct Population Segment

Source: Based on CNDDB occurrence records and common distribution knowledge unless otherwise noted.