

5.2 BIOLOGICAL RESOURCES

This section is based, in part, on the 2007 City of Fortuna Background Report, Section 6.3, Biological Resources. The Background Report is included as Appendix G of this PEIR.

Environmental Setting

Habitat Types

Habitats throughout the Planning Area are influenced by a number of factors including climate, topography, hydrology, geomorphology, natural disturbances, and anthropogenic related impacts. The dominant habitat types identified in the Planning Area are:

- Urban/disturbed
- Grassland/pastureland
- Forest
- Wetland

Habitats within the Planning Area do not always correlate to the habitats listed above. There are often complex interfaces between habitats that are, in part, a result of historical ecosystem distribution and current and historic land uses. The following descriptions generally characterize the four common habitats in the Planning Area and where appropriate, the habitat types are correlated to the *Manual of California Vegetation* (Sawyer and Keeler-Wolf, 1995). Botanical nomenclature follows *The Jepson Manual, Higher Plants of California* (Hickman, 1993).

Distribution of the habitat types can be partially correlated to topography. The western portion of the Planning Area, generally west of Rohnerville Road, consists of floodplain lowlands with minimal to moderate topographic relief. This area currently has the majority of wetland habitat, including riparian vegetation, and urban/disturbed habitat due to the concentration of development within this portion of the Planning Area. The southwestern portion also has a high percentage of the overall grassland/pastureland habitat, which may be a result of conversion of wetlands into transitional agriculture lands. The terraced, eastern portion of the Planning Area historically had North Coast coniferous forest and Coastal Terrace Prairie habitats. Nearly the entire Coastal Terrace Prairie habitat has been developed, or converted into grassland/pastureland. The northern and eastern sections of the Planning Area currently have the highest percentage of remaining North Coast coniferous forest habitat.

Urban/Disturbed. Urban/disturbed habitat is widespread throughout the Planning Area and likely comprises the largest habitat type within the city limits. It is concentrated in the area bordered by Main Street, Rohnerville Road, Drake Hill Road and HWY 101, and has begun to extend up the canyons to the north and east. Distribution and location of urban/disturbed habitat is correlated to existing and historical land uses. Depending on the degree of landscaping and extent of previous development, this habitat type is dominated by ruderal (plant species first to colonize disturbed land), ornamental, and/or naturalized plant species.

The majority of the urban/disturbed habitat within the Planning Area consists of development that is surrounded by vegetation dominated by ruderal herbaceous species. Portions of the Planning Area consist of a mosaic of urban and natural resource features, such as areas where development is adjacent to riparian corridors. These areas do not consist entirely of disturbed habitat, but a mix of native and non-native species that are tolerant of anthropogenic interactions and/or impacts.

Other areas throughout the urban/disturbed habitat have been impacted to the extent that native species composition is lacking and non-native invasive species are widespread. These areas are located throughout the commercial and industrial portions of the Planning Area, such as within the Main Street and Fortuna Boulevard commercial corridors, within the residential core, and along roadsides, and have been significantly impacted by a long history of disturbance. Invasive species, some of which are considered noxious weeds, occur throughout disturbed areas. These species include acacia (*Acacia* sp.), pampas grass (*Cortaderia jubata*), blue gum eucalyptus (*Eucalyptus globulus*), periwinkle (*Vinca major*), English ivy (*Hedera helix*), cotoneaster (*Cotoneaster* spp.), holly (*Ilex aquifolium*), and Spanish heath (*Erica lusitanica*). Spanish heath and acacia appear to be spreading vigorously throughout the Planning Area; acacia is invading portions of the environmentally sensitive Eel River riparian corridor. Impacts from invasive species are widespread and result in significant impacts to native plants and animals leading to a substantial decline in biodiversity.

Urban/disturbed habitat can be occupied by special-status (e.g., listed) wildlife species, in particular, certain hawk species such as Cooper's hawk (*Accipiter cooperii*) and Sharp-shinned Hawk (*Accipiter striatus*). Nest locations are usually associated with groves or ecotones and can be sensitive to disturbance. Both hawk species are known to occur within the U.S. Geological Survey (USGS) 7.5-minute quadrangles (e.g., Fortuna and Hydesville quadrangles) in which the Planning Area is located (CNDDDB, 2005), and undoubtedly occur within the Planning Area. A number of other common and declining wildlife species can occur within urban boundaries, in particular in habitat that is undeveloped or associated within riparian habitats.

Urban/disturbed areas tend to be the source for non-native predators, such as feral cats or pest species that reach high-density levels in association with human development. Ultimately, urban/disturbed areas can disrupt or eliminate movement and dispersal corridors important to wildlife species.

Grassland/Pastureland. Grassland/pastureland vegetation is dominated by herbaceous plant species, particularly grasses, and a limited number of shrubs. Herbaceous dominated habitat within the Planning Area, which is concentrated in the south and southwest portions of the Planning Area but also occurs in some of the valleys in the eastern portion of the Planning Area, is derived from a number of historical and current land uses, but is generally correlated to agriculture. For example, conversion of emergent wetlands into transitional agricultural lands has contributed to the extent of grassland/pastureland habitat throughout the Planning Area. For this reason, grassland/pastureland habitat is often transitional between forest and wetland habitat. These transitional areas are dominated by ruderal upland species with scattered hydrophytes. In other portions of the grassland/pastureland habitat, species composition is similar to urban/disturbed habitat, but is differentiated by a lack of landscaping and commercial or industrial development. Grassland and pastureland habitat is addressed as one habitat type

within the Planning Area, due to similar species composition, but grasslands are differentiated from pastureland by a lack of current heavy grazing or mowing activities. Due to grazing, pasturelands are typically dominated with ruderal upland forbs and scattered non-native grasses.

Prior to development throughout the Planning Area, native grasslands were likely widespread and included Coastal Terrace Prairie vegetation, which is discussed in the “Sensitive Natural Communities” subsection. That native community has been greatly reduced by development and agriculture and is now dominated by species.

Grasslands within the Planning Area are consistent with the introduced perennial grassland series (Sawyer and Keeler-Wolf, 1995). Dominant grass species include sweet vernal grass (*Anthoxanthum odoratum*), wild oats (*Avena* spp.), brome grasses (*Bromus* spp.), common velvet grass (*Holcus lanatus*), tall fescue (*Festuca arundinacea*), orchard grass (*Dactylis glomerata*), and ryegrasses (*Lolium multiflorum* and *perenne*). Various forbs are scattered throughout and include Queen Anne’s lace (*Daucus carota*), hairy cat’s ear (*Hypochaeris radicata*), birdfoot trefoil (*Lotus corniculatus*), English plantain (*Plantago lanceolata*), common knotweed (*Polygonum arenastrum*), and sheep sorrel (*Rumex acetosella*). Depending on the moisture regime within this habitat, emergent hydrophytes such as rushes (*Juncus* spp.) and sedges (*Carex* spp.) may also be present. Shrub species that occur include Himalaya berry (*Rubus discolor*), Pacific bramble (*R. ursinus*), and coyote bush (*Baccharis pilularis*). These species typically occur along edges of grassland/pastureland, or in areas that are not heavily grazed.

Grassland/ pastureland can be very important for several wildlife species. California ground squirrels (*Spermophilus beecheyii*) and California voles (*Microtus californicus*) are grassland specialists and are the foundation for several trophic levels (both as consumers and prey). Many avian species (wading birds, shorebirds, and birds-of-prey) actively forage in grassland/ pastureland and derive critical prey resources from these habitat types. Collectively, grassland passerines (song birds) have shown dramatic population declines and are of special interest to resource agencies.

Forests. Forests are generally defined as vegetation communities where tree species comprise a majority of the vegetation cover. Forests within the Planning Area are concentrated in the hillside and ridge areas in the northern and eastern portions of the Planning Area (coniferous forest) as well as along the rivers and streams (deciduous forest). There are two categories of forest, including evergreen or deciduous, which are defined by the presence of dominant species. Intergrades between evergreen and deciduous forests frequently occur near streams. Deciduous forests are discussed in the “Wetlands” section

Evergreen dominated forests within the Planning Area are referred to as North Coast coniferous forest. Coniferous species are particularly adapted for coastal, temperate, mesic (characterized by a moderate amount of water) environments that consist of a dry season and a wet season; thus North Coast coniferous forest habitat is widespread throughout the Humboldt County fog belt.

Distribution of North Coast coniferous forest habitat throughout the Planning Area is limited due to development and timber harvesting. Historically, this vegetation community was widespread throughout uplands in the Planning Area. Currently, the majority of conifer dominated areas in the Planning Area are second or third growth forests that are interspersed amongst development.

Two vegetation associations occur within the Planning Area, the Redwood series and the Sitka spruce series (Sawyer and Keeler-Wolf, 1995); the Redwood series is widespread.

North Coast coniferous forests typically consist of a mix of tree species with redwood (*Sequoia sempervirens*) as a dominant component. The following description pertains to redwood dominated stands.

The overstory consists of a patchy to moderately closed canopy dominated by redwood with scattered grand fir (*Abies grandis*), Douglas fir (*Pseudotsuga menziesii*), tan oak (*Lithocarpus densiflora*), California bay (*Umbellularia californica*), and a limited amount of madrone (*Arbutus menziesii*). Redwood forests often consist of a midstory or subcanopy of tan oak, California bay, wax myrtle (*Myrica californica*), and cascara (*Rhamnus purshiana*). The shrub layer is typically moderately dense, but may be lacking or very dense, depending on previous timber harvest practices. Common shrub species include evergreen huckleberry (*Vaccinium ovatum*), salal (*Gaultheria shallon*), thimbleberry (*Rubus parviflorus*), red flowering currant (*Ribes sanguinuem*), blue blossom (*Ceanothus thyrsiflorus*) and poison oak (*Toxicodendron diversilobum*). The understory varies from depauperate to densely vegetated with Douglas iris (*Iris douglasiana*), redwood sorrel (*Oxalis oregana*), star flower (*Trientalis latifolia*), sword fern (*Polystichum munitum*), trillium (*Trillium ovatum*), and a variety of grass species.

Vegetation within North Coast coniferous forests in the Planning Area is generally similar to what is described above, but also includes a variety of invasive species which vary in abundance from limited to dominant. Common invasives include cotoneaster, English ivy, and periwinkle.

In certain circumstances, North Coast coniferous forests can be dominated by Sitka spruce (*Picea sitchensis*). Sitka spruce forest is a California Natural Diversity Database (CNDDDB) Sensitive Natural Community and is discussed further in the “Sensitive Natural Communities” subsection.

Coniferous forest within the Planning Area is likely to be inhabited by a number of wildlife species. Residual snags within stands are particularly important to cavity nesting birds as well as bat species. Specialized small mammals such as red tree voles (*Arborimus pomo*) occur exclusively within coniferous forests and occur within the Planning Area. The cool temperatures associated with coastal coniferous forests are also very important to stream dwelling forest amphibians such as Coastal tailed frog (*Ascaphus truei*), southern torrent salamanders (*Rhyacotriton variegates*), and Pacific giant salamanders (*Dicamptodon tenebrosus*).

Wetlands. Wetlands, which are scattered within the Planning Area but are concentrated along the Planning Area’s rivers and streams, especially along the Van Duzen River, are transitional lands between terrestrial and aquatic habitats. They may contain characteristics of both aquatic and terrestrial regimes and are therefore difficult to classify. Wetlands are areas that may be covered periodically or permanently with shallow water (less than 6.6 feet) and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools (CDFG Code §2785). Numerous agencies have jurisdiction over the use, management, and impact of wetlands. The classifications of wetlands vary among resource agencies, but are generally defined by hydrophytic vegetation, hydric soils, and/or wetland hydrology.

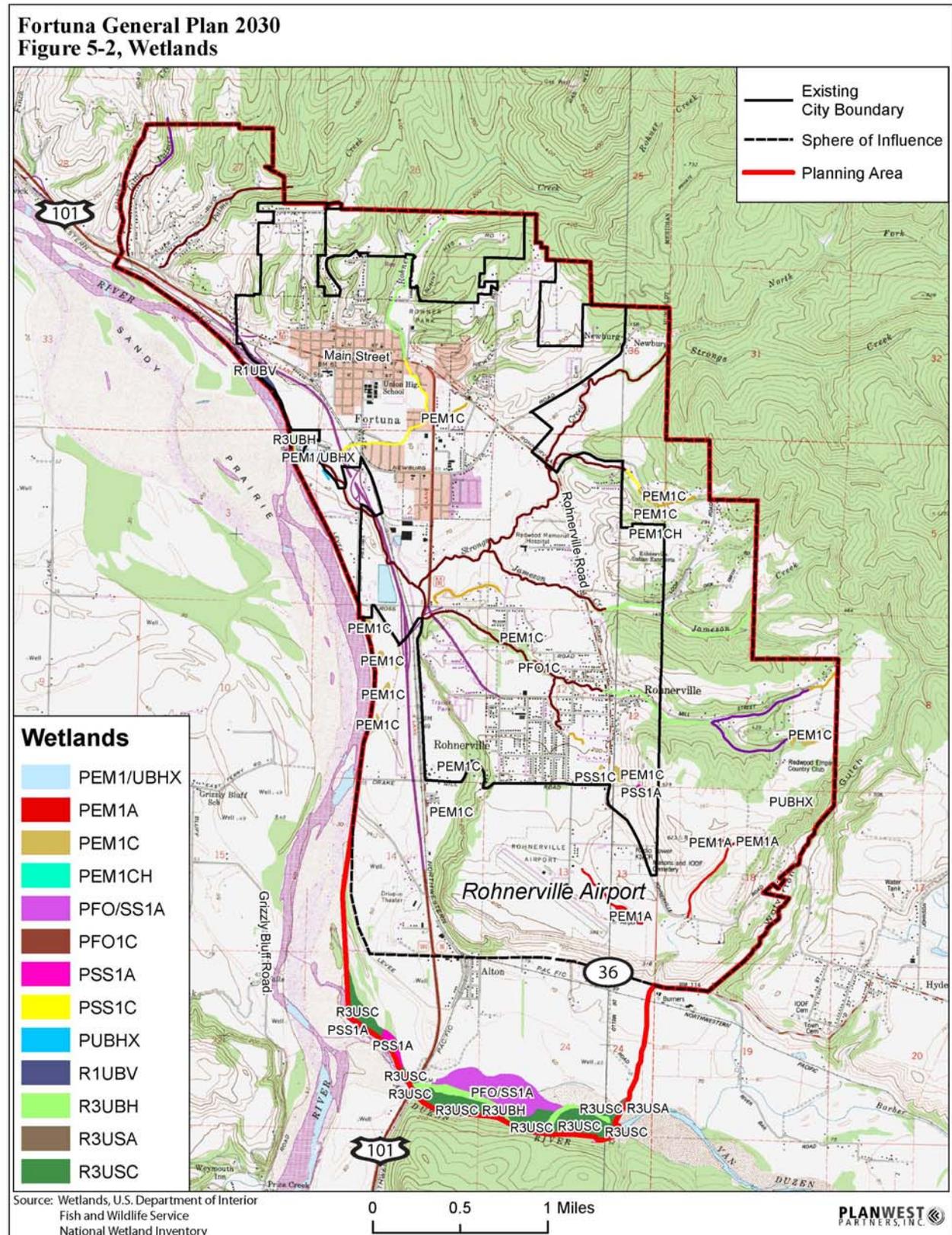
Wetland ecosystems consist of a complex array of biotic and abiotic processes, manifested in a variety of vegetation associations ranging from herbaceous dominated scrub-shrub to forests. Wetland ecosystems provide vital habitat for numerous plant and animal species, many of which are special-status species, and are extremely productive ecosystems that are high in biodiversity. They are not only important for biological diversity, but are crucial for water quality. Wetlands improve water quality through contamination filtering, natural flood control, groundwater recharge, erosion control and storm surge protection, and water temperature regulation (CDFG, 1994). For all these reasons and the role they have in biological diversity, wetlands are considered Environmentally Sensitive Habitat Areas (ESHA).

As mentioned above, wetlands habitats are diverse and have been classified extensively. Table 5.2-1 lists the wetland types that have been identified in the Planning Area by the U.S. Fish and Wildlife Service's National Wetland Inventory (NWI; USFWS, 1987). The approximately 30 wetlands identified by NWI as occurring within the Planning Area are depicted on Figure 5-2. The NWI does not identify all wetlands that occur within the Planning Area; therefore, Figure 5-2 is not intended to represent all wetlands.

**Table 5.2-1
Wetland Classifications**

Classification	Description	Location(s)
PEM1A	Palustrine, Emergent, Persistent, Temporarily Flooded	Unnamed Blue Line Stream tributary to Van Duzen River
PEM1C	<i>Palustrine, Emergent, Persistent, Seasonally Flooded</i>	Near Rohner Creek, Upper Reach of Mill Creek, Near Eel River
PEM1CH	Palustrine, Emergent, Persistent, Seasonally/ Permanently Flooded	Near Wolverton Gulch and Van Duzen River
PEMI/UBHX	Palustrine, Emergent, Persistent/Unconsolidated Bottom, Permanently Flooded	Vicinity of Rohner Creek and Eel River
<i>PFO/SSIA</i>	Palustrine, Forested/Scrub Shrub, Broad Leaved Deciduous, Temporarily Flooded	Van Duzen River, Eel River
PFO1C	Palustrine, Forested, Broad Leaved Deciduous, Seasonally Flooded	Palmer and Little Palmer Creeks, Strongs Creek, Wolverton Gulch, Mill Creek, Strongs Creek
<i>PSSIA</i>	Palustrine, Scrub Shrub, Broad Leaved Deciduous, Temporarily Flooded	Van Duzen River, Upper Reaches Mill Creek, Eel River
PSS1C	Palustrine, Scrub Shrub, Broad Leaved Deciduous, Seasonally Flooded	Rohner Creek near confluence with Strongs Creek, Mill Creek
PUBH	Palustrine, Unconsolidated Bottom, Permanently Flooded	Wetland near Wolverton Gulch
R1UBV	Riverine, Tidal, Unconsolidated Bottom, Permanent Tidal	Eel River
R3UBH	Riverine, Upper Perennial, Unconsolidated Bottom, Permanently Flooded	Rohner Creek, Mill Creek, Jameson Creek
R3USA	Riverine, Upper Perennial, Unconsolidated Shore, Temporarily Flooded	Near Wolverton Gulch and Van Duzen River
R3USC	Riverine, Upper Perennial, Unconsolidated Shore, Seasonally Flooded	Van Duzen River, Eel River
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Little Palmer Creek, Mill Creek

Source: U.S. Fish and Wildlife Service's National Wetland Inventory (USDI, 1987)



Described below are the three types of wetland habitat that occur most frequently in the Planning Area.

Emergent Wetlands. Emergent wetlands are typically herbaceous dominated areas that are temporarily or seasonally flooded and correspond to PEM1A, PEM1C, PEM1CH, and PEMI/UBHX classifications (Table 5.2-1). These wetlands often occur in depressions and adjacent to riparian corridors; however, emergent wetlands in the Planning Area have been reduced due to development and agriculture. Species diversity ranges from low in areas near development to high in wetlands relatively isolated from anthropogenic disturbances. Common hydrophytic plants in emergent wetlands include sedges (*Carex* spp.), common rush (*Juncus effuses*), Baltic rush (*J. balticus*), toad rush (*J. bufonius*), small flowered bulrush (*Scirpus microcarpus*), northern willow herb (*Epilobium ciliatum*), silverweed (*Potentilla anserina*), creeping buttercup (*Ranunculus repens*), American brooklime (*Veronica americana*), pennyroyal (*Mentha pulegium*), and a variety of native and non-native grass species.

Scrub-Shrub Wetland. Scrub-shrub wetlands are dominated by shrubs and small or stunted trees, and range from temporarily- to seasonally-flooded. This wetland type corresponds to PFO/SS1A, PFO1C, PSS1A, and PSS1C classifications that occur within the Planning Area (Table 5.2-1). Scrub-shrub wetlands may represent a successional stage leading to forested wetland, or they may be relatively stable communities (Cowardin et al., 1979). This wetland type, also referred to as riparian habitat, occurs within the floodplain of a number of watercourses within the Planning Area (Figure 5-2). Plant species that typically occur in the overstory of scrub-shrub wetlands include a variety of willows (*Salix laevigata*, *lucida*, *sitchensis* and species), Pacific ninebark (*Physocarpus capitatus*), salmonberry (*Rubus spectabilis*), hazelnut (*Corylus cornuta*) thimbleberry (*R. parviflorus*), elderberry (*Sambucus racemosa*), and American dogwood (*Cornus sericea*). The understory is typically sparse due to occasional flooding, but may include common horsetail (*Equisetum arvense*), scouring rush (*E. hyemale*), Pacific bramble (*Rubus ursinus*), rushes, sedges, and various native and non-native grass species.

Forested Wetland/ Deciduous Forest. Forested wetlands are distributed along riparian corridors located within the Planning Area and are dominated by deciduous trees; therefore, they are described as one habitat type. This wetland type typically intergrades with scrub-shrub wetlands and is differentiated by the presence of mature trees. The deciduous forests within the Planning Area that are classified as wetlands include the following:

- Palustrine, Forested/Scrub Shrub, Broad Leaved Deciduous, Temporarily Flooded (PFO/SS1A);
- Palustrine, Forested, Broad Leaved Deciduous, Seasonally Flooded (PFO1C);
- Palustrine, Scrub Shrub, Broad Leaved Deciduous, Temporarily Flooded (PSS1A); and
- Palustrine, Scrub Shrub, Broad Leaved Deciduous, Seasonally Flooded (PSS1C).

The following is a general characterization of riparian vegetation and is not intended to represent all deciduous dominated stands within the Planning Area. The overstory within mature riparian corridors consists of a moderately open canopy dominated by red alder, arroyo willow (*Salix lasiolepis*), and black cottonwood (*Populus balsmifera*) with other willow species and big-leaf maple (*Acer macrophyllum*) scattered throughout. The shrub layer varies from open to moderately dense and includes salmonberry, thimbleberry, Himalaya blackberry, elderberry, American dogwood, and willows. The understory is similar to scrub-shrub wetlands. It is typically sparse and includes common horsetail, scouring rush, Pacific bramble, mugwort (*Artemisia douglasiana*), and various native and non-native grass species.

Riparian habitats are some of the most important habitat types within the Planning Area. Riparian habitat provides essential cover and thermal protection for stream biota, especially salmonids and amphibians. Riparian habitats are thought to contain some of the highest biodiversity of any habitat type. Riparian habitat is essential for many resident and migratory avian species. Within the Planning Area, special-status animal species, such as the Willow Flycatcher (*Empidonax traillii*), are dependent on the dense cover provided by this habitat type. Additionally, riparian habitats often are used by larger wildlife species as movement corridors. Healthy riparian habitat is critically important to water quality.

Riparian corridors in the Planning Area have been significantly reduced by development and impacted by invasive vegetation. What remains of the riparian vegetation consists of a predominance of non-native shrubs and herbs that out-compete native species. The most prolific invasive species are cotoneaster, periwinkle, montbretia (*Crocsmia X crocosmia*), and English ivy. Areas that lack a dense understory of invasive species are typically unvegetated, possibly due to clearing and grading activities. The lack of vegetation, predominance of invasive species, and reduced riparian corridors has significantly impacted water quality objectives and significantly degraded this environmentally sensitive habitat type that supports a number of special-status plants and animals.

California Natural Diversity Database Search

The California Natural Diversity Database (CNDDDB) was queried to identify whether special-status plant and animal species have been previously recorded within and adjacent to Planning Area. The records search reported the occurrence of 29 special-status plant species and 23 special-status animal species within the quadrangles searched¹, including four special-status plant species and three special-status animal species within the Planning Area. See the following subsections for discussion.

¹ The United States Geological Survey (USGS) 7.5-minute quadrangles searched as part of the CNDDDB records search include the two quadrangles in which the Planning Area is occurs (e.g., Fortuna and Hydesville) and the adjoining quadrangles (e.g., Cannibal Island, Fields Landing, McWhinney Creek, Iaquia Buttes, Owl Creek, Redcrest, Scotia, Taylor Peak, Capetown, and Ferndale).

Special-Status Plant Species

The results of the CNDDDB query for special-status plant species are shown in Table 5.2-2 along with species listing status and preferred habitat. A total of 29 special-status plant species have been recorded within the search area. Of these, four have been recorded within the Planning Area, including: Whitney's farewell-to-spring (*Clarkia amoena* ssp. *whitneyi*), Pacific gilia (*Gilia capitata* ssp. *pacifica*), maple-leaved checkerbloom (*Sidalcea malachroides*), and Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*). These species are described below, and their occurrences within the Planning Area are shown on Figure 5-3.

Whitney's Farewell-to-Spring. Whitney's farewell-to-spring (*Clarkia amoena* ssp. *whitneyi*) is an annual herb in the Onagraceae Family that blooms June through August (Tibor, 2001). This species occurs in coastal bluff scrub and coastal scrub that is typically well exposed, and is a CNPS list 1B (e.g., a species that is rare, threatened, or endangered in California and elsewhere; CNDDDB, 2005). The exact location of Whitney's farewell to spring reported in the Planning Area is not known. The only information for this occurrence is a reference in the 1955 University of California publication in botany for the genus *Clarkia*. Therefore the CNDDDB mapped the location as an approximate location, 1.5 miles west of downtown Fortuna, on the east bank of the Eel River across from Sandy Prairie (CNDDDB, 2005).

Pacific Gilia. Pacific gilia (*Gilia capitata* ssp. *Pacifica*) is an annual herb in the Polemoniaceae Family that is on CNP list 1B (CNDDDB, 2005). Suitable habitat for this special-status species is various and includes coastal bluff scrub and coastal prairie (Tibor, 2001). The occurrence record for Pacific gilia shown on Figure 5-2 is from 1912, and the exact location of the occurrence is not known (CNDDDB, 2005). The location shown on Figure 5-2 is approximate, mapped by the CNDDDB in the vicinity of Alton, along the river bluffs above SR 36 (CNDDDB, 2005).

Maple-leaved Checkerbloom. Maple-leaved checkerbloom (*Sidalcea malachroides*) is a perennial herb or sub-shrub in the Malvaceae Family. This species was recently delisted from CNPS list 1B to CNPS list 4 (a species of limited distribution on the CNPSa watch list). This species occurs in broadleaved upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, and often in disturbed areas in these habitats, such as roadsides. Numerous occurrences of maple-leaved checkerbloom have been documented surrounding the Planning Area, primarily on timberlands (CNDDDB, 2005). The exact location of maple-leaved checkerbloom reported in the Planning Area is not known (CNDDDB, 2005). The occurrence record is from 1893 and was mapped in the general vicinity of Hydesville in the southeast portion of the Planning Area (CNDDDB, 2005).

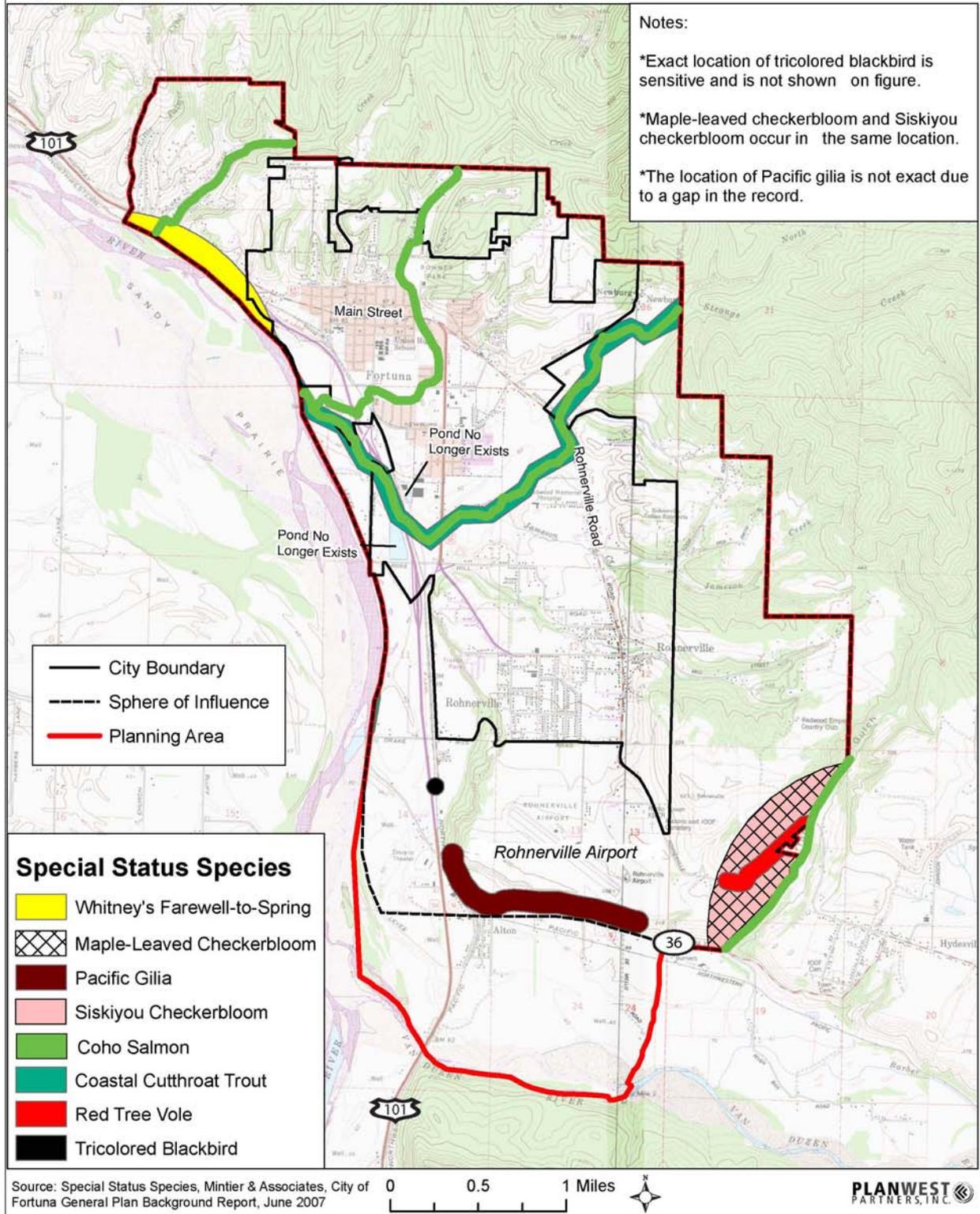
Siskiyou Checkerbloom. Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) is a perennial in the Malvaceae Family. This species, with is on CNPS list 1B, occurs in openings in North Coast coniferous forest and broadleaved upland forest such as roadsides, grasslands, and meadows and in coastal prairie habitat up to 2,300 feet above MSL (CNDDDB, 2006). The occurrence of Siskiyou checkerbloom within the Planning Area is from 1912, and thus the location of the occurrence shown on Figure 5-2, which is in the southeast portion of the Planning Area near Hydesville, is approximate.

**Table 5.2-2
Special-Status Plant Species**

Species	Common Name	Status	Preferred Habitat
<i>Abronia umbellata</i> ssp. <i>breviflora</i>	pink sand-verbena	1B	Coastal dunes; elevation <40 ft.; flowers July-Oct.
<i>Anomobryum julaceum</i>	slender silver moss	2	Damp areas and along road cuts in North Coast coniferous forests, broadleaf upland forest, and lower montane coniferous forest. Elevation ±300-3,280 ft.
<i>Astragalus pycnostachys</i> var. <i>pycnostachyus</i>	coastal marsh milk-veitch	1B	Coastal dunes, coastal salt marshes and swamps. Reported occurrences include mesic sites in dunes or along streams in coastal saltmarshes; elevation <100 ft.; flowers April-October.
<i>Carex arcta</i>	northern clustered sedge	2	Mesic areas in North Coast coniferous forests, including bogs and fens; elevation 195-4,500 ft.; flowers June-August.
<i>Carex leptalea</i>	flaccid sedge	2	Wet meadows, seeps, bogs, marshes; elevation <2,500 ft.; flowers May-July.
<i>Carex lyngbyei</i>	Lyngbye's sedge	2	Marshes and swamps; elevation <30 ft.; flowers May-August.
<i>Castilleja affinis</i> ssp. <i>litoralis</i>	Oregon coast Indian paintbrush	2	Coastal bluff scrub, coastal dunes, and coastal scrub; elevation 50-330 ft.; flowers in June.
<i>Castilleja ambigua</i> ssp. <i>humboltiensis</i>	Humboldt Bay owl's clover	1B	Coastal saltmarshes; elevation <10 ft.; flowers April-August
<i>Clarkia amoena</i> ssp. <i>whitneyi</i>	Whitney's farewell-to-spring	1B	Coastal scrub; elevation 30-330 ft.; flowers June-August.
<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	Point Reyes bird's-beak	1B	Coastal saltmarsh; elevation <50 ft.; flowers June-October.
<i>Didymodon norrisii</i>	Norris's beard-moss	2	Intermittently mesic sites in cismontane woodland and lower montane coniferous forest; elevation 1,950-5,575 ft.
<i>Erysimum menziesii</i> ssp. <i>eurekaense</i>	Humboldt Bay wall flower	1B, SE, FE	Coastal dunes; elevation <35 ft.; flowers March-April.
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B	Coastal bluff scrub, coastal prairie, valley and foothill grassland; elevation 15-1,000 ft.; flowers May-August.
<i>Lathyrus palustris</i>	marsh pea	2	Bogs, lower montane forest, marshes, North Coast coniferous forest, coastal prairie, coastal scrub; mesic sites; elevation <330 ft.; flowers March-August.
<i>Layia carnosa</i>	beach layia	1B, SE, FE	Coastal dunes and coastal scrub; elevation <250 ft.; flowers March-July.
<i>Lilium occidentale</i>	western lily	1B, SE, FE	Coastal scrub, coastal prairie, openings in North Coast coniferous forest, bogs, freshwater marsh; elevation 5-600 ft. above MSL; flowers June-July.
<i>Lycopodium clavatum</i>	running pine	2	Openings in North Coast coniferous forest, on woody debris, old roads, marshes and swamps; elevation 145-5,380 ft.; identifiable year round.
<i>Mitella caulescens</i>	leafy-stemmed mitrewort	2	Broadleaf upland forest, lower montane forest, meadows and seeps, North Coast coniferous forest; elevation 20-5,600 ft.; flowers May-July.

Species	Common Name	Status	Preferred Habitat
<i>Monardella villosa</i> ssp. <i>globosa</i>	robust monardella	1B	Broadleaf upland forest, North Coast coniferous forest, chaparral, cismontane woodland, valley and foothill grassland; elevation 100-1965 ft.; flowers June-July.
<i>Montia howellii</i>	Howell's montia	2	Meadows and seeps, North Coast coniferous forest, and vernal wet sites; elevation <2,000 ft.; flowers March-May.
<i>Oenothera wolfii</i>	Wolf's evening primrose	1B	Coastal dunes, coastal prairie, coastal bluff scrub, lower montane coniferous forest; elevation 0-2,600 ft.; flowers May-Oct.
<i>Senecio bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2	Coastal scrub and North Coast coniferous forest; elevation p to 2,000 ft.; flowers June-July.
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4	Broadleaf upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, often in disturbed areas (e.g., roadsides); elevation <2,100 ft.; flowers April-August.
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	1B	Openings in North Coast coniferous forest and lower montane forest, coastal prairie, and coastal bluff scrub; elevation <2,300 ft.; flowers May-June.
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	1B	Meadows and seeps, North Coast coniferous forest, lower montane coniferous forest; elevation <4,400 ft.; flowers June through August.
<i>Sisyrinchium hitchcockii</i>	Hitchcock's blue eyed grass	1B	Cismontane woodland, valley and foothill grassland; elevation and flowering period unknown.
<i>Spergularia canadensis</i> var. <i>occidentalis</i>	western sand spurry	2	Coastal salt marsh; elevation <10 ft.; flowers June-August.
<i>Thlaspi californicum</i>	Kneeland pennycress	1B/ FE	Serpentine rock outcrops in broadleaved upland forest and coastal prairie habitats; elevation 1,600-2,700 ft.; flowers March-May.
<i>Usnea longissima</i>	long-beard lichen	N/A	North Coast coniferous forest and broadleaved upland forest. Host trees include Douglas fir, redwood, big-leaf maple, oak, and California bay trees; elevation <2,000 ft.; identifiable year round.
<p>Status Categories:</p> <p>1B CNPS listing status 1B includes plants that are rare, threatened, or endangered in California and elsewhere.</p> <p>2 CNPS listing status 2 includes plants that are rare, threatened, or endangered in California, but more common elsewhere.</p> <p>4 CNPS list 4 includes plants of limited distribution and that are included on a watch list for monitoring.</p> <p>SE State listed Endangered. Endangered taxa are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range.</p> <p>FE Federally Listed Endangered. Endangered taxa are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range (Section 4 of FESA).</p> <p>N/A Not Applicable.</p> <p>Source: California Natural Diversity Database (CNDDDB), 2005.</p>			

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Figure 5-3, CNDDDB - Listed Special Status Species



Although the CNDDDB only reports four special-status plant species as occurring within the Planning Area, a number of other special-status plant species listed in Table 5.2-2 may have suitable habitat in the Planning Area. These include slender silver moss, northern clustered sedge, flaccid sedge, Oregon coast Indian paintbrush, western lily, running pine, leafy-stemmed mitrewort, Howell's montia, seacoast ragwort, coast checkerbloom, and long-beard lichen.

Special-Status Animal Species

The results of the CNDDDB query for special-status animal species are shown in Table 5.2-3 along with species listing status and preferred habitat. The CNDDDB query indicates that the following three special-status animal species have been previously recorded within the Planning Area:

Coastal Cutthroat Trout. Coastal Cutthroat Trout (*Oncorhynchus clarkii clarkii*) are found in coastal streams from the Eel River to Seward in southeastern Alaska. Populations in the lower Eel River drainage (including tributaries) represent the southern extent of the species range. The coastal cutthroat is listed as a Species of Special Concern (SSC) in California. Within the Planning Area, this species occurs in Strongs Creek (main stem and north fork) and the Eel River (CNDDDB 2005; DFG 2008).

Tricolored Blackbird. Tricolored blackbird (*Aegialus tricolor*) nesting colonies are usually associated with emergent freshwater wetlands with foraging areas within relative proximity to the colony. Open pastures, grasslands, and feedlots provide suitable foraging areas. Tricolored blackbirds are nearly endemic to California and are listed as an SSC. A historical nesting colony is reported by the CNDDDB as occurring south of Drake Hill Road near the railroad tracks within the southwestern portion of the Planning Area.

Red Tree Vole. Red tree vole (*Arborimus pomo*) is associated with both mature and immature coniferous forests. Red tree vole is listed as an SSC and has been documented in Wolverton Gulch in the southwestern portion of the Planning Area. This species is likely to occur elsewhere in the Planning Area if suitable habitat is present.

In addition to three special status animal species identified by the CNDDDB as previously recorded within the Planning Area, several additional special-status animal species have been reported in the Planning Area by wildlife professionals. These additional species are described below but are not mapped in Figure 5-3 because of a lack of adequate locational information.

Northern Spotted Owl. Northern Spotted Owl (*Strix occidentalis caurina*) is listed as Threatened under FESA and has designated Critical Habitat (CH). Most habitat studies indicate a strong association with older structurally diverse stands (Hunter et al. 2005). Northern Spotted Owl occurrences are in close proximity to the Planning Area. Suitable habitat within the northern and eastern portions of the Planning Area may be inhabited by this species.

**Table 5.2-3
Special-Status Animal Species**

Species	Common Name	Status	Preferred Habitat
<i>Accipiter cooperii</i>	Cooper's Hawk	SSC	Variable habitat preference including closed forest to urban interface assuming the presence of suitable nesting trees/stand
<i>Accipiter striatus</i>	Sharp-shinned Hawk	SSC	Variable habitat preference including closed forest to urban interface assuming the presence of suitable nesting trees/stand
<i>Aegialus tricolor</i>	Tricolored Blackbird	SSC	Nesting preference variable, but usually associated with emergent wetlands and vegetation over water; gregarious during non-breeding season.
<i>Ardea alba</i>	Great egret	Sensitive Colonial Nester	Shallow aquatic habitat in wetlands, estuaries, and rivers, also uses open pastures and grasslands. Colonial nester in large shrubs or trees.
<i>Ardea herodias</i>	Great Blue Heron	Sensitive Colonial Nester	Shallow aquatic habitat in wetlands, estuaries, and rivers, also uses open pastures and grasslands. Colonial nester in large shrubs or trees.
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	FT/CH/RP SE6 SSC	Near-shore waters along coast to 40+ miles inland; nests in mature trees with old growth characteristics.
<i>Charadrius alexandrinus nivosus</i>	Western Snowy Plover	FT/CH/RP SSC	Sparsely vegetated beaches, along coastal strip, and Eel River gravel bars; ground nester and gregarious in non-breeding season.
<i>Egretta thula</i>	Snowy egret	Sensitive Colonial Nester	Shallow aquatic habitat in wetlands, estuaries, and rivers, also uses open pastures and grasslands. Colonial nester in large shrubs or trees.
<i>Pandion haliaetus</i>	Osprey	SSC	Nests near large water bodies (i.e., ocean, lakes, river); nest location typically associated with snags or human structures (i.e., power poles).
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	Sensitive Colonial Nester	Shallow aquatic habitat in wetlands, estuaries, and rivers, also uses open pastures and grasslands. Colonial nester in large shrubs or trees.
<i>Strix occidentalis caurina</i>	Northern Spotted Owl	FT/CH	Coastal to mountainous mature and old growth coniferous forests; nests in cavities or on natural platforms.
<i>Empidonax traillii</i>	Willow Flycatcher	SE	Associated with dense riparian cover along streams, rivers, and wetlands. Also documented using early succession dense clear-cut forests.
<i>Ascaphus truei</i>	Coastal tailed frog	SSC	Sea level to near timberline in cold fast flowing perennial streams in forested areas.
<i>Plethodon elongatus</i>	Del Norte salamander	SSC	Rock talus in coniferous forest and under woody debris from sea level to 4,000 feet.
<i>Rana boylei</i>	Foothills yellow-legged frog	SSC	Perennial streams and vicinity, associated with rocky or sandy substrates.
<i>Rana aurora aurora</i>	Northern red-legged frog	SSC	Breeding occurs in lentic perennial to semi-perennial habitats; upland habitat important for post-metamorphic frogs.

Species	Common Name	Status	Preferred Habitat
<i>Rhyacotriton variegatus</i>	Southern torrent salamander	SSC	Cold perennial streams with rocky substrate in mesic coastal habitats.
<i>Emys (=Clemmys) marmorata marmorata</i>	Western pond turtle	SSC	Aquatic habitat with some slow water component, basking sites are important, with suitable upland nesting sites within a few hundred meters of aquatic habitat.
<i>Eucyclogobius newberryi</i>	Tidewater goby	FE/PD/PCH	Brackish waters of coastal wetlands (estuaries and lagoons).
<i>Oncorhynchus clarkii clarkii</i>	Coastal cutthroat trout	SSC	Low gradient coastal streams, estuaries, and nearshore marine areas.
<i>Oncorhynchus kisutch</i>	Coho salmon	ST/FT/CH	Associated with lower reaches of coastal mainstem rivers and associated tributaries.
<i>Oncorhynchus mykiss</i>	Steelhead	FT/CH	Associated with mainstem rivers and associated tributaries.
<i>Arborimus pomo</i>	Red tree vole	SSC	Mature and other stands of mixed coniferous forests within coastal habitat (i.e., fog belt).
<i>Corynorhinus townsendii townsendii</i>	Townsend's big-eared bat	SSC	Undisturbed roosts, nursery and hibernaculum, uses numerous plant communities and human built structures meeting specific ambient conditions.
<i>Martes americana humboldtensis</i>	Humboldt Marten	SSC	Mature coniferous forests with closed canopies, abundant standing and downed woody material.
<i>Myotis yumanensis</i>	Yuma myotis	Maternity colonies and roost sites sensitive	Open forest and woodlands near open water habitat.

Status Categories:

- SSC Species of Special Concern. Status applies to animals not listed under the FESA or the CESA, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.
- FT Federal Threatened. Threatened taxa are those likely to become endangered within the foreseeable future.
- CH Critical Habitat. Specific geographic areas, whether occupied by a listed species or not, that are essential for its conservation and that have been formally designate by rule published in the federal register.
- PHC Proposed Critical Habitat. Same as Critical habitat, but in process of being finalized.
- RP Recovery Plan. A document drafted by USFWS, NOAA Fisheries which serves as a guide for activities to be undertaken by Federal, State, or private entities in helping to recover and conserve endangered or threatened species.
- ST State Threatened
- SE State Endangered.
- FE Federal Endangered. Endangered taxa are those in danger of becoming extinct within the foreseeable future throughout all or a significant portion of range.
- PD Proposed for Delisting (north of Orange County).

Source: California Natural Diversity Database (CNDDDB), 2005.

Snowy Plover. Snowy Plover (*Charadrius alexandrinus nivosus*) is listed as Threatened under the FESA and has Critical Habitat designated for Eel River gravel bars (USFWS, 2005b). The western boundary of the Planning Area overlaps with portions of the Eel River and Western Snowy Plover Critical Habitat, although snowy plovers have not been recorded nesting in this area since 2004 (Colwell 2009).

Marbled Murrelet. Marbled Murrelet (*Brachyramphus marmoratus*) is listed as Threatened under FESA and Endangered under CESA. Marbled Murrelet are associated with mature forest or mature forest components. Marbled Murrelet nesting habitat within the Planning Area is unlikely, but flyover of the Planning Area to mature stands or nest trees is likely, especially along the Van Duzen and Eel Rivers.

Coho Salmon. Coho salmon (*Oncorhynchus kisutch*) utilize accessible reaches of streams, especially side channels. Coho occur in Palmer Creek, Strongs Creek, Wolverton Gulch (Jong pers com.; CDFG 2008), and Rohner Creek (FRA, 1989; CDFG 2008). However, Coho may also occur in other tributaries and streams within the Planning Area (CDFG 2008).

Steelhead. The Northern California Evolutionary Significant Unit (ESU) of Steelhead (*Oncorhynchus mykiss*) typically utilize the tributary channels with less than 8% gradient and use side channels to the mainstem. Steelhead occur in Palmer Creek, Strongs Creek, an Unnamed Tributary to Strongs Creek (aka Mill Creek), North Fork Strongs Creek, Wolverton Gulch (Jong pers com.), and Rohner Creek (FRA, 1989; CDFG 2008). Strongs and Rohner Creek are designated Critical Habitat for the Steelhead.

Chinook Salmon. The Coastal ESU of Chinook Salmon (*Oncorhynchus tshawytscha*) are typically associated with the mainstem of larger river systems. Chinook salmon occur in the Eel River downstream of the Planning Area and were historically present in Strongs Creek (CDFG 2008). Strongs Creek is designated Critical Habitat for the Chinook salmon.

Willow Flycatcher. Willow Flycatcher (*Empidonax traillii*) is associated with dense riparian cover along streams, rivers, and wetland habitat to early succession dense clear cuts. The Willow Flycatcher is listed as Endangered under the CESA. Willow Flycatchers historically occurred in Humboldt County and in the Planning Area, and appear to be re-colonizing suitable habitat along the Eel and Van Duzen Rivers within and adjacent to the Planning Area (Hunter et al. 2005; CDFG 2008).

Northern Red-legged Frog. Northern red-legged frog (*Rana aurora aurora*) is a SSP that uses slow or slack water habitats for breeding. Forest and riparian habitats are important upland habitat for the Northern red-legged frog. Northern red-legged frogs have been identified in Wolverton Gulch (Jong pers. com) and immediately south of the Planning Area (CNDDDB, 2005). Northern red-legged frogs are likely present in suitable habitat within the Planning Area.

Foothills Yellow-legged Frog. Foothills yellow-legged frog (*Rana boylei*) is a Species of Special Concern and is associated with stream habitat with gravel and cobble substrates with slow stream margins for breeding. Yellow-legged frogs have not been identified within the

Planning Area but are known to occur immediately to the south (CNDDDB, 2005). Foothills yellow-legged frogs are likely present in suitable habitat within the Planning Area.

Western Pond Turtle. Western Pond Turtle (*Emys (=Clemmys) marmorata marmorata*) is a Species of Special Concern and associated with pond and stream systems. Slow water and basking areas as well as upland breeding sites are important for this species. Western pond turtles have not been identified in the Planning Area, but are known to occur south of the Van Duzen River near the Planning Area (CNDDDB, 2005).

Great Blue Heron, Great Egret, Snowy Egret and Black-crowned Night Heron. Nesting locations (rookeries) for Great Blue Heron (*Ardea herodias*), Great Egret (*Casmerodius albus*), Snowy Egret (*Egretta thula*), and Black-crowned Night Heron (*Nycticorax nycticorax*) are sensitive to disturbance and could occur within the Planning Area.

Sensitive Natural Communities

Although the CNDDDB records search did not record any Sensitive Natural Communities within the Planning Area, three such communities occur within the vicinity of Fortuna and may be located within the Planning Area. Those communities are described below.

Coastal Terrace Prairie. Coastal terrace prairie is a native grassland community found on sandy, marine terraces and dominated by dense, fairly tall (greater than one meter) perennial bunch grasses and annual herbaceous species. Much of California's coastal terrace prairie habitat has been destroyed by agricultural conversion and development. The remaining areas are also threatened by the invasion of exotic weeds such as annual fescues (*Vulpia* sp.), bromes (*Bromus* sp.), and oats (*Avena* sp.). The state rarity status for this Sensitive Natural Community is very threatened (S2.1) with 2,000-10,000 acres of habitat remaining. Based on the special-status plant species occurrence records, this community has and likely continues to occur within the undisturbed terrace areas of the Planning Area.

Sitka Spruce Forest. The state rarity status for Sitka Spruce forests is very threatened (S1.1) with less than 2,000 acres remaining. Sitka spruce grows in mild wet coastal climates and occurs in a narrow band along the Pacific coast from Northern California to Alaska. Sitka spruce forest is usually found growing on steep seaward upland slopes or topographically flat areas, but can also occur in wetlands such as stream and river backwaters, bottoms, and floodplains. Species commonly associated with upland Sitka spruce forests include redwood (*sempervirens*), western hemlock (*Tsuga heterophylla*), hazelnut (*Corylus cornuta*), cascara (*Rhamnus purshiana*), salmonberry (*Rubus spectabilis*), Douglas's iris (*Iris douglasiana*), false lily-of-the-valley (*Maianthemum dilatatum*), and sword fern (*Polystichum munitum*).

Palustrine forested wetlands that are dominated with Sitka spruce have a different assemblage of species. The overstory typically consists of Sitka spruce, Oregon crabapple (*Malus fusca*), red alder (*Alnus rubra*), with a subcanopy of cascara, willows, twinberry (*Lonicera involucrata*), and wax myrtle. Dominant shrubs include salmonberry, thimbleberry, and elderberry (*Sambucus* sp.). Common herbaceous species are sword fern,

false lily-of-the-valley, milk maids (*Cardamine californica*), Douglas iris, and grass species including Pacific reed grass (*Calamagrostis nutkaensis*).

Small stands of Sitka spruce may occur on the steep seaward upland slopes and flat areas in the northern and eastern portions of the Planning Area.

Upland Douglas Fir Forest. Upland Douglas fir natural community is mixed-age climax forest dominated by (greater than 80 percent) Douglas fir trees up to 200 feet tall. Climax stands appear restricted to dry, but not xeric conditions, due to rainshadows, overly drained soils, or aspect. Sites typically occur on moderately deep, well-drained soils. Annual precipitation ranges from 23 to 120 inches. Most stands dominated by Douglas fir are seral to Sitka spruce-grand fir (*Abies grandis*) forest or western hemlock (*Tsuga heterophylla*) forest (greater than 70 percent; Holland, 1986). This state rarity status for this Sensitive Natural Community is very threatened (S3.1) with 10,000-50,000 acres remaining.

Small stands of upland Douglas fir may occur in the northern and eastern portions of the Planning Area.

Applicable Plans, Policies, Codes, and Regulations

Federal

Federal Endangered Species Act (FESA). FESA of 1973 recognizes that many species of fish, wildlife, and plants are in danger of or threatened with extinction and establishes a national policy that all federal agencies should work toward conservation of these species. The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over species listed as “threatened” or “endangered” under Section 9 of the Act and protects these species from “take”, which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Proponents of the project affecting a listed species must consult with USFWS and apply for an incidental take permit under Section 10 of the ESA. Section 10 requires an applicant to submit a conservation plan that specifies project impacts and mitigation measures (W&K 2007).

Federal Clean Water Act (§404). The U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA) regulate the placement of fill into waters of the United States under §404 of the Act. “Waters of the United States” includes lakes, rivers, streams and their tributaries, and wetlands. Wetlands are defined as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Specific project proponents must obtain a permit from the USACE for all discharges of fill material into waters of the United States, including wetlands, before proceeding with a proposed action (W&K 2007).

State

California Endangered Species Act (CESA). CESA (Fish and Game Code Sections 2050-2098) establishes a State policy to conserve, protect, restore, and enhance endangered and threatened species and their habitat (Planwest 2007). The California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) exercise jurisdiction over species listed as threatened or endangered under CESA via §2080 which prohibits the “take” of listed species. “Take” is broadly defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Proponents of projects affecting a state-listed species must consult with CDFG, enter into a management agreement, and obtain a take permit under §2081 (W&K 2007).

California Fish and Game Code (§1601-1607). Under the California Fish and Game Code, §1601-1607, CDFG regulates projects that divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Proponents of such projects must notify CDFG and enter into a streambed alteration agreement with CDFG (W&K 2007).

California Environmental Quality Act (CEQA). Both the Federal and State Endangered Species Acts protect only those species formally listed as threatened or endangered (or rare in the case of the State list). Section 15380 of CEQA Guidelines, however, independently defines "endangered" species of plants or animals as those whose survival and reproduction in the wild are in immediate jeopardy and "rare" species as those who are in such low numbers that they could become endangered if their environment worsens. Therefore, a project will normally have a significant effect on the environment if it will substantially affect rare, endangered, or other special-status plant or animal species, including:

- Species designated as rare, threatened, or endangered, or identified as a candidate species, by CDFG;
- Species designated as threatened or endangered, or identified as a candidate species, by USFWS;
- Species considered rare, threatened, or endangered pursuant to CEQA Section 15380;
- Species included on Lists 1A, 1B, 2, 3, or 4 in the *Inventory of Rare and Endangered Plants of California, 6th Edition*; and
- Other sensitive species, such as those identified by CDFG as species of special concern and species protected by local ordinances.

County

Humboldt County Streamside Management Ordinance. The Humboldt Streamside Management Ordinance applies to and along watercourses and wetlands within the unincorporated portions of the Planning Area. The Ordinance: (1) sets forth specific preservation requirements for watercourse and wetlands; (2) requires the establishment of Streamside Management Areas (SMAs) around watercourses and buffers around wetlands to protect sensitive fish and wildlife habitats; and (3) regulates development and activities within these SMAs and buffers (Humboldt County 1984).

Methodology

Policy Background

The following policy background is used to assess the biological resource impacts of the proposed plan:

- The CNDDDB was queried for special-status species within the Planning Area and adjacent to it. The CNDDDB reported a number of special-status plants and animals in and adjacent to the Planning Area; however, the information is not intended to be exhaustive and represents a starting point for additional investigation.
- A lack of CNDDDB recorded occurrences for a given area should not be interpreted as absence of a given species or natural community, merely that the information may be lacking for the given search area.
- It is assumed in this analysis that the special-status plant and animal species listed by the CNDDDB within the USGS quadrangles in which the Planning Area is located have the potential to occur in the Planning Area, if habitat for the species exists, even if they have not been previously recorded in the Planning Area.
- Even if the CNDDDB does not report an occurrence of special animals, plants, or natural communities within a specific area, it does not mean impacts will be avoided or will be at a less-than-significant level of impact.
- Existing biological resource protection laws will continue to provide protections for sensitive biological resources; however, they must also be enforced by the City of Fortuna to effectively protect those resources.

Thresholds of Significance

Proposed General Plan Implementation will have a significant effect on the environment if it:

- Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a special-status species in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- Interferes substantially with the movement of native or migratory wildlife or fish species;
- Has a substantial adverse effect on federally protected watercourses or wetlands, as defined by Section 404 of the Clean Water Act, through removal, filling, hydrological interruption, etc.; and
- Has a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFG or USFWS;

Implications of the Draft Land Use Diagram

The proposed Land Use Diagram includes a variety of land-use designations for lands adjacent to stream corridors and associated riparian areas, within and adjacent to wetlands, and within the forested hillsides and plateaus in the northern and eastern portions of the Planning Area, for urban development. These features provide the majority of habitat for special-status species known to occur in the Planning Area and represent the largest extent of ESHA within the Planning Area. Without strong biological resources policies requiring the preservation of sensitive habitat, watercourse and wetlands, future development facilitated by the proposed plan could adversely affect these sensitive biological resources and/or lead to further degradation. Additionally, increased development within these areas could limit wildlife movement within connectivity corridors and exacerbate habitat fragmentation.

General Plan Policy Response

The proposed General Plan includes the following policies and programs relevant to biological resources.

Policy NCR-1.1 Watershed Protection. The City shall condition development to minimize point and non point source pollutant discharges to local watersheds. The City shall require mitigation for development that may change runoff quality/quantity for pollution prevention.

Policy NCR-2.1 Riparian Corridor Protection. The City shall establish riparian buffers to provide for fish and terrestrial wildlife habitat protection, enhancement, and movement along riparian corridors. Activities within these buffers shall be limited to passive recreational uses (hiking, biking, sightseeing, horseback riding) and the movement of wildlife.

Policy NCR-2.2 Salmonid Bearing Stream Protection. The City shall consult with, and require developers of projects to consult with, CDFG and other regulatory agencies for expertise and guidance prior to restoration activity within salmonid-bearing streams. Some recommendations relative to all tributaries are as follows:

- Identify and inventory those portions of streams originating within or passing through the General Plan Area that are considered to support salmonid species;
- Inventory and map sources of stream bank erosion, then prioritize them according to present and potential sediment yield. Identified sites should be treated to reduce the amount of fine sediment entering the stream;
- Design and construct habitat enhancement structures that yield better gravel sorting, reduce fine sediment retention, increase pool habitat, and allow for juvenile and adult fish passage (i.e., barrier removal);
- Remove exotic vegetation and replant native vegetation, especially where the stream canopy is deemed less than optimum; and
- Reduce cattle trampling within the stream and riparian zone by exploring alternatives with landowners.

Policy NCR-2.3 CDFG Collaboration. The City shall work to implement the recommendations put forth in the Recovery Strategy for California Coho Salmon (CDFG, 2004b) to benefit salmonid species present within the General Plan Area by enhancing and restoring riparian ecosystems, improving water quality, and reducing flooding.

Policy NCR-2.4 Natural Production Streams. The City shall use North Coast Basin Planning Project (BPP) stream inventory reports that characterize applicable habitat components to manage each identified stream tributary as an anadromous fish and natural production streams.

Policy NCR-2.5 Sustainable Salmonid Stocks. The City shall collaborate with the CDFG and National Oceanic and Atmospheric Association Fisheries to develop sustainable, long-term salmonid stocks, improve quantity and quality of habitat available to salmonids, and accelerate species recovery, as well as enhance opportunities for human enjoyment.

Policy NCR-2.6 Biological/Ecological Review. When considering building permit, planning, or development applications, the City shall undertake the three stage process outlined below:

- (a) Upon receipt of building permits applications, planning applications or development applications, City staff shall perform an initial screening to determine whether the application would have the potential to impact special status species as defined by CEQA Guidelines §15380. For ministerial projects, the initial screening shall be performed in the context of the application checklist. For discretionary projects, the initial screening shall be performed in the context of Initial Study preparation required under CEQA. For purposes of this screening, the application would have the potential to impact special-status species if development or other activities would occur in ESHA areas, wetlands or riparian areas, forested areas, areas within 50 feet of any blue line stream or any undeveloped rural parcel of greater than one acre in size.
- (b) If the initial screening indicates the potential for impacts to special status species, the applicant shall have a records search performed in the California Natural Diversity Database (CNDDDB) and the City's ESHA inventory to determine whether any sensitive species have been document on or within the vicinity of the subject parcel.
- (c) If the CNDDDB or ESHA inventory indicate that the presence of sensitive on or within the vicinity of the subject parcel, or if the proposed activities would occur within wetland, riparian vegetation, or forested areas, within 50 feet of any blue line stream, or would disturb more than 10 acres, a biological study shall be performed, the application shall be referred to the appropriate responsible/trustee agencies (CDFG, USFWS, etc.), and any mitigation measures identified by the biologist and the agencies incorporated into the project. Mitigation may include, but may not be limited to restoration, off-site replacement for no net loss, or project design/operation modification.

Policy NCR-2.7 Endangered Species. The City, as lead agency, shall require that all projects comply with the requirements of the federal Endangered Species Act, California Endangered Species Act, Clean Water Act, CFDG code, and CEQA.

Policy NCR-2.8 Native Vegetation. The City shall coordinate with resource agencies to require the preservation of native vegetation, while managing areas with high concentrations of invasive species and/or noxious weeds and preventing their encroachment into new areas.

Policy NCR-2.9 Community Education. The City shall require the installation of interpretive signs that educate the public on various environmental issues including stormwater runoff and detention, creek biology, and watersheds affecting the city. Appropriate Signs and plaques may be placed at sites near the Eel River and along public trails and bike paths adjacent to creeks.

Policy NCR-2.10 Wetland Identification and Protection. In considering new development projects, the City shall conduct an initial screening to determine whether the proposal would have the potential to impact wetlands. If the screening indicates the potential presence of wetlands, a wetland assessment/ delineation shall be prepared to determine the presence of jurisdictional wetlands. The assessment/delineation, with proposed mitigation, shall be submitted to the City, CDFG and USACE for concurrence. Mitigation could include avoidance, minimization of impacts, restoration, off-site replacement, and/or the use of buffers.

Policy NCR 2.11 Wildlife Movement Corridors. The City shall identify and map movement corridors for terrestrial wildlife and fish along fish bearing streams within the Planning Area. Movement corridors shall limit physical barriers to allow movement of terrestrial wildlife. Projects proposed within the mapped movement corridors shall be reviewed for consistency with Policies NCR-2.1, NCR-2.6, NCR-2.7, NCR-2.8 and NCR-2.9.

Policy NCR-2.12 Permitted Activities within ESHAs. The following activities shall be permitted in ESHAs with approval from the Fortuna Planning Department and after consultation with Responsible and Trustee agencies: THPs; removal of dead, dying or diseased trees or downed vegetation within the streambed or stream bank; the removal of vegetation obstructing stream flow or causing streambed or stream bank erosion; and road crossings.

Policy NCR-2.13 Watercourse, Wetland and Riparian Buffers. The City shall require appropriate watercourses and wetland buffers to protect water quality and biologic values.

Policy PFS-5.20 Low Impact Development Techniques. The City shall encourage neighborhood parks, subdivisions, commercial development, and redevelopment to incorporate Low Impact Development (LID) techniques, such as bioswales and permeable pavement, to minimize stormwater runoff.

Program NCR-1. The City shall implement a stormwater management program (SWMP) consistent with its NPDES permit coverage.

Program NCR-2. The City shall require projects with greater than one acre of ground disturbance to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) as required by the SWRCB's General Permit for Discharges of Storm Water Associated with Construction Activity. The SWPPP shall identify measures to manage exposed soils, control deposition of pollutants by construction vehicles, cleanup spills of oil and other pollutants, and prevent pollutants from leaving the construction site in runoff. The SWPPP shall also identify BMPs to avoid significant sedimentation in runoff from the construction site.

Program NCR-3. The City shall require new projects that result in parcels less than one (1) acre in size to connect to the City's municipal water, wastewater and storm drain systems.

Program NCR-4. The City shall manage the extent of impervious coverage in the Planning Area to reduce impervious area coverage and to minimize directly connected impervious areas. This will reduce impacts associated with runoff from new development and re-development projects in the Planning Area.

Program NCR-5. The City shall require the integration of BMPs in new development and re-development projects to control pollutant sources and prevent pollutants in runoff during and following development.

Program NCR-6. The City shall require the use of basic water quality strategies that self-treat runoff in new development and re-development projects. These strategies may include infiltrating runoff, retaining/detaining runoff, conveying runoff slowly through vegetation, and/or treatment of runoff on a flow-through basis using other standard treatment technologies.

Program NCR-7. The City shall comply with Clean Water Act requirements with the intent of minimizing pollutant discharges from point and non-point sources to surface waters. Mitigation may include, but may not be limited to, [wetland] restoration, off-site replacement for no net loss, or project design/operation modification.

Program NCR-8. The City shall collect information for a Planning Area ESHA inventory, including but not limited to wetlands, riparian areas, anadromous fish streams, special-status species and their essential habitat, and CNDDDB Sensitive Natural Communities, to assist with the discretionary project review process. This program shall include collaboration with resource agencies, such as CDFG and USFWS, and shall be updated at least every 10 years.

Program NCR-9. The City shall create and maintain maps of streams prone to erosion and sedimentation and identify areas with severe problems to address through restoration.

Program NCR-10. The City shall create and maintain an inventory of streams prone to exotic species invasion and trampling from grazing and collaborate with local and regional stakeholders to identify mitigation measures.

Program NCR-11. The City shall develop interpretive signs that educate the public on stormwater issues and install them near the River Lodge, Eel River, and public trails and bike paths along creek and river areas. These signs should provide information on measures taken by the City to preserve and protect its watersheds.

Program NCR-12. The City shall implement a program to receive and retain any reports that inventory Environmentally Sensitive Habitat Areas (ESHAs) within the planning area, including but limited to wetlands, riparian areas, anadromous fish streams, special-status species, and California Natural Diversity Database (CNDDDB) Sensitive Natural Communities, to assist with the discretionary project review process. This program should include collaboration with agencies, such as CDFG and USFWS, to the extent possible.

Program NCR-13. Where possible, through available grant funding or assessment districts, the City shall maintain and repair streams with high sedimentation by installing habitat restoration and fish passage structures, restoring gravel beds, and creating deep ponds.

Program NCR-14. The City shall prepare a streamside management/wetland protection ordinance, following collaboration with resource agencies including but not limited to CDFG, establishing setback recommendations for perennial and intermittent streams, wetlands, and riparian corridors. At a minimum, the City shall implement the following watercourse, wetland and riparian area protection measures:

Watercourses and Riparian Areas

- (a) The City shall maintain Streamside Management Areas (SMAs) of at least 50 feet around perennial streams and 25 feet around ephemeral streams, unless a biological report indicates that such SMA setbacks are not required. New development/activities within SMAs shall be limited to: (1) activities for wildlife enhancement/restoration, flood control or drainage, new fencing so long as it would not impede natural drainage or wildlife, and bank protection; (2) commercial timber management and harvest activities regulated by the Forest Practices Act; (3) road and bridge replacement or construction, when it can be demonstrated that it would not degrade fish and wildlife resources or water quality; (4) removal of vegetation for disease; (5) control or public safety; and (6) management and maintenance of trees, shrubs and other plant life; and
- (c) New development within SMAs shall minimize adverse effects, including: retaining snags and live trees with visible evidence of use as nesting sites; replanting disturbed areas with riparian vegetation; and performing erosion control measures.

Wetlands

- (a) The City shall maintain Wetland Buffer Areas of 50 feet around jurisdictional wetlands, unless a biological report indicates that such Wetland Buffer Areas are not required;
- (b) New development within Wetland Buffer Areas shall be limited to: fish and wildlife management; wetland restoration; removal of trees for disease control and public safety; and new fencing so long as it does not impede drainage or wildlife movement;
- (c) No new development shall be permitted in Wetland Buffer Areas which degrades the wetland; and
- (d) Wetland Buffer Areas disturbed by permitted activities shall be restored to the original contours and promptly replanted with native riparian vegetation.

Combined Watercourses/Riparian Areas and Wetlands

- (a) Storm water runoff to watercourses and wetlands shall not exceed the existing rate of storm runoff for a 50 year storm of 10 minute duration;
- (b) Sediment in storm water runoff draining to watercourses and wetlands shall be minimized through the use of sediment basins, seeding or replacing bare soil, diversion of runoff away from graded areas and areas heavily used during construction, and limiting

- grading in buffer areas to the dry season (May through October);
- (c) Stormwater outfalls, culverts, gutters, and other similar facilities draining to watercourses and wetlands shall be dissipated; and
 - (d) Septic systems shall not be permitted within wetland buffer areas. Adjacent to these areas, septic systems shall meet County Health Department and RWQCB standards.

Program NCR-15. The City shall improve and replace culverts under City streets as needed to provide fish passage in affected creeks.

Program PFS-18. The City shall implement a Post Construction Stormwater runoff Control Ordinance in order to minimize pollutants in post-construction stormwater discharges.

Program PFS-19. The City shall, by resolution, adopt a Manual of Stormwater Quality Control Standards for New Development and Redevelopment which will include requirements identifying appropriate design standards and BMPs to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as may be appropriate to minimize the generation, transport and discharge of pollutants.

Impacts and Mitigation

Impact 5.2-1: Special-Status Species

Proposed General Plan Implementation will not result in substantial adverse impacts to special-status species, either directly or through habitat modification.

Discussion

The CNNDDB database search reported the occurrence of four special-status plant species and three special-status animal species within the Planning Area (Figure 5-3). The proposed Land Use Diagram (Figure 2-7 in Chapter 2 of this PDEIR), includes several areas where these special-status plant and animal species have been documented and that are designated for urban development. This includes: in the area of Whitney's farewell-to-Spring, a portion of which would be designated either Residential Rural or Industrial; in the area of both Siskiyou checkerbloom and maple-leaved checkerbloom, a small portion of which would be designated Rural Residential; in the area along either side of Strongs Creek (which contains coastal cutthroat trout), portions of which would be designated Industrial, Public, Mill District, Corridor Mixed Use, Residential High, and Residential Medium; and in the area of tricolored blackbird which would be designated Industrial. In addition, the areas of Pacific gilia and red tree vole, while not designated for urban uses, would be designated Agriculture.

The CNNDDB and other sources suggest that, in addition to these, ten other special-status plant species and eleven other special-status animal species occur or have the potential to occur in the Planning Area. While specific locations where these species occur are unknown, the proposed Land Use Diagram will designate large areas of the Planning Area for urban uses. These areas include some of the 30 known wetlands scattered throughout the Planning Area (Figure 5-2), and some of the undeveloped forest and meadows in the northern and eastern portions of the

Planning Area, that represent potential habitat for these special-status species. Specific instances include, but are not limited to: (1) the existing PEM1/UBHX wetland between HWY 101 and Alamar Way which is designated Commercial; (2) the area of existing PSS1C wetlands along Rohner Creek between Main Street and HWY 101 which passes through areas designated Corridor Mixed Use, Commercial, Residential High, Residential Medium and Residential Low; (3) the existing PEM1/UBHX wetland in the Riverwalk Annexation Area which designated as Industrial; and (4) the approximately 10 existing wetlands along the north bank of the Van Duzen which are designated Agriculture.

The development of urban uses in portions of the Planning Area known or likely to contain special status species has the potential to cause substantial adverse impacts to special-status species, either directly (e.g., direct loss of individuals - take) or through habitat modification. However, the proposed General Plan includes policies and programs designed to minimize impacts to special-status species and their habitat, including:

- (1) Goal NCR-2 calls for the protection of existing sensitive species and their habitat, including riparian corridors, wetlands, and ESHAs;
- (2) Policies NCR-2.1 and -2.13 require the City to establish watercourse, wetland and riparian buffers to provide for fish and terrestrial wildlife habitat protection, enhancement and movement along riparian corridors;
- (3) Policy NCR-2.2 requires consultations with CDFG and other regulatory agencies to solicit expertise/guidance prior to any salmonid-bearing stream restoration activity;
- (4) Policy NCR-2.3 requires the City to implement the recommendations of the Recovery Strategy for California Coho Salmon through enhancing/restoring riparian ecosystems, improving water quality and reducing flooding;
- (5) Policy NCR-2.4 requires the City to use North Coast Basin Planning Project stream inventory reports to manage each identified stream as an anadromous fish and natural production stream;
- (6) Policy NCR-2.6 requires biological studies for proposed development, consultation with trustee agencies, and implementation of mitigation measures identified in the study (including, potentially, no net loss replacement);
- (7) NCR-2.8 requires the preservation of native vegetation and the management of invasive and/or noxious plant species;
- (8) Policy NCR-2.10 requires wetland assessments/delineations for new development to identify, delineate, assess and mitigate wetland impacts;
- (9) Policy NCR-2.12 limits activities within ESHAs to THPs, removal of dead/dying/diseased trees, and removal of vegetation obstructing stream flow;
- (10) Program NCR-13 requires the City, where possible, to maintain and repair streams with high sedimentation by installing habitat restoration and fish passage structures; and
- (11) Program NCR-14 requires the City to prepare a streamside management/ wetland protection ordinance that requires the establishment of SMAs and Wetland Buffer Areas around streams and wetlands, limits activities within these SMAs, prohibits uses and activities that would degrade watercourse and wetland habitat and water quality,

controls the quantity and quality of stormwater runoff draining to watercourses and wetlands, and prohibits septic systems within SMAs and Wetland Buffer Areas.

The policies and programs summarized above will function to retain special-status species and their habitat by: (1) requiring biological studies and wetland delineations for proposed new development, and the implementation of mitigation identified in these studies and delineations to protect special-status species and their habitat; (2) protecting watercourses, wetlands, associated riparian habitat, and ESHAs; (3) requiring development activities to comply with the Recovery Strategy for California Coho Salmon and other regulations and plans designed to protect special-status fish species; (4) requiring preservation and replacement of native vegetation; and (5) requiring the City to adopt an SMA Ordinance equivalent to the County's SMA Ordinance. With compliance with applicable federal, state regulations (FESA, CESA, etc.), and with implementation of the proposed policies and programs listed above, the impact to special-status species and their habitat would be less than significant.

It should be noted that, under the proposed Land Use Diagram, large tracts of undeveloped forest and prairie in the northern and eastern portions of the Planning Area, that represent potential special-status species habitat, will be designated Rural Residential, Open Space, or Park, Greenways & Recreation. Each of these designations provides for a large amount of undeveloped open space ensuring that a considerable amount of potential special-status species habitat will be retained. This will augment the special-status species and associated habitat to be retained in compliance with applicable regulations and implementation of the proposed policies and programs.

Numerous agency comments on the Biological Resources chapter received during the 60-day comment period of the 2007 DPEIR indicated that the proposed policies should, "be clear, unambiguous and enforceable, should use the terms" shall" and "must" rather than "should" and "recommend", should identify appropriate implementation and tracking mechanisms, and should identify performance standards for future development." In response, the policies have been re-written. They now: (1) are clear, unambiguous and enforceable; (2) use the terms "shall" and "must"; (3) identify appropriate implementation and tracking through the identifications of programs to implement the policies, along with identification of the responsible party and time frame for implementation (see Policy Document); and (4) identify performance standards (such as specific quantified SMA and Wetland Buffer setback requirements).

Also, as required by CEQA, all proposed policies and programs identified in this PEIR that serve to reduce or avoid the significant impacts of the proposed plan (i.e., EIR mitigation measures), shall be included in a Mitigation Monitoring Program (MMP) to be adopted by the City. The MMP will serve as the required mitigation implementation and tracking mechanism for the proposed policies and programs.

Determination of Level of Significance

Less-Than-Significant

Mitigation

No mitigation necessary

Impact 5.2-2: Wildlife and Fish Movement

Proposed General Plan implementation will not interfere substantially with the movement of native or migratory wildlife or fish species.

Discussion

The Planning Area contains several landforms, including floodplain and valley floor in the western and southern portions, and hillsides and canyons in the northern and eastern portions. Urban uses dominate the central portion of the Planning Area, extending westward across HWY 101 in the Riverwalk area and up several of the canyons in the northern and eastern areas. Agricultural uses dominate in the south and west, but also occur in some areas in the east. Forested and meadow areas dominate in the north and east. The Planning Area is also bisected by several creeks (Palmer, Rohner, Strongs, Jameson, and Mill). Two rivers (Eel and Van Duzen) and a gulch (Wolverton) border the Planning Area in the west, south, and southeast respectively. Generally, the creeks are bordered by urban development in the central portion of the Planning Area and by open space and agriculture in the northern, eastern and southern areas. The gulch is bordered by agriculture and open space, and the two rivers are largely bordered by agricultural land and gravel extraction sites.

The Planning Area contains or has contained 17 special-status animal species, including nine species of birds (tricolored blackbird, Northern spotted owl, snowy plover, marbled murrelet, willow flycatcher, great blue heron, great egret, snowy egret and black-crowned night heron), one species of terrestrial mammal (red tree vole), one species of reptile (Western pond turtle), two species of amphibians (Northern red-legged frog, Foothills yellow-legged frog), and four species of fish (Coastal cutthroat trout, Coho salmon, steelhead, and Chinook salmon). In addition, the Planning Area has the potential to contain other as of yet unrecorded special-status animal species. Documented fish and amphibian species occur in the creeks and/or rivers in the Planning Area, and that the anadromous fish species transit from the Eel River to the creeks and the Van Duzen River during their various breeding seasons (CDFG 2008; NOAA 2008; Hendrix-Kramer 2009). It is also likely that the bird and terrestrial mammal species move within the creek corridors that bisect the Planning Area, and across the open space areas in the northern and eastern portions of the Planning Area. Therefore, the creeks within the Planning Area represent movement corridors, while the open space areas represent potential movement areas.

The proposed Land Use Diagram (Figure 2-7 in Chapter 2 of this DPEIR) designate some of the land along the creeks that bisect the Planning Area, and some of the open space in the northern and eastern portions of the Planning, for urban development. Specific instances include, but are not limited to: (1) the area along either side of Strongs Creek (that contains coastal cutthroat trout, coho salmon, steelhead, and possibly Chinook salmon), portions of which are designated Industrial, Public, Mill District, Corridor Mixed Use, Residential High, and Residential Medium; (2) the area along the Eel River within the proposed Riverwalk Annexation Area (that may contain snowy plover or other special-status species habitat) are designated Industrial and Riverwalk District; and (3) the area along the north side of Wolverton Gulch (that contains red tree vole), a portion of which is designated Residential Rural and Agriculture. In addition, forested and meadow areas that may contain multiple special-status bird and terrestrial mammal species are designated for urban uses, including: in the northern portion, within the proposed

Carson Woods Road Annexation Area, that is designated as Residential Very Low and Residential Rural; in the eastern portion around Strongs Creek , designated as Rural Residential and Residential Low; and in eastern portion around Jameson Creek , designated as rural Residential. Finally, large expanses of forested and meadow area in the northern and eastern portions of the Planning Area are designated as Open Space, and while this designation is not an urban designation, timber harvesting that is permitted with this designation could interfere with wildlife movement. This would result in the conversion of wildlife movement corridors and wildlife movement areas to urban uses, fragment existing wildlife habitat, and/or limit wildlife movement opportunities. Movement between available habitats is critical for population stability, breeding, recruitment, and dispersal.

The proposed designation of the movement corridors and movement areas for urban uses, as discussed above, will be inconsistent with facilitating movement between remaining habitats adjacent to and within the Planning Area, and in the case of fish, could potentially eliminate the fisheries in on-site creeks. However, the proposed General Plan includes policies and programs designed to preserve wildlife movement corridors and movement areas :

- Policies NCR-2.1 and -2.13 require the City to establish watercourse, wetland and riparian buffers to provide for fish and terrestrial wildlife habitat protection, enhancement and movement along riparian corridors;
- Policy NCR-2.4 requires the City to use North Coast Basin Planning Project stream inventory reports to manage each identified stream as an anadromous fish and natural production stream;
- Policy NCR-2.6 requires biological studies for proposed development, consultation with trustee agencies, and implementation of mitigation measures identified in the study (including, potentially, mitigation to ensure continued wildlife movement);
- Policy NCR 2.11 requires the City to identify and map movement corridors and requires development to limit physical barriers to allow wildlife movement; and
- Program NCR-13 requires the City to, where possible, maintain and repair streams with high sedimentation by installing habitat restoration and fish passage structures.

Furthermore, there are substantial federal and state laws and regulations protecting Waters of the U.S. and jurisdictional wetlands, and any activities that would intrude into these would require federal and/or state permits (404, 1603, etc.) which are designed to avoid significant impacts.

Finally, the harvesting of timber requires preparation of a Timber Harvest Plans (THPs) or Non-Industrial Timber Harvest Plans (NTMPs) under California Forest Practice Rules which require the implementation of measures to ensure the protection of special-status species, their habitat, and wildlife movement.

With compliance with these laws and regulations, and with implementation of the policies and programs listed above, the proposed General Plan will not interfere substantially with the movement of native or migratory wildlife or fish species. Thus, the impact will be less than significant.

Determination of Level of Significance

Less-Than-Significant

Mitigation

No mitigation necessary

Impact 5.2-3: Watercourses and Wetlands

Proposed General Plan implementation will not have a substantial adverse effect on federally protected watercourses or wetlands, as defined by Section 404 of the Clean Water Act, through removal, filling, hydrological interruption, etc.

Discussion

The Planning Area contains approximately 30 mapped wetlands (Figure 5-2), and may contain additional unmapped wetlands. Impacts to watercourses and wetlands can take several forms, including but not limited to direct removing or filling, interrupting hydrological flow, increasing erosion or sedimentation, and affecting water quality. Development allowed by the proposed Land Use Diagram could cause one or more of these impacts by designating known wetlands, land adjacent to watercourses and wetlands, and land upstream of watercourses and wetlands, for urban use. Specific instances include, but are not limited to: (1) the existing PEM1/UBHX wetland between HWY 101 and Alamar Way that is designated Commercial; (2) the area of existing PSS1C wetlands along Rohner Creek between Main Street and HWY 101 that passes through areas designated Corridor Mixed Use, Commercial, Residential High, Residential Medium and Residential Low; (3) the existing PEM1/UBHX wetland in the Riverwalk Annexation Area designated as Industrial; and (4) the approximately 10 existing wetlands along the north bank of the Van Duzen River that are designated Agriculture.

The proposed General Plan includes the following biological resources policies and programs designed to avoid significant impacts to watercourses and wetlands:

- Policies NCR-2.1 and -2.13 require the City to establish watercourse, wetland and riparian buffers and restore habitat;
- Policy NCR-2.3 requires the City to work to implement the recommendations of the Recovery Strategy for California Coho Salmon, including enhancing and restoring riparian ecosystems, improving water quality, and reducing flooding;
- Policy NCR-2.4 requires the City to manage BPP-identified streams as an anadromous fish and natural production stream;
- Policy NCR-2.6 requires biological studies for proposed development, consultation with trustee agencies, and implementation of mitigation measures identified in the study (including, potentially, mitigation to avoid impacts to watercourses and wetlands);

- Policy NCR-2.10 requires a wetland delineation/assessment, agency (CDFG, USACE) concurrence, and implementation of required mitigation (e.g., avoidance, minimization, restoration, off-site replacement, and/or use of buffers) for any projects that could impact jurisdictional wetlands; and
- Program NCR-14 requires the City to prepare an SMA/ wetland protection ordinance, equivalent to Humboldt County's SMA ordinance, that requires the establishment of SMAs and Wetland Buffer Areas of specified widths around streams and wetlands, limits activities within these SMAs, prohibits uses and activities that would degrade watercourse and wetland habitat and water quality, controls the quantity and quality of stormwater runoff draining to watercourses and wetlands, and prohibits septic systems within SMAs and Wetland Buffer Areas.

These policies and programs will preserve existing watercourses and wetlands, establish SMA and Wetland Buffer Areas, and limit the uses and activities within these areas to those that would not adversely affect the physical integrity or water quality of these the watercourses and wetlands.

Furthermore, the proposed General Plan contains the following water quality and drainage policies and programs designed to avoid significant impacts to watercourses and wetlands:

- Policy NCR-1.1 requires the City to condition development to minimize point and non-point source pollutant discharges to local watersheds;
- Program NCR-1 requires the City to implement a SWMP;
- Program NCR-2 requires projects of greater than one acre to implement a SWPPP to manage exposed soils, control deposition of pollutants by construction vehicles, cleanup spills, and prevent pollutants and sediment from leaving the construction site in runoff;
- Program NCR-3 requires new projects to connect to the City's municipal water, wastewater and storm drain systems;
- Program NCR-4 requires the City to manage the extent of impervious coverage in the Planning Area to reduce runoff;
- Program NCR-5 and -6 require the integration of BMPs (e.g., infiltrating runoff, retaining runoff, using bioswales to clean runoff, etc.) in new development to control pollutant sources and prevent polluted runoff during and following development;
- NCR-7 requires compliance with Clean Water Act requirements to minimize pollutant discharges to surface waters (e.g., wetland restoration, off-site replacement for no net loss, etc.);
- Policy PFS-5.20 requires the City to encourage new development to incorporate LID techniques such as bioswales and permeable pavement to minimize runoff;
- Program PFS-18 requires the City to implement a Post-Construction Stormwater Runoff Control Ordinance to minimize pollutants in stormwater discharges following construction; and
- Program PFS-19 requires the City to adopt a Manual of Stormwater Quality Control Standards for New Development which identifies appropriate design standards and BMPs

to control the volume, rate, and potential pollutant load of stormwater runoff from new development projects.

This would incorporate reasonable controls to minimize urban pollutants in stormwater runoff entering the areas watercourses and wetlands.

In addition to proposed policies and programs, there are substantial federal and state laws and regulations protecting Waters of the U.S. and jurisdictional wetlands (Clean Water Act, Rivers and Harbors Act, etc.). Any activities that encroach into the watercourses and wetlands require federal and/or state permits (404, 1603, etc.) designed to avoid significant impacts.

By complying with these laws and regulations, and adoption of the listed policies and programs, implementation of the proposed General Plan will not have a substantial adverse effect on federally protected watercourses or wetland. Therefore, impacts will be less than significant.

Determination of Level of Significance

Less-Than-Significant

Mitigation

No mitigation necessary

Impact 5.2-4: Riparian Habitat and other Sensitive Natural Communities

Proposed General Plan implementation will not have substantial adverse effects on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFG or USFWS.

Discussion

The topic of riparian habitat is addressed impervious impacts (special-status species habitat, wildlife and fish movement, and watercourses/wetlands). See these impact discussions for analysis.

Sensitive Natural Communities are those vegetative associations that have been categorized by CDFG or USFWS as rare or threatened, thus warranting protection and preservation. As discussed earlier in this chapter, a CNDDDB records search did not turn up any sensitive natural communities within the Planning Area, but did record three such communities within the vicinity, including coastal terrace prairie, Sitka spruce forest, and upland Douglas fir forest. Because of this proximity, one or more of these communities may also occur in the forested northern and eastern portions of the Planning Area.

The proposed Land Use Diagram designates certain forested areas in the northern and eastern portions of the Planning Area for urban development (see Figure 2-7 in Chapter 2 of the DPEIR). These include: (1) the northwest portion of the Planning Area around Palmer Creek which

would be designated Rural Residential; (2) the Carson Woods Road Annexation Area which would be designated Rural Residential; (3) the area just south of the Carson Woods Road Annexation Area which would be designated Residential Very Low; and (4) the southwestern portion of the Strongs Creek Annexation Area which would be designated Residential Low. In addition, the proposed Land Use Diagram would designate certain forested areas in the northern and eastern portions of the Planning Area as Open Space which permits timber harvesting. These areas include: (1) the far northwest corner of the Planning Area; (2) the northeastern portion of the Strongs Creek Annexation Area (3) the area in the eastern portion of the Planning Area, along the upper reaches of Jameson Creek; and (4) the area in the eastern portion of the Planning Area, between the upper reaches of Mill Creek and the Van Duzen River.

While development and activities permitted under the proposed Land Use Diagram could result in substantial adverse effects to Sensitive Natural Communities that may be present, the proposed plan includes the following policies and programs designed to minimize such impacts:

- Policy NCR-2.6 requires biological studies and consultations with responsible and trustee agencies for proposed development in forested areas, and implementation of any mitigations recommended in the studies or by the agencies;
- Policy NCR-2.8 requires the City to coordinate with resource agencies to require the preservation of native vegetation;
- Policy NCR-2.12 limits activities within ESHAs to THPs, removal of dead, dying or diseased trees, the removal of vegetation obstructing stream-flow, and road crossings; and
- Program NCR-8 requires the City to inventory ESHA areas and use the inventory during development review.

In addition, timber harvesting requires preparation of a THP or NTMP under California Forest Practice Rules that require the implementation of measures to ensure the protection of special-status species, their habitat, and Sensitive Natural Communities. By complying with applicable laws and regulations (FESA, CESA, California Forest Practice Rules, etc.), and implementing these policies and programs, the proposed General Plan will not have substantial adverse effects on Sensitive Natural Communities. Therefore, impacts will be less than significant.

Determination of Level of Significance

Less-Than-Significant

Mitigation

No mitigation necessary

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