

9 BIOLOGICAL RESOURCES

Novato is home to a rich diversity of wildlife habitat and plant and animal species. These biological resources represent an important environmental asset for the entire Bay Area and contribute to a unique sense of place in Novato. This chapter provides a description of the regulatory framework related to these resources and identifies and describes the biological resources in and around Novato.

A. Regulatory Framework

1. Federal Regulations

a. Federal Endangered Species Act

The federal Endangered Species Act (ESA) is a complex law enacted in 1973 to protect and recover plant and animal species in danger of becoming extinct and to conserve their ecosystems, with the ultimate goal being the recovery of a species to the point where it is no longer in need of protection. An “endangered” plant or animal species is one that is considered in danger of becoming extinct throughout all or a significant portion of its range. A “threatened” species is one that is likely to become endangered within the foreseeable future. The ESA prohibits the “take” of protected species. “Take,” as defined by the federal ESA, means to “harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect” a threatened or endangered species. “Harm” is further defined by the U.S. Fish and Wildlife Service (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 USFWS and the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NOAA Fisheries) have jurisdiction over species that are formally listed as threatened or endangered under the federal ESA. The USFWS also maintains a list of species proposed for listing as endangered or threatened, and a list of candidate species for which sufficient information is available to support issuance of a proposed listing rule. It is illegal to take any listed species without specific authorization.

b. Migratory Bird Treaty Act

In addition to the protection offered under the ESA, the federal Migratory Bird Treaty Act (MBTA) provides for protection of migratory bird species, birds in danger of extinction, and their active nests. It is illegal to possess or take any bird protected under the Act without a depredation permit from the USFWS, which includes protection of eggs, young, and nests in active use. Although the MBTA technically provides for protection of most bird species, it is typically applied as a mechanism to protect active nests of raptors and colonial nesting species through the breeding and nesting season.

c. Clean Water Act

The Clean Water Act was enacted to address water pollution. It establishes regulations and permit requirements regarding construction activities that affect storm water, dredge and fill material operations, and water quality standards. This regulatory program requires that discharges to surface waters be controlled under the National Pollutant Discharge Elimination System (NPDES) permit program that apply to sources of water runoff, private developments, and public facilities.

On the federal level, the USFWS is responsible for protection of terrestrial and freshwater organisms through implementation of the federal ESA¹ and the MBTA, and NOAA Fisheries is responsible for protection of anadromous fish and marine wildlife.

Under Section 404 of the Clean Water Act, U.S. Army Corps of Engineers (the Corps) is responsible for protecting wetlands and regulating the discharge of fill material into waters of the United States. The term “waters” includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations. In general, a permit must be obtained before fill can be placed in wetlands or other waters of the U.S.

In addition, the California Regional Water Quality Control Board (RWQCB) is responsible for upholding State water quality standards. Pursuant to Section 401 of the Clean Water Act, projects that apply for a Corps permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit, must obtain water quality certification. The RWQCB is also responsible for regulating wetlands under the Porter-Cologne Act, which may include hydrologically isolated wetlands no longer regulated by the Corps under Section 404 of the Clean Water Act.

2. State Regulations

a. California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the federal ESA both in process and substance, providing additional protection to listed species in California. The CESA does not supersede the federal ESA, but operates in conjunction, with some species having different listing status. The CESA is intended to conserve, protect, restore, and enhance listed species and their habitat.

The CESA prohibits the take of any plant listed as endangered, threatened or rare. A “rare” plant species is one not presently threatened with extinction but that may become endangered if its present environment worsens. State listing of plants began in 1977 with passage of the Native Plant Protection Act (NPPA). The CESA expanded upon the NPPA and enhanced legal protection for plants. To align with federal regulations, CESA created the categories of threatened and endangered species. It grandfathered all rare animals into the CESA as threatened species, but did not do so for rare plants.

The California Department of Fish and Wildlife (CDFW) has jurisdiction over threatened or endangered species that are formally listed under the CESA. Compliance with the CESA is required when a take is considered likely by the CDFW. The CDFW also considers the loss of listed species habitat as “take”, although this policy lacks statutory authority and case law support under CESA.

b. California Fish and Wildlife Code

Jurisdictional authority of the CDFW over wetland areas is established under Section 1600 of the Fish and Wildlife Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Wildlife Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake, without notifying the CDFW, incorporating necessary mitigation, and obtaining a Streambed Alteration agreement.

¹ The federal Endangered Species Act (ESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of the ESA and pertains to California species.

At the State level, the CDFW is responsible for administration of the CESA, and for protection of streams and waterbodies through the Streambed Alteration Agreement process under Section 1600 of the California Fish and Wildlife Code. Certification by the California Regional Water Quality Control Board is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the Clean Water Act and EPA Section 404(b)(1) Guidelines.

The Wetlands Resources Policy of the CDFW states that the Fish and Wildlife Commission will strongly discourage development in, or conversion of wetlands, unless, at a minimum, project mitigation assures there will be no net loss of either wetland habitat values or acreage.

c. California Natural Diversity Database

The primary information source on the distribution of special-status species in California is the California Natural Diversity Database (CNDDDB) inventory, which is maintained by the Wildlife and Habitat Data Analysis Branch of the CDFW. The CNDDDB inventory provides the most comprehensive statewide information on the location and distribution of special-status species and sensitive natural communities. 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 CNDDDB inventory.

The CDFW also maintains informal lists of “California Special Concern” (CSC) species. These species are broadly defined as animals that are of concern to the CDFW because of population declines and restricted distribution, and/or because they are associated with habitats that are declining in California. These species are inventoried in the CNDDDB, focusing on nesting, roosting, and congregation sites.

The CNDDDB is also responsible for maintaining up-to-date records of sensitive natural communities and those considered rare or threatened in the State.

d. California Native Plant Society Inventory

The California Native Plant Society (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, 2001 and electronic update). The status of a plant’s listing in the *Inventory* affects the level of protection it is accorded under State law.

3. Local Regulations

a. Novato General Plan

Biological resources are addressed in the Environment chapter of the existing Novato General Plan. EN Objective 1 through EN Objective 6 call for the City to preserve and protect bodies of water, wetlands, historic Baylands, wildlife, and native plants and woodlands. A broad range of policies and programs are provided to implement these objectives.

b. Community Strategic Plan

The Sustainable Community section of the Community Strategic Plan identifies a vision for the natural environment in Novato. Vision Statement 1 envisions “a community which values its ridgetops, hillsides, open space, wetlands and wa-

terways, and nurtures biodiversity.” Objectives to achieve this vision call for the City to protect native habitat, maintain and restore open space, and restore creeks, wetlands, and other water bodies.

c. Novato Zoning Code

The Novato Zoning Code contains a large number of standards and regulations to protect biological resources. Division 19.08, Agriculture and Resource Zoning Districts, establishes use regulations and development standards to preserve and protect open space, natural resources and agricultural areas in specified zoning districts. Division 19.16.030 establishes the Baylands overlay district with additional standards to protect wildlife and aquatic habitat found in historic Baylands. The location of these zoning districts is shown in Figure 2.2, Zoning Districts in the Land Use chapter of this report.

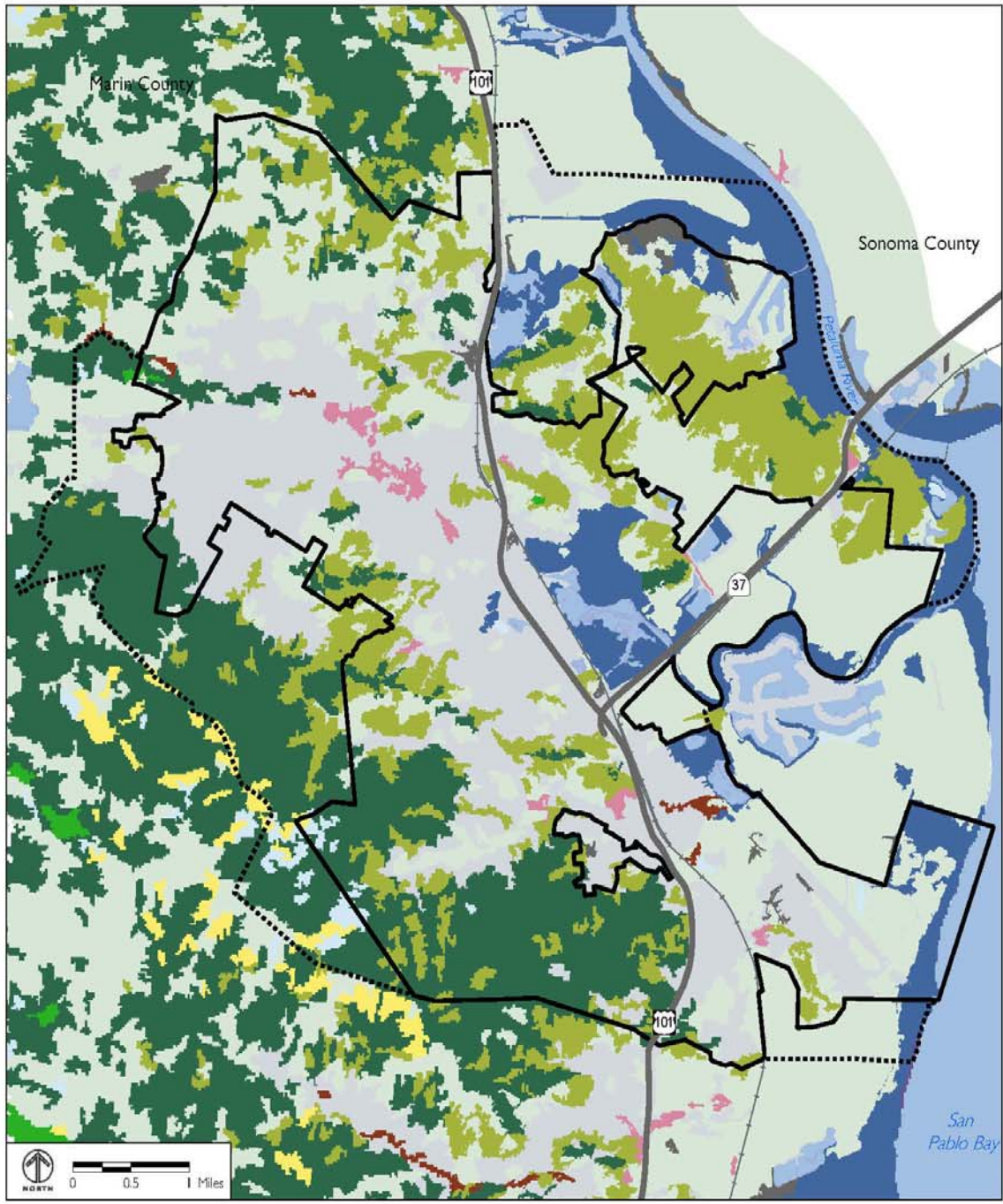
The Zoning Code also includes special provisions that apply to important natural resources located throughout the city. These standards include Division 19.26, Hillside and Ridgeline Protection; Division 19.35, Waterway and Riparian Protection; Division 19.36, Wetland Protection and Restoration; and Division 19.39, Woodland and Tree Preservation

B. Existing Biological Resources

1. Vegetation and Wildlife Habitat

Novato is in the Central Coast Region of California, which supports a wide range of terrestrial and aquatic habitat types. Figure 9-1 shows the distribution of vegetative cover in the Novato vicinity, modified from the 2004 CalVeg mapping program of the U.S. Forest Service. As indicated in Figure 9-1, the central portion of Novato along the Highway 101 corridor is largely developed with urban and suburban uses, occupying the valley floors and lower elevations of the surrounding hillsides. These largely developed areas are bisected by the remaining natural riparian and marshland habitats along major drainages such as Ignacio, Novato and Rush Creeks. The open water of San Pablo Bay forms the eastern edge of the Novato area, bordered by large expanses of marshland habitat and diked baylands which support primarily grasslands that continue to be used for grazing. A mosaic of grassland and woodland habitats covers the hillsides that form the northern, western, and southern edges of the Novato vicinity.

Historic land use has altered much of the landscape in the Novato vicinity, including the plant communities and wildlife dependent upon them. Beginning in the mid-nineteenth century and continuing into the present, activities such as live-stock grazing, firewood harvesting, clearing and disking for agricultural production, road building, and urban and suburban development have markedly altered the remaining natural communities. Native perennial grasslands in the Novato vicinity and throughout California have been largely replaced by non-native annual grasslands, and a number of highly invasive species now threaten the remaining grasslands. Fire suppression, livestock grazing, and more recently the effects of Sudden Oak Death, have greatly altered the extent of woodland and forest cover. The past effects of overgrazing and urban development along the creeks and tributary drainages on the valley floors continue to affect the aquatic habitat of the creeks and tributaries in the Novato vicinity, and limit the viability of the resident and anadromous fisheries. Although some natural areas remain in local parks, open space, stream corridors, hillsides, ridgelines, and baylands, these are considerably fragmented by urban development.



Source: Marin County GIS, 2004

- | | | | |
|-------------------------|----------------------------|----------------------------------|-------|
| — City Limit | Coastal Salt Marsh | Non-Native Eucalyptus/Pine/Scrub | Water |
| --- Sphere of Influence | Coastal Scrub | Oak Woodland | |
| □ County Boundary | Douglas Fir/Redwood Forest | Oak/Bay Woodland | |
| ■ Barren/Rock | Freshwater Marsh | Riparian Scrub/Woodland | |
| ■ Chaparral | Grassland/Agriculture | Urban/Developed | |

FIGURE 9-1
 VEGETATION

Nevertheless, the remaining natural communities in the Novato vicinity continue to support a diverse assemblage of plant and animal species, including a high number of special-status species. Even areas now occupied by urban and sub-urban development continue to support remnants of natural vegetation, including mature oaks and other native trees. The remnant native vegetation and mature ornamental landscaping in urban areas often provide important foraging, resting, and sometimes nesting opportunities to a variety of birds and other wildlife. A description of the various vegetation types and associated habitat types in the Novato vicinity is summarized below.

a. Salt/Brackish Water Marshland

Coastal salt marsh and coastal brackish marsh occupy large expanses of the Novato vicinity along the fringe of San Pablo Bay. They are part of the important wetland ecosystem that comprises the San Francisco Bay Estuary system, of regional and statewide significance. The San Francisco estuary comprised an estimated 628,500 acres of tidal marsh at the time of European colonization. Most of this habitat has been filled and developed with urban uses or converted to other habitats, such as diked wetlands, salt ponds, and agricultural and pasture lands. This conversion has had a significant effect on the health and functioning of the estuary system as a whole, and magnifies the importance of protecting the remaining marshland habitat in the Novato vicinity.

Vegetation associated with the remaining marshlands in the Novato vicinity differs in relation to tides and salinity levels depending on elevation. California cord grass (*Spartina foliosa*) occurs at the lower elevations on the bayward edge of the mudflats that are exposed at low tides. Dense stands of pickleweed (*Salicornia* spp.) occur at the middle elevations of the coastal salt marsh. Transitional marsh species such as salt grass (*Distichlis spicata*), jaumea (*Jaumea carnosa*), salt bush (*Atriplex patula* var. *Hastata*), and gum plant (*Grindelia humilis*) occur at the upper elevations of the salt marsh, together with ruderal grassland species. Areas of brackish water marsh occur at the upper limits of the tidal range, dominated by tules (*Scirpus* spp.) and cattails (*Typha* spp.). Suitable habitat for a number of special-status plant species associated with brackish and coastal salt marsh habitat also occurs in the Novato vicinity, such as Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*), soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*), and Marin knotweed (*Polygonum marinense*).

The marshlands provide important foraging and breeding habitat for a wide variety of aquatic and terrestrial species, and contribute to the health of larger baylands ecosystem. The open water and tidal mudflats provide important resting and feeding habitat for gulls, shorebirds and waterfowl. Bird species commonly associated with the mudflats include: canvasback, scaup, bufflehead, ruddy duck, American avocet, willet and sandpipers. The marshlands provide essential habitat for numerous special-status plant and animal species. The State and federally-endangered California clapper rail, the federally-endangered tidewater goby, and the State-threatened California black rail are known from the lower reaches of Novato Creek.

The State- and federally-endangered salt marsh harvest mouse and salt marsh common yellowthroat, which is recognized as a CSC species by the CDFW, are known from the mouth of the Petaluma River. The federally-threatened steelhead, green sturgeon, and Chinook salmon are all found in the open waters of San Pablo Bay, and move up Petaluma River and Novato Creek for foraging. Anadromous species such as steelhead and salmon move through the marshlands in their way to spawning locations in the upper watersheds. Higher elevations of the marsh typically provide important refugia during storms and high tides for small mammals and birds that typically occupy the lower marsh zones. These higher elevations are frequently used for nesting and resting by other species, such as northern harrier, white-tailed kite, short-eared owl and burrowing owl.

b. Freshwater Marsh

Freshwater marsh occurs along the larger creeks and tributary drainages, scattered seeps and springs, ephemeral and vernal pools, and margins of the stock ponds and other freshwater bodies in the Novato vicinity. Some segments of larger streams support emergent marsh vegetation such as cattails, tules, nut sedge (*Cyperus eragrostis*), monkey flower (*Mimulus guttatus*), narrow-leaved rush (*Juncus xiphioides*) and toad rush (*Juncus bufonius*). Rushes, Douglas' meadowfoam (*Limnanthes douglasii*), prickly buttercup (*Ranunculus muricata*), popcorn flower (*Plagiobothrys stiptatus*), and other wildflowers occur around the seeps, springs, creek margins, and mesic grasslands and seasonal pools, and the showy display of flowers stands out from the surrounding grasslands in the spring. Heavy grazing and trampling by cattle can severely impact vegetative cover and diminish the value of the freshwater marsh habitats in the Novato vicinity, including the margins of ponds, drainages, seeps and springs.

Wildlife value of freshwater marsh habitat is generally high, due to the available surface water, abundance of insect, algae, and plant foliage, and the protective cover when emergent vegetation is present. The available surface water is essential as a source of drinking water for many species of wildlife, and the open water of the larger ponds and pools attracts a variety of birds, mammals, reptiles, and amphibians. Birds expected in the larger waterbodies include waterfowl such as mallard duck and Canada goose, shorebirds such as greater yellowlegs and killdeer, and insectivores such as black phoebe and red-winged blackbird. The larger waterbodies provide potential breeding habitat for a number of amphibians and reptiles, including western terrestrial garter snake, Pacific tree frog, California slender salamander, California newt and western toad. Seasonal ponding in the remaining grasslands and agricultural fields in the diked baylands provide important forage for wintering waterfowl and other birds, including a number of special-status bird species.

c. Grasslands

Much of the remaining undeveloped portions of the Novato vicinity support grasslands dominated by non-native grasses and forbs. Grasslands occupy much of the diked baylands that continue to be used as grazing lands in the eastern portion of the Novato vicinity, as well as the lower slopes of Mount Burdell and the rolling hills of eastern Novato. Species composition in the grasslands varies, depending on the extent of past disturbance, depth to groundwater, and frequency and duration of soil saturation. Highly invasive species, particularly Himalayan blackberry (*Rubus discolor*), poison hemlock (*Conium maculatum*), French broom (*Genista monspessulana*), Scotch broom (*Cytisus scoparius*), and fennel (*Foeniculum vulgare*), are spreading into grassland habitat along road margins and edges of developed areas. These species contribute to the risk of fire through increased fuel loads, and compromise the wildlife habitat values of areas they occupy.

The grasslands in the Novato vicinity tend to support high numbers of insects, reptiles, birds, and small mammals, which in turn serve as important prey for predatory reptiles, birds, and mammals. Some of these species spend all their life in the grasslands, and others forage in the open grasslands and retreat to the protective cover of the surrounding woodlands, scrub, and chaparral for refuge and nesting. Herbivorous small mammals typically associated with grassland habitat include California ground squirrel, Botta's pocket gopher and California vole. Reptiles associated with grassland habitat include gopher snake, common king snake, western rattlesnake, western fence lizard, and alligator lizard. Bird species include granivores, omnivores and insectivores, as well as birds of prey, such as western meadowlark, Say's phoebe, killdeer, savanna sparrow, American goldfinch, blackbird, red-tailed hawk, white-tailed kite, American kestrel, northern harrier, prairie falcon, great-horned owl, barn owl, and occasionally golden eagle. Large herbivores and predatory mammals that frequent the grasslands or use the open areas for dispersal and movement through the Novato vicinity include: black-tailed deer, black-tailed jackrabbit, long-tailed weasel, striped skunk, grey fox, red fox, American badger, bobcat and coyote.

d. Woodlands

Oak woodlands and other hardwood woodlands occupy much of the remaining undeveloped hillsides at Black Point, Deer Island, and the lower slopes of Mount Burdell and Big Rock Ridge in the Novato vicinity. The woodlands vary in species composition and structure, from dense tree cover with a continuous canopy and little understory, to open woodlands with a lush understory of grassland and shrubs, to a widely spaced savanna surrounded by grasslands. Most of the woodlands are dominated by several species of oak and other native tree species, including black oak (*Quercus kelloggii*), valley oak (*Q. lobata*), coast live oak (*Q. agrifolia*), blue oak (*Q. douglasii*), California bay (*Umbellularia californica*) and madrone (*Arbutus menziesii*). Where the woodland canopy is closed, understory vegetation is generally sparse, composed of poison oak (*Toxicodendron diversilobum*), coyote brush (*Baccharis pilularis*), toyon (*Heteromels arbutifolia*) and other shrub and groundcover species. Where the canopy is open or sparse, the understory is dominated by a relatively dense cover of non-native grassland species.

The mature woodlands provide denning, nesting and foraging opportunities for numerous species of small mammals, reptiles, and birds. Mammals and reptiles found in the woodlands include: deer mouse, woodrat, striped skunk, grey squirrel, western skink, newts, ensatina (a type of salamander), ring-necked snake, and rubber boa. Larger mammals such as black-tailed deer and predatory species such as grey fox, mountain lion, and coyote most likely forage throughout the woodlands and open savanna, and the annual crop of acorns is an important source of food from many species of mammals and birds. The trees provide nesting cavities, perching and foraging opportunities, and nesting substrate for numerous species of birds, including jays, woodpeckers, kinglets and bushtits. Several species of raptors utilize the mature trees for roosting and possibly nesting, with foraging in the understory and areas of open grassland. These include: red-tailed hawk, Cooper's hawk, white-tailed kite, turkey vulture, great-horned owl and barn owl, among others.

e. Riparian Woodland/Scrub

Riparian woodland and scrub occurs along the larger creeks and tributaries in the Novato vicinity, including Igancio, Novato, and Rush Creeks. Native willow (*Salix* spp.), valley oak, coast live oak, and California bay form the dominant native tree cover along these riparian corridors. Other tree species include native California buckeye (*Aesculus californica*), white alder (*Alnus rhombifolia*), box elder (*Acer negundo* var. *californicum*), Fremont cottonwood (*Populus fremontii*) and black walnut (*Juglans hindsii*), as well as a number of non-native invasive species such as silver wattle (*Acacia dealbata*), black locust (*Robinia pseudoacacia*) and plum (*Prunus* sp.). Several highly invasive, non-native species have become well-established along the creeks and tributary drainages, creating impenetrable thickets of Himalayan blackberry in some locations, scattered stands of arundo (*Arundo donax*), and a dense groundcover of periwinkle (*Vinca major*) in other locations. Riparian habitat is relatively scarce because it only forms along watercourses and lakes, and in California much of this habitat has been lost to agricultural uses, urbanization and channelization for flood control.

Riparian habitat tends to be of high resource value to wildlife, due to the complex structure of the vegetation, available surface water, and the transition to other habitat types which border the creek corridors, sometimes referred to as "edge" habitat. The dense cover of trees and shrubs serves to shade the creeks, and help keep temperatures cooler during the hot summer months. Surface water is available for aquatic-dependent organisms, and as a source of drinking water for terrestrial mammals and birds. Creek channels tend to serve as movement corridors for both terrestrial and aquatic species, including resident and anadromous fish, western pond turtle, aquatic garter snake, western toad, and possibly foothill yellow-legged frog and other amphibians, among others. Wildlife dependent on the protective cover associated with riparian habitat includes: black-tailed deer, black-tailed jackrabbit, brushrabbit, rufous-sided towhee, flycatchers and warblers. The mature trees provide important perching, roosting, and suitable nesting habitat for numerous

species of birds, including several species of raptors, such as red-tailed hawk, red-shouldered hawk, Cooper's hawk and sharp-shinned hawk.

f. Chaparral and Coastal Scrub

Northern mixed chaparral and coastal scrub occurs in patches in the southwest of the Novato vicinity. Most of the stands of chaparral are associated with shallow soils along the upper slopes of Big Rock Ridge, and are dominated by chamise (*Adenostoma fasciculatum*), coyote brush (*Baccharis pilularis*), poison oak, manzanita (*Arctostaphylos manzanita*), monkey flower (*Diplacus aurantiacus*), California sagebrush (*Artemisia californica*) and squaw bush (*Rhus trilobata*).

Scrub and chaparral habitats provide important protective cover for wildlife, many of which forage in the surrounding grasslands and woodlands. The dense cover provides habitat for several bird and mammal species that are uncommon in other habitats, including California quail, rufous-sided towhee, rufous-crowned sparrow, California thrasher, Bewick's wren, wrentit, Anna's hummingbird, brush rabbit, pinyon mouse and dusky-footed woodrat.

g. Developed Areas/Ornamental Landscaping

Buildings, roadways, parking lots, other impervious surfaces, turf and ornamental landscaping occupy the developed portions of the Novato vicinity. Existing landscaping consists of a mixture of native and non-native trees, shrubs, and groundcovers. Ornamental landscaping includes a wide range of introduced, commercially available species that provide shade and contribute to the aesthetics of the urban landscape. As noted previously, several highly invasive plant species occur in developed areas and are spreading along roadways and into nearby undeveloped lands. These highly invasive species represent major challenges to controlling the risk of fires and protecting the habitat value of open space lands.

The wildlife habitat values of the developed portions of the Novato vicinity are generally considerably less than that of the surrounding remaining natural habitats. Impervious surfaces, turf, and routine maintenance limit protective cover and foraging opportunities. Wildlife in these developed areas are typically more used to human activity, and include species common in suburban habitats such as scrub jay, brown towhee, mourning dove, house finch, house sparrow, American robin, mockingbird, Norway rat and house mouse. The mature trees provide roosting and potential nesting substrate for numerous species of birds, particularly where they occur in close proximity to open space and other undeveloped lands.

2. Special-Status Species

Special-status species² are plants and animals that are legally protected under the State and/or federal ESAs 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. Species with legal protection under the federal and State Endangered Species Acts often represent major constraints to development.

² Special-status species include: designated (rare, threatened, or endangered) and candidate species for listing by the CDFW; designated (threatened or endangered) and candidate species for listing by the USFWS; species considered to be rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those identified on lists 1A, 1B, and 2 in the 2001 *Inventory of Rare and Endangered Plants of California* by the California Native Plant Society (CNPS); and possibly other species which are considered sensitive due to limited distribution or lack of adequate information to permit listing or rejection for State or federal status, such as those included on list 3 in the CNPS *Inventory* or identified as animal "California Species Concern" (CSC) species by the CDFW. Species designated as CSC have no legal protective status under the California Endangered Species Act but are of concern to the CDFW because of severe decline in breeding populations and other factors.

A relatively high number of special-status species are reported from or are suspected to occur in the Novato vicinity based on the CNDDDB records,³ the CNPS *Inventory*, and other information sources. Collectively, an estimated 128 special-status plants and animal species are reported from or are suspected to occur in the Novato vicinity. Table 9-1 lists a total of 57 special-status animal species and Table 9-2 lists a total of 71 special-status plant species known or suspected to occur in the Novato vicinity. Information contained in Tables 9-1 and 9-2 includes the common and scientific name, status, and preferred habitat characteristics of each of these special-status species. These special-status species tend to occur in the remaining natural communities in the Novato vicinity, including the baylands along the fringe of San Pablo Bay, the open space and undeveloped lands along the slopes of Mount Burdell, and along Big Rock Ridge. Others are dependent on the creeks, freshwater marshes, and riparian habitat in Novato and other locations for dispersal and essential breeding habitat.

TABLE 9-1 SPECIAL-STATUS ANIMAL SPECIES KNOWN OR SUSPECTED FROM NOVATO VICINITY

Common Name (<i>Scientific Name</i>)	Status Federal/ State	Habitat
<i>Amphibians/Reptiles</i>		
California tiger salamander (<i>Ambystoma californiense</i>)	FT/ CSC	Vernal pools/grasslands
Northwestern pond turtle (<i>Clemmys marmorata marmorata</i>)	- / CSC	Streams/ponds/lakes
California horned lizard (<i>Phrynosoma coronatum frontale</i>)	- / CSC	Forests/woodlands/grasslands with loose soil
California red-legged frog (<i>Rana aurora draytonii</i>)	FT / CSC	Forests/woodlands/grasslands along streamsides
Foothill yellow-legged frog (<i>Rana boylei</i>)	- / CSC	Streams with rocky substrate
Western spadefoot toad (<i>Spea hammondi</i>)	- / CSC	Grasslands/open woodlands with seasonal pools
<i>Birds</i>		
Cooper's hawk (<i>Accipiter cooperii</i>) (nesting)	- / -	Nesting in riparian corridors and woodlands
Sharp-shinned hawk (<i>Accipiter striatus</i>) (nesting)	- / -	Nesting in riparian corridors and woodlands
Tricolored blackbird (<i>Agelaius tricolor</i>) (nesting colony)	- / CSC	Freshwater marsh and surrounding fields
Great egret (<i>Ardea alba</i>) (rookery)	- / -	Colonial nester in large trees
Great blue heron (<i>Ardea herodias</i>) (rookery)	- / -	Colonial nester in trees, cliff-sides, marshes
Short-eared owl (<i>Asio flammeus</i>)	- / CSC	Grassland and marshes
Golden eagle (<i>Aquila chrysaetos</i>)	- / CSC; FP	Grassland and open woodlands

³ California Department of Fish and Wildlife, Natural Diversity Data Base, Record Search of Marin County, Novato 7.5, September 2013.

**TABLE 9-1 SPECIAL-STATUS ANIMAL SPECIES KNOWN OR SUSPECTED FROM NOVATO VICINITY
(CONTINUED)**

Common Name (<i>Scientific Name</i>)	Status Federal/ State	Habitat
Burrowing owl (<i>Athene cunicularia</i>) (burrow sites)	– / CSC	Grassland and open scrub
Northern harrier (<i>Circus cyaneus</i>) (nesting)	– / CSC	Nesting in marsh and low shrubs
Yellow warbler (<i>Dendroica petechia brewsteri</i>) (nesting)	– / CSC	Nesting in willows and riparian cover
Snowy egret (<i>Egretta thula</i>) (rookery)	– / –	Colonial nester in trees, cliff-sides, near marshland
White-tailed kite (<i>Elanus leucurus</i>) (nesting)	– / FP	Nesting in grassland and marshland with trees
Merlin (<i>Falco columbarius</i>)	– / –	Open woodlands as winter migrant
Prairie falcon (<i>Falco mexicanus</i>) (nesting)	– / –	Open woodlands, grasslands, marshland
American peregrine falcon (<i>Falco peregrinus anatum</i>)	Delisted / SE	Open woodlands, grasslands, marshland
Saltmarsh common yellowthroat (<i>Geothlypis trichas sinuosa</i>) (nesting)	– / CSC	Salt and brackish water marsh
Bald eagle (<i>Haliaeetus leucocephalus</i>)	FT / SE	Open water of lakes, bays, and ocean shoreline
Loggerhead shrike (<i>Lanius ludovicianus</i>) (nesting)	– / CSC	Open grassland/scrub
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	– / ST; FP	Coastal saltmarsh
San Pablo song sparrow (<i>Melospiza melodia samuelis</i>) (nesting)	– / CSC	Coastal saltmarsh and brackish marsh
Long-billed curlew (<i>Numenius americanus</i>)	– /	Marshlands, agricultural fields, and grassland as winter migrant
Black-crowned night heron (<i>Nycticorax nycticorax</i>) (rookery)	– / –	Colonial nester in trees/shrubs near marshland
Osprey (<i>Pandion haliaetus</i>) (nesting)	– / CSC	Nesting in trees associated with water bodies
California brown pelican (<i>Pelecanus occidentalis californicus</i>)	FE / SE; FP	Coastal/bay shorelines and open water
Purple martin (<i>Progne subis</i>) (nesting)	– / CSC	Woodlands and forest
California clapper rail (<i>Rallus longirostris obsoletus</i>)	FE / SE	Salt and brackish marsh
California least tern (<i>Sterna antillarum browni</i>)	FE / SE; FP	Coastal/bay shorelines and open water
Northern spotted owl (<i>Strix occidentalis caurina</i>)	FT / –	Forest and woodland
Fish		
Green sturgeon (<i>Acipenser medirostris</i>)	FT / CSC	Brackish water, marsh/bays

**TABLE 9-1 SPECIAL-STATUS ANIMAL SPECIES KNOWN OR SUSPECTED FROM NOVATO VICINITY
(CONTINUED)**

Common Name (<i>Scientific Name</i>)	Status Federal/ State	Habitat
Tidewater goby (<i>Eucyclogoriscus newberryi</i>)	FE / CSC	Brackish water, marsh/bays
Coho salmon (<i>Oncorhynchus kisutch</i>)	FE / SE	Spawns in freshwater streams
Steelhead trout (<i>Oncorhynchus mykiss irideus</i>)	FT / CSC	Spawns in freshwater streams
Chinook salmon (<i>Oncorhynchus tshawytscha</i>)	FT / -	Spawns in freshwater streams
Sacramento splittail (<i>Pogonichthys macrolepidotus</i>)	- / CSC	Brackish water, marsh/bays
<i>Invertebrates</i>		
Opler's longhorn moth (<i>Adela oplerella</i>)	- / -	Serpentine grasslands
Marin blind harvestman (<i>Calicina diminua</i>)	- / -	Rocky outcrops in serpentine grasslands
Monarch butterfly (<i>Danaus plexippus</i>) (colonies)	- / -	Overwinters in blue gum eucalyptus
Ricksecker's water scavenger beetle (<i>Hydrochara rickseckeri</i>)	- / -	Aquatic habitat/pools and ponds
Myrtles silverspot (<i>Speyeria zerene myrtleae</i>)	FE / -	Scrub/grassland with larval host
California freshwater shrimp (<i>Syncaris pacifica</i>)	FE / SE	Freshwater streams with undercut banks
Ubick's gnaphosid spider (<i>Talanites ubicki</i>)	- / -	Serpentine outcrops
California brackishwater snail (<i>Tryonia imitator</i>)	- / -	Coastal marshes and lagoons
<i>Mammals</i>		
Pallid bat (<i>Antrozous pallidus</i>)	- / CSC	Roosts in protected locations
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	- / CSC	Roosts in protected locations
Greater western mastiff-bat (<i>Eumops perotis californicus</i>)	- / CSC	Roosts in protected locations
Long-eared myotis bat (<i>Myotis evotis</i>)	- / -	Roosts in protected locations
Fringed myotis bat (<i>Myotis thysanodes</i>)	- / -	Roosts in protected locations
Long-legged myotis bat (<i>Myotis volans</i>)	- / -	Roosts in protected locations
Yuma myotis bat (<i>Myotis yumanensis</i>)	- / -	Roosts in protected locations
Salt marsh harvest mouse (<i>Reithrodontomys raviventris</i>)	FE / SE; FP	Coastal saltmarsh

**TABLE 9-1 SPECIAL-STATUS ANIMAL SPECIES KNOWN OR SUSPECTED FROM NOVATO VICINITY
 (CONTINUED)**

Common Name (<i>Scientific Name</i>)	Status Federal/ State	Habitat
Suisun shrew (<i>Sorex ornatus sinuosus</i>)	- / -	Coastal saltmarsh

Status Designations

Federal:

- FE = Listed as “endangered” under the federal Endangered Species Act
- FT = Listed as “threatened” under the federal Endangered Species Act
- PE = Proposed for federal listing as “endangered”
- PT = Proposed for federal listing as “threatened”
- C = A candidate species under review for federal listing. Candidates include taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened

State:

- SE = Listed as “endangered” under the California Endangered Species Act
- ST = Listed as “threatened” under the California Endangered Species Act
- CP = California fully protected species; individual may not be possessed or taken at any time
- CSC = Considered a “Species of Special Concern” by the CDFW; taxa have no formal legal protection but nest sites and communal roosts are generally recognized as significant biotic features

TABLE 9-2 SPECIAL-STATUS PLANT SPECIES KNOWN OR SUSPECTED FROM NOVATO VICINITY

Common Name (<i>Scientific Name</i>)	Status Federal/ State/ CNPS	Habitat
Franciscan onion (<i>Allium peninsulare</i> var. <i>franciscanum</i>)	- / - / 1B	Woodland/grassland
Sonoma alopecurus (<i>Alopecurus aequalis</i> var. <i>sonomensis</i>)	FE / - / 1B	Freshwater marsh/riparian scrub
Napa false indigo (<i>Amorpha californica</i> var. <i>napensis</i>)	- / - / 1B	Forest/chaparral/woodland
Bent-flowered fiddleneck (<i>Amsinckia lunaris</i>)	- / - / 1B	Coastal bluff scrub/woodland/grassland
Mt. Tamalpais manzanita (<i>Arctostaphylos bookeri</i> ssp. <i>montana</i>)	- / - / 1B	Chaparral/grassland
Marin manzanita (<i>Arctostaphylos virgata</i>)	- / - / 1B	Forest/chaparral
Coastal marsh milk-vetch (<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>)	- / - / 1B	Coastal scrub/dunes/marshes/swamps
Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	- / - / 1B	Vernal pools/grassland/playas
Sonoma sunshine (<i>Blennosperma bakeri</i>)	FE / SE / 1B	Vernal pools/mesic grassland
Small groundcone (<i>Boschniakia bookeri</i>)	- / - / 2	Forest
Round-leaved filaree (<i>California macrophylla</i>)	- / - / 1B	Woodland/grassland
Tiburon mariposa lily (<i>Calochortus tiburonensis</i>)	FT / ST / 1B	Serpentine grassland
Lyngbye's sedge (<i>Carex lyngbyei</i>)	- / - / 2	Marshes/swamps
Tiburon indian paintbrush (<i>Castilleja affinis</i> ssp. <i>neglecta</i>)	FE / ST / 1B	Serpentine grassland
Humbolt Bay owl's clover (<i>Castilleja ambigua</i> ssp. <i>humboldtiensis</i>)	- / - / 1B	Coastal saltmarsh
Mason's ceanothus (<i>Ceanothus masonii</i>)	- / SR / 1B	Chaparral/serpentine
Pappose tarplant (<i>Centromadia parryi</i> ssp. <i>parryi</i>)	- / - / 1B	Chaparral/mesic grassland/marshes/coastal prairie
San Francisco Bay spineflower (<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>)	- / - / 1B	Coastal scrub/prairie/dunes
Woolly-headed spineflower (<i>Chorizanthe cuspidata</i> var. <i>villosa</i>)	- / - / 1B	Coastal scrub/prairie/dunes
Robust spineflower (<i>Chorizanthe robusta</i> var. <i>robusta</i>)	FE / - / 1B	Woodlands, coastal dunes/scrub
Sonoma spineflower (<i>Chorizanthe valida</i>)	FE / SE / 1B	Coastal prairie
Franciscan thistle (<i>Cirsium andrewsii</i>)	- / - / 1B	Forest/coastal bluff scrub/prairie/coastal scrub
Mt Tamalpais thistle (<i>Cirsium hydrophilum</i> var. <i>vaseyi</i>)	- / - / 1B	Forest/chaparral
Round-headed Chinese-houses (<i>Collinsia corymbosa</i>)	- / - / 1B	Coastal dunes
Point Reye's bird's beak (<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>)	- / - / 1B	Coastal saltmarsh/dunes
Soft bird's beak (<i>Cordylanthus mollis</i> spp. <i>mollis</i>)	FE / SR / 1B	Coastal saltmarsh
Baker's larkspur (<i>Delphinium bakeri</i>)	FE / SR / 1B	Coastal scrub

TABLE 9-2 SPECIAL-STATUS PLANT SPECIES KNOWN OR SUSPECTED FROM NOVATO VICINITY (CONTINUED)

Common Name (<i>Scientific Name</i>)	Status Federal/ State/ CNPS	Habitat
Yellow larkspur (<i>Delphinium luteum</i>)	FE / SR / 1B	Chaparral/coastal scrub/prairie
Western leatherwood (<i>Dirca occidentalis</i>)	- / - / 1B	Forest/chaparral/woodland
Dwarf downingia (<i>Downingia pusilla</i>)	- / - / 2	Vernal pools/mesic grassland
Koch's cord moss (<i>Entosthodon kochii</i>)	- / - / 1B	Woodland
Streamside daisy (<i>Erigeron biolettii</i>)	- / - / 3	Forest/Woodland
Tiburon buckwheat (<i>Eriogonum luteolum</i> var. <i>caninum</i>)	- / - / 1B	Chaparral/woodland/grassland/coastal prairie
Minute pocket moss (<i>Fissidens pauperculus</i>)	- / - / 1B	Forest with damp soil
Marin checker lilly (<i>Fritillaria laneolata</i> var. <i>tristulis</i>)	- / - / 1B	Coastal bluff scrub/prairie
Fragrant fritillary (<i>Fritillaria liliacea</i>)	- / - / 1B	Coastal scrub/prairie/grassland
Blue coast gilia (<i>Gilia capitata</i> ssp. <i>chamissonis</i>)	- / - / 1B	Coastal scrub/dunes
Woolly-headed gilia (<i>Gilia capitata</i> ssp. <i>tomentosa</i>)	- / - / 1B	Coastal bluff scrub
Dark-eyed gilia (<i>Gilia millefoliata</i>)	- / - / 1B	Coastal dunes
San Francisco gumplant (<i>Grindelia hirsutula</i> var. <i>maritima</i>)	- / - / 1B	Coastal bluff scrub/coastal scrub/grassland
Diablo helianthella (<i>Helianthella castanea</i>)	- / - / 1B	Forest/chaparral/woodland/coastal scrub/grassland
Seaside tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>)	- / - / 1B	Grassland
Marin western flax (<i>Hesperolinon congestum</i>)	FT / ST / 1B	Chaparral/grassland
Santa Cruz tarplant (<i>Holocarpha macradenia</i>)	FT / SE / 1B	Coastal prairie/coastal scrub/grassland
Thin-lobed horkelia (<i>Horkelia tenuiloba</i>)	- / - / 1B	Mesic grassland/chaparral/forest
Sebastopol meadowfoam (<i>Limnanthes vinculans</i>)	FE / SE / 1B	Vernal pools/mesic grassland/seeps
Contra Costa goldfields (<i>Lasthenia conjugens</i>)	FE / - / 1B	Vernal pools/grassland/woodland
Baker's goldfields (<i>Lasthenia macrantha</i> ssp. <i>bakeri</i>)	- / - / 1B	Coniferous forest/coastal scrub
Perennial goldfields (<i>Lasthenia macrantha</i> ssp. <i>macrantha</i>)	- / - / 1B	Coastal bluff scrub/dunes/coastal scrub
Tamalpais lessingia (<i>Lessingia micradenia</i> var. <i>micradenia</i>)	- / - / 1B	Chaparral/grassland in serpentine
Coast yellow leptosiphon (<i>Leptosiphon croceus</i>)	- / - / 1B	Coastal bluff scrub/coastal prairie
Woolly-headed lessingia (<i>Lessingia hololenca</i>)	- / - / 3	Forest/scrub/grassland
Maison's lilaeopsis (<i>Lilaeopsis masonii</i>)	- / SR / 1B	Fresh and brackish marsh
Mt. Diablo cottonweed (<i>Micropus amphibolus</i>)	- / - / 1B	Forest/woodland/chaparral/grassland
Marsh microseris (<i>Microseris paludosa</i>)	- / - / 1B	Forest/woodland/coastal scrub/grassland
Elongate copper moss (<i>Mielichhoferia elongate</i>)	- / - / 2	Woodland/vernally mesic rocks
Baker's navarretia (<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>)	- / - / 1B	Woodland/seeps/pools/grassland/forest
Marin County navarretia (<i>Navarretia rosulata</i>)	- / - / 1B	Coniferous forest/chaparral
White-rayed pentachaeta (<i>Pentachaeta bellidiflora</i>)	FE / SE / 1B	Grassland on serpentine
Hairless popcorn flower (<i>Plagiobothrys glaber</i>)	/ / 1A	Meadows/seeps/marshes/swamps

TABLE 9-2 SPECIAL-STATUS PLANT SPECIES KNOWN OR SUSPECTED FROM NOVATO VICINITY (CONTINUED)

Common Name (<i>Scientific Name</i>)	Status Federal/ State/ CNPS	Habitat
North Coast semaphore grass (<i>Pleuropogon booverianus</i>)	- / SB / 1B	Forest/steeps
Marin knotweed (<i>Polygonum marinense</i>)	- / - / 3	Marshes/swamps
California beaked-rush (<i>Rhynchospora californica</i>)	- / - / 1B	Bogs/marshes/seeps/coniferous forest
Marin checkerbloom (<i>Sidalcea hickmanii</i> ssp. <i>viridis</i>)	- / - / 1B	Chaparral
Purple-stemmed checkerbloom (<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>)	- / - / 1B	Forest/prairie
Tamalpais jewel-flower (<i>Streptanthus batrachopus</i>)	- / - / 1B	Coniferous forest/chaparral
Mt. Tamalpais jewel-flower (<i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>)	- / - / 1B	Chaparral/grassland
Santa Cruz microseris (<i>Stebbinsoseris decipiens</i>)	- / - / 1B	Forest/chaparral/coastal scrub and prairie
Tiburon jewel-flower (<i>Streptanthus niger</i>)	FE / SE / 1B	Grassland on serpentine
Showy Indian clover (<i>Trifolium amoenum</i>)	FE / - / 1B	Grassland/coastal bluff scrub
San Francisco owl's clover (<i>Triphysaria floribunda</i>)	- / - / 1B	Coastal prairie/grassland

STATUS DESIGNATIONS

Federal:

- FE = Listed as “endangered” under the federal Endangered Species Act
- FT = Listed as “threatened” under the federal Endangered Species Act
- PE = Proposed for federal listing as “endangered”
- PT = Proposed for federal listing as “threatened”
- C = A candidate species under review for federal listing. Candidates include taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened.

State:

- SE = Listed as “endangered” under the California Endangered Species Act
- SR = Listed as “rare” under the California Endangered Species Act
- ST = Listed as “threatened” under the California Endangered Species Act

CNPS:

- 1A = Plants of highest priority; plants presumed extinct in California
- 1B = Plants of highest priority; plants rare and endangered in California and elsewhere
- 3 = Plants requiring additional information; a review list
- 4 = Plants of limited distribution; a watch list

Figure 9-2 shows the location of known occurrences of 34 special-status species reported by the CNDDDB from the Novato vicinity. These consist of a total of 21 special-status animal species and 13 special-status plant species. It should be noted that the occurrence records of the CNDDDB tend to focus on listed species or those with a high inventory priority. Numerous special-status species that are known from the Novato vicinity are either not monitored at all or are recorded on only a sporadic basis by the CNDDDB. The number of occurrences of a species in the CNDDDB records does not necessarily mean that it is more abundant or more widely distributed than species that are actually listed under the State or federal Endangered Species Acts.

For many of the special-status species known or suspected from the Novato vicinity, habitat suitability is severely limited by the direct and indirect effects of past development and habitat modifications. These include the direct loss of habitat as a result of conversion to urban uses, effects of on-going habitat disturbance due to vegetation management and agricultural practices, and indirect effects such as stormwater runoff into aquatic habitat and recreational activities in the open space lands. A summary of the special-status plant and animal species known or suspected to occur in the Novato vicinity is provided below.

a. Plant Species

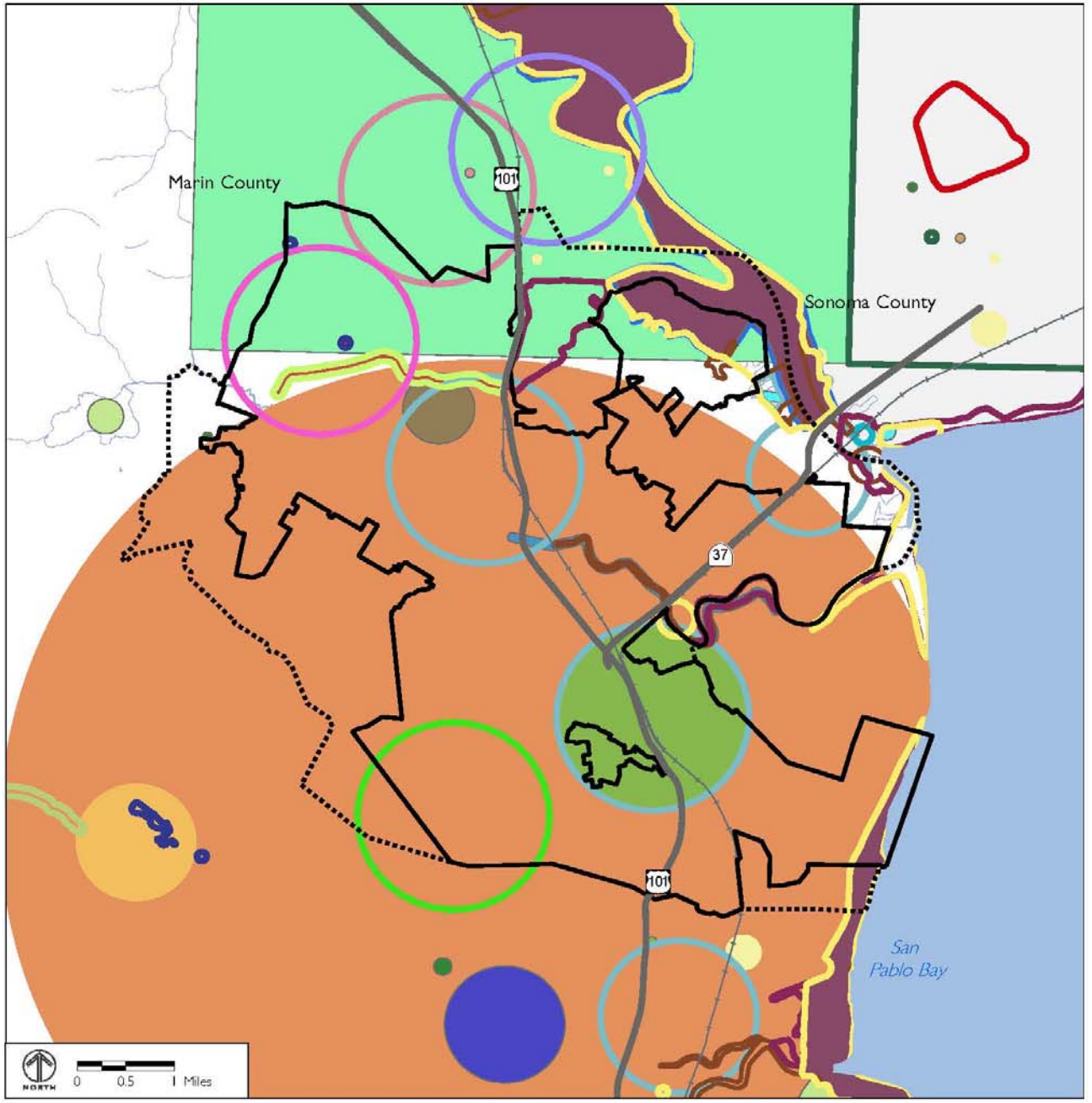
Based on the CNDDDB records, the *Inventory of Rare and Endangered Plants of California* (CNPS, 2001 and electronic update), and other information sources, a total of 71 special-status plant species are known or suspected to occur in the Novato vicinity. Most of these are maintained on List 1B (Rare and Endangered in California and elsewhere) of the CNPS *Inventory*, and meet the definition of endangered under Section 15380 of the CEQA Guidelines. Suitable habitat for these special-status plant species includes the coastal salt and brackish water marshlands along the edge of San Pablo Bay, freshwater marshland and seeps, serpentine derived soils and outcroppings, vernal pools and mesic grasslands, woodland, forest, and chaparral habitats.

As indicated in Figure 9-2, the CNDDDB has occurrence records for 13 special-status plant species in the Novato vicinity. These range from specific occurrences of Marin western flax and fragrant fritillary on the south slopes of Mount Burdell, to broad, generalized occurrences of Mt. Tamalpais manzanita that extend over much of the Novato vicinity.

b. Fish Species

A number of special-status fish species are known from the open waters of San Pablo Bay and the lower reaches of creeks and sloughs within the Novato vicinity. These include green sturgeon, tidewater goby and Sacramento splittail. Steelhead trout, coho salmon and Chinook salmon – all State- and federally-listed species – also occur in the vicinity and historically used the creeks in the Novato vicinity for dispersal and spawning.

Steelhead and salmon are anadromous, spawning in streams and rivers, and then migrating to and maturing in the ocean. Timber harvest activities, overgrazing, gravel mining operations, channel modifications and removal of riparian vegetation, flood control and hydroelectric facilities, and water quality degradation have all contributed to a decline of these species. As indicated in Figure 9-2, Novato Creek and the Petaluma River are both known to support steelhead and occasionally salmon, based on records from Marin County. Where a record of salmon or steelhead has been reported from a stream, the entire drainage has been indicated as supporting the species, although habitat conditions have generally not been confirmed in the field. Existing drop structures and other barriers may currently prevent fish from moving up the entire drainage.



Source: California Natural Diversity Database (CNDDDB)

- | | | | |
|---|---|--|--|
| <ul style="list-style-type: none"> — City Limit --- Sphere of Influence □ County Boundary Sensitive Natural Communities — Coastal Brackish Marsh — Northern Coastal Salt Marsh Special-Status Animal Species ○ burrowing owl ○ California black rail | <ul style="list-style-type: none"> ○ California dapper rail ○ California red-legged frog ○ foothill yellow-legged frog ○ great blue heron ○ northwestern pond turtle ○ Marin blind harvestman ○ mimicryonia (=California brackishwater snail) ○ Myrtle's silverspot ○ pallid bat | <ul style="list-style-type: none"> ○ Sacramento splittail ○ saltmarsh common yellowthroat ○ salt-marsh harvest mouse ○ San Pablo song sparrow ○ Subun shrew ○ tidewater goby ○ Townsend's big-eared bat ○ tricolored blackbird ○ Ubick's gnaphosid spider ○ white-tailed kite Special Status Plant Species ○ Baker's navarretia ○ bent-flowered fiddleneck ○ fragrant fritillary ○ Koch's cord moss ○ Marin knotweed ○ Marin western flax ○ Mount Tamalpais bristly jewel-flower | <ul style="list-style-type: none"> ○ Mt. Tamalpais manzanita ○ Napa false indigo ○ Point Reyes bird's-beak ○ seaside tarplant ○ soft bird's-beak ○ Tiburon buckwheat |
|---|---|--|--|

FIGURE 9-2

KNOWN OCCURRENCES OF SPECIAL-STATUS PLANTS AND ANIMALS/SENSITIVE COMMUNITIES

c. Amphibians and Reptiles

The California red-legged frog was historically known from throughout Marin County, but no populations of this frog are currently known in the Novato vicinity. The closest occurrence records are from the Sears Point vicinity a few miles east.

The middle reaches of Novato Creek, Ignacio Creek, and other drainages in the Novato vicinity provide suitable habitat for foothill yellow-legged frog, which is recognized as a CSC and a fully protected species by the CDFW. It is found in stream habitats throughout northwestern California, the northern and central Coast Ranges, and the Sierra Nevada foothills. Foothill yellow-legged frog inhabits shaded, shallow streams with rocky substrate that is at least cobble-sized.

As indicated in Figure 9-2, western pond turtle has been reported by the CNDDB from a number of locations in the Novato vicinity. Western pond turtle typically occurs in ponds and streams with permanent pools used as retreat habitat. Northwestern pond turtle has been observed along the Napa River throughout the Napa Valley. Pond turtle individuals are known to establish nests in protected uplands near aquatic habitat, sometimes several hundred feet from pools and ponds used for retreat.

Several other amphibians and reptiles are known from or were suspected to historically occur in the Novato vicinity. These include more common species such as California horned lizard and western spadefoot toad, both recognized as CSC species by the CDFW, and the federally listed endangered California tiger salamander. No recent records of California tiger salamander have been made within several miles of Novato. The closest known occurrences are reported from the Cotati and northwestern Petaluma areas.

d. Bird Species

An estimated 28 species of special-status birds are known or suspected from the Novato vicinity, as indicated in Table 9-2. These range from resident species known from essential habitat in the Novato vicinity to seasonal migrants that seasonally pass through and forage in suitable habitat. Listed species such as California clapper rail and California black rail are known from the coastal salt marsh and brackish water marsh along the lower reaches of Novato Creek and the Petaluma River, together with a number of non-listed species recognized by the CDFG as CSC species such as saltmarsh common yellowthroat, San Pablo song sparrow, northern harrier, and tricolored blackbird. A number of these special-status bird species, such as yellow warbler, sharp-shinned hawk and Cooper's hawk, are typically associated with riparian woodlands. Still others rely on grasslands, scrub and open woodlands for foraging and nesting, such as loggerhead shrike, burrowing owl, golden eagle, short-eared owl, prairie falcon and white-tailed kite. Seasonal winter migrants that utilize the remaining grasslands and agricultural lands in the Novato vicinity include merlin, long-billed curlew, bald eagle, and a number of other bird species. Many of the bird species listed in Table 9-2 have no protective status under the Endangered Species Acts, such as black-crowned night heron, snowy egret, great blue heron and great egret, but their rookeries and nesting locations are considered sensitive habitat resources by the CDFW, and all are protected under the provisions of the Migratory Bird Treaty Act.

e. Bats

Several special-status bat species are known or suspected to occur in the Novato vicinity. A roosting colony of Townsend's big-eared bat occurs in one of the unused historic structures at Olompali State Park, and an occurrence of pallid bat is known from the eastern portion of the Novato vicinity. Like more common bat species, all of the special-status bat species suspected to occur in the Novato vicinity occur in a variety of habitats at lower elevations in California.

Most of the special-status bat species are known to roost in abandoned buildings, trees, mines, caves, rock crevices and bridges.

f. Invertebrates

A number of special-status invertebrates have been reported by the CNDDDB from the Novato vicinity, as indicated in Figure 9-2. Several of these are typically associated with serpentine grasslands and outcrops, such as Opler's longhorn moth, Marin blind harvestman and Ubick's gnaphosid spider. Most of these species were once considered candidates for federal listing. Wintering colonies of Monarch butterfly, which often congregate on stands of blue gum eucalyptus, are also monitored by the CNDDDB, although they have no legally protected status under the Endangered Species Acts.

California freshwater shrimp and Myrtles silverspot butterfly are the only listed invertebrate species known or suspected from the Novato vicinity. California freshwater shrimp are State- and federally-listed as endangered, and typically occur in perennial freshwater channels with undercut banks and riparian vegetation. The shrimp habitat historically occurred throughout Marin County, and potentially suitable habitat remains in the Novato vicinity. Myrtles silverspot is federally listed as endangered, and is now known from only a few occurrences, including one near Sears Point in Sonoma County about two miles northeast of the Novato Sphere of Influence (SOI). This butterfly species was historically associated with coastal dunes, prairie and bluff scrub habitats where the larval host plant, violet (*Viola adunca*) is present.

3. Sensitive Natural Communities

In addition to species-oriented management, protecting sensitive natural communities on an ecosystem level is increasingly recognized as vital to the protection of natural diversity in the State. This is considered the most effective means of providing long-term protection of ecologically viable habitat, and can include whole watersheds, ecosystems, and sensitive natural communities. Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species.

Several of the natural communities within the Novato vicinity are considered to have a high inventory priority with the CNDDDB, and should receive appropriate recognition in updating the General Plan. These communities have been designated as "sensitive" due to their rarity and continuing loss as a result of urban and agricultural development, flood control improvements, and other factors. As indicated in Figure 9-2, large areas of northern coastal salt marsh and coastal brackish marsh occur along the fringe of San Pablo Bay and along the lower reaches of Novato Creek, Petaluma Marsh, Black John Slough and Rush Creek. Although not mapped by the CNDDDB, other sensitive natural communities known or suspected from the Novato vicinity include areas of well-developed riparian woodland and scrub along segments of the larger creeks, freshwater marshes, and remnant stands of native grasslands. Undeveloped sites may also support sensitive natural communities, including native grasslands, seeps, riparian scrub and woodland, valley oak woodland, coastal salt marsh and coastal brackish marsh, among others.

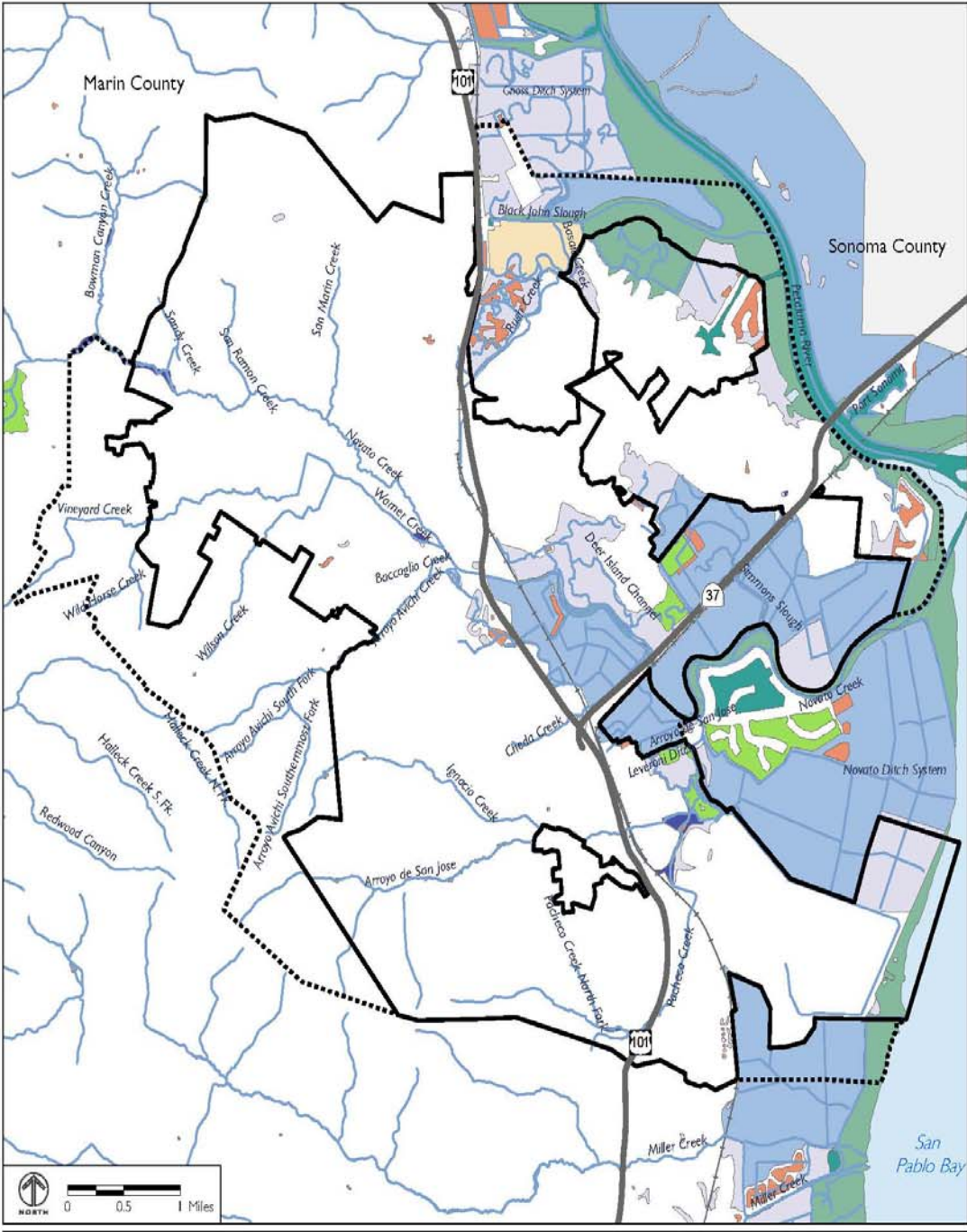
While oak woodlands in general is not considered to have a high inventory priority with the CNDDDB, it should be recognized as an important habitat type in the Novato vicinity due to its high wildlife value and its vulnerability to the effects of Sudden Oak Death Syndrome (SOD). Tanoaks and coast live oaks are dying in large numbers and black oaks, California buckeye, California bay, madrone, huckleberry and rhododendron are suspected to be hosts or potential carriers of the fungus believed to cause oak mortality. SOD is contributing to significant changes in vegetative cover over large parts of Marin County and other areas along the California coast, altering habitat for woodland-dependent species and exacerbating hazardous fire conditions where wildlands interface with developed areas.

4. Wetlands

Although definitions vary to some degree, wetlands are generally considered to be 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 flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the Corps and the USFWS that generally define wetlands through consideration of three criteria: hydrology, soils and vegetation.

Wetlands in the Novato vicinity include areas of coastal salt marsh and coastal brackish water marsh along the baylands of San Pablo Bay, riparian habitat along creeks and streams, and scattered freshwater seeps, springs, and ponds. Figure 9-3 shows the extent of major wetland habitat types in the Novato vicinity mapped as part of the National Wetlands Inventory (NWI), which consists of a range of characteristic wetland types, together with streams mapped by Marin County. These wetland habitats include the marine and estuarine systems of San Pablo Bay and the lower reaches of Novato Creek, Petaluma River, Black John Slough and Rush Creek; major creeks and channels; and freshwater marsh, riparian scrub, woodland and scattered stock ponds. Some wetland features, such as freshwater seeps and springs, were generally not identified as part of the NWI because of the general scale of the mapping effort. Detailed wetland delineations would be required to determine the extent of any jurisdictional wetlands and other waters at specific locations. The Corps holds the responsibility of making a final determination on the extent of jurisdictional waters for a particular site.

CITY OF NOVATO
 EXISTING CONDITIONS REPORT
 BIOLOGICAL RESOURCES



Source: Marin County, GIS

- | | | |
|---------------------------|---|--|
| — City Limit | Farmed | Unconsolidated Shore/Rocky Shore/Streambed |
| Sphere of Influence | Lake | Palustrine Unconsolidated Bottom |
| □ County Boundary | Palustrine Emergent | Unknown |
| ■ Aquatic Bed | Scrub and Forested | Upland |
| ■ Estuarine Emergent | Estuarine Unconsolidated Bottom/Aquatic Bed | |

FIGURE 9-3

MAJOR WETLAND HABITAT TYPES