

2 Biological Resources

This chapter is intended as a guide to the current biological resources in Humboldt County including habitats, fisheries, special status species, and the existing policies concerning these resources. The final section contains existing policies pertaining to biological resources and policy issues and options for consideration during the General Plan Update Process.

2.1 EXISTING BIOLOGICAL RESOURCES

GENERAL HABITATS

Humboldt County is part of the Klamath/North coast bioregion. In general, this bioregion is characterized by its rocky coastline, forested montane areas, and sparse human settlement. Much of the bioregion is covered by forest, including many important forest resources in Humboldt County. This mountainous region is also the wettest area in the state of California. The coastal climate is cool, moist, and tends to be foggy, while inland the climate is drier.

The Humboldt coastal area is rich in natural resources. Bays and estuaries and other tidal inlets provide a variety of habitats supporting many species of resident and migratory wildlife. Humboldt Bay, one of California's largest coastal estuaries, is second only to San Francisco Bay in size. The bay is an important habitat for many invertebrates, fish, birds, and mammals. Humboldt Bay National Wildlife Refuge was established in 1971 in recognition of the area's unique fish and wildlife values.

The inland area of Humboldt County is home to a wealth of fish and wildlife due to ample rainfall and the mild, consistent climate of the region. Additionally, the sparse development in Humboldt has allowed nearly 400,000 acres of the county's mountains and coastline to be absorbed into the state and national park systems, leaving large tracts of existing habitat untouched. The relative lack of development and human disturbance in the area enhances the opportunity for wildlife species to live and reproduce without disturbance. The county is composed mainly of coastline and mountainous areas with dense coniferous forests interspersed with grass or chaparral covered slopes. As discussed in the previous chapter, six wild rivers run through the county providing habitats for fish and wildlife as well as important water resources.

Wildlife habitat can be broadly defined as any area that supports wildlife species. It is often difficult to determine what elements in the landscape actually increase the value of a given habitat. The type of vegetation and the structure of the vegetative community are important characteristics of habitat since wildlife species rely upon vegetation for food and cover. Slope, elevation, exposure, and accessibility by predators or humans can also have an impact on habitat suitability. Habitat requirements vary according to species, season, and climatic conditions. The varied wildlife habitat types present in Humboldt County provide opportunities for a diverse wildlife population. Habitat in Humboldt County supports fox, deer, elk, waterfowl, marine mammals, salmon, mountain lions, bears, and other fish and wildlife.

VEGETATION/HABITAT TYPES

The predominant vegetation type or community found in a certain region can generally be used to characterize habitats. The generalized vegetation types in Humboldt County are listed in Table 2-1 and their overall percentages are illustrated in Figure 2-1. Vegetation type distribution in the county is shown in Figure 2-2. (Figures 2-5 through 2-16, following the discussion of special status species, show a more detailed distribution of vegetation types for each planning watershed.) These vegetation categories have been consolidated from the California Wildlife Habitat Relationships (WHR) types. These various vegetation areas provide important habitat for a wide variety of wildlife and plant life. Several of the key habitats are described below.

Forest Habitats

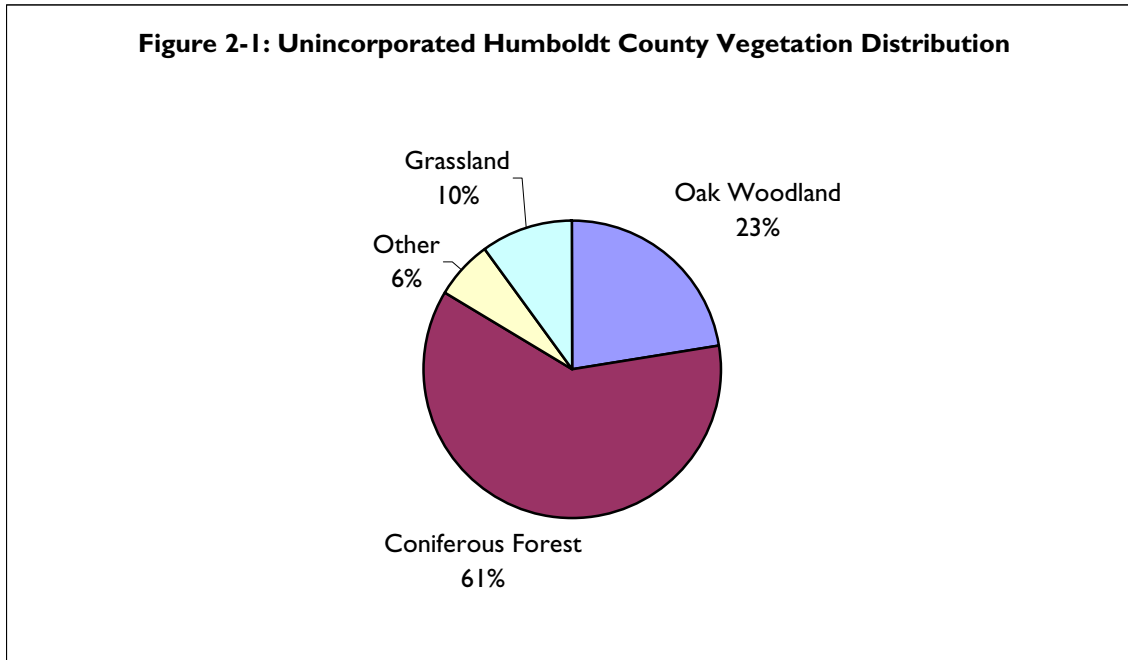
As listed in the table, forests are the predominant vegetation type with fir forest, and redwood representing over 50 percent of the unincorporated county. Redwood areas generally occur from the coast eastward to the ridgeline. Fir and montane hardwood occur in the eastern and southeastern areas of the county.

Forests are an important biological resource, which must be balanced for economic, biological, social, and cultural demands placed upon them. Fir and hardwood forests support sensitive species such as goshawk, red tree vole, and spotted owls. Old growth redwood and Douglas fir forests provide prime breeding grounds for numerous sensitive species. Most of the old growth forestland is protected by state or federal park designation (e.g., Redwoods State Park, Headwaters, and Redwood National Park). However, there are a few pockets of unprotected old growth forestlands near the Headwaters land and adjacent to other protected areas. Hardwood and conifer forests are not considered as sensitive as fir and redwood forests, in terms of habitat quality. Forest Resources and greater detail of forest types are discussed in depth in Chapter 3.

Table 2-1: Vegetation Types in Unincorporated Humboldt County

| <i>Vegetation Type</i> | <i>Total Acres</i> | <i>% Of Total</i> |
|------------------------|--------------------|-------------------|
| Agriculture-Crops | 41,166 | 2% |
| Annual Grass | 222,109 | 10% |
| Chaparral | 30,452 | 1% |
| Coastal Scrub | 13,699 | 1% |
| Fir Forest | 760,611 | 34% |
| Oak Woodlands | 502,066 | 23% |
| Pine Forest | 170,492 | 8% |
| Redwood | 425,670 | 19% |
| Riparian | 49,968 | 2% |
| Wetlands | 8,867 | 0% |
| Total | 2,225,100 | 100% |

Source: California Department of Forestry and Fire Protection, based on WHR classifications consolidated into more general categories, 2002.



Oak Woodlands

Oak woodlands include coastal oaks, montane hardwood, and blue oak areas. These woodlands provide excellent habitat for raptors and other wildlife species. As shown in Figure 2-2, these areas are distributed throughout the county, with higher concentrations inland, particularly in the northern part of the county and the eastern portion of the central county.

Riparian Areas

Riparian zones include the vegetation communities that grow along the banks or edges of rivers or creeks. Riparian habitats typically include a dense understory of shrubs and vines sheltered by overstory vegetation provided by tree species such as willows. Montane riparian areas include dominant species such as Black Cottonwood, White Alder, and Bigleaf Maple. Riparian areas are critical to many species of wildlife. The vegetation provides cover and nesting habitat for birds and creates corridors for animal movement including travel to and from different habitat types. These areas are important for wildlife migration and dispersal. While riparian habitat occurs as linear strips through various vegetation types, the adjacent upland habitat is often different. The edges where riparian habitat meets with upland habitat are known as ecotones, or edge habitats, which are important for many wildlife species.

Wetlands

Wetland areas, which are scattered throughout the county, include wet meadows, and both saline and freshwater emergent wetlands. Coastal wetlands were inventoried during preparation of the County's Coastal Plan; other areas of the county have not been comprehensively inventoried for wetland features. For areas outside of the Coastal Zone, wetland data is from the National Wetland Inventory, which is limited to the central portion of the county. Therefore, the depiction of wetlands in Figure 2-2 is not complete. Since it is difficult to discern coastal wetlands on the countywide map, they are shown in the constraints summary figures, in Chapter 14.

FISHERIES

Humboldt's many wild rivers, Humboldt Bay, and the ocean off of the coast of Humboldt County all support fisheries. However, consistent with the national trend, fewer and fewer commercial fishing licenses have been sought in recent years as locally based commercial fishing has become less lucrative. Additionally, several species of fish living in both the ocean and rivers have become threatened or endangered and are protected by the Federal Endangered Species Act.

Humboldt Bay is one of California's largest estuaries and is a significant fishery in Humboldt County. In the seventies, over half of the fish produced and consumed in California were landed in the Humboldt Bay Area.¹ The bay provides critical habitat to over 100 different fish species and other wildlife. The five major fisheries based out of Humboldt Bay are groundfish, salmon, shrimp, crab, and albacore. Inland, sport fishing in Humboldt's many wild rivers should be rich and plentiful, but each year fewer and fewer adult fish return from the sea to spawn as a result of habitat damage from logging, road building, grazing, and mining; over-fishing; and well-intended but flawed hatcheries. This decline in the population of several species of salmon and trout has limited sport fishing within Humboldt Bay's tributaries.

¹ Humboldt County Local Coastal Program Technical Studies Commercial Fishery and Beach Use, page 7.

Figure 2-2a: Vegetation Types

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Back

Figure 2-2b: Vegetation Types

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Back

Figure 2-2c: Vegetation Types

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Natural Resources and Hazards*

Back

SENSITIVE HABITATS

A sensitive habitat is an area important to the survival of a plant or animal species that is valued because of the unique role it plays in the environment. Sensitive species and their ecological systems are plants and animals in danger of dying out due to low numbers of individuals per population, a limited number of populations, or a highly limited, fragmented, or vulnerable habitat. Sensitive species are protected under State law, Federal law, the County General Plan, or other regulations (see below). A critical habitat is a type of sensitive habitat that is presently threatened and reduction or loss would cause the extinction of a threatened, rare, or endangered species. The County's current General Plan identifies the following habitats as being threatened by loss or reduction:

- Roosevelt Elk Range
- Rookery and Nest Sites
- Critical Habitat Areas (e.g., rare and endangered species)
- Streams and Streamside Areas
- Coastal Habitats (designated Environmentally Sensitive Habitat Areas)

Within the Coastal Zone, Environmentally Sensitive Habitat Areas (ESHAs) are designated, pursuant to the California Coastal Act. Humboldt County ESHAs include: anadromous fish streams, sand dunes, rookeries and marine mammal haul-out areas, wetlands, riparian areas, areas of pygmy vegetation which contain species of rare or endangered plants, and habitats of rare and endangered plants and animals. Figure 2-3 maps out some of the critical habitat and habitat corridors in Humboldt County, as they existed in 1984. Please note that this information is not comprehensive and may not fully reflect current habitat conditions. New field studies will be necessary to update the data in this figure.

SPECIAL STATUS SPECIES

Special status species are defined as species that are designated by Federal or State regulatory agencies as needing protection due to rarity or threats to their existence. In addition to federal and state "listed" and rare species, some animals have been identified as "species of concern." These terms are described in the following subsections.

Federal and State Listings

The Endangered Species Act (ESA) of 1973 defines an endangered species to mean "any species which is in danger of extinction throughout all or a significant portion of its range" and a threatened species as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Candidate species are "plants and animals for which the Fish and Wildlife Service (FWS) has sufficient information on their biological status and threats to propose them as endangered or threatened under the

Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.”² The National Marine Fisheries Service (NMFS) defines candidate species more broadly to include species whose status is of concern but more information is needed before they can be proposed for listing.

The California Endangered Species Act (CESA) uses the same definitions for endangered and threatened species, but refers only to native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant. CESA also refers to “candidate species.” These are any species or subspecies currently under formal review by the California Department of Fish and Game (DFG) for inclusion in either the threatened or endangered species lists; this information is not included in the CNDDDB data summarized in this chapter. The State does list some native plants as “rare”; an explanation of this category can be found in the NPPA and CESA subsections of the State Regulations section later in this chapter.

Table 2-2 shows a complete list of federal and state listed species for the County. More detailed information on these species is displayed in the Planning Watersheds section.

As summarized in Table 2-3, there are six federally listed endangered species, seven federally listed threatened species, and two federal candidate species in Humboldt County. Figure 2-4 illustrates the distribution of special-status species throughout the County.

The marbled murrelet (*Brachyramphus marmoratus*) and the Northern California steelhead (*Oncorhynchus mykiss irideus*, same nomenclature as for the summer-run steelhead) are not included in the CNDDDB, therefore occurrences and watershed information is not available through GIS. Both are federally listed as threatened; the marbled murrelet is also listed as endangered by the State.

² <http://endangered.fws.gov>, produced September 2001.

Figure 2-3: Biological Resource Areas

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Natural Resources and Hazards*

Back

Figure 2-4a: Special Status Species and Wetlands in Humboldt County (North)

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Natural Resources and Hazards*

Figure 2-4a pg.2

Figure 2-4b: Special Status Species and Wetlands in Humboldt County (Central)

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Natural Resources and Hazards*

Figure 2-4b pg.2

Figure 2-4c: Special Status Species and Wetlands in Humboldt County (South)

Figure 2-4c pg.2

Table 2-2: Federal and State Listed Species in Humboldt County

| <i>Scientific Name</i> | <i>Common Name</i> | <i>Occurrences</i> |
|---|--------------------------------------|--------------------|
| <i>Astragalus agnicidus</i> | Humboldt Milk-Vetch | 5 |
| <i>Bensoniella oregona</i> | Bensoniella | 5 |
| <i>Brachyramphus marmoratus</i> | Marbled Murrelet | - |
| <i>Charadrius alexandrinus nivosus</i> | Western Snowy Plover | 6 |
| <i>Empidonax traillii</i> | Willow Flycatcher | 1 |
| <i>Erysimum menziesii</i> ssp <i>eurekaense</i> | Humboldt Bay Wallflower | 6 |
| <i>Eucyclogobius newberryi</i> | Tidewater Goby | 6 |
| <i>Falco peregrinus anatum</i> | American Peregrine Falcon | 2 |
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | 5 |
| <i>Layia carnosa</i> | Beach Layia | 10 |
| <i>Lilium occidentale</i> | Western Lily | 9 |
| <i>Oncorhynchus clarki clarki</i> | Coast Cutthroat Trout | 32 |
| <i>Oncorhynchus kisutch</i> | Coho Salmon - Central California ESU | 3 |
| <i>Oncorhynchus mykiss irideus</i> | Summer-Run Steelhead Trout | 6 |
| <i>Oncorhynchus mykiss irideus</i> | Northern California Steelhead Trout | - |
| <i>Oncorhynchus tshawytscha</i> spring-run | Spring-Run Chinook Salmon | 1 |
| <i>Rallus longirostris obsoletus</i> | California Clapper Rail | 1 |
| <i>Riparia riparia</i> | Bank Swallow | 1 |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 318 |
| <i>Thlaspi californicum</i> | Kneeland Prairie Pennycress | 1 |

Source: *California Natural Diversity Database and Dyett and Bhatia, 2002.*

Species of Special Concern

The Department of Fish and Game (DFG) has designated certain vertebrate species as "Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as Species of Special Concern is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long term viability. Not all Species of Special Concern have declined equally; some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a threatened or endangered species under the State and/or Federal Endangered Species Acts.³

³ http://www.dfg.ca.gov/endangered/special_animals.html

An example of a species of special concern is the osprey. Osprey nesting sites are classified as Areas of Special Biological Importance by the Department of Fish and Game. Fish and Game considers the area along the southern boundary of the Eureka Planning Area (near Catfish Lake, Shaw Gulch and Elk River) to be one of the two largest concentrations of osprey nesting sites in the State.

Table 2-3: Summary of Special Status Species in Unincorporated Humboldt County

| <i>Status</i> | <i>Number of Species</i> |
|--|--------------------------|
| Federal Endangered | 6 |
| Federal Threatened | 7 |
| Federal Candidate | 2 |
| State Endangered | 10 |
| State Threatened | 2 |
| State Rare ¹ | 1 |
| DFG Species of Special Concern ² | 24 |
| CNPS* Rare or Endangered in CA and elsewhere | 25 |
| CNPS* Rare or Endangered solely in CA | 30 |

¹ Applies to plants only; see section on State Regulations.

² Applies to vertebrates only.

*California Native Plant Society, a statewide nonprofit organization with open membership. These ratings do not conform to Federal or State standards. Further information about the CNPS Rare Plant Program and its rating system can be found at <http://www.cnps.org/rareplants/program.htm>.

Source: *California Natural Diversity Database and Dyett and Bhatia, 2002.*

PLANNING WATERSHEDS

The following pages provide a summary of each planning watershed (planning watersheds are defined in Chapter 1). Figures 2-5 to 2-16 illustrate the distribution of vegetation types within each. Tables 2-4 through 2-15 list the federal and state listed special status species in Humboldt County’s planning watersheds. The Eureka Plain, Mad River, and Trinidad watersheds have the greatest number of federal and state listed species. The only species found consistently in every watershed is the federally endangered northern spotted owl. This may be due to the variety of habitat necessary to support nesting, roosting, and foraging behaviors. Both the northern spotted owl and the marbled murrelet are dependent on forestlands for part of their life cycle and have become threatened due to reductions in habitat. Their designated sensitive status requires consideration in timber harvesting plans. The marbled murrelet feeds at sea and nests exclusively in old-growth redwood habitat. Thus, there is a limited area in which the marbled murrelet can find suitable platforms for nest-building and adequate marine food supplies. Areas identified as critical habitat for the marbled murrelet are owned by Pacific Lumber.

Lower Klamath

Vegetation in the Lower Klamath watershed is dominated by fir forest, oak woodlands, and pine forests. Four special status species can be found in this watershed, all of which are also present in at least two other watersheds within the County.

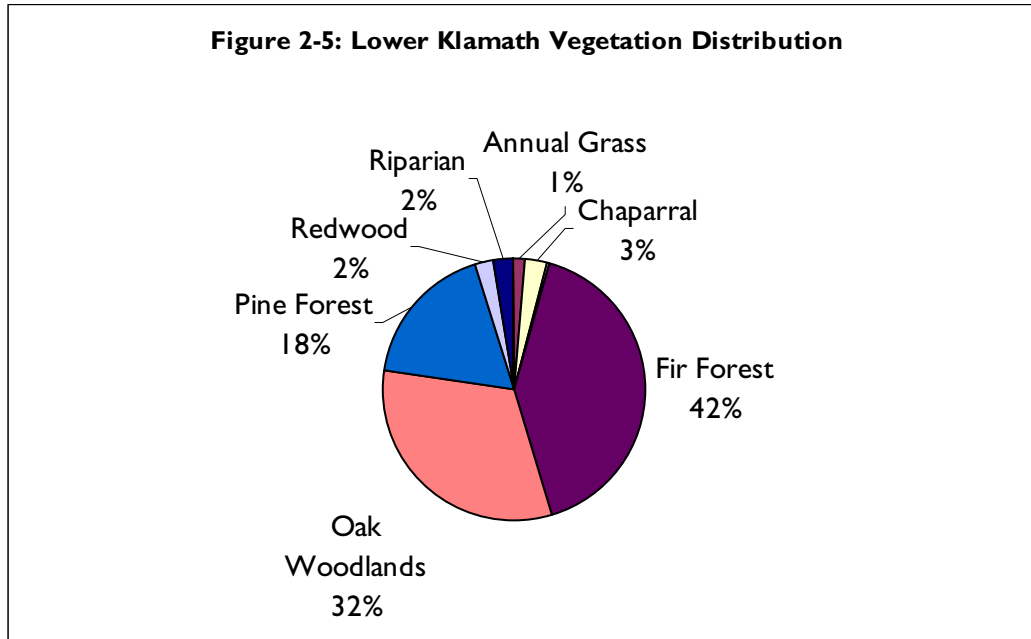


Table 2-4: Special Status Species in the Lower Klamath Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS |
|------------------------------------|----------------------------|-------------|----------------------|--------------------|------------------|------|
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | 3 | 2 | 1 | | |
| <i>Oncorhynchus clarki clarki</i> | Coast Cutthroat Trout | 1 | 5 | 5 | SC | |
| <i>Oncorhynchus mykiss irideus</i> | Summer-Run Steelhead Trout | 2 | 5 | 5 | SC | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 53 | 2 | 5 | | |

¹Federal Listing: 2 = Federally listed as Threatened; 5 = Candidate for Federal listing.

²State Listing: 1 = State listed as Endangered; 5 = None - no State status.

³DFG: Sutter County = Species of Concern.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Lower Trinity

Fir forest comprises a slight majority of the Lower Trinity’s vegetation, followed by oak woodlands and pine forest. The only special status species in the watershed is the spotted owl.

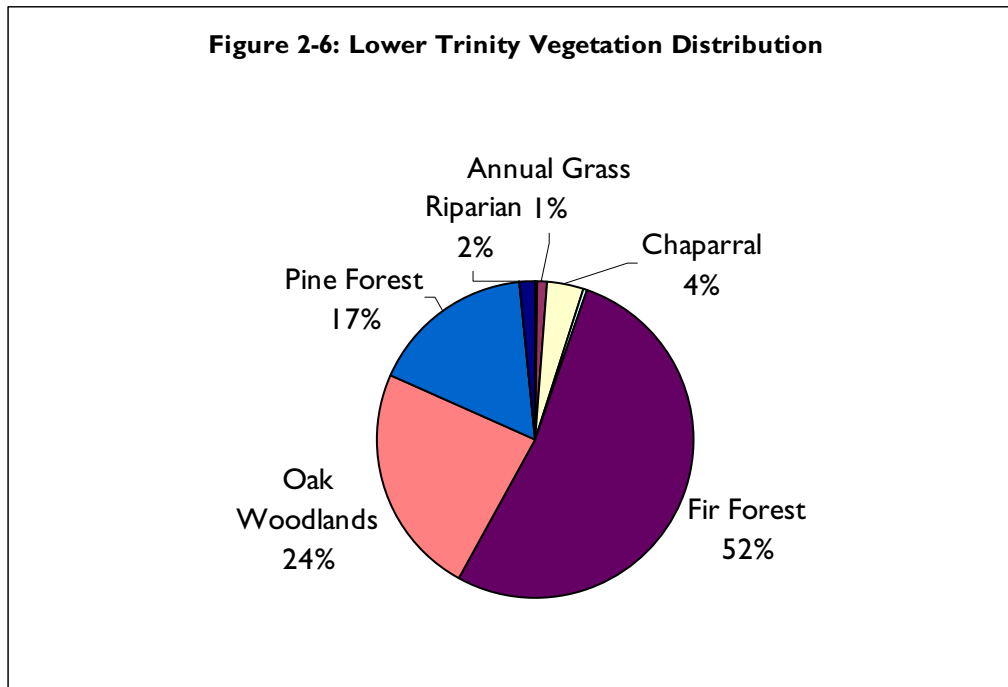


Table 2-5: Special Status Species in the Lower Trinity Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG | CNPS |
|-----------------------------------|----------------------|-------------|----------------------|--------------------|-----|------|
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 41 | 2 | 5 | | |

¹Federal Listing: 2 = Federally listed as Threatened.

²State Listing: 5 = None - no State status.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

South Fork Trinity

Vegetation in the South Fork Trinity watershed is dominated by fir forest, with oak woodland and pine forest comprising most of the remainder. The spring-run chinook salmon, a special status species found in the South Fork Trinity, does not occur anywhere else within the county.

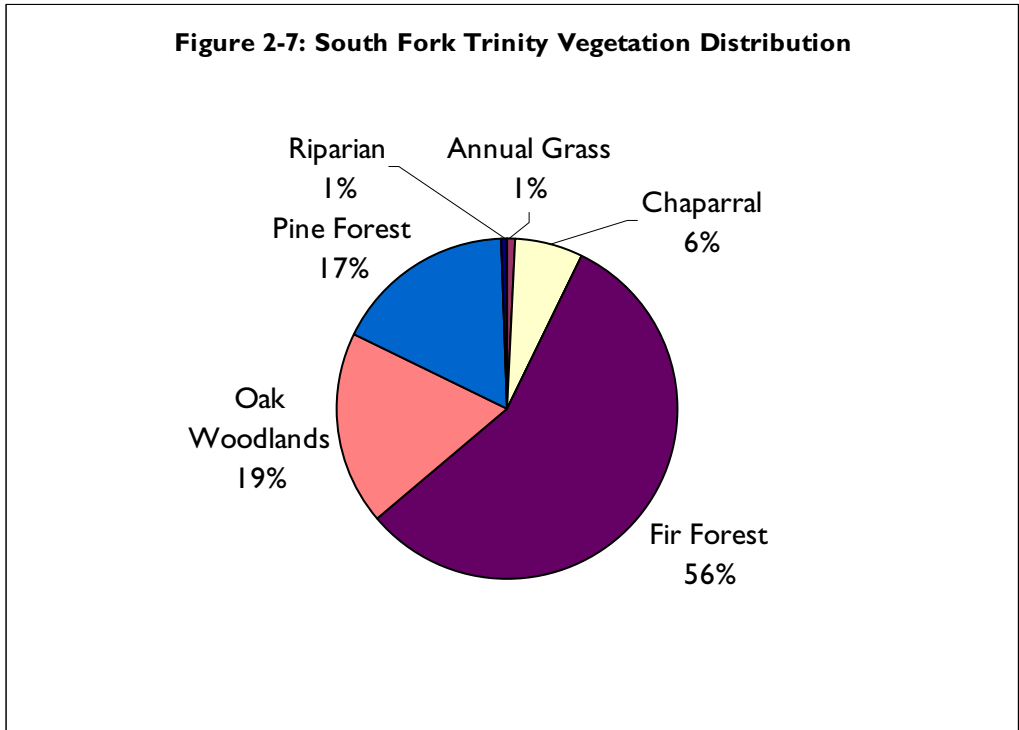


Table 2-6: Special Status Species in the South Fork Trinity Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG | CNPS |
|---|------------------------------|-------------|----------------------|--------------------|-----|------|
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | 1 | 2 | 1 | | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 46 | 2 | 5 | | |
| <i>Oncorhynchus tshawytscha</i> spring-run | Spring-Run Chinook Salmon | 1 | 2 | 2 | | |

¹Federal Listing: 2 = Federally listed as Threatened.

²State Listing: 1 = State listed as Endangered; 2 = State listed as Threatened; 5 = None - no State status.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Redwood Creek

The most common vegetation types in the Redwood Creek watershed are oak woodlands, redwood, and fir forest. Of the special status species native to the watershed, the *bensoniella* is only found in one other watershed in the Humboldt County.

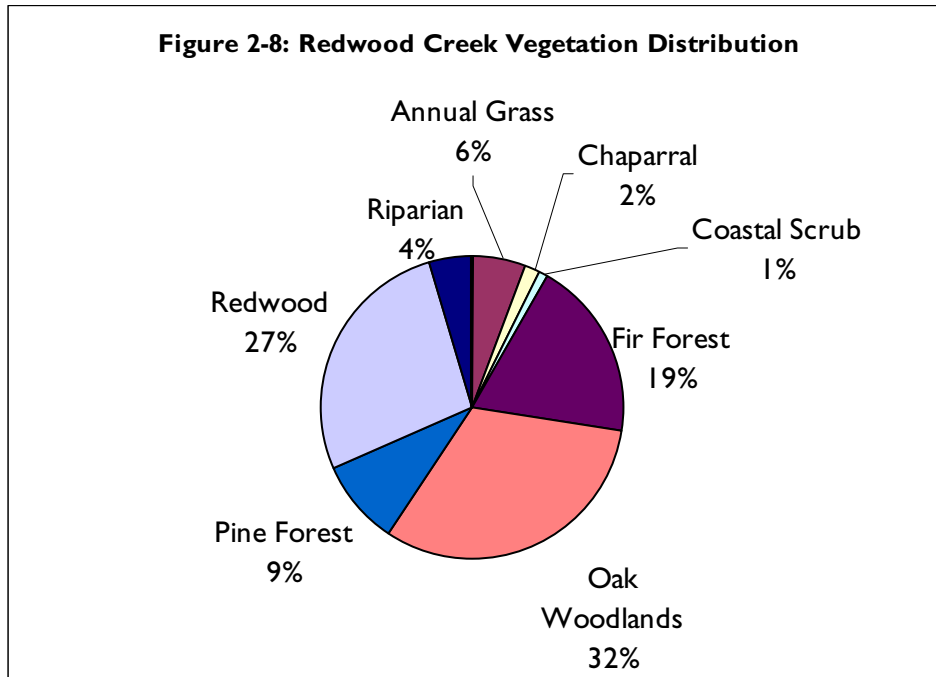


Table 2-7: Special Status Species in the Redwood Creek Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS ⁴ |
|------------------------------------|----------------------------|-------------|----------------------|--------------------|------------------|-------------------|
| <i>Bensoniella oregona</i> | Bensoniella | 4 | 7 | 3 | | IB |
| <i>Eucyclogobius newberryi</i> | Tidewater Goby | 1 | 1 | 5 | SC | |
| <i>Oncorhynchus clarki clarki</i> | Coast Cutthroat Trout | 5 | 5 | 5 | SC | |
| <i>Oncorhynchus mykiss irideus</i> | Summer-Run Steelhead Trout | 1 | 5 | 5 | SC | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 30 | 2 | 5 | | |

¹Federal Listing: 1 = Federally listed as Endangered; 2 = Federally listed as Threatened; 5 = Candidate for Federal listing; 7 = None - no Federal status.

²State Listing: 3 = State listed as Rare; 5 = None - no State status.

³DFG: SC = Species of Concern.

⁴CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Trinidad

Redwood dominates the vegetation in the Trinidad watershed, with oak woodlands, riparian environments, and pine forest comprising most of the remainder. Only the Mad River watershed hosts more special status species than Trinidad. Within Humboldt County, the bank swallow is found only in this watershed.

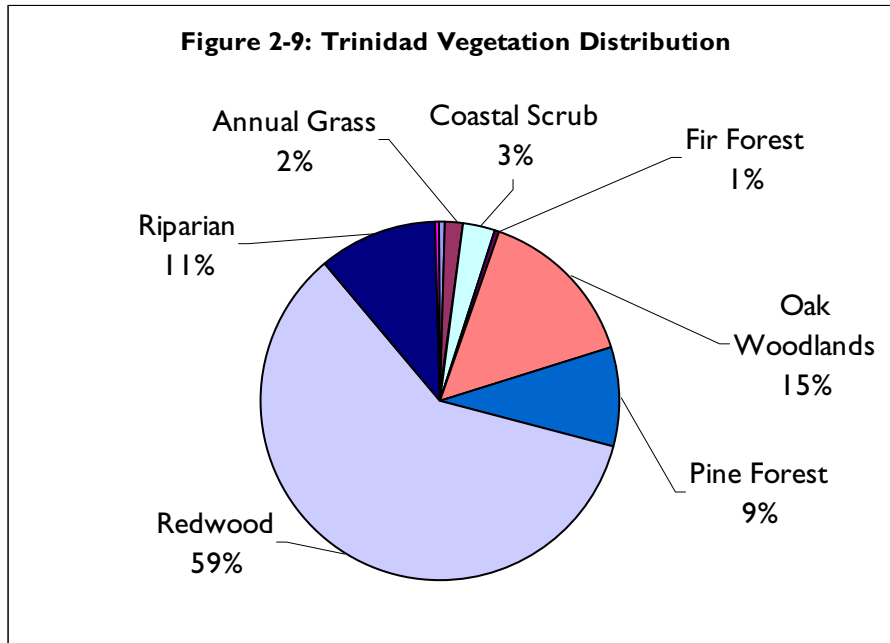


Table 2-8: Special Status Species in the Trinidad Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS ⁴ |
|--|-----------------------|-------------|----------------------|--------------------|------------------|-------------------|
| <i>Charadrius alexandrinus nivosus</i> | Western Snowy Plover | 1 | 2 | 5 | SC | |
| <i>Eucyclogobius newberryi</i> | Tidewater Goby | 3 | 1 | 5 | SC | |
| <i>Layia carnosa</i> | Beach Layia | 2 | 1 | 1 | | IB |
| <i>Oncorhynchus clarki clarki</i> | Coast Cutthroat Trout | 12 | 5 | 5 | SC | |
| <i>Riparia riparia</i> | Bank Swallow | 1 | 7 | 2 | | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 3 | 2 | 5 | | |

¹Federal Listing: 1 = Federally listed as Endangered; 2 = Federally listed as Threatened; 5 = Candidate for Federal listing; 7 = None - no Federal status.

²State Listing: 1 = State listed as Endangered; 2 = State listed as Threatened; 5 = None - no State status.

³DFG: SC = Species of Concern.

⁴CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Mad River

Fir forest is the most common vegetation type in the Mad River watershed, followed by redwood and oak woodlands. This watershed hosts seven special status species, more than any other watershed in the County. The California clapper rail is not found in any other watershed within the County.

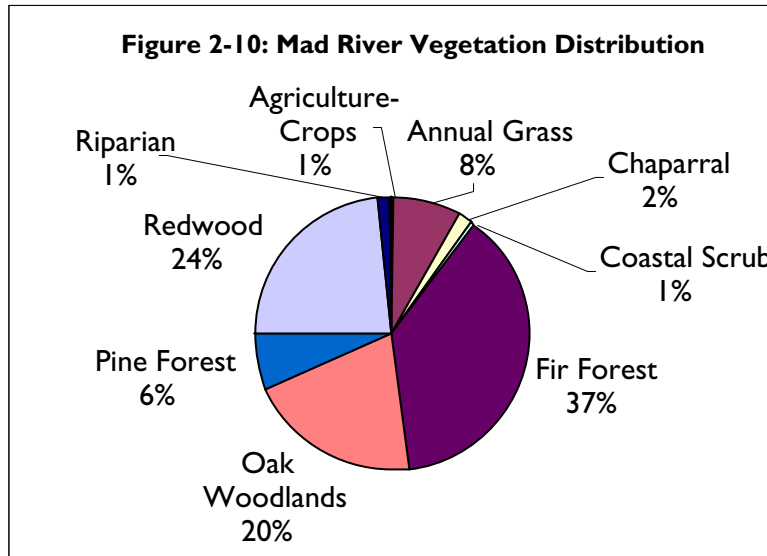


Table 2-9: Special Status Species in the Mad River Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS ⁴ |
|--|----------------------------|-------------|----------------------|--------------------|------------------|-------------------|
| <i>Bensoniella oregona</i> | Bensoniella | 1 | 7 | 3 | | IB |
| <i>Charadrius alexandrinus nivosus</i> | Western Snowy Plover | 1 | 2 | 5 | SC | |
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | 1 | 2 | 1 | | |
| <i>Layia carnosa</i> | Beach Layia | 1 | 1 | 1 | | IB |
| <i>Oncorhynchus clarki clarki</i> | Coast Cutthroat Trout | 3 | 5 | 5 | SC | |
| <i>Oncorhynchus mykiss irideus</i> | Summer-Run Steelhead Trout | 1 | 5 | 5 | SC | |
| <i>Rallus longirostris obsoletus</i> | California Clapper Rail | 1 | 1 | 1 | | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 63 | 2 | 5 | | |

¹Federal Listing: 1 = Federally listed as Endangered; 2 = Federally listed as Threatened; 5 = Candidate for Federal listing; 7 = None - no Federal status.

²State Listing: 1 = State listed as Endangered; 3 = State listed as Rare; 5 = None - no State status.

³DFG: SC = Species of Concern.

⁴CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Eureka Plain

Redwood comprises nearly three quarters of the vegetation in the Eureka Plain watershed. The Humboldt Bay wallflower is found only in this watershed; the western lily is only found in one other watershed in Humboldt County.

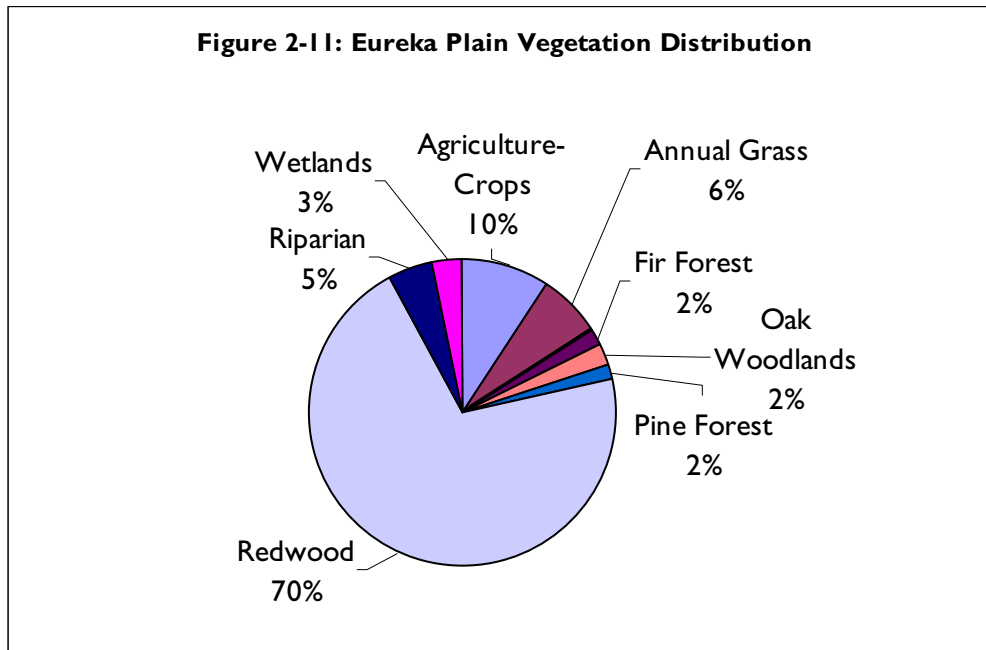


Table 2-10: Special Status Species in the Eureka Plain Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS ⁴ |
|-----------------------------------|-----------------------|-------------|----------------------|--------------------|------------------|-------------------|
| <i>Layia carnosa</i> | Beach Layia | 5 | 1 | 1 | | IB |
| <i>Lilium occidentale</i> | Western Lily | 7 | 1 | 1 | | IB |
| <i>Oncorhynchus clarki clarki</i> | Coast Cutthroat Trout | 10 | 5 | 5 | SC | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 17 | 2 | 5 | | |
| <i>Eucyclogobius newberryi</i> | Tidewater Goby | 2 | 1 | 5 | SC | |

¹Federal Listing: 1 = Federally listed as Endangered; 2 = Federally listed as Threatened; 5 = Candidate for Federal listing.

²State Listing: 1 = State listed as Endangered; 5 = None - no State status.

³DFG: SC = Species of Concern.

⁴CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Van Duzen

Fir forest, oak woodlands, redwood, and annual grass all account for sizeable portions of the Van Duzen watershed’s vegetation. Within Humboldt County, the Kneeland Prairie pennycress—a federally endangered species—is only found within this watershed and the peregrine falcon (federally delisted) is found in only one other Humboldt watershed.

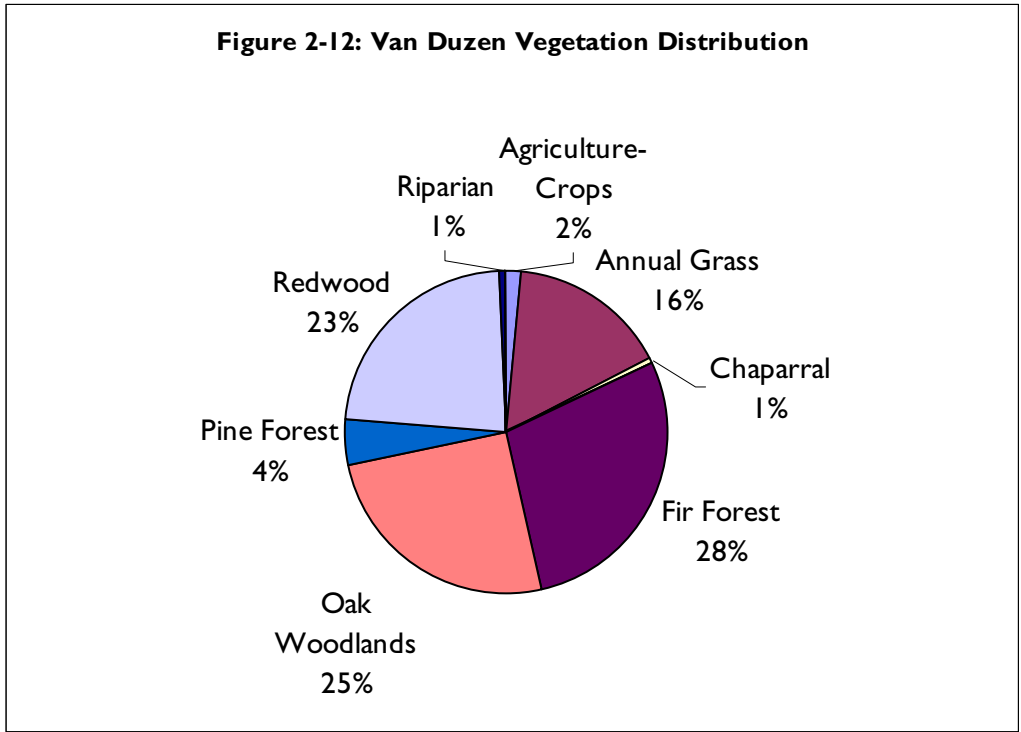


Table 2-11: Special Status Species in the Van Duzen Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS ⁴ |
|------------------------------------|-----------------------------|-------------|----------------------|--------------------|------------------|-------------------|
| <i>Falco peregrinus anatum</i> | American Peregrine Falcon | 1 | 6 | 1 | | |
| <i>Oncorhynchus mykiss irideus</i> | Summer-Run Steelhead Trout | 1 | 5 | 5 | SC | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 22 | 2 | 5 | | |
| <i>Thlaspi californicum</i> | Kneeland Prairie Pennycress | 1 | 1 | 5 | | IB |

¹Federal Listing: 1 = Federally listed as Endangered; 2 = Federally listed as Threatened; 5 = Candidate for Federal listing; 6 = Delisted - Previously Listed.

²State Listing: 1 = State listed as Endangered; 5 = None - no State status.

³DFG: SC = Species of Concern.

⁴CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Lower Eel

The largest portion of the vegetation in the Lower Eel watershed is redwood, followed by fir forest and agriculture-crops. The special status species on the watershed include the western lily, coastal cutthroat trout, and milk-vetch. Two of the four special status species found in this watershed (the milk-vetch and western lily) are only found in one other watershed in Humboldt County.

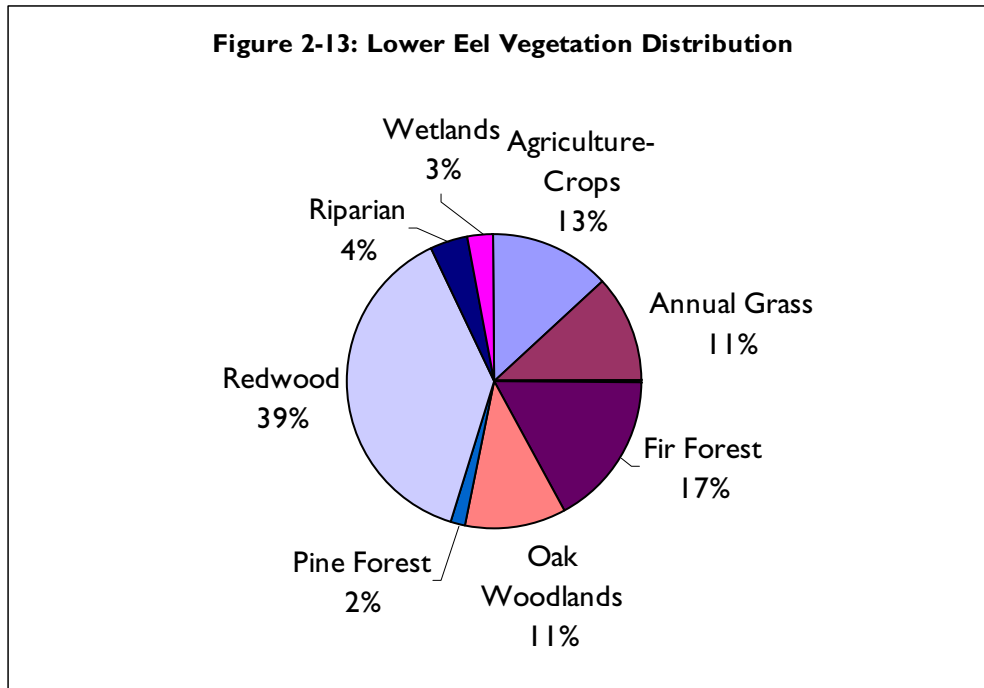


Table 2-12: Special Status Species in the Lower Eel Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS ⁴ |
|-----------------------------------|-----------------------|-------------|----------------------|--------------------|------------------|-------------------|
| <i>Astragalus agnicidus</i> | Humboldt Milk-Vetch | 4 | 7 | 1 | | IB |
| <i>Lilium occidentale</i> | Western Lily | 2 | 1 | 1 | | IB |
| <i>Oncorhynchus clarki clarki</i> | Coast Cutthroat Trout | 1 | 5 | 5 | SC | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 19 | 2 | 5 | | |

¹Federal Listing: 1 = Federally listed as Endangered; 2 = Federally listed as Threatened; 5 = Candidate for Federal listing; 7 = None - no Federal status.

²State Listing: 1 = State listed as Endangered; 5 = None - no State status.

³DFG: SC = Species of Concern.

⁴CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: *California Natural Diversity Database and Dyett & Bhatia, 2002.*

Middle Main Eel

Fir forest and oak woodlands each comprise a third of the vegetative cover in the Middle Main Eel watershed. Annual grass and redwood account for most of the remainder. The spotted owl is the only special status species found in the watershed.

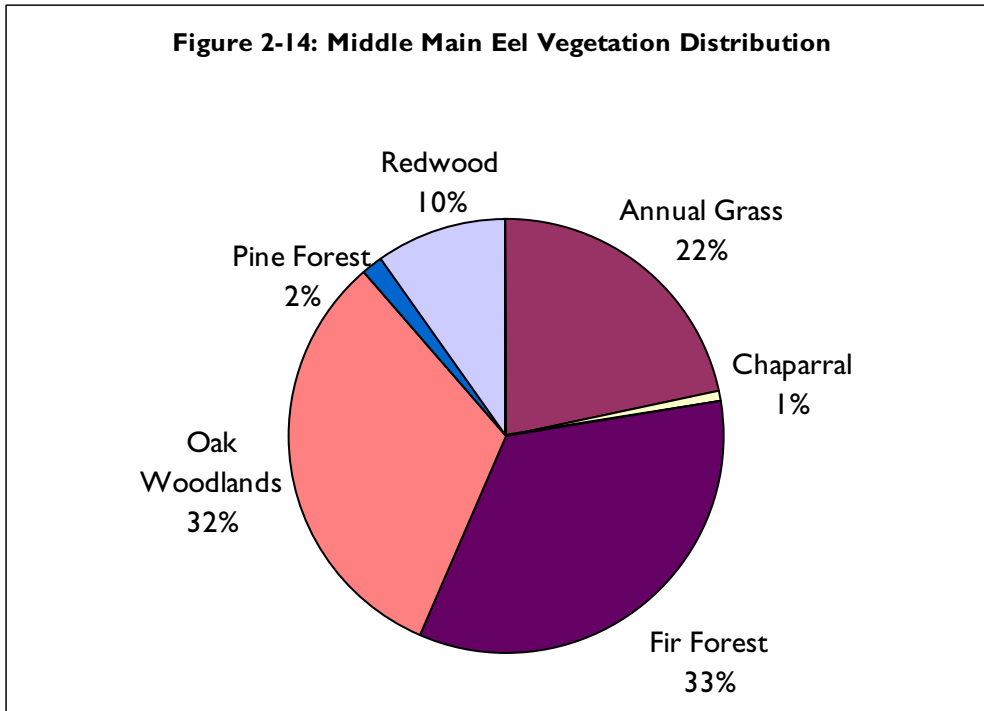


Table 2-13: Special Status Species in the Middle Main Eel Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG | CNPS |
|-----------------------------------|----------------------|-------------|----------------------|--------------------|-----|------|
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 4 | 2 | 5 | | |

¹Federal Listing: 2 = Federally listed as Threatened.

²State Listing: 5 = None - no State status.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

South Fork Eel

Fir forest comprises the largest portion of the South Fork Eel watershed’s vegetation, followed by redwood, oak woodlands, and annual grass. Of the four special status species found in this watershed, one (the willow flycatcher) is found nowhere else in Humboldt County, and two more are found only in one other watershed.

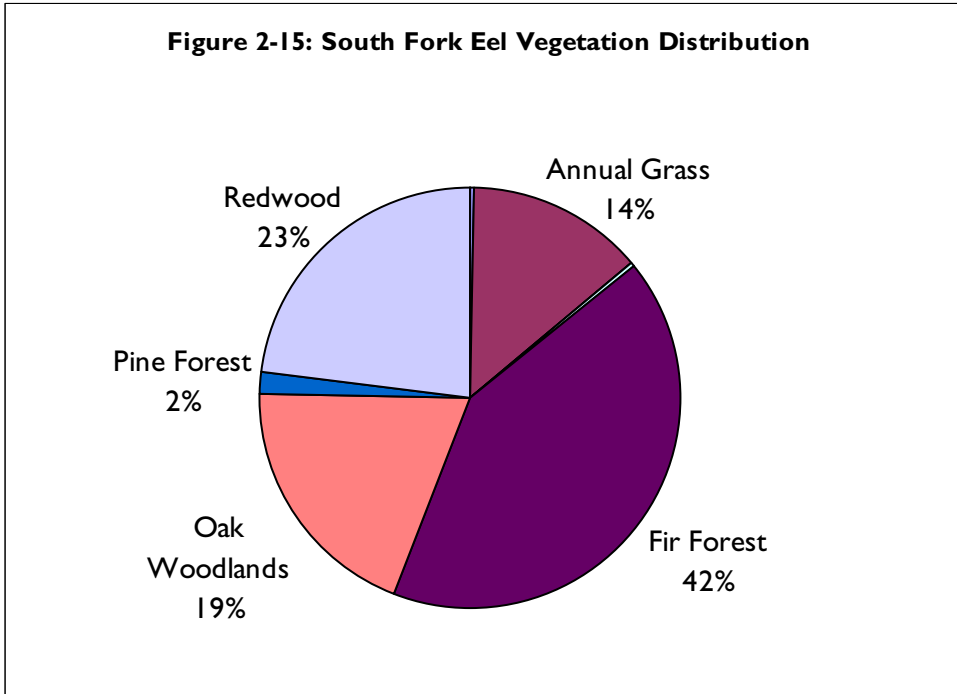


Table 2-14: Special Status Species in the South Fork Eel Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG | CNPS ³ |
|-----------------------------------|---------------------------|-------------|----------------------|--------------------|-----|-------------------|
| <i>Astragalus agnicidus</i> | Humboldt Milk-Vetch | 1 | 7 | 1 | | IB |
| <i>Empidonax traillii</i> | Willow Flycatcher | 1 | 7 | 1 | | |
| <i>Falco peregrinus anatum</i> | American Peregrine Falcon | 1 | 6 | 1 | | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 4 | 2 | 5 | | |

¹Federal Listing: 2 = Federally listed as Threatened; 6 = Delisted - Previously Listed; 7 = None - no Federal status.

²State Listing: 1 = State listed as Endangered; 5 = None - no State status.

³CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

Cape Mendocino

The Cape Mendocino watershed’s vegetation is dominated by fir forest, annual grass, and oak woodlands. Of the four special status species found in this watershed, the federally threatened coho salmon is not found anywhere else in Humboldt County.

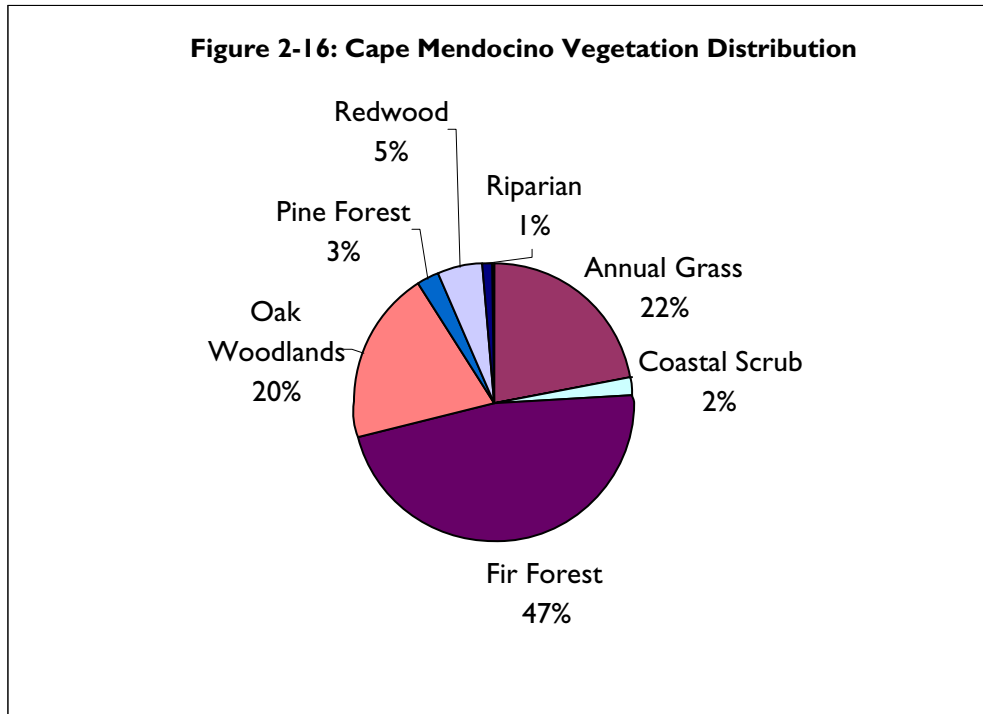


Table 2-15: Special Status Species in the Cape Mendocino Planning Watershed

| Scientific Name | Common Name | Occurrences | Federal ¹ | State ² | DFG ³ | CNPS ⁴ |
|------------------------------------|--------------------------------------|-------------|----------------------|--------------------|------------------|-------------------|
| <i>Layia carnosa</i> | Beach Layia | 2 | 1 | 1 | | IB |
| <i>Oncorhynchus kisutch</i> | Coho Salmon - Central California ESU | 3 | 2 | 1 | | |
| <i>Oncorhynchus mykiss irideus</i> | Summer-Run Steelhead Trout | 1 | 5 | 5 | SC | |
| <i>Strix occidentalis caurina</i> | Northern Spotted Owl | 16 | 2 | 5 | | |

¹Federal Listing: 1 = Federally listed as Endangered; 2 = Federally listed as Threatened; 5 = Candidate for Federal listing.

²State Listing: 1 = State listed as Endangered; 5 = None – no State status.

³DFG: SC = Species of Concern.

⁴CNPS: IB = Plants rare, threatened, or endangered in California and elsewhere.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

OTHER RARE SPECIES

There are other plant and animal species that have not been listed as threatened or endangered at the federal or state level, but which are still rare enough to be listed in the California Natural Diversity Database (CNDDDB). These species would meet the criteria for listing but have not yet been formally listed or selected as candidates. See Table 2-16 for a complete listing of these species in Humboldt County.

Table 2-16: CNDDDB Non-Listed Species in Humboldt County

| <i>Scientific Name</i> | <i>Common Name</i> | <i>Occurrences</i> | <i>DFG</i> ¹ | <i>CNPS</i> ² |
|---|---------------------------------------|--------------------|-------------------------|--------------------------|
| Animals | | | | |
| <i>Accipiter cooperii</i> | Cooper's Hawk | 1 | SC | |
| <i>Accipiter gentiles</i> | Northern Goshawk | 7 | SC | |
| <i>Agelaius tricolor</i> | Tricolored Blackbird | 1 | SC | |
| <i>Aquila chrysaetos</i> | Golden Eagle | 2 | SC | |
| <i>Arborimus albigipes</i> | White-Footed Vole | 2 | SC | |
| <i>Arborimus pomo</i> | Red Tree Vole | 76 | SC | |
| <i>Ardea alba</i> | Great Egret | 3 | | |
| <i>Ardea herodias</i> | Great Blue Heron | 12 | | |
| <i>Ascaphus truei</i> | Tailed Frog | 43 | SC | |
| <i>Cerorhinca monocerata</i> ³ | Rhinoceros Auklet | 2 | SC | |
| <i>Clemmys marmorata marmorata</i> | Northwestern Pond Turtle | 9 | SC | |
| <i>Corynorhinus townsendii townsendii</i> | Townsend's Western Big-Eared Bat | 2 | SC | |
| <i>Cypseloides niger</i> | Black Swift | 1 | SC | |
| <i>Egretta thula</i> | Snowy Egret | 1 | | |
| <i>Fratercula cirrhata</i> ³ | Tufted Puffin | 7 | SC | |
| <i>Martes pennanti pacifica</i> | Pacific Fisher | 96 | SC | |
| <i>Nycticorax nycticorax</i> | Black-Crowned Night Heron | 4 | | |
| <i>Oceanodroma furcata</i> | Fork-Tailed Storm-Petrel | 1 | SC | |
| <i>Pandion haliaetus</i> | Osprey | 148 | SC | |
| <i>Phalacrocorax auritus</i> ³ | Double-Crested Cormorant | 5 | SC | |
| <i>Plethodon elongates</i> | Del Norte Salamander | 56 | SC | |
| <i>Rana aurora aurora</i> | Northern Red-Legged Frog | 29 | SC | |
| <i>Rana boylei</i> | Foothill Yellow-Legged Frog | 27 | SC | |
| <i>Rhyacotriton variegatus</i> | Southern Torrent (=Seep) Salamander | 99 | SC | |
| <i>Vespericola karokorum</i> | Karok Hesperian (=Karok Indian Snail) | 17 | | |

*Humboldt County General Plan Update
Natural Resources and Hazards*

Table 2-16: CNDDB Non-Listed Species in Humboldt County

| <i>Scientific Name</i> | <i>Common Name</i> | <i>Occurrences</i> | <i>DFG¹</i> | <i>CNPS²</i> |
|---|--------------------------------|--------------------|------------------------|-------------------------|
| Plants | | | | |
| <i>Abronia umbellata</i> ssp <i>breviflora</i> | Pink Sand-Verbena | 23 | | IB |
| <i>Anomobryum filiforme</i> | Slender Silver-Moss | 2 | | 2 |
| <i>Arctostaphylos canescens</i> ssp <i>sonomensis</i> | Sonoma Manzanita | 2 | | IB |
| <i>Boschniakia hookeri</i> | Small Groundcone | 2 | | 2 |
| <i>Carex arcta</i> | Northern Clustered Sedge | 5 | | 2 |
| <i>Carex leptalea</i> | Flaccid Sedge | 4 | | 2 |
| <i>Carex lyngbyei</i> | Lyngbye's Sedge | 7 | | 2 |
| <i>Carex praticola</i> | Meadow Sedge | 5 | | 2 |
| <i>Carex saliniformis</i> | Deceiving Sedge | 1 | | IB |
| <i>Carex viridula</i> var <i>viridula</i> | Green Sedge | 2 | | 2 |
| <i>Castilleja affinis</i> ssp <i>litoralis</i> | Oregon Coast Indian Paintbrush | 21 | | 2 |
| <i>Castilleja ambigua</i> ssp <i>humboldtensis</i> | Humboldt Bay Owl's-Clover | 17 | | IB |
| <i>Cordylanthus maritimus</i> ssp <i>palustris</i> | Point Reyes Bird's-Beak | 11 | | IB |
| <i>Didymodon norrisii</i> | Norris's Beard-Moss | 1 | | 2 |
| <i>Empetrum nigrum</i> ssp <i>hermaphroditum</i> | Black Crowberry | 1 | | 2 |
| <i>Epilobium oreganum</i> | Oregon Fireweed | 12 | | IB |
| <i>Erythronium revolutum</i> | Coast Fawn Lily | 12 | | 2 |
| <i>Fissidens pauperculus</i> | Minute Pocket-Moss | 2 | | IB |
| <i>Glyceria grandis</i> | American Manna Grass | 1 | | 2 |
| <i>Lathyrus biflorus</i> | Two-Flowered Pea | 1 | | IB |
| <i>Lathyrus japonicus</i> | Sand Pea | 5 | | 2 |
| <i>Lathyrus palustris</i> | Marsh Pea | 4 | | 2 |
| <i>Lewisia cotyledon</i> var <i>heckneri</i> | Heckner's Lewisia | 1 | | IB |
| <i>Lupinus constancei</i> | The Lassics Lupine | 3 | | IB |
| <i>Lupinus elmeri</i> | South Fork Mtn. Lupine | 3 | | IB |
| <i>Lycopodiella inundata</i> | Bog Club-Moss | 2 | | 2 |
| <i>Lycopodium clavatum</i> | Running-Pine | 17 | | 2 |
| <i>Meesia triquetra</i> | Three-Ranked Hump-Moss | 1 | | 2 |
| <i>Microseris borealis</i> | Northern Microseris | 1 | | 2 |
| <i>Mielichhoferia elongata</i> | Elongate Copper-Moss | 1 | | 2 |
| <i>Mitella caulescens</i> | Leafy-Stemmed Mitrewort | 7 | | 2 |
| <i>Monardella villosa</i> ssp <i>globosa</i> | Robust Monardella | 1 | | IB |
| <i>Monotropa uniflora</i> | Indian-Pipe | 1 | | 2 |

Table 2-16: CNDDDB Non-Listed Species in Humboldt County

| <i>Scientific Name</i> | <i>Common Name</i> | <i>Occurrences</i> | <i>DFG¹</i> | <i>CNPS²</i> |
|--|---------------------------|--------------------|------------------------|-------------------------|
| <i>Montia howellii</i> | Howell's Montia | 21 | | 2 |
| <i>Oenothera wolfii</i> | Wolf's Evening-Primrose | 5 | | 1B |
| <i>Puccinellia pumila</i> | Dwarf Alkali Grass | 1 | | 2 |
| <i>Romanzoffia tracyi</i> | Tracy's Romanzoffia | 2 | | 2 |
| <i>Rorippa columbiae</i> | Columbia Yellow Cress | 1 | | 1B |
| <i>Sanguisorba officinalis</i> | Great Burnet | 2 | | 2 |
| <i>Scirpus subterminalis</i> | Water Bulrush | 1 | | 2 |
| <i>Sedum divergens</i> | Cascade Stonecrop | 1 | | 2 |
| <i>Sidalcea malachroides</i> | Maple-Leaved Checkerbloom | 71 | | 1B |
| <i>Sidalcea malviflora ssp patula</i> | Siskiyou Checkerbloom | 5 | | 1B |
| <i>Sidalcea oregana ssp eximia</i> | Coast Checkerbloom | 5 | | 1B |
| <i>Spergularia canadensis var occidentalis</i> | Western Sand-Spurrey | 2 | | 2 |
| <i>Thermopsis robusta</i> | Robust False Lupine | 10 | | 1B |
| <i>Tracyina rostrata</i> | Beaked Tracyina | 10 | | 1B |
| <i>Trichodon cylindricus</i> | Cylindrical Trichodon | 1 | | 2 |
| <i>Usnea longissima</i> | Long-Beard Lichen | 93 | | |
| <i>Viola palustris</i> | Marsh Violet | 2 | | 2 |

1 California Department of Fish and Game (DFG) SC = species of concern.

2 California Native Plant Society (CNPS) rankings: 1B=rare or endangered in California and elsewhere; 2=rare or endangered in California, more common elsewhere.

3 These species' occurrences are outside of planning watershed boundaries; all species occur off the coast of the Trinidad Coastal Zone, except for one occurrence of the tufted puffin along the South Coast.

Source: California Natural Diversity Database and Dyett & Bhatia, 2002.

2.2 REGULATORY ENVIRONMENT

Natural vegetation communities such as riparian corridors and wetlands provide important habitat for most native California special status species. When a habitat becomes limited, dependent species would require listing as threatened or endangered. Such species are protected under the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA) for the purposes of conserving, protecting, restoring, and enhancing endangered species and their habitats. The California Natural Diversity Data Base (CNDDDB) is then used to track the locations and condition of the state's rare species and natural communities. Listed species are generally given greater attention during the land use planning process by local governments, public agencies, and landowners than are species that have not been listed.

Several Federal, State, and regional agencies have jurisdictional responsibilities regarding permit approvals and other regulatory actions for public improvements and private development projects that may affect biological resources within the county. Many of the permits and regulatory actions discussed below require conditions to mitigate adverse impacts resulting from development activities.

FEDERAL REGULATIONS

Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act makes it unlawful to "take" (kill, harm, harass, etc.) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many other bird species.

Federal Endangered Species Act of 1973

Section 3 of the Federal Endangered Species Act (FESA) defines an endangered species as any species or subspecies "in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as any species or subspecies of fish, wildlife, or plants "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Designated endangered and threatened animal species, as listed through publication of a final rule in the *Federal Register*, are fully protected from a "take" without a take permit administered by the U. S. Fish and Wildlife Service (USFWS) under Section 10 of the FESA. A take is defined as the killing, capturing, or harassing of a species. Proposed endangered or threatened species are those species for which a proposed regulation, but not final rule, has been published in the Federal Register. Federally listed plants occurring on private land with no other Federal jurisdiction are not subject to the Section 10 take provisions. Section 10 take permits may require the permit applicant to prepare a Habitat Conservation Plan (HCP) that specifies the measures that will be implemented to minimize and mitigate impacts from incidental take.

Section 7 of the FESA requires that Federal agencies ensure that their actions are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. This obligation requires Federal agencies to consult with the USFWS on any actions (including issuing Section 404 permits or Federal funding) that may affect listed species to ensure that reasonable and prudent measures will be undertaken to mitigate impacts on listed species. Consultation with USFWS can be either formal or informal depending on the likelihood of the action to adversely affect listed species or critical habitat. Once a formal consultation is initiated, USFWS will issue a Biological Opinion (either a "no jeopardy" or a "jeopardy" opinion) indicating whether the proposed agency action will jeopardize the continued existence of a listed species or result in the destruction or modification of its critical habitat. A permit cannot be issued for a project with a "jeopardy" opinion unless it is redesigned to lessen impacts.

Magnuson Stevens Fishery Conservation and Management Act

The Magnuson Stevens Fishery Conservation and Management Act placed fisheries within 200 miles of all US coasts under Federal jurisdiction.

Marine Mammal Protection Act (MMPA)

The Marine Mammal Protection Act declared a moratorium on the taking of marine mammals, with some exceptions, in US waters. The term “take” is defined as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." Prior to passage of the MMPA, States were responsible for the marine mammals on lands and in waters under their jurisdiction. The MMPA vested marine mammal management authority in the Federal Government. It provides that management authority, on a species-by-species basis, could be returned to States that adopt conservation and management programs consistent with the purposes and policies of the Act.

Lacey Act

The Lacey Act, as amended in 1981, makes it illegal to partake in the trade of fish, wildlife, or plants taken in violation of any U.S. or Indian tribal law, treaty, or regulation as well as the trade of any of these items acquired through violations of foreign law. Activities regulated by the Magnuson Stevens Fishery Conservation and Management Act are not within the scope of this Act.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires that wildlife, including fish, receive equal consideration and be coordinated with other aspects of water resource development. This is accomplished by requiring consultation with the USFWS and National Marine Fisheries Service (NMFS) whenever any body of water is proposed to be modified in any way and a Federal permit or license is required. This consultation determines the possible harm to fish and wildlife resources, and the measures that are needed to both prevent the damage to and loss of these resources, and to develop and improve the resources, in connection with water resource development. NMFS submits comments and recommendations to Federal licensing and permitting agencies and to Federal agencies conducting construction projects on the potential harm to living marine resources caused by the proposed water development project, and submits recommendations to prevent harm.

STATE REGULATIONS

Native Plant Protection Act (NPPA)

The State Legislature formally recognized the plight of rare and endangered plants in 1977 with the passage of the Native Plant Protection Act (NPPA). The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants.

California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) declares that deserving plant or animal species will be given protection by the State because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

The CESA expanded upon the original NPPA and enhanced legal protection for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

California Environmental Quality Act (CEQA) - Treatment of Listed Plant and Animal Species

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 affect on the environment if it will substantially affect a rare or endangered plant or animal species or the habitat of the species. Under CEQA, the significance of impacts on a species must be based on analyzing actual rarity and threat of extinction despite legal status or lack thereof.

State of California - Sections 1601 - 1603 of the Fish and Game Code

The DFG has direct jurisdiction under Fish and Game Code sections 1601 - 1603 in regard to any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. These regulations require that private landowners or project developers obtain a "Streambed Alteration Agreement" from the DFG prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the DFG may impose conditions to limit and fully mitigate impacts on fish and wildlife resources.

The process for obtaining a DFG streambed alteration agreement has changed because of a recent court order, which requires the DFG to conduct an environmental review pursuant to the California Environmental Quality Act (CEQA)⁴ prior to entering into a 1603 Lake or Streambed Alteration Agreement (form FG 2023). Completion of a Project Questionnaire form (FG 2024) is also required. Therefore, because of the additional process required under CEQA, which includes minimum document circulation periods, the DFG is no longer restricted to processing applications and issuing agreements within 30 days.

State of California - Sections 3503, 3503.5, 3800 of the Fish and Game Code

These sections of the Fish and Game Code prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate Federal law protecting migratory birds.⁵ This statute protects all non-game birds except starlings

⁴ Public Resources Code, Section 21000 et seq.

⁵ Migratory Bird Treaty Act citation.

and English sparrows. It is especially relevant to tree and brush removal, requiring that nests with eggs or young birds not be destroyed until the birds have fledged or left the nest.

California Coastal Act

The California Coastal Act sets out a series of policies to protect and enhance the California Coastal Zone. The following directives are established in the Act: oceanfront land suitable for aquaculture should be protected for that purpose; the commercial, economic, and recreational “importance of fishing activities shall be recognized and protected”; Environmentally Sensitive Habitat areas should be protected from disruption including conflicting development on adjacent lands; and marine resources should be “maintained, enhanced, and where feasible, restored.”

COUNTY REGULATIONS – STREAMSIDE MANAGEMENT AREAS

In addition to the general biological resources policies established in the County General Plan (see below), the County maintains Streamside Management Areas (SMAs) to protect sensitive fish and wildlife habitats and to minimize erosion, runoff, and other conditions detrimental to water quality. These areas are corridors paralleling blue line streams identified on USGS topographic maps and significant drainage courses identified under CEQA. The width of the SMA depends on whether or not the stream is perennial or intermittent and whether the area is inside or outside of Urban Development and Expansion Areas. In urban areas, the SMA width is 50 feet on each side of perennial streams and 25 feet for intermittent streams; outside of urban areas, the width is 100 feet for perennial streams and 50 feet for intermittent streams. The County’s SMAs are shown in Figure 2-17. Development within the SMAs is very restricted and is subject to implementation of numerous mitigation measures designed to protect the habitat quality of the SMA.

2.3 POLICY ISSUES

This section focuses on biological resource issues from a public policy perspective. In valuating existing and future conditions, the County must consider the various policy options for the issues identified in Phase I of the General Plan Update, which are summarized in the Critical Choices Report. These key questions help frame the issues for policy options for biological resources. As background, the existing policies in the General Plan are presented, followed by a discussion of issues and policy options that respond to them. The policy evaluation worksheets that will be used to guide discussion of these issues are in the Appendix. This worksheet is provided as a tool for members of the public to evaluate policy options and indicate preferences for accepting, modifying or rejecting these options.

EXISTING COUNTY POLICIES

Existing County biological resources policies are contained in Chapter 3 of the Framework Plan and are listed below. In addition to these policies, an extensive set of standards is included in the Framework Plan. Most of the standards apply to the Streamside Management Areas.

Appendix A includes a worksheet for community review of the exiting policy framework, with columns to indicate whether the policy should be modified, expanded or deleted.

GOAL

To maximize where feasible, the long-term public and economic benefits from the biological resources within the County by maintaining and restoring fish and wildlife habitats.

POLICIES

1. Maintain values of significantly important habitat areas by assuring compatible adjacent land uses, where feasible.
2. Habitats for "critical species" shall be protected under provisions of NEPA and CEQA.
3. Development within stream channels shall be permitted when there is no less environmentally damaging feasible alternative, where the best feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to essential, nondisruptive projects as listed in Standard 6.
4. To protect sensitive fish and wildlife habitats and to minimize erosion, runoff and interference with surface water flows, the County shall maintain Streamside Management Areas (SMA), along its blue line streams as identified on the largest scale U.S.G.S. topographic maps most recently published, and any significant drainage courses identified through the CEQA process.
5. Development within the Streamside Management Areas shall be permitted where mitigation measures (Standard 8) have been provided to minimize any adverse environmental effects, and shall be limited to uses as described in Standard 7.

Project Review

6. The Biological Resource Maps shall be incorporated into the project review process in order to identify sensitive habitat concerns. These maps shall be kept up to date with the most recent information obtainable. Accommodation of new resource information on the Biological Resource Maps may require an amendment to the adopted General Plan.
7. The County should request the Department of Fish and Game, as well as other appropriate agencies and organizations to review plans for development within sensitive habitat areas or Streamside Management Areas. Recommended mitigation measures shall be considered prior to project approval.

Figure 2-17a: Northern Humboldt Streamside Management Areas (11"x17")

Figure 2-17a p.2

Figure 2-17b: Central Humboldt Streamside Management Areas (11"x17")

Figure 2-17b p.2

Figure 2-17c: Southern Humboldt Streamside Management Areas (11"x17")

Figure 2-17c p.2

ISSUES AND OPTIONS

Each key question or issue raised in the Critical Choices Report that relate to biological resources is discussed below. Based on County and public input, these policy options will be refined. Some of these options also will shape preparation of “sketch plans” (generalized land use plans for accommodating future development), while others will be implemented through zoning and subdivision regulations or other programs.

Appendix B provides a worksheet for the public to evaluate these policy options in the same format as used for the Building Communities Report. These worksheets include an assessment of each policy option with regard to four criteria: consistency with existing General Plan policies, economic benefits, environmental benefits, and potential public costs. Those policy options that represent new initiatives for the County are highlights to focus discussion.

ISSUE

- *Should biological resources be inventoried and analyzed on a watershed basis?*
- *Can resource trends be identified and correlated with land use development impacts?*

Watersheds provide a popular spatial framework by which to group information – a point mentioned by several residents during the Phase I community workshops for the General Plan Update. The health of a watershed is an important biological indicator, linking water quality, species health, and other natural resources. By utilizing a watershed approach, a comprehensive understanding is gained of the inter-relationships of habitats, stream flow, water quality, and development effects. However, there are other valid spatial frameworks which might be considered for Humboldt County’s unique topographical, biological, and environmental resources. Other spatial frameworks to consider include vegetation types and Community Plan Areas. Also, utilizing the California Wildlife Habitat Relationships (CMHR) that has been developed by the California Department of Fish and Game may assist in reviewing future specific development proposals. Lake County, for example, is integrating the CWHR program into its General Plan update and development review process.

Option 2.1 Continue to map and analyze biological information, particularly for sensitive habitats on a watershed basis. The County's new GIS will facilitate this process.

Option 2.2 Work with the California Wildlife Habitat Relationships (CWHR) Program of the Department of Fish and Game to develop predictive models of habitat relationships geared to Humboldt County. The CWHR program, available to public agencies on a subscription basis, will allow the County to develop habitat suitability indices for individual species in given habitat conditions⁶. It can help in watershed planning and management, as well as provide applications for assessing wildlife resource issues such as wildlife population, habitat conservation, and impact assessment. Also, CWHR can be used to evaluate sustained yield timber operations.

ISSUE

- *What is the County's role in biological resource protection relative to State and Federal agencies?*

State and federal agencies establish regulations for sensitive species (see Section 2.2). However, the County is its own best advocate in the protection of biological resources. The County can aid protection of rare and endangered species by protecting habitats that support these species. Habitat protection can be ensured by requiring site reviews prior to development and by requiring onsite and/or offsite mitigation for habitat losses. Existing policies and development review procedures do address habitat protection, but several additional policy options could provide an opportunity for an expanded role in response to the concerns raised during Phase I.

Option 2.3 Establish a County-level Habitat Protection Program to complement State and federal programs. As part of the requirements for the subdivision process, the County could establish requirements for inventorying habitat potentially affected by rural development in 'areas of critical concern' where there is a high incidence of special status species and preparing a biological report. Then, based on the findings of this report, a Natural Communities Habitat Conservation Plan (NCHCP) may be required as a condition of approval of a rural subdivision. The NCHCP would be prepared in consultation with state and federal agencies and would include monitoring and report procedures to track potential impacts on special status species. The County could grant exceptions to these requirements upon finding that existing studies adequately fulfill the requirements, provided such studies were prepared by a qualified professional as a part of a previously certified Final EIR or certified Habitat Conservation Program.

⁶ The DFG Website contains more specific information: www.dfg.ca.gov/whdab/html/cwhr.html.

Option 2.4 Establish incentives for creation of “Rural Conservation” parcels, including provisions for Transfer of Development Rights (TDRs) and cooperative arrangements with land trusts and others who could accept conservation easements. TDR programs create incentives for preservation of large areas of open space by allowing for transfer of development from a “sending area” to a “receiving area”. TDR programs do not require cash outlays for open space acquisition. Tax benefits associated with conservation easements can make these attractive options and help in implementation of habitat protection programs.

Option 2.5 Establish a Habitat Mitigation Fee and Land Banking Programs to help protect habitat for special status species. Mitigation fees have been used successfully elsewhere to support land-banking and conservation easement programs; they allow for flexibility in implementing conservation policies. These funds also could be used to restore degraded habitat.

Option 2.6 Support creation of a private non-profit open space trust. If a Humboldt County Open Space Lands Trust were created, this type of organization could administer funds received from grants and from the private sector and work with other open space and public land organizations to help the County preserve open space. A Land Trust could acquire open space as well as open space and conservation easements or receive easements or fee title as charitable donations. Alternatively, the County could work with the Trust for Public Lands, the North Coast Regional Land Trust, or a similar organization. This relationship could provide immediate tangible benefits because of their reputation and long-standing experience, staff skills and visibility within the environmental community.

ISSUE

- *How does the County ensure and document that its policies and practices are consistent with the Endangered Species Act?*

The provisions of the Endangered Species Act should be readily available to County staff for use in reviewing development proposals. Current sensitive species lists should be maintained and distributed to planning staff. Table 2-3 summaries Federal and State Listed Special Status Species that have been sighted in the unincorporated areas of Humboldt County. The list, presented in Table 2-4, includes the number of times (occurrences) that a species of concern has been sighted and, for plants, what the classifications are of the California Native Plant Society (CNPS).

The County may want to develop a set of project application review guidelines that include relevant provisions of the ESA and should consult with USFW and DFG when reviewing development applications. Consultation provisions are addressed in existing General Plan policies. These internal procedures do not require development of new policy options.

Humboldt County General Plan Update
Natural Resources and Hazards

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