

3.5 BIOLOGICAL RESOURCES

3.5.1 ENVIRONMENTAL SETTING

The information in this section was collected from technical reports prepared for the project applicant; database searches; review of other technical reports; conversations with local biologists, including resource agency personnel; and a site reconnaissance conducted by AECOM biologists in August 2018. The biologists peer reviewed the following technical reports (included in this EIR as Appendices D through S) for technical accuracy before incorporating relevant material into this section:

- ▶ *Humboldt Wind Energy Project Biological Resources Work Plan, Humboldt County, California* (Stantec 2018a) (Appendix D)
- ▶ *Humboldt Wind Energy Project Eagle and Raptor Aerial Nest Survey Report, Humboldt County, California, Spring 2018* (Stantec 2018b) (Appendix E)
- ▶ *Humboldt Wind Energy Project Aquatic Resources Survey Report, Humboldt County, California, Summer and Fall 2018* (Stantec 2018c) (Appendix F)
- ▶ *Humboldt Wind Energy Project Botanical Resources Report, Humboldt County, California, Spring and Summer 2018* (Stantec 2018d) (Appendix G)
- ▶ *Humboldt Wind Energy Project Eagle Use Survey Report, Humboldt County, California, October 2017–October 2018* (Stantec 2018e) (Appendix H)
- ▶ *Humboldt Wind Energy Project Northern Spotted Owl Habitat Assessment and Auditory and Visual Disturbance Analysis Report, Humboldt County, California, Summer 2018* (Stantec 2018f) (Appendix I)
- ▶ *Humboldt Wind Energy Project Bird Use Count Report, Humboldt County, California, October 2017–October 2018* (Stantec 2018g) (Appendix J)
- ▶ *Humboldt Wind Energy Project Marbled Murrelet Habitat Assessment and Auditory and Visual Disturbance Analysis Report, Humboldt County, California, Summer and Fall 2018* (Stantec 2018h) (Appendix K)
- ▶ *Humboldt Wind Energy Project Bat Acoustic Monitoring Report, Humboldt County, California, March 2018–October 2018* (Stantec 2018i) (Appendix L)
- ▶ *Humboldt Wind Energy Project Wildlife Assessment, Humboldt County, California* (Stantec 2018j) (Appendix M)
- ▶ *Humboldt Wind Energy Project Marbled Murrelet Radar Survey Report, Humboldt County, California, April 2018–September 2018* (Stantec 2018k) (Appendix N)
- ▶ *Marbled Murrelet Collision Risk Assessment Associated with the Humboldt Wind Project Proposed for Humboldt County, California* (H. T. Harvey & Associates 2018a) (Appendix O)
- ▶ *Wetland Delineation for Activities in the Coastal Zone* (Stantec 2018l) (Appendix P)

- ▶ *Humboldt Wind Energy Project—Updated Habitat Assessment and Auditory and Visual Disturbance Analysis for Northern Spotted Owl and Marbled Murrelet* (Stantec 2019a) (Appendix Q)
- ▶ *Barge Discharge Memo—Operational Confirmation of Avoidance of Marine Floor and Eelgrass (Zostera marina)* (Central Oceans USA 2019) (Appendix R)
- ▶ *Humboldt Wind Energy Project Bird and Bat Conservation Strategy* (Stantec 2019a) (Appendix S)

REGIONAL SETTING

The project site is located within the Coast Range ecoregion of California, defined by low mountains with highly productive evergreen forests, including managed Douglas-fir plantations and redwood forest (Griffith et al. 2016). The region also features significant coastal resources, as well as rivers and streams containing important anadromous fishery resources. The project site encompasses canyons, drainages, valley bottoms, and prominent ridgelines (i.e., Bear River Ridge, Monument Ridge, and Shively Ridge) with elevations ranging from nearly sea level to approximately 3,000 feet. The project site spans the Eel River, Cape Mendocino, and Eureka Plain hydrologic units, whose watersheds flow west toward the Pacific Ocean (Humboldt County 2007). Several named drainages traverse the project site, including Greenlow Creek, the Eel River, the Van Duzen River, and Stitz Creek. The climate of the region is temperate, with a maritime influence that is moderated by the Pacific Ocean. Summers are cool and dry, with highs in the 60s Fahrenheit. Winters are mild and rainy, with highs in the 50s and average precipitation of 41 inches. Fog is common throughout the year.

Surrounding regional land uses include Humboldt Bay to the north, the Six Rivers National Forest (Mad River Ranger District) to the east, Humboldt Redwoods State Park to the south, and privately held ranches to the west. Most of the project site is used for cattle grazing and timberland management, encompassing lands zoned Agriculture Exclusive (AE) and Timber Production Zone (TPZ), except for limited segments of the proposed generation transmission line (gen-tie).¹

BIOLOGICAL STUDY AREA

The biological study area encompasses the locations of all project components and options under evaluation, as well as adjacent lands that were surveyed by biologists as part of this evaluation. To support a conservative approach to project planning and environmental review, biological surveys were conducted within the 882-acre project site plus adjacent buffers, including a 1,000-foot-wide corridor centered on the proposed locations of wind turbine generators (WTGs); a 200-foot-wide corridor centered on project roads, the electrical collection line, and the gen-tie line; and a 500-foot-wide buffer around proposed staging areas, temporary impact areas, and the project substation. Biological resources studies included surveys for vegetation type, rare plants, eagle and raptor nests, wetlands and other waters, birds, and bats; and habitat assessments for wildlife, northern spotted owl (*Strix occidentalis caurina*), and marbled murrelet (*Brachyramphus marmoratus*). In addition, the Fields Landing delivery site, encompassing approximately 12 acres of temporary disturbance, was surveyed for wetlands, vegetation, and wildlife habitat. The combined project site and Fields Landing delivery site total approximately 895 acres of temporary and permanent disturbance areas associated with project component delivery, staging, access, construction, power generation, and transmission.

¹ Portions of the gen-tie cross areas zoned Agricultural General (AG), Community Commercial (C-2), City, Flood Plain (FP), Heavy Industrial (MH), Public Facility (PF), Residential One-Family (R-1), and Unclassified (U).

Some biological resources surveys were expanded to surrounding areas to gain a more complete understanding of the environmental setting, particularly as it relates to potential impacts of project operation on birds. Table 3.5-1 lists biological resources studies and associated survey areas.

Table 3.5-1. Humboldt Wind Energy Project Biological Resources Surveys and Habitat Assessment Areas

Biological Resource Survey or Habitat Assessment Type	Area Surveyed
Botanical resources	Biological Study Area ¹
Eagle aerial nest survey	A 10-mile buffer around proposed wind turbine generator locations
Raptor aerial nest survey	A 1-mile buffer around proposed wind turbine generator locations
Aquatic resources	Biological Study Area and Fields Landing Delivery Site
Eagle use count and bird use count surveys	Thirteen survey plots, each with an 800-meter buffer, near proposed wind turbine generator locations
Northern spotted owl habitat assessment	A 0.7-mile buffer around the Biological Study Area boundary
Marbled murrelet habitat assessment	A 0.25-mile buffer around the Biological Study Area boundary
Bat acoustic monitoring	Eleven point locations: 10 near proposed wind turbine generator locations and one near the Eel River near the proposed operations and management facility
Wildlife habitat assessment	Biological Study Area and Fields Landing Delivery Site
Marbled murrelet radar survey	Eight survey locations, each with a 1.4-kilometer (0.87-mile) buffer, near proposed wind turbine generator locations
¹ The biological study area includes the project site and adjacent buffers consisting of a 1,000-foot-wide corridor centered on the proposed locations of wind turbine generators; a 200-foot-wide corridor centered on project roads, the electrical collection line, and the generation transmission line; and a 500-foot-wide buffer around proposed staging areas, temporary impact areas, and the project substation. Sources: Stantec 2018a, 2018b, 2018c, 2018d, 2018e, 2018f, 2018g, 2018h, 2018i, 2018j, 2018k; H. T. Harvey & Associates 2018a	

Vegetation and Habitats

In spring, summer, and fall 2018 Stantec Consulting Services, Inc. (Stantec) conducted vegetation mapping within the project site and Fields Landing delivery site, resulting in the identification of 83 vegetation communities (Stantec 2018d). These vegetation communities were categorized to the alliance or association level in accordance with *A Manual of California Vegetation*, 2nd Edition (MCV) (Sawyer et al. 2009) and updated in the current online edition (CNPS 2019a). Stantec then translated the vegetation communities mapped at the project site from MCV vegetation alliances to California Wildlife Habitat Relationship habitat types, using the California Native Plant Society's web-based version of the MCV, resulting in six wildlife habitat types (Stantec 2018j). These wildlife habitat types include forest and woodland; grassland; shrub/scrub; barren/urban land; riparian; and aquatic habitats (wetland areas), including drainages and open water. Table 3.5-2 summarizes the wildlife habitats and total acreage of each habitat identified and mapped within the project site and Fields Landing Delivery Site. Approximately 24 acres of the project site were not surveyed due to intractable safety concerns (i.e., cattle pens with bulls, steep slopes) (Akky, pers. comm. 2019). See Appendix G, "Humboldt Wind Energy Project Botanical Resources Report," and Appendix M, "Humboldt Wind Energy Project Wildlife Habitat Assessment," for detailed descriptions of vegetation communities and wildlife habitats, respectively.

Table 3.5-2. Land Cover Types Identified within the Humboldt Wind Energy Project Site, 2018

Land Cover Type	Total Acres (Approximate)
Forest/woodland	554.6
Grassland	283.7
Shrub/scrub	19.8
Barren/urban	8.8
Riparian	1.8
Wetland areas ¹	2.3
Total	871.8

¹ The wetland areas habitat type includes the combined acreage of vegetation communities classified as being associated with wetland-type habitats, but does not reflect acreages delineated as jurisdictional wetlands/other waters.

Source: Stantec 2018j

Forest and Woodland

Forest and woodland habitats cover much of the project site. In addition, existing roads and proposed access routes, staging areas, and facility locations are often within or adjacent to forest and woodland vegetation. This habitat is typically characterized by a mixed-coniferous canopy dominated by Douglas-fir (*Pseudotsuga menziesii*) and redwood (*Sequoia sempervirens*), with hardwood trees such as bigleaf maple (*Acer macrophyllum*), California bay (*Umbellularia californica*), and tanoak (*Notholithocarpus densiflorus*) also common. Douglas-fir stands in early seral stages with no developed shrub or herbaceous layers are present in recently logged areas and areas grazed by cattle (Stantec 2018d). More developed forest stands feature subdominant to codominant hardwood trees and an understory shrub layer (Stantec 2018d). Much of the forest is logged and the canopy varies from closed to open.

Grassland

A wide swath of grassland habitat dominates the entire Bear River Ridge and western portions of Monument Ridge. Grasslands in the wind generation corridor have historically been used for cattle grazing and are characterized by nonnative annual and perennial grasses variably mixed with native grasses and forbs. Characteristic grass species include sweet vernal grass (*Anthoxanthum odoratum*), common velvet grass (*Holcus lanatus*), and purple awned wallaby grass (*Rytidosperma penicillatum*). Common forbs include Spanish lotus (*Acmispon americanus*) and English plantain (*Plantago lanceolata*) (Stantec 2018d). Some grassland habitat is also intermittently present along the gen-tie, at the Fields Landing delivery site, along access routes, in staging areas, and at facility locations.

Shrub/Scrub

Scrub habitat is intermittently present throughout the project site, typically along roadsides and in forest openings (Stantec 2018d). This habitat often comprises a diverse community of native and nonnative shrubs, including redwood manzanita (*Arctostaphylos columbiana*), poison oak (*Toxicodendron diversiloba*), California huckleberry (*Vaccinium ovatum*), coyote brush (*Baccharis pilularis*), blue blossom (*Ceanothus thyrsiflorus*), Scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), Himalayan blackberry (*Rubus armeniacus*), California blackberry (*R. ursinus*), thimbleberry (*R. parviflorus*), and salmonberry (*R. spectabilis*) (Stantec 2018d).

In the western portion of the proposed wind generation corridor, dense stands of ocean spray brush (*Holodiscus discolor*) occur along grassland borders. Scrub habitats associated with drainages and ditches are typically characterized by thickets of arroyo willow (*Salix lasiolepis*) or, in more disturbed areas, nonnative Himalayan blackberry and firethorn (*Pyracantha* spp.).

Barren/Urban Land

Barren/urban lands within the project site are associated with existing developed areas, such as the Palco lumber yards, the Bridgeville Substation, roads, and houses, ranches, and other structures. The proposed project component delivery site at Fields Landing consists primarily of barren/urban lands used for boat hauling and storage (HBHRCD 2018). In contrast, the proposed wind generation corridor is generally undeveloped, except for scattered livestock/hay barns and several roads (Bear River Ridge Road, Monument Road, and Mt. Pierce Lookout Road) (Stantec 2018d).

Riparian

Forested/scrub riparian habitats are common along the perennial and intermittent drainages that traverse the proposed electrical interconnection areas, project access routes, staging areas, and facility locations (Stantec 2018c). Common species in riparian zones include Sitka willow (*Salix sitchensis*), arroyo willow, red alder (*Alnus rubra*), California bay, and bigleaf maple. A narrow band of riparian habitat dominated by black cottonwood (*Populus trichocarpa*) and Pacific willow (*Salix lasiandra* var. *lasiandra*) was mapped along the eastern bank of the Eel River where the proposed gen-tie would cross the river (Stantec 2018c, 2018d, 2018j).

Wetland Areas

Numerous wetland features are scattered throughout the project site (Stantec 2018d). These features include palustrine emergent marsh, palustrine forested, and palustrine scrub-shrub habitats (Stantec 2018c). Wildlife habitat that is mapped as a wetland-area type includes vegetation communities classified as being associated with wetland-type habitats, but does not reflect acreages delineated as jurisdictional wetlands or other waters (Stantec 2018j). For a detailed description of wetlands and waters subject to federal and state jurisdiction, see “Waters of the United States and Other Waters.”

Grasslands within the proposed wind generation corridor are dotted with small palustrine emergent marshes, as well as one permanently inundated, unvegetated stock pond in the eastern portion of Bear River Ridge (Stantec 2018j). Grazing and other disturbance by cattle strongly affect the vegetation at these locations. Dominant species associated with emergent marshes are soft rush (*Juncus effuses* var. *pacificus*), western rush (*J. patens*), pennyroyal (*Mentha pulegium*), and Harding grass (*Phalaris aquatica*) (Stantec 2018d).

Existing roads are often paralleled by adjacent ephemeral and intermittent drainages, many of which are culverted (Stantec 2018c). In addition, several named drainages traverse the biological study area: Stitz Creek, Hoagland Creek, Fish Creek, Greenlow Creek, and Little Larabee Creek. These creeks and drainages typically support palustrine forested and/or shrub-scrub wetlands characterized by a prominent tree layer. Palustrine forested wetlands are dominated by red alder or black cottonwood, while palustrine scrub-shrub wetlands are characterized by willow thickets consisting of coastal dune willow (*Salix hookeriana*), arroyo willow, Sitka willow, or narrowleaf willow (*S. exigua*) (Stantec 2018c).

Non-native Invasive/Noxious Weeds

Noxious weeds are known to occur or have potential to occur in the biological study area (Table 3.5-3). Several thistles are known from the biological study area: including Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), slender flowered thistle (*C. tenuiflorus*), tocalote (*Centaurea melitensis*), spotted knapweed (*C. stoebe* ssp. *micranthos*), Canada thistle (*Cirsium arvense*), and bull thistle (*C. vulgare*). These thistles often compete with crops and native plants for nutrients and water, and may restrict grazing in areas where infestations are high (Bossard et al. 2000). Other species such as Scotch broom, French broom, poison hemlock (*Conium maculatum*), Himalayan blackberry, and fennel (*Foeniculum vulgare*) are common along many roadsides in Humboldt County, including some of the access roads leading to the proposed turbine locations. Table 3.5-3 lists the noxious weeds known or with potential to occur in the biological study area. The information in Table 3.5-3 was compiled by AECOM biologists during a review of the *Humboldt Wind Energy Project Botanical Resources Report* (Stantec 2018d), CDFA Encycloweedia (CDFA 2016), the Cal-IPC Invasive Plant Inventory Database (Cal-IPC 2019), and the Humboldt County Weed Management Area (HCWMA) list of invasive weeds of concern in the county (HCWMA 2010).

Table 3.5-3. Noxious Weeds Known or with Potential to Occur in the Biological Study Area^{1,2}

Scientific Name	Common Name	CDFA Rating ³	Cal-IPC Rating ⁴	HCWMA Rating ⁵
<i>Ailanthus altissima</i>	Tree-of-heaven	C	Moderate	High Priority
<i>Anthoxanthum odoratum</i> *	Sweet vernal grass	—	Moderate	—
<i>Avena fatua</i> *	Wild oats	—	Moderate	—
<i>Brassica nigra</i> *	Black mustard	—	Moderate	—
<i>Briza maxima</i> *	Rattlesnake grass	—	Limited	—
<i>Bromus diandrus</i> *	Ripgut brome	—	Moderate	—
<i>Bromus hordeaceus</i> *	Soft chess brome	—	Limited	—
<i>Buddleja davidii</i>	Butterfly bush	—	—	Moderate Priority
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i> *	Italian thistle	C	—	—
<i>Carduus tenuiflorus</i> *	Slender flowered thistle	C	Limited	—
<i>Centaurea debeauxii</i>	Meadow knapweed	—	Moderate	—
<i>Centaurea diffusa</i>	Diffuse knapweed	A	Moderate	Red Alert
<i>Centaurea melitensis</i> *	Tocalote	B	Moderate	—
<i>Centaurea solstitialis</i>	Yellow starthistle	C	High	High Priority
<i>Centaurea stoebe</i> ssp. <i>micranthos</i> *	Spotted knapweed	A	High	Red Alert
<i>Cirsium arvense</i> *	Canada thistle	B	Moderate	High Priority
<i>Cirsium vulgare</i> *	Bull thistle	C	Moderate	High Priority
<i>Conium maculatum</i> *	Poison hemlock	—	Moderate	Moderate Priority
<i>Cortaderia jubata</i> *	Jubata grass	—	High	High Priority
<i>Cortaderia selloana</i>	Pampas grass	—	High	High Priority
<i>Cotoneaster franchetii</i>	Orange cotoneaster	—	Moderate	High Priority
<i>Cotoneaster pannosus</i>	Silverleaf cotoneaster	—	Moderate	High Priority
<i>Cynosurus echinatus</i> *	Dogtail grass	—	Moderate	—
<i>Cytisus scoparius</i> *	Scotch broom	C	High	High Priority

Table 3.5-3. Noxious Weeds Known or with Potential to Occur in the Biological Study Area^{1, 2}

Scientific Name	Common Name	CDFA Rating ³	Cal-IPC Rating ⁴	HCWMA Rating ⁵
<i>Dactylis glomerata</i> *	Ochardgrass	–	Limited	–
<i>Delairea odorata</i>	Cape ivy	–	High	High Priority
<i>Digitalis purpurea</i> *	Foxglove	–	Limited	–
<i>Dipsacus fullonum</i> *	Wild teasel	–	Moderate	–
<i>Elymus caput-medusae</i> *	Medusa head	–	High	–
<i>Erica lusitanica</i>	Heath	–	–	High Priority
<i>Erodium cicutarium</i>	Coastal heron's bill	–	Limited	–
<i>Fallopia japonica</i>	Japanese knotweed	–	–	Red Alert
<i>Fallopia sachalinensis</i>	Giant knotweed	–	–	Red Alert
<i>Festuca arundinacea</i> *	Reed fescue	–	Moderate	–
<i>Foeniculum vulgare</i> *	Fennel	–	High	High Priority
<i>Genista monspessulana</i> *	French broom	C	High	High Priority
<i>Hedera helix</i> *	English ivy	–	High	High Priority
<i>Holcus lanatus</i> *	Common velvetgrass	–	Moderate	–
<i>Hypericum perforatum</i> *	Klamath weed	C	Moderate	–
<i>Hypochaeris radicata</i> *	Hairy cats ear	–	Moderate	–
<i>Ilex aquifolium</i>	English holly	–	Moderate	–
<i>Leucanthemum vulgare</i> *	Ox-eye daisy	–	Moderate	–
<i>Lythrum salicaria</i>	Purple loosestrife	B	High	Red Alert
<i>Mentha pulegium</i> *	Pennyroyal	–	Moderate	–
<i>Myriophyllum aquaticum</i>	Parrotfeather	–	High	Red Alert
<i>Parentucellia viscosa</i> *	Yellow parentucellia	–	Limited	–
<i>Persicaria wallichii</i>	Himalayan knotweed	–	–	Red Alert
<i>Phalaris aquatica</i> *	Harding grass	–	Moderate	–
<i>Pittosporum undulatum</i>	Pittosporum	–	–	Moderate Priority
<i>Plantago lanceolata</i> *	Ribwort	–	Limited	–
<i>Ranunculus repens</i> *	Creeping buttercup	–	Limited	–
<i>Rubus armeniacus</i> *	Himalayan blackberry	–	High	High Priority
<i>Rumex acetosella</i> *	Sheep sorrel	–	Moderate	–
<i>Rumex crispus</i> *	Curly dock	–	Limited	–
<i>Rytidosperma penicillatum</i> *	Purple awned wallaby grass	–	Limited	–
<i>Silybum marianum</i> *	Milk thistle	–	Limited	–
<i>Torilis arvensis</i> *	Field hedge parsley	–	Moderate	–
<i>Trifolium hirtum</i> *	Rose clover	–	Limited	–
<i>Ulex europaeus</i>	Gorse	B	High	Red Alert
<i>Vinca major</i> *	Periwinkle	–	Moderate	High Priority

Notes for Table 3.5-3

Notes:

CDFA = California Department of Food and Agriculture; Cal-IPC = California Invasive Plant Council; HCWMA = Humboldt County Weed Management Area

¹ Species names denoted by an asterisk have been observed in the biological study area.

CDFA Pest Ratings:

- A: Weeds of known economic significance, subject to action by CDFA including eradication, quarantine, containment, rejection of shipments, or other holding action at the state-county level. Quarantine interceptions are to be rejected or treated at any point in the state.
- B: Weeds subject to action by CDFA only when found in a nursery, and otherwise subject to eradication, containment, control, or other holding action at the discretion of the local county agricultural commissioner.
- C: Not subject to state action except to provide for general pest cleanliness in nurseries; reject by CDFA only when found in a crop seed for planting or at the discretion of the commissioner, action to retard spread outside of nurseries at the discretion of the county agricultural commissioner.

Cal-IPC Pest Ratings:

High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Humboldt County Weed Management Area Ratings:

Red Alert: The species is present in the HCWMA and has very few populations and/or very limited distribution, such that complete eradication is possible, even if it takes repeated eradication efforts. Its potential for spread and agronomic, economic, or wildland impact is severe. This is an early-detection, rapid-response action category. These localized and satellite species, once located, will be actively managed.

High Priority: These species are present in the HCWMA and are under ongoing, active management. They are affecting agronomic, economic, or wildland resources. Combined efforts between members of the HCWMA can significantly work toward complete eradication or containment of these species. Efforts include direct weed control, public education and outreach, prevention, mapping, etc.

Moderate Priority: These species are known to be invasive in various environments and have known ecological impacts. Treatment of these species occurs, often packaged as part of an overall weed abatement program for a given project area.

Sources: ²Stantec 2018d; ³CDFA 2016; ⁴Cal-IPC 2018; ⁵HCWMA 2010

Wildlife

The diversity and abundance of wildlife in the biological study area is influenced by the combination of diverse habitat types, variations in topographic relief, and a relatively low level of anthropogenic disturbance. These characteristics contribute to the relatively high number of wildlife species documented during field surveys conducted for the project, as described below.

Birds

The most intensively surveyed taxonomic group of wildlife was birds, with 110 species detected in the biological study area (Stantec 2018g). Survey methods followed the *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development* (CEC and CDFG 2007); the U.S. Fish and Wildlife Service (USFWS) eagle conservation plan guidance (USFWS 2016); and the draft work plan prepared by Stantec (2018a). The bird use count surveys included large birds such as raptors, vultures, corvids, and waterfowl, but also included observations of small birds. The small-bird use count surveys supplemented the bird use count survey by

surveying for large and small birds at additional plots within representative habitats throughout the project area during the spring, summer, and fall (Stantec 2018g). Other bird surveys conducted by Stantec that are discussed in detail below under “Special-Status Species” include a habitat assessment and radar surveys for marbled murrelet (Stantec 2018h, 2018k), a habitat assessment for northern spotted owl (Stantec 2018f), aerial eagle/raptor nest surveys (Stantec 2018b), and eagle use count surveys (Stantec 2018b).

The bird use count surveys conducted in the project area from October 2017 to October 2018 most frequently encountered thrushes, sparrows/larks, and blackbirds/orioles. The species most often encountered were American robin (*Turdus migratorius*), dark-eyed junco (*Junco hyemalis*), and Brewer’s blackbird (*Euphagus cyanocephalus*) (Stantec 2018g). During the surveys, the largest number of bird species were detected in managed timberlands dominated by redwood and Douglas-fir forests found throughout the project site (usage at 75.59 percent, with 5,781 observations), followed by grassland habitats (usage at 32.82 percent, with 2,549 observations). The most frequently observed raptors included red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and Cooper’s hawk (*Accipiter cooperii*). Two bald eagles (*Haliaeetus leucocephalus*) were also detected during the surveys. No golden eagles (*Aquila chrysaetos*) were observed during the bird use count surveys, although eagles were detected during the eagle use surveys and aerial nesting eagle/raptor surveys.

The small-bird use count surveys were conducted between April 3, 2018, and October 26, 2018. The survey resulted in 5,577 observations from 92 species (Stantec 2018g). The group of birds most often encountered was passerines (91.50 percent of observations), followed by doves/pigeons (2.53 percent of observations) and upland game birds (1.94 percent of observations). The largest number of observations occurred in the fall (Stantec 2018g).

Mammals

Stantec’s wildlife habitat assessment (Appendix M) lists mammal species expected to occur within the project site’s various habitats, and provides detailed descriptions of special-status mammal species that have the potential or are known to occur at the project site. Mammal species incidentally observed during project surveys include bobcat (*Lynx rufus*), Botta’s pocket gopher (*Thomomys bottae*), brush rabbit (*Sylvilagus bachmani*), Columbian black-tailed deer (*Odocoileus hemionus columbianus*), coyote (*Canis latrans*), mountain lion (*Puma concolor*), northwestern black bear (*Ursus americana altifrontalis*), Roosevelt elk (*Cervus elaphus roosevelti*), and wild pig (*Sus scrofa*) (Stantec 2018j).

One notable mammal that was detected incidentally during surveys for birds and bats is the Pacific fisher (*Pekania pennanti*), a state-listed threatened species and California Department of Fish and Wildlife (CDFW) species of special concern. Pacific fisher has also been observed and documented by Humboldt Redwood Company (HRC) at 53 locations that it owns and manages (HRC 2018a).

Other mammals expected to occur within the forested portions of the project area include Douglas squirrel (*Tamiasciurus douglasii*), Townsend’s chipmunk (*Eutamias townsendii*), and grey fox (*Urocyon cinereoargenteus*) (Stantec 2018j). The Sonoma tree vole (*Arborimus pomo*), a CDFW species of special concern, also has the potential to occur in the project area because it has been documented in the coniferous forests in the biological study area (CDFW 2018a). American badger (*Taxidea taxus*) is also known to occur on Bear River Ridge (McAllister, pers. comm., 2019).

The only surveys specifically conducted for mammals in the biological study area were acoustic surveys for bats. Twelve of the 13 bat species found in Humboldt County were detected during acoustic surveys conducted at 11 stations within the project site in spring, summer, and fall 2018 (Stantec 2018i). These acoustic surveys detected higher levels of bat activity at certain survey sites than had been detected by other passive acoustic studies conducted in the region. Kennedy et al. (2014) recorded fewer than 20 bat passes per night on a monthly basis during 1,365 detector-nights of monitoring in Humboldt Redwoods State Park, whereas mean monthly activity exceeded 100 bat passes per night at several detectors in the project area (Stantec 2018i). Acoustic survey results from the project area showed a gradual increase in monthly bat activity between March and September (Stantec 2018i). No bats listed as threatened or endangered by USFWS or CDFW occur in the study area. Bat species of conservation concern are discussed further in the description of special-status species under “Sensitive Biological Resources,” below.

Reptiles and Amphibians

Although no focused surveys were conducted for reptiles and amphibians, the project site is expected to support a variety of reptile and amphibian species. Reptiles may use open grassland habitat, including the surfaces of small rock outcrops, as basking sites; they may also use the cover of animal burrows as hibernation and/or aestivation habitats. Amphibians may use the wet understory of the coniferous forest habitat, wetlands, and riparian areas as overwintering sites. Alligator lizard (*Elgaria coerulea*), coast garter snake (*Thamnophis elegans terrestris*), gopher snake (*Pituophis catenifer*), and northern red-legged frog (*Rana aurora*) were incidentally observed during the wildlife habitat assessment (Stantec 2018j). The northern red-legged frog is a CDFW species of special concern.

Fish

No focused surveys for fish were conducted as part of project surveys, and no fish were observed incidentally within the project site (Stantec 2018j). However, the North Coast region is recognized as having important fishery resources. Perennial aquatic habitats within the project site, such as Humboldt Bay near Fields Landing and the Eel River and its tributaries, are known to support several species of fish, including listed salmonids. A spawning run of Green Sturgeon (Northern Distinct Population Segment [DPS]) occurs in the Eel River basin annually, and the current range of Pacific Lamprey includes both the Eel and Van Duzen rivers (Stantec 2018j). Coastal Cutthroat Trout may be present in the Eel River as far upstream as the confluence with the Van Duzen River (Stantec 2018j). The Eel and Van Duzen rivers, as well as suitable tributaries, provide important movement and spawning habitat for the Southern Oregon/Northern California Coast Coho Salmon Evolutionarily Significant Unit (ESU), California Coastal Chinook Salmon ESU, Northern California Steelhead DPS, and Summer-run Steelhead Trout (Stantec 2018j). Lastly, Longfin Smelt have been observed throughout the Eel River estuary and the mainstem portions of the coastal plain in Humboldt Bay (Stantec 2018j).

Sensitive Biological Resources

Sensitive biological resources addressed in this analysis include special-status species and sensitive habitats that are afforded consideration or protection under CEQA, the California Fish and Game Code, the California Endangered Species Act (CESA), the federal Endangered Species Act (ESA), the Clean Water Act (CWA), the Migratory Bird Treaty Act (MBTA), the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and the Bald and Golden Eagle Protection Act.

Special-Status Species

For the purpose of this analysis, special-status species are plants and animals that fall within any of the following categories:

- ▶ Species that are listed under the federal ESA and/or CESA as rare, threatened, or endangered
- ▶ Species considered as candidates and proposed for federal or state listing as threatened or endangered
- ▶ Wildlife designated by CDFW as fully protected and/or species of special concern
- ▶ Birds designated by CDFW as watch list species
- ▶ Birds protected under the MBTA
- ▶ Bats designated by the Western Bat Working Group (WBWG) as high (red) or medium (yellow) priority
- ▶ Plants ranked by CDFW to be rare, threatened, or endangered in California

The California Native Plant Society (CNPS) has identified five categories of California Rare Plant Ranks (CRPRs):

- ▶ List 1A—Plants presumed to be extinct in California
- ▶ List 1B—Plant species considered rare, threatened, or endangered in California and elsewhere
- ▶ List 2—Plant species considered rare, threatened, or endangered in California but more common elsewhere
- ▶ List 3—Plants about which more information is needed (a review list)
- ▶ List 4—plants of limited distribution (a watch list)

Each CRPR category may include an extension indicating the level of endangerment in California:

- ▶ 1—Seriously endangered in California (more than 80 percent of occurrences are threatened and/or high degree and immediacy of threat)
- ▶ 2—Fairly endangered in California (20–80 percent of occurrences are threatened)
- ▶ 3—Not very endangered in California

CDFW recommends—and local governments may require—that CEQA review of proposed projects address plants on Lists 1A, 1B, and 2.

Special-Status Plants

AECOM biologists compiled a list of special-status plant species with potential to occur in the biological study area and surrounding areas. The list was compiled using information provided in the CNDDDB database (CDFW 2018a), documentation of species in technical reports prepared for the project, species specifically requested by resource agencies to be addressed during project scoping, and a search of the CNPS (2019b) and USFWS databases (USFWS 2018a) for the following local U.S. Geological Survey (USGS) quadrangles (USGS 2013): Eureka, Arcata South, Cannibal Island, Fields Landing, McWhinney Creek, Ferndale, Fortuna, Hydesville, Owl Creek, Yager Junction, Showers Mountain, Larabee Valley, Bridgeville, Redcrest, Scotia, Taylor Peak, Capetown, Petrolia, Buckeye Mountain, Bull Creek, Weott, Myers Flat, and Blocksburg. These searches initially identified a total of 52 special-status plant species. Of these, 35 special-status plant species are known to occur or have the potential to occur within the biological study area (Table 3.5-4). The remaining 17 species have no potential to occur within the biological study area. These species are pink sand-verbena, McDonald's rockcress, twisted horsehair lichen, lagoon sedge, deceiving sedge, green yellow sedge, Humboldt Bay owl's-clover, Point

Reyes salty bird's beak, round-headed Chinese houses, Menzie's wallflower, bluff wallflower, dark-eyed gilia, glandular western flax, seaside pea, dwarf alkali grass, western sand spurrey, and Kneeland Prairie penny-cress. Because they are restricted to elevations or habitats (e.g., serpentinite, coastal dunes, coastal strand, coastal salt marsh, bogs/fens) that are not present in the biological study area, these 17 species are not addressed further in this EIR.

Table 3.5-4. Special-Status Plant Species Known to Occur or with Potential to Occur in the Biological Study Area

Species	Status ¹			Habitat, Elevation, and Blooming Period	Potential for Occurrence ²
	Federal	State	CRPR		
Bristle-stalked sedge <i>Carex leptalea</i>	–	–	2B.2	Bogs and fens, mesic meadows and seeps, marshes and swamps. 0–790 meters. Blooms March through July.	Could occur. Suitable habitats (seeps and other mesic habitats) exist on the project site. Nearest recorded location is from 1918, in a mossy bog on the north slope of Humboldt Hill adjacent to Humboldt Bay (CDFW 2018a). This species was not detected during 2018 surveys.
Oregon coast paintbrush <i>Castilleja litoralis</i>	–	–	2B.2	Coastal bluff scrub, coastal dunes, and sandy coastal scrub. 15–100 meters. Blooms in June.	Could occur. Suitable habitat (sandy areas in coastal habitat) may exist near Fields Landing. Nearest recorded location is from 1926, within 2 miles of Fields Landing on a brushy slope of Humboldt Hill adjacent to Humboldt Bay (CDFW 2018a). This species was not detected during 2018 surveys.
Whitney's farewell-to-spring <i>Clarkia amoena</i> ssp. <i>whitneyi</i>	–	–	1B.1	Coastal bluff scrub and coastal scrub. 10–100 meters. Blooms June through August.	Could occur. Suitable habitat (coastal scrub) exists on the project site. Nearest recorded location is from 1955, approximately 1.5 miles west of Fortuna (CDFW 2018a). This species was not detected during 2018 surveys.
Giant fawn lily <i>Erythronium oregonum</i>	–	–	2B.2	Openings in cismontane woodland, meadows, and seeps, sometimes on rocky serpentinite soils. 100–500 meters. Blooms March through May.	Could occur. Suitable habitats (seeps, woodland, and rocky open habitats) exist on the project site. Nearest recorded location is from 2007, in a mesic area of mixed coniferous forest within 2 miles of the project site, near Stafford (CDFW 2018a). This species was not detected during 2018 surveys.
Minute pocket moss <i>Fissidens pauperculus</i>	–	–	1B.2	North Coast coniferous forest (damp coastal soil). 10–1,025 meters.	Could occur. Suitable habitat (damp soils in North Coast coniferous forest) exists on the project site. There is one occurrence within 2 miles of the project site, from a 1965 collection from logs along the Van Duzen River (CDFW 2018a). This species was not detected during 2018 surveys.

Table 3.5-4. Special-Status Plant Species Known to Occur or with Potential to Occur in the Biological Study Area

Species	Status ¹			Habitat, Elevation, and Blooming Period	Potential for Occurrence ²
	Federal	State	CRPR		
Coast fawn lily <i>Erythronium revolutum</i>	–	–	2B.2	Bogs and fens, broadleaf upland forest, mesic North Coast coniferous forest, and streambanks. 0–1,350 meters. Blooms March through July (rarely March through August).	Could occur. Suitable habitats (mesic areas and streambanks) exist on the project site. There are six occurrences of this species within 2 miles of the project site, on various drainage slopes and road cuts. Nearest recorded location is from 2004, on the southwest slope of Monument Ridge (CDFW 2018a). This species was not detected during 2018 surveys.
Pacific gilia <i>Gilia capitata</i> ssp. <i>pacifica</i>	–	–	1B.2	Coastal bluff scrub, openings in chaparral, coastal prairie, and valley and foothill grassland. 5–869 meters. Blooms April through August.	Known to occur. This species was detected on Monument Ridge and on the U.S. 101–Monument Ridge gen-tie segment during 2018 surveys. Suitable habitat (grassland) exists in the project site. There are six occurrences of this species within 2 miles of the project site (CDFW 2018a).
Short-leaved evax <i>Hesperervax sparsiflora</i> var. <i>brevifolia</i>	–	–	1B.2	Sandy coastal bluff scrub, coastal dunes, coastal prairie. 0–215 meters. Blooms March through June.	Known to occur. This species was detected on Bear River Ridge during 2018 surveys. Suitable habitat (coastal prairie) exists on the project site. Nearest occurrence is within 2 miles of the project site, along Bear River Ridge Road (CDFW 2018a).
Small groundcone <i>Kopsiopsis hookeri</i>	–	–	2B.3	North Coast coniferous forest. 90–885 meters. Blooms April through August.	Could occur. Suitable habitat (North Coast coniferous forest) is present on the project site. There are no known occurrences of this species in the 23-quadrangle search area (CDFW 2018a). This species was not detected during 2018 surveys.
Marsh pea <i>Lathyrus palustris</i>	–	–	2B.2	Bogs and fens, lower montane coniferous forest, marshes and swamps, North Coast coniferous forest, coastal prairie, coastal scrub, and moist coastal areas. 1–100 meters. Blooms March through August.	Could occur. Suitable habitats (marsh, coastal scrub, North Coast coniferous forest) exist on the project site. The nearest occurrence is from 2003, in a marsh along Elk River Slough, approximately 3 miles north of Fields Landing (CDFW 2018a). This species was not detected during 2018 surveys.
Beach layia <i>Layia carnosa</i>	E	E	1B.1	Coastal dunes or sandy coastal scrub. 0–30 meters. Blooms March through July.	Could occur. Suitable habitat (sandy coastal scrub) may be present near Fields Landing. There is one occurrence for this species within 2 miles of Fields Landing, along the south spit of Humboldt Bay, and it is from 2005 (CDFW 2018a).
Western lily <i>Lilium occidentale</i>	E	E	1B.1	Bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, freshwater marshes and swamps, and openings in coniferous forest, usually near margins of Sitka spruce stands. 2–185 meters. Blooms June and July.	Could occur. There are seven recorded occurrences within 2 miles of the project site in coastal prairie and meadow habitats, in the Fields Landing and Cannibal Island quadrangles; specific location information is not available (CDFW 2018a). This species was not detected during 2018 surveys.

Table 3.5-4. Special-Status Plant Species Known to Occur or with Potential to Occur in the Biological Study Area

Species	Status ¹			Habitat, Elevation, and Blooming Period	Potential for Occurrence ²
	Federal	State	CRPR		
Howell's montia <i>Montia howellii</i>	–	–	2B.2	Meadows and seeps, North Coast coniferous forest, vernal pools and vernal mesic sites, sometimes roadsides, often on compacted soil. 0–730 meters. Blooms March through May.	Known to occur. This species was detected near Monument Ridge and on the U.S. 101–Monument Ridge gen-tie segment during 2018 surveys. Suitable habitat (North Coast coniferous forest) exists on the project site. There are 22 occurrences within 2 miles of the project site, typically in forest openings and on logging roads (CDFW 2018a).
Wolf's evening primrose <i>Oenothera wolfii</i>	–	–	1B.1	Coastal bluff scrub, coastal dunes, coastal prairie, and lower montane coniferous forest with sandy soils, usually in mesic sites. 3–800 meters. Blooms May through October.	Could occur. Suitable habitat (mesic areas in coastal prairie) exists on the project site. Nearest occurrence is 5 miles north of the project site, in Humboldt Bay (CDFW 2018a). This species was not detected during 2018 surveys.
Woodnymph <i>Moneses uniflora</i>	–	–	2B.2	Broadleaf upland forest, North Coast coniferous forest. 150–1,500 meters. Blooms May through August.	Could occur. Suitable habitat (North Coast coniferous forest) exists on the project site. There are no known occurrences of this species in the 23-quadrangle search area (CDFW 2018a). This species was not detected during 2018 surveys.
Ghost-pipe <i>Monotropa uniflora</i>	–	–	2B.2	Broadleaf upland forest, North Coast coniferous forest. 10–550 meters. Blooms June through August (occasionally September).	Could occur. Suitable habitat (North Coast coniferous forest) exists on the project site. There is only one recorded location for this species in the 23-quadrangle search area, and it is from a 1971 collection in eastern Eureka (CDFW 2018a). This species was not detected during 2018 surveys.
Great burnet <i>Sanguisorba officinalis</i>	–	–	2B.2	Bogs and fens, broadleaf upland forest, meadows and seeps, marshes and swamps, North Coast coniferous forest, riparian forest/often serpentine. 60–1,400 meters. Blooms July through October.	Could occur. Suitable habitats (riparian and mesic sites in North Coast coniferous forest) exist on the project site. There are no known occurrences of this species in the 23-quadrangle search area (CDFW 2018a). This species was not detected during 2018 surveys.
Scouler's catchfly <i>Silene scouleri</i> ssp. <i>scouleri</i>	–	–	2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. 0–600 meters. Blooms June through August, occasionally March through May and September.	Could occur. Suitable habitats (coastal prairie and grassland) exist on the project site. There is only one occurrence of this species in the 23-quadrangle search area, and it is from 1904, in bluff habitat near Eureka (CDFW 2018a). This species was not detected during 2018 surveys.
Robust false lupine <i>Thermopsis robusta</i>	–	–	1B.2	Broadleaved upland forest, North Coast coniferous forest. 150–1500 meters. Blooms May through July.	Could occur. Suitable habitat (North Coast coniferous forest) exists on the project site. There are no known occurrences of this species in the 23-quadrangle search area (CDFW 2018a). This species was not detected during 2018 surveys.

Table 3.5-4. Special-Status Plant Species Known to Occur or with Potential to Occur in the Biological Study Area

Species	Status ¹			Habitat, Elevation, and Blooming Period	Potential for Occurrence ²
	Federal	State	CRPR		
Beaked tracyina <i>Tracyina rostrata</i>	–	–	1B.2	Chaparral, cismontane woodland, valley and foothill grassland. 90–790 meters. Blooms May through June.	Could occur. Suitable habitats (coastal prairie and forest) exist on the project site. There are no known occurrences of this species in the 23-quadrangle search area (CDDW 2018a). This species was not detected during 2018 surveys.
Santa Cruz clover <i>Trifolium buckwestiorum</i>	–	–	1B.1	Gravelly margins of broadleafed upland forest, cismontane woodland, coastal prairie. 105–610 meters. Blooms April through October.	Could occur. Suitable habitats (coastal prairie and woodland) exist on the project site. There are no known occurrences of this species in the 23-quadrangle search area (CDFW 2018a). This species was not detected during 2018 surveys.
Alpine marsh violet <i>Viola palustris</i>	–	–	2B.2	Coastal bogs and fens, mesic sites in coastal scrub. 0–150 meters. Blooms March through August.	Could occur. Suitable habitat (mesic sites in coastal scrub) exists on the project site. There is only one occurrence record for this species in the 23-quadrangle search area, and it is from a 1923 collection from a forested area 3.5 miles east of Eureka (CDFW 2018a). This species was not detected during 2018 surveys.
Seacoast ragwort <i>Packera bolanderi</i> var. <i>bolanderi</i>	–	–	2B.2	Coastal scrub and North Coast coniferous forest, sometimes along roadsides. 30–650 meters. Blooms May through July (rarely February through July).	Could occur. Suitable habitat (North Coast coniferous forest) exists on the project site. There are 13 occurrences within 2 miles of the project site, all located on steep slopes and banks (CDFW 2018a). This species was not detected during 2018 surveys.
White-flowered rein orchid <i>Piperia candida</i>	–	–	1B.2	Broadleaf upland forest, lower montane coniferous forest, North Coast coniferous forest, in forest duff, mossy banks and rock outcrops, sometimes on serpentinite soils. 0–1,310 meters. Blooms May through September.	Could occur. Suitable habitat (North Coast coniferous forest) exists on the project site. There are seven occurrences within 2 miles of the project site, two of which are on Monument Ridge (CDFW 2018a). This species was not detected during 2018 surveys.
Oregon polemonium <i>Polemonium carneum</i>	–	–	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0–1,830 meters. Blooms April through September.	Could occur. Suitable habitat (mesic areas in coastal prairie) exists on the project site. The nearest recorded location is within 2 miles of the project site on Bear River Ridge, and it is from 1950 (CDFW 2018a). This species was not detected during 2018 surveys.
Siskiyou checkerbloom <i>Sidalcea malviflora</i> ssp. <i>patula</i>	–	–	1B.2	Coastal bluff scrub, coastal prairie, broadleaf upland forest, and North Coast coniferous forest, often on roadcuts. 15–878 meters. Blooms May through August.	Known to occur. This species was detected on Bear River Ridge during 2018 surveys. Suitable habitats (disturbed North Coast coniferous forest and prairie) exist on the project site. There are six recorded locations within 2 miles of the project site (CDFW 2018a).

Table 3.5-4. Special-Status Plant Species Known to Occur or with Potential to Occur in the Biological Study Area

Species	Status ¹			Habitat, Elevation, and Blooming Period	Potential for Occurrence ²
	Federal	State	CRPR		
Coast checkerbloom <i>Sidalcea oregana</i> ssp. <i>eximia</i>	–	–	1B.2	Lower montane coniferous forest, meadows and seeps, and North Coast coniferous forest, in gravelly soils. 0–1,800 meters. Blooms June through August.	Could occur. Suitable habitats (mesic grassland and North Coast coniferous forest) exist on the project site. There are two occurrences of this species within 2 miles of the project site, both recorded in ditches near Field Landing (CDFW 2018a). This species was not detected during 2018 surveys.
Northern clustered sedge <i>Carex arcta</i>	–	–	2B.2	Bogs and fens, North Coast coniferous forest (mesic). 60–1,405 meters. Blooms June through September.	Could occur. Suitable habitats (seeps and other mesic sites in North Coast coniferous forest) exist on the project site. The species is known to occur near the project site on Humboldt Redwood Company land. The nearest occurrence is within 2 miles of the project site, near the headwaters of Root Creek, in a sphagnum fen (CDFW 2018a). This species was not detected during 2018 surveys.
Seaside bittercress <i>Cardamine angulata</i>	–	–	2B.2	Lower montane coniferous forest, North Coast coniferous forest. Wet areas, streambanks. 5–15 meters. Blooms January and March through July.	Could occur. Suitable habitat (mesic areas in North Coast coniferous forest) exists on the project site. There is only one occurrence of this species in the 23-quadrangle search area, and it is from 1964, located more than 5 miles northeast of the project site near Freshwater City (CDFW 2018a). This species was not detected during 2018 surveys.
Lyngbye's sedge <i>Carex lyngbyei</i>	–	–	2B.2	Marshes and swamps (brackish or freshwater). 0–200 meters. Blooms April through August.	Not likely to occur. Although suitable habitat (freshwater marsh) is present on the project site, this species is most often associated with sloughs and brackish, tidal marshes. Nearby occurrences are restricted to tidal marshes along Humboldt Bay (CDFW 2018a). This species was not detected during 2018 surveys.
Northern meadow sedge <i>Carex praticola</i>	–	–	2B.2	Meadows and seeps (mesic). 15–3,200 meters. Blooms May through July.	Could occur. Suitable habitats (meadows, seeps, and other mesic sites) exist on the project site. There is only one occurrence of this species within a 23-quadrangle search area, and it is from 1915, in Ryan Slough near Eureka (CDFW 2018a). This species was not detected during 2018 surveys.
Humboldt County milk-vetch <i>Astragalus agnicidus</i>	–	E	1B.1	Broadleaf upland forest, North Coast coniferous forest/openings, disturbed areas, sometimes roadsides. 115–670 meters. Blooms April through September.	Could occur. Suitable habitat (disturbed North Coast coniferous forest) exists on the project site. There is one occurrence for this species in the 23-quadrangle search area, and it is from 2017, in the Larabee Creek drainage where there are open areas along skid roads (CDFW 2018a). This species was not detected during 2018 surveys.

Table 3.5-4. Special-Status Plant Species Known to Occur or with Potential to Occur in the Biological Study Area

Species	Status ¹			Habitat, Elevation, and Blooming Period	Potential for Occurrence ²
	Federal	State	CRPR		
Bald Mountain milk-vetch <i>Astragalus umbraticus</i>	–	–	2B.3	Cismontane woodland, lower montane coniferous forest. Sometimes roadsides. 210–1,220 meters. Blooms May through August.	Could occur. Suitable habitats (woodland and forest) exist on the project site. There is only one occurrence for this species in the 23-quadrangle search area, and it is from 2006, along the north side of Showers Mountain in a skid road (CDFW 2018a). This species was not detected during 2018 surveys.
Coastal marsh milk-vetch <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	–	–	1B.2	Coastal dunes, marshes and swamps, coastal scrub. Mesic sites in dunes or along streams or coastal salt marshes. 0–155 meters. Blooms June through October, rarely April.	Could occur. Suitable habitats (coastal scrub, mesic sites along streams) exist on the project site. Nearest recorded location is in Humboldt Bay, 3 miles north of Fields Landing (CDFW 2018a). This species was not detected during 2018 surveys.
Hitchcock's blue-eyed grass <i>Sisyrinchium hitchcockii</i>	–	–	1B.1	Openings in cismontane woodland and valley and foothill grassland. 305 meters. Blooms in June.	Could occur. Suitable habitats (grassland and coastal prairie) exist on the project site. The single known occurrence for this species is located approximately 5 miles to the west along Cape Ridge, and is from 1938 (CDFW 2018a). This species was not detected during 2018 surveys.
<p>Notes:</p> <p>¹ Legal Status Definitions:</p> <p><u>Federal—U.S. Fish and Wildlife Service:</u></p> <p>E = endangered – = no status</p> <p><u>State—California Department of Fish and Wildlife:</u></p> <p>E = endangered – = no status</p> <p><u>California Rare Plant Ranks (CRPRs):</u></p> <p>1B = plant species considered rare, threatened, or endangered in California and elsewhere</p> <p>2 = plant species considered rare, threatened, or endangered in California but more common elsewhere</p> <p><u>California Rare Plant Rank Extensions:</u></p> <p>.1 = seriously endangered in California (>80 percent of occurrences are threatened and/or have high degree and immediacy of threat)</p> <p>.2 = fairly endangered in California (20–80 percent of occurrences are threatened)</p> <p>.3 = not very endangered in California</p> <p>² Potential for Occurrence:</p> <p>Not Likely to Occur: The project site is within the species' range, no occurrences of the species have been recorded within or immediately adjacent to the project site, and either habitat for the species is marginal or potentially suitable habitat may occur, but the species' current known range is restricted to areas outside of the project site.</p> <p>Could Occur: The project site is within the species' range, and no occurrences of the species have been recorded within the project site; however, suitable habitat for the species is present and recorded occurrences of the species are generally present in the vicinity.</p> <p>Known to Occur: The project site is within the species' range, suitable habitat for the species is present, and the species has been recorded from within the project site.</p> <p>Sources: CDFW 2018a; CNPS 2019b; Stantec 2018d; USFWS 2018a; data compiled by AECOM in 2018.</p>					

CNDDDB occurrences within 2 miles of the project site have been recorded for 18 of the 35 species known or with potential to occur in the project site. Figure 3.5-1 shows the locations of potentially occurring special-status plant species identified in the CNDDDB within a 2-mile radius of the project site.

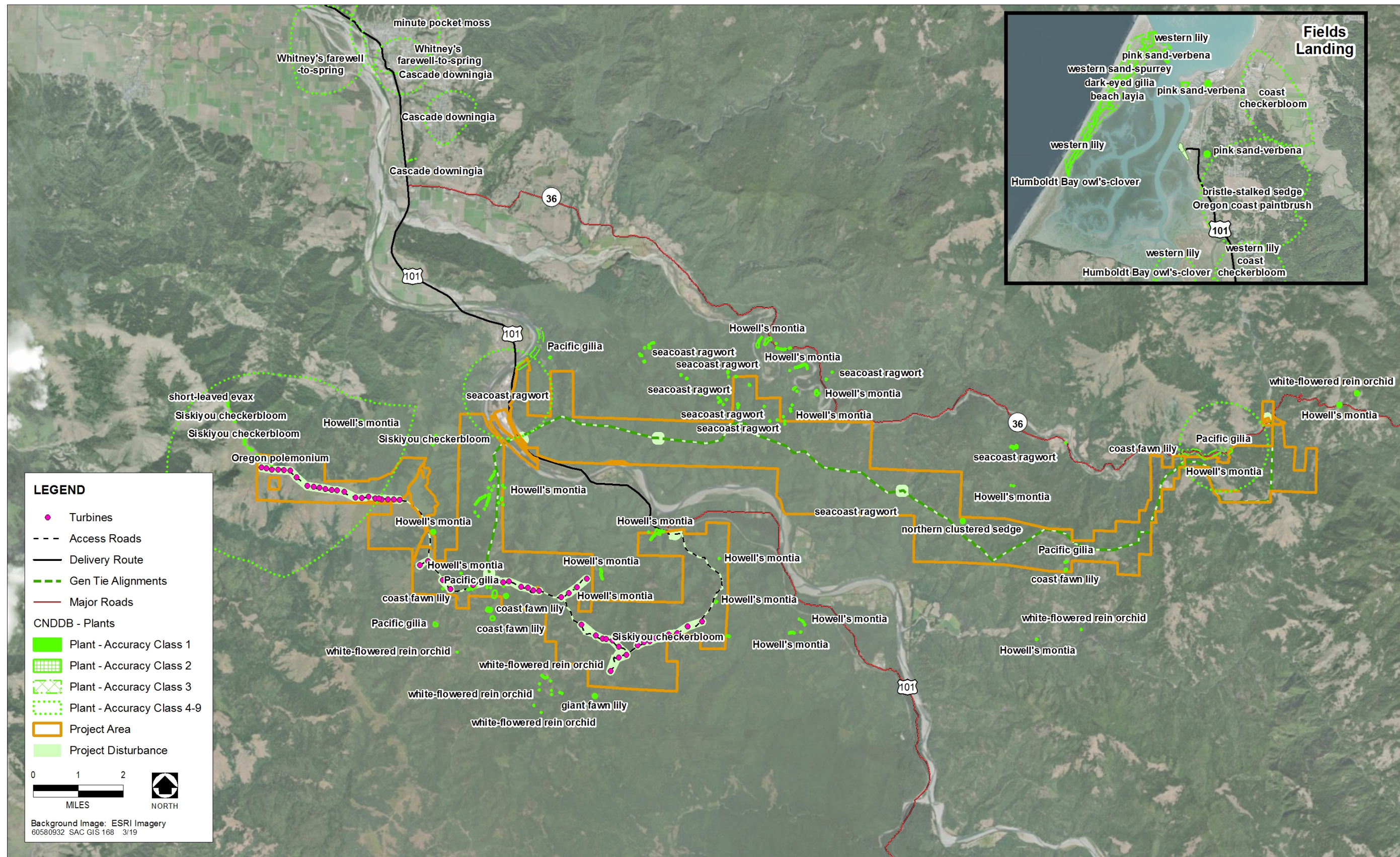
In spring and summer 2018, Stantec conducted a comprehensive botanical survey of approximately 1,736 acres of the project site, as well as reconnaissance-level surveys of the Fields Landing delivery site, the transportation improvement areas, and the eastern extent of the gen-tie line connecting to the Bridgeville Substation (Stantec 2018d). Approximately 50 acres of the project site were not surveyed for special-status plants because of intractable safety concerns (e.g., steep slopes, pens with bulls, and marijuana grow sites) (Akky, pers. comm., 2018). Stantec plans to conduct a comprehensive botanical survey of the eastern gen-tie line, the Fields Landing delivery site, and the transportation improvement areas in spring 2019 to confirm the findings of the reconnaissance-level survey (Stantec 2018d).

Surveys were conducted according to CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018b). The surveys focused on detecting special-status plants known from the project region. Stantec identified four special-status (i.e., CRPR List 1 or 2) and 11 CRPR List 3 or 4 plant species in the project area during the 2018 botanical surveys, all of which were mapped using geographic information system (GIS) global positioning system units, photographed, and subsequently documented in the CNDDDB (Stantec 2018d). The four special-status plants recorded during surveys were Pacific gilia (*Gilia capitata* ssp. *pacifica*), short-leaved evax (*Hesperis matronalis* var. *brevifolia*), Howell's montia (*Montia howellii*), and Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) (Stantec 2018d). Pacific gilia was identified in 0.95 acre of the area surveyed within coastal prairie habitat on Monument Ridge and in portions of the gen-tie segment connecting Monument Ridge to U.S. 101. Short-leaved evax was identified in 0.17 acre of the area surveyed within the coastal prairie habitat on Bear River Ridge. Howell's montia was observed in moderately used roadbeds near Monument Ridge and the gen-tie segment connecting Monument Ridge to U.S. 101, occupying 0.15 acre of the surveyed area. Siskiyou checkerbloom was observed as scattered populations in coastal prairie on Bear River Ridge, occupying 17.31 acres. These occurrences have been submitted to the CNDDDB.

A total of 52 special-status plant species were initially identified by these searches. Of these, 35 special-status plant species are known to occur or have the potential to occur within the project site, and are listed in Table 3.5-4.

Special-Status Wildlife

AECOM biologists compiled a list of special-status wildlife species with potential to occur in the biological study area. The list was compiled using information obtained from the CNDDDB, documentation of species in technical reports prepared for the project, species specifically requested by resource agencies to be addressed during project scoping, and a search of the USFWS database for the following local USGS quadrangles: Eureka, Arcata South, Cannibal Island, Fields Landing, McWhinney Creek, Ferndale, Fortuna, Hydesville, Owl Creek, Yager Junction, Showers Mountain, Larabee Valley, Bridgeville, Redcrest, Scotia, Taylor Peak, Capetown, Petrolia, Buckeye Mountain, Bull Creek, Weott, Myers Flat, and Blocksburg. These searches initially identified a total of 74 special-status wildlife species. Of these, 60 special-status wildlife species are known to occur or have the potential to occur within the biological study area (Table 3.5-5).



Source: CDFW 2018a

Figure 3.5-1. Special-status Plants within 2 Miles of the Project Site

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Table 3.5-5. Special-Status Wildlife with Potential to Occur in the Biological Study Area

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Fish				
Green Sturgeon Northern DPS <i>Acipenser medirostris</i>	T	SSC	Most marine species of sturgeon; abundance increases northward of Point Conception. Individuals spawn in streams at temperatures between 46.4°F and 57.2°F (8–14°C). Preferred spawning substrate is large cobble but can range from clean sand to bedrock.	Could occur. Species’ range is found in biological study area. Green Sturgeons enter Humboldt Bay from April to June and reside until September to October.
Shortnose Sucker <i>Chasmistes brevirostris</i>	E	E, FP	Deepwater lakes and impoundments, and swift water and deep pools in rivers. Known from Upper Klamath Lake and its tributaries, Clear Lake Reservoir and its tributaries, and Klamath River downstream to Copco Reservoir.	No potential to occur. The project area is located outside of the geographic range for this species.
Lost River Sucker <i>Deltistes luxatus</i>	E	E, FP	Deepwater lakes and impoundments, and swift water and deep pools in rivers. Known from Upper Klamath Lake and its tributaries, Clear Lake Reservoir and its tributaries, and Klamath River downstream to Copco Reservoir.	No potential to occur. The project area is located outside of the geographic range for this species.
Pacific Lamprey <i>Entosphenus tridentatus</i>	–	SSC	Usually anadromous; individuals begin life cycle as ammocoetes in freshwater streams. Larval lamprey stay in freshwater for 5–7 years before moving downstream to saltwater environments where they stay for 2–3 years before returning to freshwater to spawn.	Could occur in the Fields Landing region of the biological study area. Has been previously detected in 2013 and 2014 in the South Fork, 300 meters upstream of Tom Gulch.
Tidewater Goby <i>Eucyclogobius newberryi</i>	E	SSC	Found in shallow lagoons in lower streams where the water is brackish to fresh and slow-moving or fairly still but not stagnant.	Could occur in the Fields Landing region of the project area. Previously documented in 2006 in the southeast shore of Humboldt Bay, about 1 mile west of the Humboldt Bay National Wildlife Refuge.
Coastal Cutthroat Trout <i>Oncorhynchus clarkii clarkii</i>	D	SSC	Small coastal streams from the Eel River to the Oregon border; small, low-gradient coastal streams and estuaries. Individuals need shaded streams with water temperatures less than 64.4°F (less than 18°C) and small gravel for spawning.	Could occur in the Fields Landing region of the biological study area. Previously recorded in the Elk River, including the North and South forks and tributaries. Detected by electrofishing in June 2014.
Southern Oregon/ Northern California Coast Coho Salmon ESU <i>Oncorhynchus kisutch</i>	T	T	In the United States, individuals spawn in coastal freshwater streams from Alaska to Monterey Bay, California.	Could occur. Designated critical habitat occurs near the biological study area in Fields Landing, and in the Eel River and its tributaries. Previously recorded in the Elk River, including the North and South forks and tributaries leading to Humboldt Bay in 2006.

Table 3.5-5. Special-Status Wildlife with Potential to Occur in the Biological Study Area

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Northern California Steelhead DPS—Population 16 <i>Oncorhynchus mykiss irideus</i>	T	—	Along the Pacific Coast of North America, adults spawn and young rear in freshwater streams.	Could occur. Designated critical habitat occurs near the biological study area. Detected in the Fields Landing region by electrofishing in 2011 in the Elk River including the North and South forks and tributaries leading to Humboldt Bay (CDFW 2018a).
Summer-run Steelhead, population 36 <i>Oncorhynchus mykiss irideus</i>	—	SSC	This species requires cool, swift water, clean loose gravel for spawning. Requires large pools in which to rear and over summer.	Could occur. Found in the Larabee Valley quadrangle in the Van Duzen and Little Van Duzen rivers, which are tributaries to the Eel River (CDFW 2018a).
California Coastal Chinook Salmon ESU <i>Oncorhynchus tshawytscha</i>	T	—	Along the Pacific Coast of North America, adults spawn and young rear in freshwater streams.	Could occur. Designated critical habitat occurs near the biological study area, including Howe and Atwell creeks, which cross the proposed transmission route (USFWS 2005a).
Longfin Smelt <i>Spirinchus thaleichthys</i>	FC	T, SSC	Found close to shore in bays and estuaries. Individuals enter coastal streams to spawn.	Could occur in the Fields Landing region of the biological study area. This species has been found in the north and south bays of Humboldt Bay (CDFW 2018a).
Eulachon Southern DPS <i>Thaleichthys pacificus</i>	T	—	This species spends most of its life in salt water. Individuals spawn in lower reaches of rivers and tributaries with small gravel or in semi-sandy area with debris.	Not likely to occur. This species has not been documented south of the Humboldt Bay and Jacoby Creek (CDFW 2018a).
Amphibians and Reptiles				
Western pond turtle <i>Actinemys marmorata</i>	—	SSC	Individuals forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; they nest in nearby uplands with low, sparse vegetation.	Could occur in ponds and streams and surrounding upland habitat and the Fields Landing region. Several occurrences documented in the Larabee River, Eel River, and Van Duzen River (CDFW 2018a).
Coastal tailed frog <i>Ascaphus truei</i>	—	SSC	Found in cold, rocky streams in wet forests. After heavy rains, adults may be found in upland habitat away from the stream.	Could occur in streams surrounding upland habitat and the Fields Landing region. Two occurrences documented in the CNDDB database, which states that several individuals were collected from 1930 to 1994 (CDFW 2018a).
Green sea turtle <i>Chelonia mydas</i>	T	—	Found in tropical and subtropical saltwater environments. Open beaches with gradual slopes and minimal disturbance for nesting.	Not likely to occur. The project area does not include any saltwater features (Stantec 2018j).
Northern red-legged frog <i>Rana aurora aurora</i>	—	SSC	Humid forest, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water but can be found far from water in damp woods and meadows during nonbreeding season.	Known to occur. Species detected during 2018 wildlife assessment surveys (Stantec 2018j). Several occurrences near the Van Duzen River, Humboldt Bay National Wildlife Refuge, Humboldt Redwoods State Park, and in ponds near the College of the Redwoods (CDFW 2018a).

Table 3.5-5. Special-Status Wildlife with Potential to Occur in the Biological Study Area

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Foothill yellow-legged frog <i>Rana boylei</i>	–	CT, SSC	Streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands from sea level to 6,700 feet. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	Could occur in the streams or surrounding upland habitat; several occurrences within 2 miles of the biological study area (CDFW 2018a).
Southern torrent salamander <i>Rhyacotriton variegatus</i>	–	SSC	Shallow, cold, clear, well-shaded streams and seeps associated with rock or talus and mature to old growth forests. Occasionally found in riparian vegetation.	Could occur in the streams or surrounding upland habitat; several occurrences within 2 miles of the biological study area, last documented in 1995 (CDFW 2018a).
Red-bellied newt <i>Taricha rivularis</i>	–	SSC	Requires streams in proximity to redwood forest, mixed conifer, or woodland habitat, where it feeds in water and on the forest floor within ground litter. Spends the dry season underground, and migrates to streams during fall and winter rains for breeding and egg-laying.	Not likely to occur. There are no records for this species in the CNDDDB within a 23-quad search area, and the project site is outside if the species' range. The northern extent of the species' range is in the Mattole River watershed, more than 10 miles to the south of the project site (Thomson, et al. 2016).
Birds				
Cooper's hawk <i>Accipiter cooperii</i>	–	WL	Breeds in mixed deciduous forest, riparian forest, open woodlands, and urban areas.	Known to occur. Observed during the bird use count surveys (Stantec 2018g).
Northern goshawk <i>Accipiter gentilis</i>	–	SSC	In northwestern California, rare resident and breeder sparsely distributed throughout mountainous regions in mixed conifer/hardwood and pure hardwood forests; nesting habitat is near coniferous forest.	Low potential to occur. Rare resident in Northwestern California. Was not observed in the bird use count surveys and not in the CNDDDB (Stantec 2018g).
Sharp-shinned hawk <i>Accipiter striatus</i>	–	WL	Individuals nest in forest and woodland habitats and hunt along forest edges.	Known to occur. Observed during the bird use count surveys (Stantec 2018g).
Tricolored blackbird <i>Agelaius tricolor</i>	–	CE, SSC	Individuals forage in agricultural lands and grasslands, and nest in marshes, riparian scrub, and other areas that support cattails or dense thickets of shrubs or herbs.	Not likely to occur as a breeder but possible in migration. Nearest occurrence includes a colony of fewer than 100 birds that occurred near Fortuna from 1992 to 2001 approximately 6.5 miles from the generation area (CDFW 2018a).
Grasshopper sparrow <i>Ammodramus savannarum</i>	–	SSC	Prairies and pastures scattered in a largely forested landscape.	Known to occur. Observed during the bird use count surveys (Stantec 2018g).
Golden eagle <i>Aquila chrysaetos</i>	–	FP, WL	Rolling foothills, mountain areas, sage-juniper flats, and desert; cliff-walled canyons provide nesting habitat in most parts of range, as well as large trees in open areas.	Known to occur throughout biological study area on lands owned by HRC, and identified during the bird use count surveys (HRC 2018b; Stantec 2018g). Occurrences documented in the CNDDDB in the Larabee Creek, Bear River, and Eel River (CDFW 2018a).

Table 3.5-5. Special-Status Wildlife with Potential to Occur in the Biological Study Area

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Short-eared owl <i>Asio flammeus</i>	–	SSC	Individuals forage in open grasslands, prairie, agricultural fields, salt marshes, estuaries, and mountain meadows; they roost in old-growth fields, along thick hedgerows, in overgrown rubble in abandoned fields, or in clumps of dense conifers. Breeding habitat has ground cover to conceal nests.	Known to occur. Species detected during the wildlife assessment surveys and documented in eBird on Bear River Ridge (Stantec 2018j; eBird 2018).
Long-eared owl <i>Asio otus</i>	–	SSC	Dense vegetation near grasslands or shrublands and in open forests.	Low potential to occur. Species has been known to winter or make extended stops in the biological study area according to the online eBird database (Stantec 2018j; eBird 2018).
Western burrowing owl <i>Athene cunicularia</i>	–	SSC	Locally rare migrant and winter visit in northwestern California, not known to breed in Humboldt County; individuals burrow in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-lying vegetation; they breed in open, well-drained grasslands, steppes, deserts, prairies, and agricultural land.	Known to occur. Species was detected during the wildlife assessment surveys, and one individual was observed along Monument Ridge during the bird use count surveys (Stantec 2018g, 2018j).
Marbled murrelet <i>Brachyramphus marmoratus</i>	T	E	Individuals forage in coastal/ocean habitats and nest in low-elevation forest stands, near the coast dominated by large, old-growth and mature redwood trees.	Known to occur. Preferred nesting habitat is found in the project area and on neighboring HRC lands (Stantec 2018h; HRC 2017a). Occurrences in the Eel River and Bear River (CDFW 2018a), and also detected during radar surveys (Stantec 2018k).
Black brant <i>Branta bernicla</i>	–	SSC	Found in shallow marine shorelines, mudflats, and lagoons in migration.	Low potential to occur. Species occurs commonly throughout Humboldt County. The northern end of the transportation route in Fields Landing provides suitable habitat (Stantec 2018j).
Ferruginous hawk <i>Buteo regalis</i>	–	WL	Found in open spaces and grasslands in the West.	Known to occur. Species was detected during the bird use count surveys regardless of being outside its normal range (Stantec 2018g).
Vaux's swift <i>Chaetura vauxi</i>	–	SSC	Most numerous in coastal redwood zone; strongly associated with old-growth redwood forest; individuals nest in burned-out redwood snags and stumps with large hollows or cavities; they forage in a variety of habitats (especially over water).	Known to occur. Species was detected during the bird use count surveys (Stantec 2018g).

Table 3.5-5. Special-Status Wildlife with Potential to Occur in the Biological Study Area

Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	T	SSC	Individuals breed/nest above the high-tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	Could occur in Fields Landing region; observations from 1969–2014 on the coastline from the South Humboldt Bay spit to the mouth of the Eel River, up to 22 individuals seen at a time (CDFW 2018a).
Mountain plover <i>Charadrius montanus</i>	–	SSC	Rare winter visitor along the northern coastal area of California. Individuals use open grasslands, plowed fields with little vegetation, and open sagebrush habitats.	Not likely to occur. Species only occurs as solo vagrants in the late fall and winter, no breeding records; one individual observed in 2009 and one individual observed in 2010 in Humboldt Bay south spit (CDFW 2018a).
Northern harrier <i>Circus hudsonius</i>	–	SSC	Common migrant and winter visitor and uncommon breeder and summer resident in northwestern California; nesting habitat consists of tall dense clumps of vegetation on the ground.	Known to occur. Species detected during the bird use count surveys. Occurrences documented in the CNDDDB in the Larabee Creek, Bear River, and Eel River (Stantec 2018g; CDFW 2018a).
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	T	E	Deciduous riparian thickets or forests with dense, low-level or understory foliage adjacent to slow-moving watercourses, backwaters, or seeps; willow is almost always a dominant component of the vegetation.	Low potential to occur. A small area of suitable nesting habitat (cottonwood riparian forest) exists along the Eel River, next to the proposed gen-tie crossing. Nearest occurrence records are approximately 4 miles downstream near Rio Dell at the base of Monument Road and upstream at the mouth of Larabee Creek. Evidence of breeding has been documented on the lower Eel River at Cock Robin Island, approximately 8 miles from the project site (Falxa and McAllister 2016).
Olive-sided flycatcher <i>Contopus cooperi</i>	–	SSC	Associated with forest edges, forest openings, and natural and human-created clearings in otherwise relatively dense forests, but individuals also occupy semi-open forests.	Known to occur. Species was documented during the habitat assessment surveys and the bird use count surveys (Stantec 2018g, 2018j).
Yellow rail <i>Coturnicops noveboracensis</i>	–	SSC	Breeding occurs in marsh habitat in the Central Flyway.	Not likely to occur. No suitable nesting habitat is found in the biological study area; no occurrences within 2 miles of the project area (CDFW 2018a).
Black swift <i>Cypseloides niger</i>	–	SSC	Individuals often nest near water, near waterfalls or sea caves. Vertical cliffs and crevices in mountainous country also provide nesting habitat. They may nest in small colonies, depending on availability of nest sites.	Known to occur. Species was documented during wildlife assessment surveys (Stantec 2018j).
White-tailed kite <i>Elanus leucurus</i>	–	FP	Individuals prefer open grasslands with dispersed trees for nesting and perching. Frequently found along tree-lined river valleys with contiguous open areas.	Known to occur. Species was documented during wildlife assessment surveys (Stantec 2018j).

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Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Little willow flycatcher <i>Empidonax traillii brewsteri</i>	–	E	Individuals forage in willow thickets and adjacent meadows and nest in extensive thickets of low, dense willows at edge of wet meadows, ponds, or backwaters. Also known to occur in regenerating managed conifer forest habitat.	Low potential to occur. Suitable nesting habitat in project site, and could also occur during migration (Stantec 2018j). Recent observations were recorded in 2015 and 2016 in the Van Duzen riparian area, Hansen/Hauck riparian area, Holmgren Ranch, and McCann area in the online eBird database (eBird 2018).
California horned lark <i>Eremophila alpestris actia</i>	–	WL	Found in bare grasslands, heavily grazed pastures, and areas with dry ground and short, sparse vegetation.	Known to occur. Identified on Bear River Ridge (eBird 2018) and was observed during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j).
Prairie falcon <i>Falco mexicanus</i>	–	WL	Annual grasslands, alpine meadows, perennial grasslands, savannas, rangeland, and desert scrub; individuals usually nest in sheltered ledges of cliffs, bluffs, or rocky outcrops, and may use old nests of ravens or other raptors.	Known to occur. Identified to occur on Bear River Ridge Road (CDFW 2018a) and observed during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j).
American peregrine falcon <i>Falco peregrines anatum</i>	D	FP, D	Common migrant and winter visitor, uncommon breeder and summer resident in northwestern California; individuals forage in open water, marshes, mudflats, and tidal zones, or pasturelands; they nest on ledges of high cliffs, woodland, forest, and coastal habitats.	Known to occur. Identified to occur on Bear River Ridge Road (eBird 2018), and observed during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j).
Common loon <i>Gavia immer</i>	–	SSC	Found in wooded lakes, tundra ponds, and coastal waters. Common in Humboldt Bay in the winter.	Known to occur. Observed during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j).
Bald eagle <i>Haliaeetus leucocephalus</i>	D	FP, E	Individuals forage primarily in large inland fish-bearing waters with adjacent large trees or snags; occasionally in uplands with abundant rabbits, other small mammals, or carrion; they often roost communally in winter.	Known to occur. Species was detected during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j). Observed nesting in Fields Landing area in 2005 (CDFW 2018a). Several observations in the online database eBird within 10 miles of the biological study area (eBird 2018).
Yellow-breasted chat <i>Icteria virens</i>	–	SSC	Individuals prefer to breed in areas of low dense vegetation in most of the United States and winter in Central America.	Low potential to occur. Several observations documented within 10 miles in the online eBird database in 2015–2016 (eBird 2018). There are no records in the CNDDB database (CDFW 2018a).
Osprey <i>Pandion haliaetus</i>	–	WL	Individuals prefer any habitat found near water, including rivers, lakes, reservoirs, lagoons, swamps and marshes. Habitat must provide sufficient supply of fish and elevated nest sites.	Known to occur. Species was observed during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j). Historic nest site found along the Eel River (CDFW 2018a).

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Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Bryant's savannah sparrow <i>Passerculus sandwichensis alaudinus</i>	–	SSC	Found mostly in savannas with few trees, but individuals may also inhabit tidal salt marshes and estuaries.	Known to occur. Species was observed during the wildlife assessment surveys (Stantec 2018j).
Short-tailed albatross <i>Phoebastria</i> (= <i>Diomedea</i>) <i>albatrus</i>	E	SSC	Individuals spend most of their lives at sea. They breed on two islands in the North Pacific. Occasionally observed offshore from Alaska to Morro Bay.	Not likely to occur. The habitat requirements for this species are not found in the biological study area.
Purple martin <i>Progne subis</i>	–	SSC	Individuals forage in conifer, woodland, and riparian habitats and nest in snags in old-growth, multilayered, open forests and woodlands.	Known to occur. Species was observed during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j). Several observations documented in online eBird database (eBird 2018).
Bank swallow <i>Riparia riparia</i>	–	T	Individuals forage in open riparian areas, grassland, wetlands, water, and cropland and nest in vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, and lakes.	Low potential to occur. May possibly occur during migration. Last recorded observation within 2 miles was in 1946 in the Van Duzen River (CDFW 2018a); two new colonies detected during the 2018 breeding season at the mouth of the Van Duzen River (McAllister, pers. comm., 2019).
Yellow warbler <i>Setophaga petechia</i>	–	SSC	Individuals nest in low, open-canopy riparian deciduous woodlands with a heavy brush understory, and sometimes in montane shrubbery in open conifer forests.	Known to occur. Species was observed during the wildlife assessment surveys and the bird use count surveys (Stantec 2018g, 2018j). Several observations documented in online eBird database (eBird 2018).
Northern spotted owl <i>Strix occidentalis caurina</i>	T	T, SSC	Nesting, roosting, and foraging habitat occurs in structurally complex, older coniferous forests; species can occur in younger redwood and mixed conifer-hardwood forests of coastal northwestern California.	Known to occur. Owls were detected during the wildlife assessment surveys (Stantec 2018j). Suitable habitat for the species is found in the biological study area (Stantec 2018f).
Mammals				
Pallid bat <i>Anthrozous pallidus</i>	–	SSC	Grasslands, shrublands, oak woodlands, forests; most common in open, dry habitats; individuals roost in rock crevices, cliffs, caves, mines, and hollows of oaks and redwoods, and under sloughing bark, and human structures (e.g., bridges, buildings). This species is designated as the highest priority (red) for funding, planning, and conservation actions, by the Western Bat Working Group (WBWG 2019).	Could occur. Potential habitat exists and the biological study area falls within the species' range (Zeiner et al. 1988–1990). Not detected during acoustic surveys, but this species can be difficult to detect acoustically and the surveys conducted were not specifically designed for detecting this species.

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Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Sonoma tree vole <i>Arborimus pomo</i>	–	SSC	North Coast fog belt from the Oregon border to Sonoma County in Douglas-fir, redwood, and montane hardwood-conifer forest; individuals feed almost exclusively on Douglas-fir needles; will occasionally take needles of grand fir, hemlock, or spruce.	Could occur. Several occurrences in forested areas adjacent to the generation area and the transmission and haul routes on Bear River Ridge Road, and near the gen-tie (CDFW 2018a). The species is documented as occurring in Douglas-fir dominated forest stands on neighboring HRC owned lands (HRC 2017b).
Ringtail <i>Bassariscus astutus</i>	–	FP	Widely distributed; individuals occur in riparian habitats, forests, and shrub habitats. They forage on the ground, among rocks, and in trees; usually near water.	Low potential to occur. Documented by Humboldt Redwood Company at six of 86 camera trap locations. May use riparian areas of suitable habitat (Stantec 2018j).
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	–	SSC	Uncommon colonial bat associated with coniferous forests, mixed mesophytic forests, deserts, agricultural areas, native prairies, riparian communities, and coastal habitat types; individuals typically roost in caves and mines, but also in basal hollows of trees, including redwoods, and human structures (e.g., bridges, buildings). This species is designated as the highest priority (red) for funding, planning, and conservation actions, by the Western Bat Working Group (WBWG 2019).	Known to occur. The species was detected at six detector locations during the bat acoustic monitoring surveys (Stantec 2018i).
Western red bat <i>Lasiurus blossevillei</i>	–	SSC	Solitary foliage-roosting bat associated with riparian habitat (particularly willows, cottonwoods, sycamore, and eucalyptus), but individuals also use orchards, agricultural, and sometimes urban environments. This species is designated as the highest priority (red) for funding, planning, and conservation actions, by the Western Bat Working Group (WBWG 2019).	Known to occur. The species was detected during the 2018 bat acoustic monitoring surveys (Stantec 2018i) and is frequently captured nearby at Humboldt Redwoods State Park (Weller, pers. comm., 2018).
Hoary bat <i>Lasiurus cinereus</i>	–	–	Uncommon, solitary foliage-roosting bat. Most widespread North American bat. Individuals prefer to bear young in woodlands and forests with medium to large-size trees with dense foliage. This species is designated as medium priority (yellow); lack of information is a major obstacle in adequately assessing the status of the species (WBWG 2019).	Known to occur. The species was detected during the 2018 bat acoustic monitoring surveys (Stantec 2018i). The species is captured in exceptionally large numbers in the fall at nearby Humboldt Redwoods State Park, where the only known occurrence of probable swarming behavior has been documented (Weller, pers. comm., 2018; Szewczak, pers. comm., 2018).

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Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	USFWS	CDFW		
Silver-haired bat <i>Lasionycteris noctivagans</i>	–	–	Common colonial bat distributed in coastal and montane forests. Individuals roost in hollow trees, snags, buildings, rock crevices, caves, and under bark. Females congregate in small maternity colonies inside trees. This species is designated as medium priority (yellow); lack of information is a major obstacle in adequately assessing the status of the species (WBWG 2019).	Known to occur. The species was detected during the 2018 bat acoustic monitoring surveys (Stantec 2018i) and is frequently captured nearby at Humboldt Redwoods State Park (Weller, pers. comm., 2018).
Humboldt marten <i>Martes americana humboldtensis</i>	–	CE, SSC	Late-successional coniferous forests; individuals prefer forests with low overhead cover.	Not likely to occur in the forested areas, no modern records south of northern Humboldt County (McAllister, pers. comm., 2019); one occurrence documented in 1913 within 5 miles of project components (CDFW 2018a).
Long-eared myotis <i>Myotis evotis</i>	–	–	Colonial bat found in coniferous forests; individuals prefer to roost in hollow trees or under bark. This species is designated as medium priority (yellow); lack of information is a major obstacle in adequately assessing the status of the species (WBWG 2019).	Known to occur. The species was detected during the 2018 bat acoustic monitoring surveys (Stantec 2018i).
Long-legged myotis <i>Myotis volans</i>	–	–	Colonial bat found in coniferous forests at 4,000–9,000 feet in elevation. This species is designated as the highest priority (red) for funding, planning, and conservation actions, by the Western Bat Working Group (WBWG 2019).	Known to occur. The species was detected during the 2018 bat acoustic monitoring surveys (Stantec 2018i).
Little brown bat <i>Myotis lucifugus</i>			Common forest/woodland bat. Summer maternity colony sites include tree cavities, caves and human-occupied structures. This species is designated as medium priority (yellow); lack of knowledge of hibernation sites (and the degree of population aggregation at these sites) is a key point of vulnerability for this species (WBWG 2019).	Known to occur. The species was detected during the 2018 bat acoustic monitoring surveys (Stantec 2018i).
Fringed myotis <i>Myotis thysanodes</i>			Uncommon colonial forest/woodland bat that roosts in crevices in buildings, underground mines, rocks, cliff faces, bridges, and large decadent trees and snags. This species is designated as the highest priority (red) for funding, planning, and conservation actions, by the Western Bat Working Group (WBWG 2019).	Known to occur. The species was detected during the 2018 bat acoustic monitoring surveys (Stantec 2018i).

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Species	Listing Status ¹		Habitat	Potential for Occurrence ²																
	USFWS	CDFW																		
Pacific fisher <i>Martes pennanti</i> (<i>pacifica</i>) DPS	–	SSC	Coniferous forests often mixed with hardwoods, which have structural characteristics that include high canopy closure, large tree snags, large downed wood, and multiple canopy layers. Riparian habitat used as travel corridors and resting sites.	Could occur in forested areas; known to occur on land owned by Humboldt Redwood Company due east and south of the Bear River within 5 miles of the project components (CDFW 2018a; HRC 2018a).																
American badger <i>Taxidea taxus</i>	–	SSC	Open grasslands, agricultural areas, and woodland edges.	Known to occur on Bear River Ridge (McAllister, pers. comm., 2019); nearest CNDDDB occurrence is 12 miles southwest of the Monument Ridge segment (CDFW 2018a).																
<p>Notes:</p> <p>°C = degrees Celsius; CNDDDB = California Natural Diversity Database; DPS = distinct population segment; ESU = Evolutionarily Significant Unit</p> <p>¹ Legal Status Definitions:</p> <table><tr><td><u>U.S. Fish and Wildlife Service:</u></td><td><u>California Department of Fish and Wildlife:</u></td></tr><tr><td>E = endangered</td><td>E = endangered</td></tr><tr><td>T = threatened</td><td>FP = fully protected</td></tr><tr><td>PT = proposed as threatened</td><td>SSC= species of special concern (no formal protection other than CEQA consideration)</td></tr><tr><td>R = under review</td><td>T = threatened</td></tr><tr><td>D = delisted (no Endangered Species Act protection)</td><td>C = candidate for listing</td></tr><tr><td>– = no status</td><td>WL = watch listed</td></tr><tr><td></td><td>– = no status</td></tr></table> <p>² Potential for Occurrence:</p> <p>No Potential to Occur: The project site is outside the species’ range or suitable habitat for the species is absent from the project site and adjacent areas.</p> <p>Not likely to Occur: No occurrences of the species have been recorded within or immediately adjacent to the project site, and either habitat for the species is marginal or potentially suitable habitat may occur, but the species’ current known range is restricted to areas far from the project site.</p> <p>Low Potential to Occur: The species was identified during literature review as potentially occurring near the project site and habitat for the species is marginal or potentially suitable habitat may occur, but there are no records of species occurrence within the project site or its vicinity.</p> <p>Could Occur: The project site is within the species’ range, and no occurrences of the species have been recorded within the project site; however, suitable habitat for the species is present and recorded occurrences of the species are generally present in the vicinity.</p> <p>Known to Occur: The project site is within the species’ range, suitable habitat for the species is present, and the species has been recorded from within the project site.</p> <p>Sources: CDFW 2018a; eBird 2018; HRC 2017a, 2017b, 2018a, 2018b; Stantec 2018b, 2018e, 2018f, 2018g, 2018h, 2018i, 2018j, 2018k; USFWS 2018a; WBWG 2019; data compiled by AECOM in 2018 and 2019</p>					<u>U.S. Fish and Wildlife Service:</u>	<u>California Department of Fish and Wildlife:</u>	E = endangered	E = endangered	T = threatened	FP = fully protected	PT = proposed as threatened	SSC= species of special concern (no formal protection other than CEQA consideration)	R = under review	T = threatened	D = delisted (no Endangered Species Act protection)	C = candidate for listing	– = no status	WL = watch listed		– = no status
<u>U.S. Fish and Wildlife Service:</u>	<u>California Department of Fish and Wildlife:</u>																			
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– = no status	WL = watch listed																			
	– = no status																			

A search of the CNDDDB database identified 29 special-status wildlife species that occur within a 2-mile radius of the project components (Figure 3.5-2): Green Sturgeon, Pacific Lamprey, Tidewater Goby, Coastal Cutthroat Trout, Coho Salmon–Southern Oregon/Northern California ESU, Steelhead–Northern California DPS, Summer-run Steelhead Trout, Longfin Smelt, Eulachon, Pacific tailed frog, northern red-legged frog, foothill yellow-legged frog, southern torrent salamander, western pond turtle, Cooper's hawk, sharp-shinned hawk, tricolored blackbird, golden eagle, marbled murrelet, western snowy plover, American peregrine falcon, bald eagle, osprey, bank swallow, Sonoma tree vole, Townsend's big-eared bat, Yuma myotis, and fisher–West Coast DPS. The CNDDDB suppresses precise information on golden eagle nesting sites to protect the species; therefore, Figure 3.5-2 does not show this species' known nesting locations. Northern spotted owls are known to be present near the project site, but Figure 3.5-2 does not show territories and observations because data for northern spotted owl are compiled separately, using different methods, from other species tracked by the CNDDDB. Geo-referenced locations of northern spotted owl observations and activity centers contributed to CDFW are available through the Biogeographic Information and Observation System (BIOS) Spotted Observations Database (CDFW 2018c).

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Migratory birds, which are addressed below, are not addressed individually in Table 3.5-5 unless they have been otherwise designated as special-status species by CDFW or USFWS.

Special-status species detected during field surveys in the biological study area include northern red-legged frog, golden eagle, bald eagle, northern harrier (*Circus cyaneus*), American peregrine falcon (*Falco peregrines anatum*), western burrowing owl (*Athene cunicularia*), Vaux's swift (*Chaetura vauxi*), olive-sided flycatcher (*Contopus cooperi*), purple martin (*Progne subis*), yellow warbler (*Dendroica petechia*), grasshopper sparrow (*Ammodramus savannarum*), common loon (*Gavia immer*), Bryant's savannah sparrow (*Passerculus sandwichensis*), Townsend's big-eared bat (*Corynorhinus townsendii*), western red bat (*Lasiurus blossevillei*), little brown bat (*Myotis lucifugus*), and fringed myotis (*M. thysanodes*) (Stantec 2018g, 2018i). All of these species are considered CDFW species of special concern except the bald eagle and peregrine falcon, which are considered CDFW fully protected species; and little brown bat and fringed myotis, which are ranked as medium and high priority, respectively, by the WBWG. The bald eagle is also state-listed as endangered.

Information regarding the life history and ecology of special-status species known or with potential to occur on the project site is presented in Appendix M, "Humboldt Wind Energy Project Wildlife Assessment Report." For additional information regarding use of the project site for eagles, raptors, northern spotted owl, migratory and resident birds, marbled murrelet, and bats, see Appendices D2, D5 through D9, D11 through D12, and D14. Based on responses to the notice of preparation (Humboldt County 2018) and subsequent discussions during agency meetings, a summary of findings from technical reports is presented and supplementary information is provided below for the following species and taxonomic groups that are of particular concern because of potential project impacts: marbled murrelet, northern spotted owl, golden eagle, bald eagle, raptors, bats, and migratory birds.

Marbled Murrelet

The marbled murrelet is federally listed as threatened and state-listed as endangered. The project site is located within the range of the murrelet (USFWS 1996). Designated critical habitat for the murrelet is located near the project site, immediately east of U.S. 101 in Humboldt Redwoods State Park along the northern end of Avenue of the Giants (i.e., near Stands 63 and 64 in the Eel River valley bottom) (Stantec 2018h; USFWS 2011) (Figure 3.5-3). Marbled murrelets nest on large, moss-covered branches in old-growth coniferous trees and fly between inland nesting habitat and coastal/ocean foraging habitat, where they feed on small schooling fish and large pelagic crustaceans (Stantec 2018h). Two occurrences of marbled murrelet have also been documented in the CNDDDB in the general project vicinity (CDFW 2018a).

A habitat assessment was conducted by Stantec in 2018 to determine potential for the presence of murrelet nesting habitat (Stantec 2018h). This habitat assessment relied on Humboldt Redwood Company's geographic spatial data for marbled murrelet conservation areas and phasing stands, which are described in Chapter 6 of HRC's habitat conservation plan (HCP) (HRC 1999). The phasing stands are those identified under Section 6.1.2.3.3 (HRC 1999). Stantec identified forest Stands 63, 64, 66, 68, and 76 as potential nesting habitat for marbled murrelet (Stantec 2018h). Stands 63 and 64 are in Humboldt Redwoods State Park and occur across U.S. 101 from the location of the proposed operations and maintenance (O&M) facility and access road. Stand 76 occurs along the gen-tie route and is located approximately 250 feet north of the project area. No construction activities are proposed in Stands 63, 64, or 76; however, murrelets could use a small saddle at the top of Stand 76 as a flyway. Stands 66 and 68 occur at the location of the proposed O&M facility and access road. Stand 68 is located outside

of the project area and would not be directly affected by construction of the O&M facility or access road. Based on the current project design, approximately 14 acres of Stand 66 (which encompasses 35 acres) fall within the project area. Of these 14 acres, approximately 2.5 acres are within the current project footprint (Stantec 2018h).

Radar surveys for marbled murrelet were conducted by Stantec between April 17 and September 27, 2018 (Stantec 2018k). Seven radar stations were placed along Bear River and Monument ridges and one station was placed at a low-elevation site near the Eel River (Stantec 2018k). Marbled murrelet targets were detected in the biological study area during radar surveys. Murrelet targets detected on radar were distinguished from other species by their flight speed, timing, and target signature. All targets with a flight speed greater than 40 miles per hour were considered to be marbled murrelets unless the target signature was typical of a flock of band-tailed pigeons, or the target was observed after sunrise; to help eliminate single band-tailed pigeons from the data set, targets observed after sunrise were not considered murrelet targets. Stantec detected 136 murrelet targets during the 341 hours of radar sampling, with the most activity occurring at the low-elevation site along the Eel River, followed by radar station M5, the easternmost and lowest elevation ridgeline radar station (Stantec 2018k). The most murrelet activity was recorded in July, followed by May and June; more inbound flights were recorded than seaward flights (79 percent were inward flights); and most flights were concentrated along the Eel River and in the lower altitudes of the Eel River valley (Stantec 2018k).

Northern Spotted Owl

The northern spotted owl is federally listed as endangered and state-listed as threatened. The biological study area is located within the range of the northern spotted owl, but not within critical habitat that was designated for this species in 1992 and revised in 2008 (USFWS 1992, 2008). Designated critical habitat for the northern spotted owl is located near the project site to the north and east of the gen-tie corridor (USFWS 2008) (Figure 3.5-3). The northern spotted owl is strongly associated with structurally complex, older coniferous forests; however, in Northern California, the spotted owl also occurs in some types of relatively young forests, especially where those forests are structurally similar to late-successional/old-growth forest stands (Solis and Gutierrez 1990).

In August 2018, Stantec conducted a northern spotted owl habitat assessment in the project area using the guidelines provided by the Northern Spotted Owl Protocol (USFWS 2012a). Stantec surveyed a 0.7-mile buffer around the project area shown in Figure 2 of the northern spotted owl habitat assessment (Stantec 2018f). Comprehensive protocol-level surveys for the species were not conducted as part of the northern spotted owl habitat assessment, and northern spotted owls were not detected during other wildlife surveys (Stantec 2018f, 2018j). HRC conducts surveys for northern spotted owl on approximately one-fifth of its land per year, but data are not available for analysis (Stantec 2018f, 2018j).

Despite this lack of information about the species' occurrence in the project vicinity, the northern spotted owl habitat assessment survey determined that 1,473 acres of northern spotted owl suitable habitat occur in the project area, including 161 acres of functional nesting habitat (Stantec 2018f:Table 1, Figure 4). Auditory and visual disturbance analyses conducted by Stantec also found that if construction activities were to occur during the northern spotted owl nesting season (February to mid-July), then auditory and/or visual harassment could occur if northern spotted owls were nesting within 100 meters of the disturbance (Stantec 2018f, 2019).

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Golden Eagle

The golden eagle is federally protected under the Bald and Golden Eagle Protection Act and is a state fully protected and watch list species. Golden eagles are known to nest in areas south and east of the biological study area. Based on long-term monitoring conducted on HRC lands from 2002 to 2018 (HRC 2018b), at least eight golden eagle nesting territories, comprising 14 previously documented golden eagle nest locations, are located within 10 miles of WTG locations for the proposed project. Six of the 14 historic nest sites are located within 2 miles of proposed turbine locations. In 2018, monitoring was conducted in four of these territories. All were determined to be occupied and nesting behavior was observed in three territories; however, no active nests were located on HRC lands, and the report did not indicate when the nests were last documented to be active. However, monitoring data indicate that occupancy of golden eagle nesting territories on HRC lands averaged 85.7 percent annually from 2002 to 2018 (HRC 2018b). In addition, Stantec inspected all suitable habitat within 10 miles of proposed turbine locations during aerial surveys conducted in 2018, and found no active golden eagle nests in the survey area, including at 12 known historic nesting sites (Stantec 2018b).

The CNDDDB contains records of eagles nesting in the survey area, with the most recent observation occurring in 2006. In addition to the aerial eagle and raptor nest surveys, Stantec conducted eagle use count surveys between October 2017 and October 2018 (Stantec 2018e). The same 13 plots used for the bird use count surveys (Stantec 2018g) were also used for the eagle use count surveys. Whereas no golden eagles were detected during bird use count surveys, seven golden eagles were observed during the eagle use count surveys: three adults, two subadults, one juvenile, and one of unknown age. Of the 13 plots sampled during the eagle use count surveys, biologists observed eagles (golden and bald) in seven plots.

Bald Eagle

The bald eagle is federally protected under the Bald and Golden Eagle Protection Act, and is a fully protected species in California and state-listed as endangered. Stantec conducted an aerial eagle and raptor nest survey and an eagle use survey during its 2017–2018 survey efforts. No active bald eagle nests were detected in the survey area during the aerial eagle and raptor nest survey. The most recent historical nesting site in the survey area, approximately 5.5 miles from the nearest proposed WTGs, was also observed inactive during the survey. Overall, seven bald eagles were observed during the nesting eagle surveys, in the Van Duzen and Eel rivers, south of the Ferndale bottoms (Stantec 2018b). Eagle use count surveys were conducted between October 2017 and October 2018. The same 13 plots used for the bird use count surveys (Stantec 2018g) were also used for the eagle use count surveys.

Out of the 13 plots sampled, biologists observed eagles (golden and bald) in seven plots. Four bald eagle observations were documented during the eagle use count surveys conducted by Stantec, with three adults and one subadult observed (Stantec 2018e), and two bald eagle observations (ages not specified) were documented during the bird use count surveys (Stantec 2018g). HRC reported no observations of bald eagles during its 2017 raptor surveys. Incidental observations of bald eagles in flight along the Eel River near Scotia were made, but no nesting activities were observed (HRC 2018b).

Other Raptors

The results of surveys conducted by Stantec in 2017–2018 indicate that the biological study area is well used by numerous raptors and turkey vultures (Stantec 2018b, 2018e, 2018g). Turkey vultures are not closely related but

are behaviorally similar to true raptors, and are therefore presented together. The surveys yielded numerous observations of diurnal raptors and vultures, with 484 observed raptors and 152 vultures observed. The raptors observed during the surveys include Cooper's hawk, sharp-shinned hawk (*Accipiter striatus*), ferruginous hawk (*Buteo regalis*), red-tailed hawk, bald eagle, American kestrel, American peregrine falcon, merlin (*Falco columbarius*), prairie falcon (*F. mexicanus*), osprey (*Pandion haliaetus*), and northern harrier (*Circus hudsonius*) (Stantec 2018g). Golden eagle was also detected during the eagle use count surveys (Stantec 2018e), for a total of 12 raptor species observed in the biological study area. Five species—northern harrier, white-tailed kite, bald eagle, prairie falcon, and American peregrine falcon—are considered CDFW species of special concern. The white-tailed kite, bald eagle, golden eagle, and American peregrine falcon are also considered fully protected in California. The bald eagle is also state-listed as endangered.

The California condor (*Gymnogyps californianus*), a federally listed and state-listed endangered species and a CDFW fully protected species, was extirpated from the North Coast region in the early 20th century. As part of the federal California Condor Recovery Program, USFWS, in partnership with the National Park Service and the Yurok Tribe, plans to reintroduce the California condor to the North Coast region to allow recovery of the species in its full historical range (NPS 2017). The proposed reintroduction program includes establishing a release facility and monitoring program in the remote Bald Hills region of Redwood National Park, approximately 50 miles north of the project site. The program will examine the impacts of condor reintroduction on the natural and human environment in the park and the region, with the reintroduced group of condors possibly designated as an “experimental nonessential population” to allow for more collaboration amongst stakeholders (Hayden 2017). The first release of condors into the park could occur as soon as 2020 (Hayden 2017). Given that condors are known to fly 150 miles per day in search of food, this species has the potential to fly through and/or use the project site in the future. Habitat requirements for condors include appropriate roost sites (e.g., large trees or snags, or isolated rocky outcrops and cliffs), shallow caves and rock crevices on cliffs where there is minimal disturbance for nesting, and open grasslands and foothills that support populations of large mammals such as deer and cattle for foraging (NPS 2017).

Bats

Nine of the 13 bat species that are expected to occur at the project site are species of conservation concern (see Table 3.5-5 above) (Stantec 2018i; CDFW 2018a; WBWG 2019). As described below, these species of conservation concern are either colonial bat species, or solitary migratory species.

Colonial Bats

The colonial species of conservation concern that are expected to occur in the project site are Townsend's big-eared bat, the four *Myotis* species, silver-haired bat, and pallid bat. Pallid bats hunt on the ground and would not be expected to be especially vulnerable to impacts associated with wind farms. Threats associated with the *Myotis* species and silver-haired bat in the project area are similar to those associated with Townsend's big-eared bat, described below.

Townsend's big-eared bat is a widespread but rare species of particular conservation concern in the project area and in California in general. This species was recently a candidate for listing under CESA because California populations may be declining and at risk. In 2016, CDFW determined not to list the species based in part on the conclusion that CEQA review should provide adequate regulatory oversight to maintain sustainable population numbers (CDFW 2016a). This species often forms roosts in caves, mines, and human structures. Caves and mines are naturally rare in the area, and several borrow pits, gravel pits, and quarries in the project vicinity are not

expected to provide substantial cavity roost habitat such as mine tunnels (DOC 2018). In the North Coast region, cavity-roosting bats are known to use hollows in old-growth redwood trees as day and maternity roosts (Gellman and Zielinski 1996; Mazurek 2004; CDFW 2018a). Before the advent of widespread logging, large, old redwoods were likely the primary roost sites for Townsend's big-eared bat in this part of the state (Pierson and Fellers 1998). Thus, the project site may contain suitable and scarce roosting habitat (i.e., basal hollows) for Townsend's big-eared bat and other special-status, colonial, cavity-roosting bats.

Bat occurrences are rarely reported to the CNDDDB; however, two Townsend's big-eared bat roost sites were recorded in 2000 near the project site (CDFW 2018a). The nearest occurrence (Number 139) was a possible maternity roost, with about 50 bats observed roosting in an abandoned house approximately 4 miles east-southeast of Monument Ridge. The other roost occurrence (Number 146) was located at Grizzly Creek Redwoods State Park, approximately 10 miles northeast of the proposed wind turbine locations and 3 miles north of the gen-tie corridor. This occurrence consisted of a total of 13 roosts in basal hollows that the colony appeared to move between (Mazurek 2004).

Solitary Migratory Bats

The generally solitary species of conservation concern that are expected to occur in the project area are hoary bat (*Lasiurus cinereus*²) and western red bat. These bats roost in clumps of tree foliage. The winter behavior of these species is not well understood. Evidence suggests that some individuals of these species may conduct short seasonal migrations to the coast, while others may conduct long migrations or hibernate (Weller et al. 2016; Kennedy et al. 2014). Both species are strongly associated with riparian habitat and have been captured in large numbers at a U.S. Forest Service long-term study site along Bull Creek in Humboldt Redwoods State Park, approximately 4 miles south of the project site (Weller, pers. comm., 2018) (Figure 3.5-2). Threats associated with western red bat in the project area are similar to those associated with the hoary bat, described below.

The hoary bat is a widespread but uncommon species of particular conservation concern in the project area and in relation to wind turbine generators. Hoary bats have been captured in exceptionally high numbers at the nearby Bull Creek study site, especially during the fall. Many researchers may have only captured a dozen hoary bats over the course of a career, but that many and more can be captured on a single night at the Bull Creek study site (Humboldt State University 2014). Ted Weller, the lead researcher, queried state heritage database staff in several Western states about all documented hoary bat captures and museum specimens, and compiled the data shown in Table 3.5-6 for comparison with one single mist netting effort at the Bull Creek study site in fall 2015 (Weller, pers. comm., 2018).

Table 3.5-6. Western States Database Results for Documented Hoary Bat Captures and Museum Specimens Compared to Mist-Netting Effort at Bull Creek Study Site in Humboldt Redwoods State Park

Location	Date(s)	Number of Hoary Bats Documented
State of Montana	1939–2012	232
State of Washington	1918–2009	60
State of Oregon	1935–2010	224
State of Nevada	1979–2013	199
Bull Creek Study Site, Humboldt Redwoods State Park	Fall 2015	154
Source: Weller, pers. comm., 2018		

² A taxonomic change has been proposed for this species, to *Aeorestes cinereus* (Baird et. al. 2017).

This discovery of what could be considered fall swarming behavior of hoary bats in the redwoods has not yet been documented anywhere else; it could represent a vital life history component for this species (Szewczak, pers. comm., 2018), and it may demonstrate a seasonal concentration of mating hoary bats from all over western North America (Johnston, pers. comm., 2018). In addition, male hoary bats captured at the Bull Creek study site were documented making multi-directional movements during the migratory season, while others were documented experiencing varying periods of hibernation or torpor (Weller et al. 2016).

Migratory Birds

Habitats in the biological study area provide breeding, nesting, and connectivity functions for a number of resident and migratory bird species. Rivers, drainages, and ridgelines are especially likely to function as movement corridors for these species. Surveys for birds and eagles were conducted at 13 800-meter-radius bird use count/eagle use count plots situated amongst the locations of the proposed WTGs and evenly distributed along ridgelines (Stantec 2018e, 2018g) (Figure 3.5-1). Point-count surveys for birds and eagles were conducted weekly every month for an entire year, starting October 24, 2017, and ending October 25, 2018. Of the birds documented during bird use counts, 49.18 percent were flying, and of these, 29.72 percent were flying within the rotor-swept zone of wind turbine generators, defined as 50–200 meters above ground level (Stantec 2018g). The frequency of occurrence within the rotor-swept zone was greatest for American peregrine falcon and red-winged blackbird (*Agelaius phoeniceus*), followed by house finch (*Haemorhous mexicanus*), purple finch (*H. purpureus*), American goldfinch (*Spinus tristis*), and white-throated swift (*Aeronautes saxatalis*) (Stantec 2018g). Eagle use count surveys resulted in observations of four bald eagles and seven golden eagles, and a total of 27 eagle use minutes within the rotor-swept zone (Stantec 2018e). Eagle use minutes were greatest in May (13 minutes), followed by August (11 minutes) (Stantec 2018e). The number and duration of eagle observations and the total eagle use minutes were greatest during the spring and summer seasons. Passerines (order Passeriformes) were the most abundant bird group detected throughout the year. During bird and eagle counts, a total of 12 special-status species were observed, including the state-listed endangered bald eagle; the CDFW fully protected American peregrine falcon and golden eagle; and 10 species of special concern consisting of common loon, northern harrier, burrowing owl, Vaux's swift, olive-sided flycatcher, purple martin, yellow warbler, grasshopper sparrow, and Bryant's savannah sparrow.

U.S. Fish and Wildlife Service Critical Habitat

Critical habitat near the biological study area has been designated for the western snowy plover (*Charadrius alexandrinus nivosus*) (USFWS 2012b), marbled murrelet (USFWS 2011), Tidewater Goby (USFWS 2012c), yellow-billed cuckoo (*Coccyzus americanus*) (USFWS 2014), and northern spotted owl (USFWS 2008), and for several anadromous fish species (NMFS 2005, 2009) (Figure 3.5-3). The Pacific Coast near Humboldt Bay, and the bay itself, contain critical habitats for the western snowy plover, Tidewater Goby, and Green Sturgeon (NMFS 2009). Critical habitat for western snowy plover continues inland along the Eel River, near the proposed transportation haul route. HRC lands northeast of the transportation routes and project site contain critical habitat for the marbled murrelet. The major rivers (Eel River and Van Duzen River) and numerous tributary streams within the watersheds of the biological study area compose critical habitat for several anadromous fish species, including the Southern Oregon/Northern California Coast Coho Salmon ESU (NMFS 1999), Northern California Steelhead DPS (NMFS 2005), and California Coastal Chinook Salmon ESU (NMFS 2005).

Waters of the United States and Other Waters

An aquatic resources survey was conducted by Stantec for the project site and Fields Landing delivery site in summer and fall 2018. The survey included delineation of wetlands and other waters of the United States subject to U.S. Army Corps of Engineers (USACE) and North Coast Regional Water Quality Control Board (RWQCB) jurisdiction under Section 404 of the federal CWA and mapping of drainages and riparian canopy/riparian wetland habitats subject to CDFW jurisdiction. Coastal zone wetlands subject to regulations by the California Coastal Commission (CCC) were also mapped. In December 2018, Stantec prepared a memorandum to the CCC with the results of a wetland delineation for activities in the coastal zone (Stantec 2018l), included in Appendix P. Appendix F, “Humboldt Wind Energy Project Aquatic Resources Survey Report,” provides details regarding the mapping and wetland delineation methodology, maps, and descriptions of each wetland and drainage type. The wetland delineation and mapping of the ordinary high-water mark of drainages were conducted according to the methods identified in the USACE wetlands delineation manual (Environmental Laboratory 1987) and the revised procedures in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE 2010); and *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (USACE 2014). The wetland delineation and drainage mapping have not been verified by USACE (Stantec 2018c). All potentially jurisdictional waters were mapped within the project site and Fields Landing delivery site. Potentially isolated wetlands, which are not subject to USACE jurisdiction under Section 404 of the Clean Water Act but may be considered waters of the state under the Porter-Cologne Act, would be subject to regulation by the North Coast RWQCB. Streams (drainages) and associated riparian habitat are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Wetlands located within the coastal zone are under the jurisdiction of the CCC. Furthermore, aquatic resources are subject to the standards and provisions of the *Humboldt County General Plan* (General Plan) Conservation and Open Space Element, Chapter 10.2 (Biological Resources), and Humboldt County Code Section 314-61.1 (Streamside Management Ordinance).

Wetlands and one open water feature were mapped by Stantec within the project site and Fields Landing delivery site (Stantec 2018c, 2018l). Wetlands were categorized into one of three Cowardin classifications (Cowardin et al. 1979): palustrine emergent, palustrine forested, and palustrine scrub-shrub habitats. The open water feature is an unvegetated stock pond. In addition, drainages and drainage segments were mapped within the project site (Stantec 2018c). Wetland soil samples were classified primarily as clay loam or loam, with the predominant hydric soil indicator being redox dark surface (Stantec 2018c). The primary indicator of wetland hydrology was the presence of oxidized rhizospheres along living roots (Stantec 2018c).

Table 3.5-7 summarizes each aquatic feature and the approximate acreage mapped within the project site and Fields Landing delivery site. A total of 4.22 ³acres of wetlands potentially under the jurisdiction of the North Coast RWQCB and USACE were mapped. Of these, 0.35 acre is potentially under the jurisdiction of the CCC. The approximately 0.13-acre stock pond is potentially under the jurisdiction of the North Coast RWQCB, USACE, and CDFW. In addition, 1.242 acres of drainages potentially under the jurisdiction of the North Coast RWQCB, USACE, and CDFW were mapped. (Stantec 2018c, 2018l; Akky, pers. comm. 2019).

³ Delineated wetlands are not the same as the “Wetland Areas” listed in Table 3.5-2 (Land Cover Types), which shows 2.3 acres of “Wetland Areas” in the project site. This is different from the total acreage of delineated wetlands because wildlife habitats are based on vegetation community types and are not reflective of delineated wetland acreages.

Table 3.5-7. Potentially Jurisdictional Aquatic Features Mapped within the Humboldt Wind Energy Project Site and Fields Landing Delivery Site

Feature Type	Acres
Open Water	0.13
Wetlands	4.22
Drainages	0.89 ⁵
Total Jurisdictional Area	5.24
Sources: Stantec 2018c, 2018l	

Coastal Zone Wetlands

The Fields Landing delivery site is inside the coastal zone. Wetlands in the coastal zone are subject to the Coastal Act and Coastal Management Act and are potentially under CCC jurisdiction. A total of three wetlands (± 0.35 acre) lie within the coastal zone at Fields Landing (Stantec 2018l; Akky, pers. comm., 2019). Potential wetlands under CCC jurisdiction that lie within the coastal zone were mapped following the USACE method for delineation and fall under USACE jurisdiction (i.e., all wetlands in the coastal zone meet all three USACE parameters for wetland delineations). Wetlands mapped in these areas were classified as palustrine emergent (± 0.14 acre) and palustrine scrub-shrub (± 0.22 acre). In addition, approximately 0.002 acre of ephemeral drainage was mapped within the coastal zone.

Riparian Habitat and Sensitive Natural Communities

California natural communities are organized by CDFW and partner organizations, such as CNPS, based on vegetation type classification, and are ranked using the same system to assign global and state rarity ranks for plant and animal species in the CNDDb. Natural communities that are ranked S1–S3 are considered sensitive natural communities by CDFW, to be addressed in the environmental review processes (CDFW 2018d).

Of the 83 vegetation communities mapped by Stantec in the project area to the alliance or association level during botanical surveys, 43 are categorized as sensitive natural communities (Stantec 2018d). Sensitive natural communities mapped to the state vegetation standard do not imply regulatory jurisdictional determinations under Section 404 of the federal Clean Water Act, Section 10 of the Rivers and Harbors Act, or Section 1600 of the California Fish and Game Code (Lake and Streambed Alteration Program); such determinations usually require mapping boundaries at a finer scale than the state vegetation map standard.

Similarly, terms such as “riparian” and “wetland” in the vegetation keys and type descriptions may inform but do not imply or assert regulatory jurisdiction or the lack thereof. Instead, riparian habitat is defined separately in the context of Section 1600 of the California Fish and Game Code. According to guidance provided in A Field Guide to Lake and Streambed Alteration Agreements: Section 1600 Fish and Game Code, the outer edge of riparian vegetation is a reasonable and identifiable boundary for the lateral extent of a stream, the protection of which should result in preserving the fish and wildlife at risk within a stream or drainage, and therefore may constitute the limits of CDFW jurisdiction along waterways. Because CDFW takes jurisdiction over riparian habitat pursuant to Section 1600 of the California Fish and Game Code, riparian habitats were classified, mapped, and quantified separately as part of wildlife habitat assessment surveys and aquatic resources surveys within the project site, defined as any habitat where herbaceous plants, shrub/scrubs, and/or trees of varying densities are growing along waterways (Stantec 2018c, 2018d, 2018j). As a result, riparian habitat within the project site includes several mapped sensitive natural communities as well as other, nonsensitive vegetation communities that

overlap waterways and may be subject to regulation by CDFW under Section 1602 of the California Fish and Game Code.

Detailed descriptions of the riparian habitats and sensitive natural communities, respectively, occurring within the project site are provided in Stantec's *Humboldt Wind Energy Project Wildlife Assessment* (Appendix M) and *Humboldt Wind Energy Project Botanical Resources Report* (Appendix G). Stantec identified approximately 1.8 acres of riparian habitat and 419.2 acres of sensitive natural communities within the project site: approximately 328 acres of sensitive forest/woodland, 7 acres of sensitive shrubland, and 84 acres of sensitive grassland vegetation types (Stantec 2018d). Table 3.5-8 summarizes the acres of riparian habitat and sensitive natural communities mapped within the project site. Most sensitive natural communities on the project site are represented by a vegetation alliance (i.e., one or more closely allied sensitive vegetation associations), with the exception of the Douglas-fir forest alliance, which contains some sensitive vegetation associations and others that are not; therefore, sensitive vegetation associations related to Douglas-fir forest are listed separately in Table 3.5-8.

In addition to the sensitive natural communities listed in Table 3.5-8, eelgrass estuarine habitat in Humboldt Bay is of special concern to the resource agencies. The need to address eelgrass in the environmental analysis was specifically highlighted during scoping.

Descriptions of riparian habitat, eelgrass estuarine habitat, and select common sensitive natural communities mapped within the project site are presented below.

Riparian Habitat

Riparian habitat is scattered throughout the project site along drainages, creeks, and river banks, representing a mixture of sensitive and nonsensitive vegetation communities. Sensitive natural communities associated with riparian canopy include red alder forest, California bay forest, and black cottonwood forest. Nonsensitive riparian vegetation communities include Douglas fir-tanoak forest. In addition, small portions of upland habitats and nonvegetated areas overlap with and are included in the total acreage of riparian habitat (Stantec 2018j). Riparian habitat is subject to regulation by CDFW under California Fish and Game Code Section 1602.

Eelgrass

In its response to the notice of preparation (Humboldt County 2018), CDFW expressed concern regarding potential impacts on eelgrass (*Zostera marina*) beds, an important submergent vegetation community found in Humboldt Bay, as a result of barge delivery of components to Fields Landing (CDFW 2018b). Eelgrass was mapped by CDFW in Humboldt Bay between 2009 and 2016, with some areas close to Fields Landing (CDFW 2016b) (Figure 3.5-4). Bathymetry studies have been conducted to confirm that in-water work would not be required in the Fields Landing channel or dock site (Central Oceans USA 2018). A memorandum addressing barge discharge at Fields Landing for project component delivery in relationship to the marine floor of Humboldt Bay and eelgrass was prepared by Central Oceans USA and is included in Appendix R (Central Oceans USA 2019).

Table 3.5-8. Riparian Habitat and Sensitive Natural Communities Identified within the Humboldt Wind Energy Project Site and Transportation Improvement Areas

Type	Total Acres (Approximate)
Riparian Habitat¹	
Nonvegetated	0.01
Black cottonwood forest*	0.29
California bay forest*	0.08
Douglas-fir forest	0.02
Douglas-fir–tanoak forest	0.19
Red alder forest*	1.12
Redwood forest*	0.07
TOTAL RIPARIAN HABITAT:	1.77
Sensitive Vegetation Alliances	
Redwood forest*	283.58
Spike bentgrass prairie/coastal terrace prairie	42.54
Tanoak forest	12.63
California brome–blue wildrye prairie	23.97
California oat grass prairie	12.86
Ocean spray brush	4.35
Tufted hair grass meadows	4.12
Coastal brambles	2.89
Oregon white oak woodland	2.87
Bigleaf maple forest	2.93
Red alder forest*	0.91
California bay forest*	1.25
Madrone forest	1.92
Shining willow groves	0.85
Grand fir forest	0.63
Sand dune sedge swaths	0.47
Sensitive Vegetation Associations within the Douglas-fir (<i>Pseudotsuga menziesii</i>) Forest Alliance	
<i>Pseudotsuga menziesii</i> – <i>Gaultheria shallon</i>	9.31
<i>Pseudotsuga menziesii</i> – <i>Arbutus menziesii</i>	6.13
<i>Pseudotsuga menziesii</i> / <i>Mahonia nervosa</i>	2.32
<i>Pseudotsuga menziesii</i> – <i>Quercus garryana</i> var. <i>garryana</i> /grass	0.48
TOTAL NON-RIPARIAN SENSITIVE NATURAL COMMUNITIES:	417.63
GRAND TOTAL SENSITIVE NATURAL COMMUNITIES:	419.19

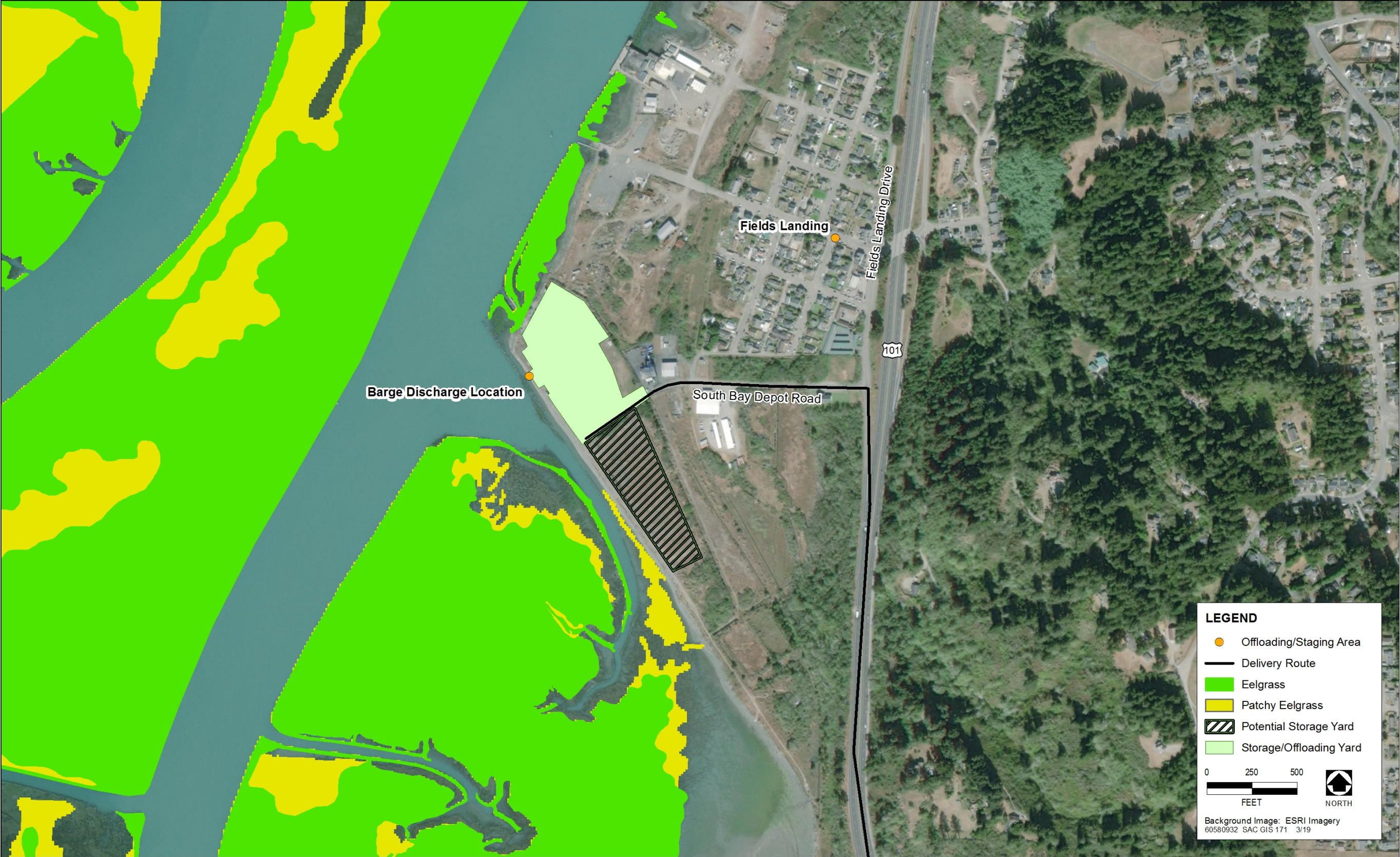
Notes:

¹ Defined as any habitat where herbaceous plants, shrub/scrubs, and/or trees of varying densities are growing along waterways. Includes several sensitive natural communities, as well as vegetation communities not considered sensitive but that constitute riparian wildlife habitat, including nonsensitive vegetation alliances within the Douglas-fir forest alliance (Stantec 2018j).

² Arroyo willow thickets were mapped within the Fields Landing delivery site only.

* Vegetation communities denoted with an asterisk were mapped as sensitive natural communities and riparian habitat. Where a sensitive natural community overlaps a waterway, that acreage is calculated and captured as riparian habitat. To avoid double-counting, the acreages of sensitive natural communities that are mapped as riparian habitat are not included in the total acreage of sensitive natural communities, since these acreages are already accounted for in riparian habitat acreages.

Sources: Stantec 2018d, 2018j



Source: CDFW 2016; Stantec

Figure 3.5-4. Eelgrass Mapped in the Vicinity of the Project Site

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Redwood and Douglas-fir Forest

Redwood forest alliance and Douglas-fir forest alliance are the most abundant community types on the project site and are the most variable in community composition because stands are in various states of succession. Stantec mapped nine redwood forest and six Douglas-fir associations on the project site as occurring along the slopes of Bear River Ridge, within the eastern portions of Monument Ridge, and along the entire gen-tie line (Stantec 2018d). CDFW considers all associations within the redwood forest alliance and four of the mapped Douglas-fir association (*Pseudotsuga menziesii*–*Gaultheria shallon*, *Pseudotsuga menziesii*–*Arbutus menziesii*, *Pseudotsuga menziesii*–*Quercus garryana* var. *garryana*/grass, and *Pseudotsuga menziesii*/Mahonia *nervosa*) sensitive natural communities. Stands of redwood (40–80 percent relative cover) generally codominate with Douglas-fir (30–70 percent relative cover) in the tree layer; however, several stands have become subdominant to codominant hardwoods such as bigleaf maple, California bay, and tanoak. Most of the developed stands have a mixture of California huckleberry and salal in the understory. Several stands with less dense canopy cover have moderate to dense cover of bracken fern (*Pteridium aquilinum* var. *pubescens*) or western sword fern. Stands with undeveloped shrub or herbaceous layers are common and present in early seral stage stands, areas grazed by cattle, and recently logged areas.

Tanoak Forest

Tanoak forest is scattered throughout the project site. This forest/woodland vegetation community is dominated or codominated by tanoak, often as part of a diverse mix of montane hardwood and mixed evergreen species. Stantec botanists observed that tanoak on the project site was often codominant with madrone (*Arbutus menziesii*) and California bay, with moderate to high cover of California huckleberry in the understory (Stantec 2018d). Tanoak forest was mapped as both riparian communities and upland communities.

Spike Bentgrass Prairie/Coastal Terrace Prairie

Spike bentgrass prairie/coastal terrace prairie is the most common sensitive grassland community on the project site, occurring in wet depressions within staging areas (Stantec 2018d). This plant community either is dominated by spike bentgrass or codominated with nonnative common velvet grass and sweet vernal grass. In addition, several stands contain a high density of rush species, including slender rush (*Juncus occidentalis*), Bolander's rush (*J. bolanderi*), and toad rush (*J. bufonius*).

Ocean Spray Brush and Coastal Brambles

Ocean spray brush and coastal brambles are the two shrub/scrub habitats mapped within the project site that are categorized as sensitive natural communities. Stands of ocean spray brush mixed with poison oak, California blackberry, thimbleberry, and coast man-root (*Marah oregana*) are limited to grassland borders in the western portion of the project site (Bear River Ridge) (Stantec 2018d). Coastal brambles occur as small patches throughout the project site, typically along roadsides, forest openings, and other disturbed areas (Stantec 2018d). This community is typically dominated by a combination of California blackberry, thimbleberry, and/or salmonberry. Other species commonly intermixed within coastal brambles include coast man-root and various grasses and forbs.

Connectivity and Migration Corridors

Habitats in the biological study area provide connectivity and migration corridors for a number of aquatic, terrestrial, and avian species, both resident and migratory. Rivers, drainages, and ridgelines are especially likely to function as movement corridors, and upland habitat is expected to provide landscape connections for terrestrial species. The project area is relatively undeveloped and wildlife can freely move through the forest, shrub, and grassland habitat.

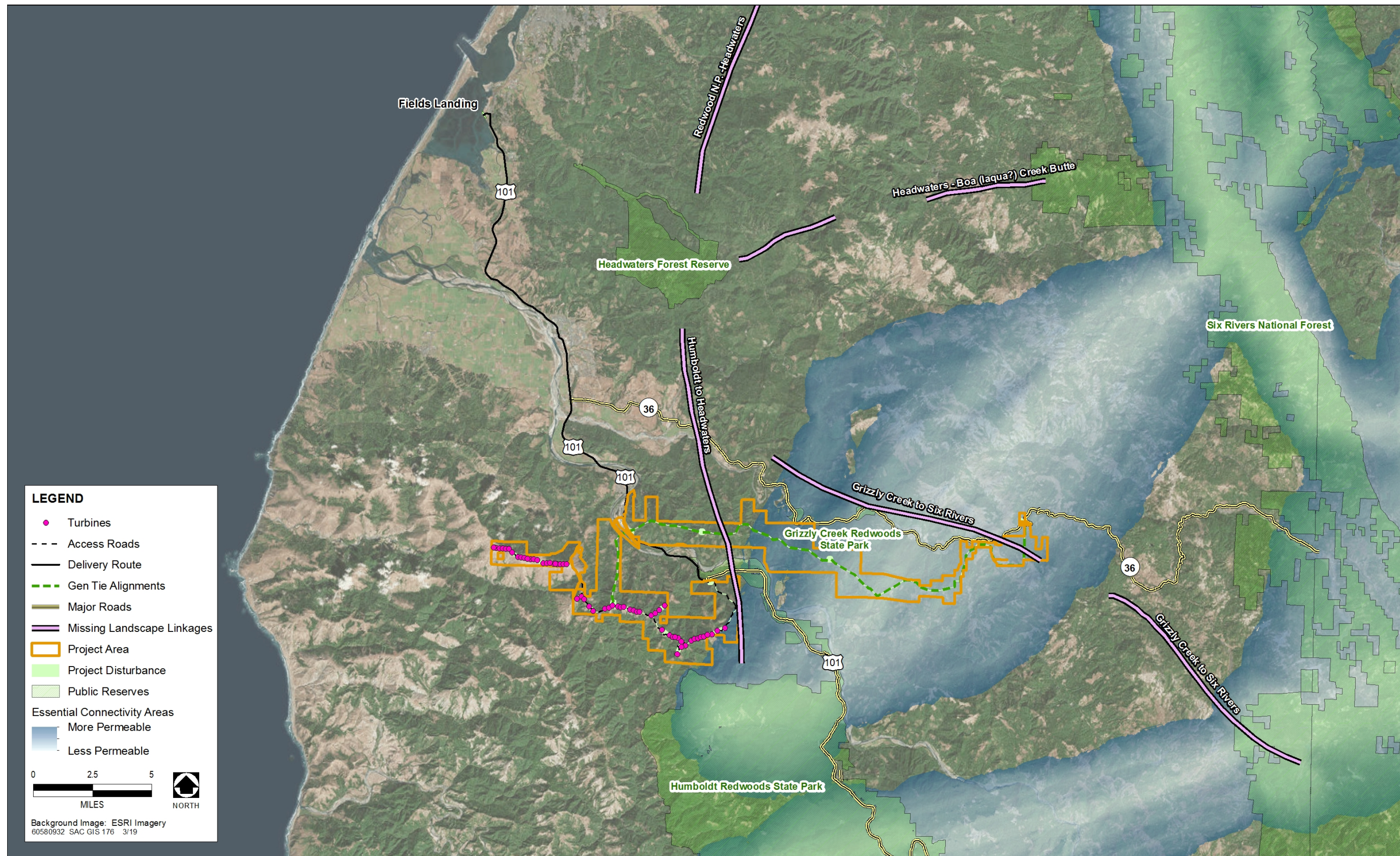
Linkage Corridors

According to Penrod et al. (2001), the biological study area lies within the Humboldt to Headwaters and Grizzly Creek to Six Rivers linkage corridors (Figure 3.5-5). The Humboldt to Headwaters landscape linkage crosses the project site from north to south, connecting Humboldt Redwoods State Park and the Headwaters Forest Reserve (Penrod et al. 2001). A landscape linkage is defined as a large regional connection between core habitat areas. The Humboldt to Headwaters linkage is identified by Penrod et al. (2001) as containing forest cover and land management protections (e.g., HCPs) that facilitate continued animal movement through the linkage area. The Grizzly Creek to Six Rivers linkage crosses the gen-tie portion of the project site from west to east, and is identified as a stepping-stone linkage with remnant late seral forest patches connecting Grizzly Creek Redwoods State Park to Six Rivers National Forest (Penrod et al. 2001).

The California Essential Habitat Connectivity Project identifies the privately held timber lands (including HRC-owned lands) overlapping the project site as part of an Essential Connectivity Area between nearby Natural Landscape Blocks (i.e., state parks and reserves) (Spencer et al. 2010) (Figure 3.5-5). Essential Connectivity Areas, characterized as being more fragmented and less protected than Natural Landscape Blocks, serve an important function to connect the most ecologically intact and well-conserved lands in a region (Spencer et al. 2010). The Essential Connectivity Area that overlaps the project site supports mostly natural land covers and is relatively permeable to wildlife movements, thereby sustaining functional connectivity across the landscape. Major rivers are also shown on the Essential Habitat Connectivity map to represent where aquatic and riparian corridors may further contribute to ecological connectivity (Figure 3.5-5). Riparian areas, though generally narrower than Essential Connectivity Areas, are recognized as being very important to maintaining ecological connectivity by linking Natural Landscape Blocks and Essential Connectivity Areas while also maintaining aquatic habitats and flows for numerous species and important ecological processes (Spencer et al. 2010). Riparian corridors facilitate movements of both terrestrial and aquatic species (Spencer et al. 2010). Furthermore, the aquatic habitats within the Eel and Van Duzen rivers, as well as numerous tributary creeks and streams, represent important migration corridors for anadromous fish, including several listed species.

Important Bird Areas and Flyways

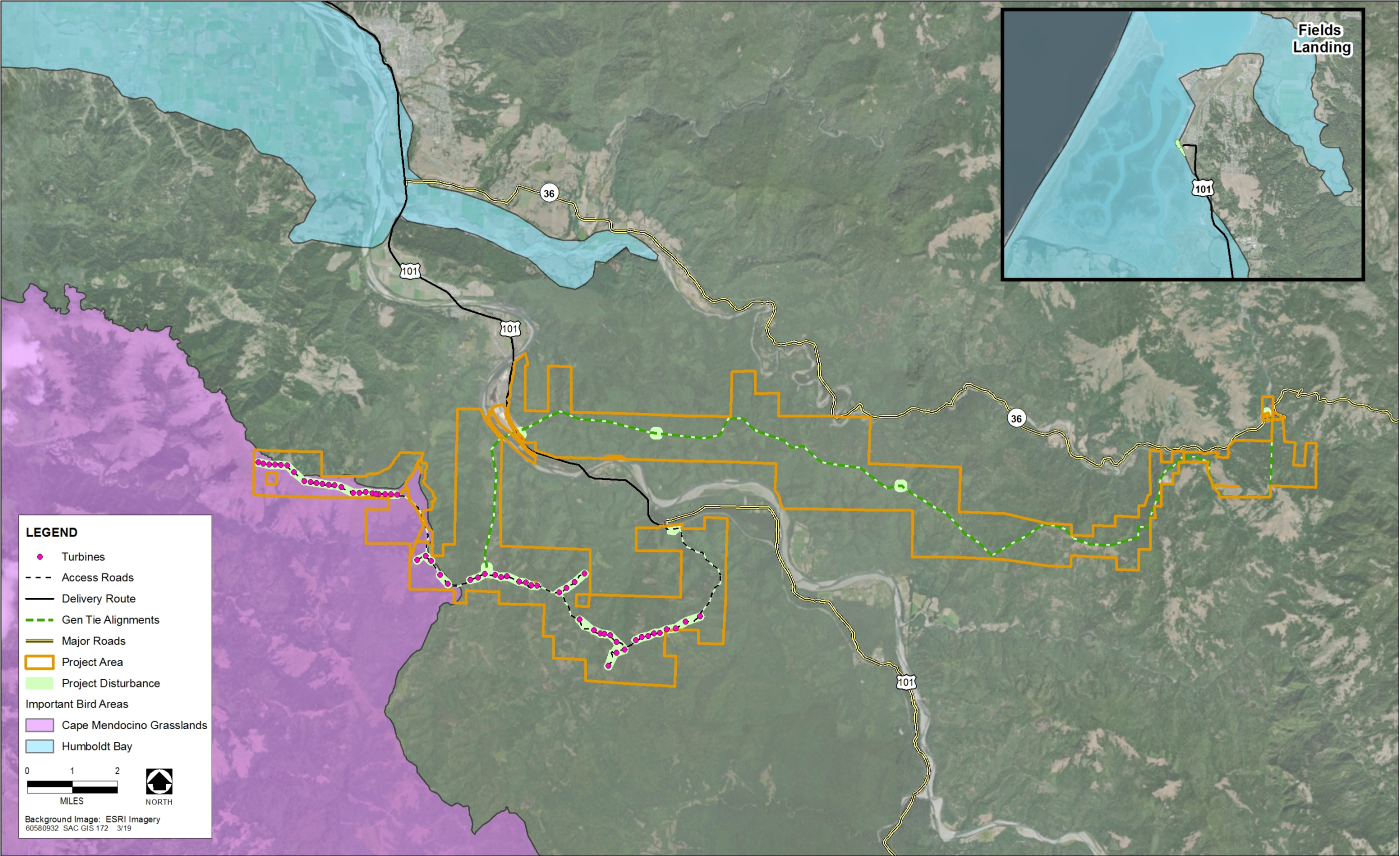
In its response to the notice of preparation, CDFW noted that the project site is situated between the Humboldt Bay and Cape Mendocino Grasslands important bird areas (Cooper 2004) (Figure 3.5-6). Fields Landing and the northern portion of the proposed haul route are located along the eastern edge of the Humboldt Bay important bird area. Humboldt Bay is a known stopover point for migratory birds along the Pacific Flyway, with expansive eelgrass habitat in the lagoon particularly important for migrating black brant (*Branta bernicla*), a CDFW species of special concern (Table 3.5-2) (CDFW 2018a). The Bear River Ridge portion of the project site is located within and along the northeastern portion of the Cape Mendocino Grasslands Important Bird Area, one of the largest expanses of grassland in northwestern California supporting wintering raptors and colonies of nesting



Sources: Penrod et al. 2001; Spencer et al. 2010; CDFW BIOS; CPAD; Stantec

Figure 3.5-5. Landscape Linkage Corridors and Essential Connectivity Area Overlapping the Project Site

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Source: Cooper 2004

Figure 3.5-6. Important Bird Areas in the Vicinity of the Project Site

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grasshopper sparrows and horned larks (Cooper 2004). Other special-status bird species that may be present near the project site during the fall and spring migration periods are bank swallow, willow flycatcher, tricolored blackbird, northern harrier, burrowing owl, yellow warbler, and American peregrine falcon (Stantec 2018j). In addition, golden eagle and bald eagle are expected to occur in the project vicinity during both the wintering and nesting seasons (Stantec 2018j).

The Eel River is a known flyway for marbled murrelets transiting from the ocean to potential nesting habitats in Humboldt Redwoods State Park or other suitable forest habitats south and along the river (Stantec 2018h). Marbled murrelets travel between foraging areas at sea and inland nesting locations throughout the year. Most inland flights occur during the breeding season (typically April through August), with transits between the ocean and inland nesting habitat restricted to the hours around sunrise and sunset (Stantec 2018h). Radar monitoring survey results suggest that the greatest flight activity in the biological study area occurs from early to mid-summer (May, June, and July) (Stantec 2018k). Most murrelet activity in the biological study area was observed traveling parallel to ridgelines (Stantec 2018k).

3.5.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Endangered Species Act

Pursuant to the ESA, USFWS and the National Marine Fisheries Service (NMFS) have regulatory authority over federally listed species. Under the ESA, a permit is required for any federal action that may result in “take” of a listed species. Section 9 of the ESA defines “take” as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Under federal regulations, take is further defined to include the modification or degradation of habitat where such activity results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7 of the ESA outlines procedures for federal interagency cooperation to protect and conserve federally listed species and designated critical habitat. Critical habitat identifies specific areas that have the physical and biological features essential to the conservation of a listed species and that may require special management considerations or protection. Section 7(a)(2) requires federal agencies to consult with USFWS and/or NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroying or adversely modifying designated critical habitat.

Section 10(a) of the ESA allows USFWS and NFMS to permit the incidental take of listed species if the applicant submits an HCP that meets statutory requirements including components to minimize and mitigate impacts associated with the take.

Migratory Bird Treaty Act

The MBTA implements domestically a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (Title 16, Section 703 of the U.S. Code [16 USC 703]). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in

direct loss of birds, nests, or eggs. The current list of species protected by the MBTA includes almost all bird species that are native to the United States. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collection, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Bald and Golden Eagle Protection Act

Under authority of the Bald and Golden Eagle Protection Act (BGEPA), bald eagles and golden eagles are afforded additional legal protection. BGEPA prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof (16 USC 668–668d). BGEPA also defines take to include “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb,” and includes criminal and civil penalties for violating the statute. USFWS further defines the term “disturb” as agitating or bothering an eagle to a degree that causes, or is likely to cause, injury, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior.

The BGEPA authorizes USFWS to permit the take of eagles for certain purposes and under certain circumstances, including scientific or exhibition purposes, religious purposes of Indian tribes, and the protection of wildlife, agricultural, or other interests, so long as that take is compatible with the preservation of eagles. In 2009, USFWS promulgated a final rule on two new permit regulations that, for the first time, specifically authorized the take of eagle nests and “non-purposeful” take of eagles in certain situations under BGEPA. Then, on December 15, 2016, USFWS issued proposed changes to eagle permitting regulations to improve implementation and compliance, which took effect on January 17, 2017. Key provisions of the new rules include that “non-purposeful take permits” are now called “incidental take permits” and the maximum permit length has been extended from 5 years to 30 years (USFWS 2016). USFWS requires that permitted projects consult with USFWS every 5 years to ensure compliance with the permit and all eagle management requirements.

Clean Water Act

Section 404

Section 404 of the CWA requires project proponents to obtain a permit from USACE before performing any activity that involves any discharge of dredged or fill material into waters of the United States. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

Vegetated shallows that support eelgrass are also considered special aquatic sites under the Section 404(b)(1) guidelines of the CWA (Title 40, Section 230.43 of the Code of Federal Regulations [40 CFR 230.43]).

Section 402

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System program, which is administered by the U.S. Environmental Protection Agency (EPA). In California, the State Water Resources Control Board is authorized by EPA to oversee the program through the regional water quality control boards, in this case, the North Coast (Region 1) RWQCB.

Section 401

CWA Section 401(a)(1) specifies that any applicant for a federal license or permit to conduct any activity that may result in any discharge into waters of the United States shall provide the federal licensing or permitting agency with a certification that any such discharge will not violate state water quality standards. The RWQCBs administer the Section 401 program with the intent of prescribing measures for projects that are necessary to avoid, minimize, and mitigate adverse effects on water quality and ecosystems.

Plant Protection Act of 2000

Some nonnative plant species are categorized as “noxious weeds” by the federal and state governments because they are highly invasive and/or interfere with the management objectives of an area. Both the U.S. and California governments maintain lists of plants that are considered threats to the well-being of the state or the country. The Federal Noxious Weed Act of 1974, as amended (7 USC 2801 et seq.; 88 Stat. 2148) established a federal program to control the spread of noxious weeds. The act was superseded by the federal Plant Protection Act of 2000 (7 USC 7701 et seq.; 114 Stat. 438), which consolidated and modernized all major statutes pertaining to plant protection and quarantine (e.g., Federal Noxious Weed Act and Plant Quarantine Act). The Plant Protection Act revised the definition of a “noxious weed” originally defined in the Federal Noxious Weed Act to include “any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment.” Under the Plant Protection Act, the Secretary of Agriculture was given the authority to designate plants as “noxious weeds” by regulation, and to prohibit or restrict all such weeds from entering the United States or moving through interstate commerce. The Secretary was also given authority to inspect, seize, and destroy products and to quarantine areas, if necessary, to prevent the spread of such weeds. In addition, the Secretary was authorized to cooperate with other federal, state, and local agencies, farmers’ associations, and private individuals in measures to control, eradicate, or prevent or retard the spread of such weeds.

U.S. Fish and Wildlife Service Guidance

Guidance for the Development of Project-Specific Avian and Bat Protection Plans for Renewable Energy Facilities

USFWS issued a white paper on August 3, 2010, on the development of specific avian and bat protection plans or avian protection plans for renewable energy facilities. The white paper provides a template for content and discussion that should be considered for inclusion in avian and bat protection plans or avian protection plans for renewable energy projects while the national avian and bat protection plan guidance and template are under development. An avian and bat protection plan is a project-specific document that delineates a program designed to reduce risks to bats and birds associated with construction and operation of renewable energy facilities. The overall goal of any avian and bat protection plan should be to reduce or eliminate avian and bat mortality. The development and implementation of an avian and bat protection plan are voluntary actions; USFWS recommends that the development of an avian and bat protection plan or an avian protection plan begin at the earliest planning stages of a proposed project, but such a plan may be applied to projects that have progressed into later stages.

Land-Based Wind Energy Guidelines

On March 23, 2012, USFWS issued voluntary *Land Based Wind Energy Guidelines*, which replace interim voluntary guidance published by USFWS in 2003. The guidelines discuss various risks to species of concern—such as migratory birds, bats, bald and golden eagles—from wind energy projects, including collisions with wind turbines and associated infrastructure; loss and degradation of habitat from turbines and infrastructure; fragmentation of large habitat blocks into smaller segments that may not support sensitive species; displacement and behavioral changes; and indirect effects such as increased predator populations or introduction of invasive plants. The guidelines use a “tiered approach” for assessing potential adverse effects to species of concern and their habitats. The tiered approach provides an iterative decision making process quantifying the possible risks of proposed wind energy projects to species of concern and their habitats; and evaluating those risks to make siting, construction, and operation decisions.

Eagle Conservation Plan Guidance

The eagle conservation plan guidance issued by USFWS in April 2013 supplements the USFWS *Land Based Wind Energy Guidelines* and describes specific actions that are recommended to comply with the regulatory requirements in the BGEPA for an eagle take permit, as described in 50 CFR 22.26 and 22.27. This guidance provides a national framework for assessing and mitigating risk specific to eagles through development of eagle conservation plans and issuance of programmatic incidental takes of eagles at wind turbine facilities. Compliance with the eagle conservation plan guidance is voluntary and intended to help project operators in complying with regulatory requirements and avoiding the unintentional “take” of eagles at wind energy facilities, and will also assist the wind energy industry in providing the biological data needed to support permit applications for facilities that may pose a risk to eagles.

Coastal Zone Management Act

In October 1972, the U.S. Congress enacted 16 USC 1451–1464, which established a federal coastal zone management policy and created a federal coastal zone. The Coastal Zone Management Act of 1972 provides for the management of the nation’s coastal resources, including the Great Lakes. The goal of the law is to “preserve, protect, develop, and where possible, to restore or enhance the resources of the nation’s coastal zone,” and it is administered by the National Oceanic and Atmospheric Administration (NOAA). The Coastal Zone Management Act outlines three national programs: the National Coastal Zone Management Program, the National Estuarine Research Reserve System, and the Coastal and Estuarine Land Conservation Program.

National Marine Fisheries Service California Eelgrass Mitigation Policy

NMFS developed a specific policy to protect eelgrass habitat in California. The California Eelgrass Mitigation Policy and Implementing Guidelines note that eelgrass warrants a strong protection strategy because of the important biological, physical, and economic values it provides, as well as its importance to managed species under the Magnuson-Stevens Fishery Conservation and Management Act.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Endangered Species Act

Pursuant to the CESA, a permit from CDFW is required for projects that could result in take of a plant or animal species that is state-listed as threatened or endangered. The CESA defines “take” as an activity that would directly or indirectly kill an individual of a species. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2080.1 consistency determination or a Section 2081 incidental take permit.

California Fish and Game Code

Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species. CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species.

Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW:

- ▶ substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- ▶ deposit or dispose of debris, waste, or other material where it may pass into any river, stream, or lake.

A “stream” is defined as a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW’s jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

Sections 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

Section 3513—Protection of Migratory Birds

This section protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated by the federal MBTA, except as authorized in regulation adopted by the federal government under provisions of the MBTA.

Section 3800(a)—Protection of Nongame Birds

All birds occurring in California that are not resident game birds, migratory game birds, or fully protected birds are nongame birds. It is unlawful to take any nongame bird except as provided in Section 3800(a) of the California Fish and Game Code or in accordance with regulation of the California Fish and Game Commission or, when relating to mining operation, a mitigation plan approved by CDFW.

Section 4150—Protection of Nongame Mammals

Bats are nongame mammals under California Fish and Game Code Section 4150. As such, bats are protected from being taken or possessed without a permit (Fish and Game Code Section 4152); "take" means hunt, pursue, catch, capture, or kill, or attempt any of these (Section 86). The State of California may pursue civil damages for violation of these sections.

California Code of Regulations Title 14

Section 30.10—Protection of Eelgrass

Title 14, Section 30.10 of the California Code of Regulations (14 CCR) prohibits cutting or disturbing eelgrass (*Zostera*), surf grass (*Phyllospadix*), or sea palm (*Postelsia*).

Section 251.1—Protection of Birds and Mammals

14 CCR Section 251.1 protects mammals and birds from harassment, defined as intentional disruption of normal behavior, including but not limited to feeding, breeding, or sheltering.

Section 917.9(a)—Prevention of Sudden Oak Death Disease

Humboldt County is one of 14 counties in the state that has confirmed sudden oak death (*Phytophthora ramorum*) findings and is under state and federal quarantine for the disease. Quarantined areas are subject to regulations regarding the movement and use of susceptible plants. The County Agricultural Commissioner is tasked with enforcement of both California and federal regulations related to this disease. Unauthorized movement of plant material is prohibited, and the intent of mitigation measures is to prevent disease spread.

The California State Board of Forestry and Fire Protection has approved the establishment of a Zone of Infestation (ZOI) for Sudden Oak Death (SOD) covering all portions of the 14 infested counties identified in the CDFA Section 3700 regulations. Pursuant to 14 CCR 917.9(a), a Registered Professional Forester shall identify feasible measures to mitigate adverse infestation or infection impacts from timber operations (PCR 4527).

California Department of Food and Agriculture Section 3700

Before moving plant material that is susceptible to infection by Sudden Oak Death (SOD) disease outside of the county regulated area, the local County Agricultural Commissioner must be contacted for a permit, or the project

must have an active harvest plan that either includes SOD mitigations or has a currently valid, negative finding, “free-from” survey. USDA Forest Service and other agency firewood permits may serve as a permit or compliance agreement. Current California regulations require a permit for movement of any regulated article from the regulated area to anywhere outside of the county.

Current federal regulations require a permit (certificate) or treatment before moving any regulated plant material from an infested county to areas out of the state. Federal rules regulate soil movement from infested counties out of the state, but California does not currently regulate soil movement within the state. Currently there is no provision that allows moving any host material out-of-state under the federal regulations without removing all bark, or an approved treatment prior to shipment out-of-state. Even when bark is removed, a certificate must be obtained prior to shipment. State and Federal regulations apply when infected hosts are removed during timber operations.

Regulated host material cannot not leave the Zone of Infestation (ZOI) except as authorized through an approved harvest document with either a valid “free-from” survey or where mitigations have been addressed minimizing the spread of the pathogen. Mitigation measures must be discussed in harvest documents due to the declarations of Zone of Infestation by the Board of Forestry and Fire Protection Regulations even when host logs are not being moved offsite. A free-from survey is allowed only if the regulated articles are not moved interstate. The free-from survey is valid for a period of one year from the date of survey if no symptomatic hosts are found, or one year from the date of negative lab findings of symptomatic host samples.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan establishes numerical or narrative water quality objectives to protect established beneficial uses, which include wildlife, fisheries, and their habitats. Projects that affect wetlands or waters of the state, including groundwater, must meet discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

California Noxious Weed Laws and Regulations (California Food and Agriculture Code)

The California Department of Food and Agriculture (CDFA) is responsible for listing noxious weeds for the State of California and implementing various management and eradication efforts, as defined in four main sections of the California Food and Agriculture Code. Section 5004 defines a “noxious” weed as “any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, which the director, by regulation, designates to be a noxious weed.” Section 7201 et seq. gives authority to CDFA to consult with other state and federal agencies having responsibility for forest management and protection of native species to declare an area within the state as “weed free” and makes it unlawful to allow noxious weeds to enter these areas.

California Energy Commission and California Department of Fish and Game Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development

The voluntary guidelines described in the 2007 final report provide information to help reduce impacts on birds and bats from new development or repowering of wind energy projects in California. They include recommendations on preliminary screening of proposed wind energy project sites; pre-permitting study design

and methods; assessing direct, indirect, and cumulative impacts on birds and bats in accordance with federal and state laws; developing avoidance and minimization measures; establishing appropriate compensatory mitigation; and postconstruction operations monitoring, analysis, and reporting methods.

California Coastal Act and California Coastal Commission

As a result of the federal enactment of the Coastal Zone Management Act, coastal states were provided a policy and source of funding for the implementation of federal goals. California responded by enacting the California Coastal Zone Conservation Act of 1972 (Proposition 20) to set up temporary regional coastal commissions with permit authority and a directive to prepare a comprehensive coastal plan, followed by the California Coastal Act of 1976 as the permanent enacting law approved by the state legislature. The California Coastal Act provides for the transfer of permitting authority, with certain limitations reserved for the State of California, to local governments through adoption and certification of local coastal programs (LCPs) by the CCC.

The CCC is charged with the regulation of development in California's coastal zone as stipulated in the California Coastal Act. Development within the coastal zone generally may not commence until a coastal development permit has been issued by either the CCC or a local government. Coastal development permits are the regulatory mechanism by which proposed developments in the coastal zone are brought into compliance with the policies of Chapter 3 of the California Coastal Act.

In partnership with the CCC, local governments develop and use LCPs as planning tools to guide development in the coastal zone, in conformity with California Coastal Act goals and policies. An LCP specifies appropriate location, type, and scale of new or changed uses of land and water, and includes a land use plan and measures to implement the plan (such as zoning ordinances). Following adoption by a city council or county board of supervisors, an LCP is submitted to the CCC for review for consistency with California Coastal Act requirements. After the CCC certifies a local coastal program, most coastal development permit authority is delegated and coastal development permit applications are then reviewed and acted on by cities and counties.

The California Coastal Act requires that most development avoid and buffer wetland resources. The CCC's Wetlands Briefing Background Information Handout 3 regulations (CCR Title 14) establish a one-parameter definition that only requires evidence of a single parameter to establish wetland conditions, as defined below:

Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats. (14 CCR Section 13577)

3.5.2.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Humboldt County General Plan

The General Plan (Humboldt County 2017) provides overall guidance for biological resource conservation in Humboldt County. Chapter 10 of the General Plan includes policies that address preservation of natural

vegetation, fish and wildlife habitats, and aquatic resources. Section 10.3 contains the following goals and policies applicable to protection of biological resources:

- ▶ **Goal BR-G1: Threatened and Endangered Species.** Sufficient recovery of threatened and endangered species to support de-listing.
- ▶ **Goal BR-G2: Sensitive and Critical Habitat.** A mapped inventory of sensitive and critical habitat where biological resource protection policies apply.
- ▶ **Goal BR-G3: Benefits of Biological Resources.** Fish and wildlife habitats protected on a sustainable basis to generate long-term public, economic, and environmental benefits.
- **Policy BR-P1: Compatible Land Uses.** Areas containing sensitive habitats shall be planned and zoned for uses compatible with the long-term sustainability of the habitat. Discretionary land uses and building activity in proximity to sensitive habitats shall be conditioned or otherwise permitted to prevent significant degradation of sensitive habitat, to the extent feasible consistent with California Department of Fish and Wildlife guidelines or recovery strategies.
- **Policy BR-P2: Critical Habitat.** Discretionary projects which use federal permits or federal funds on private lands that have the potential to impact critical habitat shall be conditioned to avoid significant habitat modification or destruction consistent with federally adopted Habitat Recovery Plans or interim recovery strategies.
- **Policy BR-P4: Development within Stream Channels.** Development within stream channels shall be permitted when there is no lesser environmentally damaging feasible alternative, and where the best feasible mitigation measures have been provided to minimize adverse environmental effects. Development shall be limited to essential, non-disruptive projects as listed in Standard BR-S6 – Development within Stream Channels.
- **Policy BR-P5: Streamside Management Areas.** 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, along streams including intermittent streams that exhibit in-channel wetland characteristics and off-channel riparian vegetation.
- **Policy BR-P6: Development within Streamside Management Areas.** Development within Streamside Management Areas shall only be permitted where mitigation measures (Standards BR-S8 – Required Mitigation Measures, BR-S9 – Erosion Control, and BR-S10 – Development Standards for Wetlands) have been provided to minimize any adverse environmental effects, and shall be limited to uses as described in Standard BR-S7 – Development within Streamside Management Areas.
- **Policy BR-P7: Wetland Identification.** The presence of wetlands in the vicinity of a proposed project shall be determined during the review process for discretionary projects and for ministerial building and grading permit applications, when the proposed building development activity involves new construction or expansion of existing structures or grading activities. Wetland delineation by a qualified professional shall be required when wetland characterization and limits cannot be easily inventoried and identified by site inspection.

- **Policy BR-P8: Wetlands Banking.** The County supports the development of a wetlands banking system that minimizes potential conversion of prime agriculture lands to wetlands.
- **Policy BR-P9: Oak Woodlands.** Oak woodlands shall be conserved through the review and conditioning of discretionary projects to minimize avoidable impacts to functional capacity and aesthetics, consistent with state law.
- **Policy BR-P10: Invasive Plant Species.** The County shall cooperate with public and private efforts to manage and control noxious and exotic invasive plant species. The County shall recommend measures to minimize the introduction of noxious and exotic invasive plant species in landscaping, grading and major vegetation clearing activities.
- **Policy BR-P11: Biological Resource Maps.** Biological resource maps shall be consulted during the ministerial and discretionary permit review process in order to identify habitat concerns and to guide mitigation for discretionary projects that will reduce biological resource impacts to below levels of significance, consistent with CEQA.
- **Policy BR-P12: Agency Review.** The County shall request the California Department of Fish and Wildlife, as well as other appropriate trustee agencies and organizations, to review plans for development within Sensitive Habitat, including Streamside Management Areas. The County shall request NOAA Fisheries [NMFS] or U.S. Fish and Wildlife Service to review plans for development within critical habitat if the project includes federal permits or federal funding. Recommended mitigation measures to reduce impacts below levels of significance shall be considered during project approval, consistent with CEQA.
- **Policy BR-P13: Landmark Trees.** Establish a program to identify and protect landmark trees, including trees that exhibit notable characteristics in terms of their size, age, rarity, shape or location.

Humboldt County Streamside Management Ordinance and Streamside Management Areas

Aquatic resources are subject to Humboldt County Code Section 314-61.1, the Streamside Management Ordinance, which provides minimum standards pertaining to the use and development of land located within Streamside Management Areas (SMAs) and other wet areas such as natural ponds, springs, vernal pools, marshes, and wet meadows (exhibiting standing water yearlong or riparian vegetation). Humboldt County maintains SMAs to protect sensitive fish and wildlife habitats and to minimize erosion, runoff, and other conditions detrimental to water quality. In areas outside of Urban Development and Expansion Areas, the outer boundaries of SMAs are defined as 100 feet and 50 feet, measured as the horizontal distance from the stream transition line on either side of perennial streams and intermittent streams, respectively. SMAs can be expanded up to 200 feet where necessary and may be reduced or eliminated where the County determines that USGS mapping is inappropriate and/or it will not result in a significant adverse impact on fish, wildlife, riparian habitat, or soil stability. 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. With the exception of certain exemptions outlined in Subsection (d) of the Streamside Management Ordinance, all development within or affecting SMAs or other wet areas shall require a permit pursuant to an application for development within SMAs or other wet areas and processed as a special permit pursuant to the Humboldt County Zoning Regulations (Section 312-3.1.1 et seq.).

The SMAs are defined in the General Plan (BR-S5), which is more restrictive than the Streamside Management Area Ordinance; compliance with the General Plan ensures compliance with the less restrictive setbacks in the Streamside Management Area Ordinance. For areas not specifically mapped as SMAs, per General Plan BR-S5.B, the setbacks are 100 feet on either side of perennial streams and 50 feet on either side of intermittent streams. The setback is measured from the top of bank or the edge of riparian drip line, *whichever is greater*, but not to exceed 200 feet from the top of bank.

General Plan BR-S5.D allows for a reduction or elimination of the SMA based on specific factual findings, as indicated below:

D. The Streamside Management Area may be reduced or eliminated where the County determines, based on specific factual findings, that the mapping of the SMA is not accurate, there are no in-channel wetland characteristics or off-channel riparian vegetation, [or] the reduction will not significantly affect the biological resources of the SMA on the property. When the prescribed buffer would prohibit development of the site for the principal use for which it is designated, measures shall be applied that result in the least environmentally damaging feasible project.

Humboldt County Grading, Excavation, Erosion, and Sedimentation Control Ordinance

Except as exempted in Sections 331-12(D)(2) and 331-12(c)(3) of the Humboldt County Grading, Excavation, Erosion, and Sedimentation Control Ordinance, no person shall do any grading without first obtaining a grading permit from the building official. A separate permit shall be obtained for each site, and may cover both excavations and fills. In accordance with Section 331-12(H)(6), Erosion and Sedimentation Control, minimum erosion and sedimentation control standards shall apply to all projects requiring building, grading, and development permits, and County of Humboldt Public Works activities, to prevent sedimentation or damage to onsite and offsite property. These standards shall be incorporated into the project design and shall be adhered to during project construction. Section 331-12(H)(6), Subsection (c)(4) requires protection of watercourses and drainage inlets, and Subsection (c)(7) requires revegetation of cleared areas per the following provisions:

- (a) Apply temporary seeding and mulching to denuded areas prior to October 15 unless the project is conditioned otherwise.*
- (b) Establish a permanent vegetative cover on denuded areas not otherwise stabilized. Permanent vegetation ground cover must control soil erosion satisfactorily and survive severe weather conditions.*
- (c) Retain a vegetative barrier whenever possible around property boundaries.*
- (d) Use self-sustaining, non-invasive plants that require little or no maintenance and do not create an extreme fire hazard.*
- (e) Use native plant species whenever feasible.*

Local Coastal Program

The certified Humboldt County LCP consists of the Humboldt County Zoning Code Chapter 3, *Regulations that Apply in the Coastal Zone*, in concert with six regional local coastal plans:

- ▶ Eel River Area Local Coastal Plan (2007)
- ▶ Humboldt Bay Area Local Coastal Plan (2014)
- ▶ McKinleyville Area Local Coastal Plan (2007)
- ▶ North Coast Area Local Coastal Plan (2014)
- ▶ South Coast Area Local Coastal Plan (2014)
- ▶ Trinidad Area Local Coastal Plan (2007)

The Humboldt County LCP identifies land uses and standards by which development will be evaluated within the coastal zone, including specific policies and standards which govern zoning plan amendments, public works extensions, land divisions, and other development activities, as well as the generalized plan maps, including land use and resource protection.

The uses and standards of the Humboldt County LCP adopted by the County, and certified by the CCC, are in conformance with and satisfy the policies and requirements for coastal land use contained in the California Coastal Act of 1976 (Public Resources Code Section 30000 et seq.) and other related legislation. The California Coastal Act requires that all development within the coastal zone have a coastal development permit in addition to any other permit required for development by a state or local agency. In most cases, the coastal development permit is issued by the County. In some cases, specified types of development are exempt from the requirement for a coastal development permit. Exempt developments must still be in conformance with the LCP and applicable zoning, and all necessary county permits must be secured.

The Five Counties Salmon Conservation Program

The *Water Quality and Stream Habitat Protection Manual for County Road Maintenance in Northwestern California Watersheds* was adopted by the Humboldt County Board of Supervisors on July 6, 2010 (Sommarstrom et al. 2002). This document includes measures to protect water quality using best management practices during the design and operation of new road segments. A summary of the intent behind the manual is provided below.

- ▶ Impacts from point source and non-point source pollution are prevented or minimized, including discharges of sediment or other pollutants that constitute a threat to water quality. Road segments would be required to be designed and maintained in ways that minimize the potential for discharge of sediment through measures to reduce velocity of runoff, capture and detain stormwater from road systems to enable settling of transported sediments, and minimize direct delivery to nearby watercourses, to the greatest extent feasible.
- ▶ Road segments are hydrologically disconnected from surface water features to the greatest extent feasible.
- ▶ Design and construction of culverts, stream crossings, and related drainage features would be required to remove barriers to passage and use by adult and juvenile fish, amphibians, reptiles, and aquatic invertebrates.

Humboldt Bay Harbor Conservation and Recreation District's Humboldt Bay Management Plan

Biological resources are discussed in Chapter 5.0 of the Humboldt Bay Harbor Conservation and Recreation District's Humboldt Bay Management Plan, which addresses management programs and practices for the environmental resources covered by the plan. The policies in this chapter are arranged into the following categories:

- ▶ Maintaining Aquatic Ecosystem Functions (Policies CAE-1 through CAE-5)
- ▶ Aquatic Species Management (Policies CAS-1 through CAS-6)
- ▶ Humboldt Bay Ecosystem Management Program Elements (Policies CEP-1 through CEP-14)
- ▶ Public Involvement and Outreach (Policies CPE-1 through CPE-3)

Policy CAE-2 states that “The District shall require that uses of the freshwater, estuarine, and coastal environments under the District’s jurisdiction are carried out in the manner that will sustain the biological integrity of these freshwater, estuarine, and coastal ecosystems, and will maintain healthy populations of aquatic species adequate for long-term commercial, recreational, scientific, and educational purposes.”

Furthermore, Policy CAS-1: Maintain Biological Diversity and Important Habitats throughout Humboldt Bay Policy states: “The District shall, to the extent possible, maintain viable populations of native species in Humboldt Bay, distributed in appropriate habitats within the Bay, in a state that will maintain the ecological functions of the Humboldt Bay ecosystem.”

Humboldt Redwood Company Habitat Conservation Plan

The *Habitat Conservation Plan for the Properties of the Pacific Lumber Company, Scotia Pacific Holding Company, and Salmon Creek Corporation* (Humboldt Redwood Company HCP) is a habitat-based, multispecies conservation plan for minimizing and mitigating impacts on multiple species in Humboldt County from timber management activities, mining, or other extraction (HRC 1999). Most of the project site overlaps with Humboldt Redwood Company HCP lands (Figure 3.5-7). USFWS approved the HCP and issued incidental take permits (ITPs) on March 1, 1999, for take of federally listed species. The covered species under the HCP include the following federally listed threatened, candidate, and nonlisted species:

- ▶ Marbled murrelet
- ▶ Northern spotted owl
- ▶ Coho Salmon in the Southern Oregon/Northern California Coastal ESU
- ▶ Chinook Salmon in the California Coastal ESU
- ▶ Coastal Cutthroat Trout
- ▶ Steelhead in the Northern California DPS
- ▶ Southern torrent salamander
- ▶ Western tailed frog (*Ascaphus truei*)
- ▶ Red-legged frog (*Rana aurora*)
- ▶ Foothill yellow-legged frog (*Rana boylei*)
- ▶ Northwestern pond turtle (*Emys marmorata*)
- ▶ Bald eagle
- ▶ American peregrine falcon
- ▶ Western snowy plover

- ▶ Bank swallow
- ▶ Pacific fisher
- ▶ California red tree vole (*Arborimus pomus*)

The project applicant is not a permittee under the HCP, and the HCP does not cover development for private land within the project site.

The management objectives of the Humboldt Redwood Company HCP are the broad guiding principles for the operating conservation program and provide the rationale behind the minimization and mitigation strategies. The specific conservation measures are the measurable targets for achieving the management objectives. The measures together provide a framework for developing a monitoring program that measures progress toward meeting those objectives.

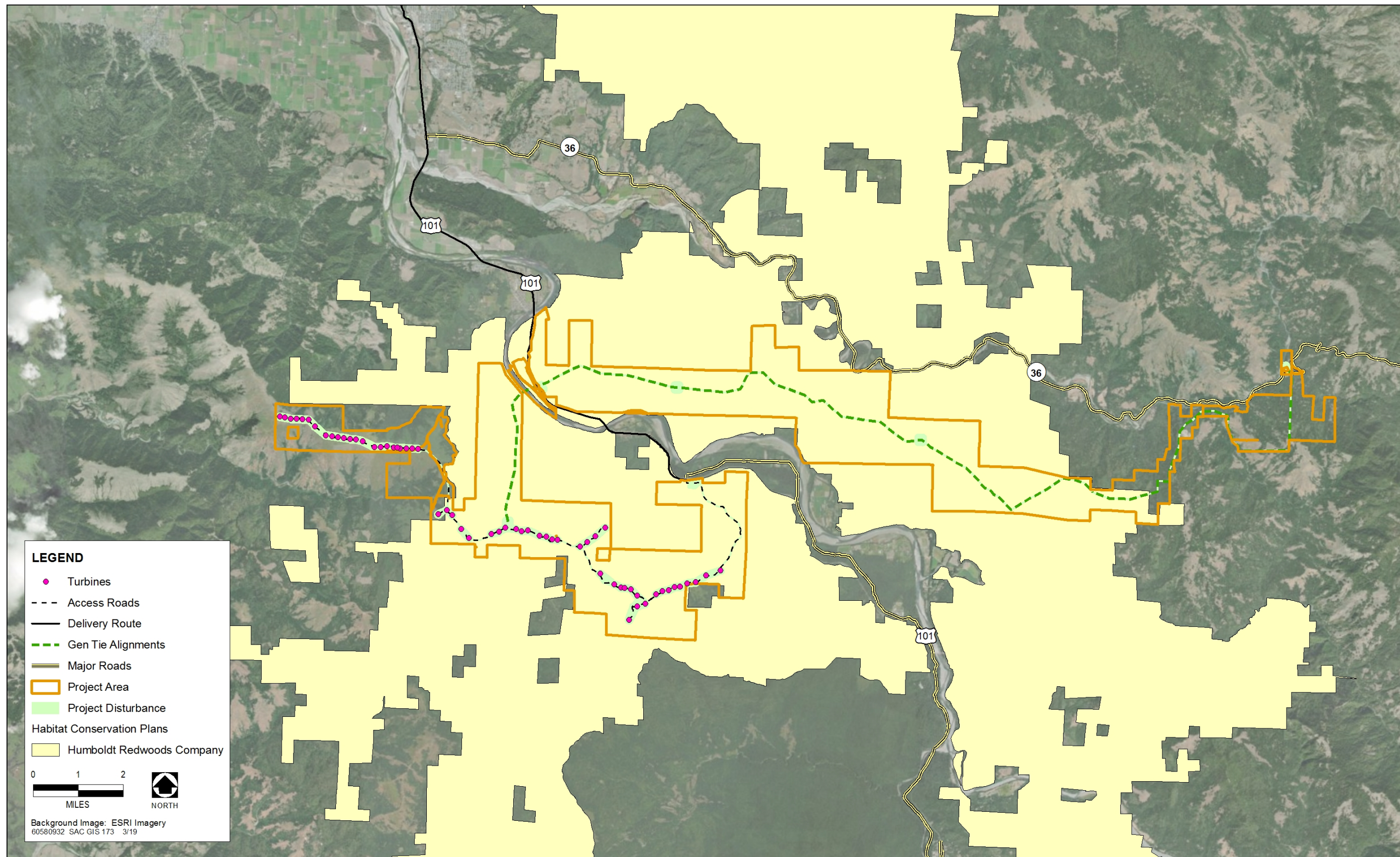
Sudden Oak Death Quarantine

The U.S. Department of Agriculture Animal and Plant Health Inspection Service and CDFA regulate the movement of host materials (e.g., leaves, firewood, logs) for the pathogenic fungi that causes sudden oak death (SOD) (*Phytophthora ramorum*) from quarantine areas. Humboldt County is listed by the Animal and Plant Health Inspection Service and CDFA as a quarantine area (7 CFR 301.92; 3 CCR Section 3700).

Since 1995, unusually large numbers of trees, primarily oaks (*Quercus* sp.), have died in coastal areas of California as a result of SOD. The first reports of SOD in Humboldt County date from 2002 when it was first discovered in California bay laurel trees. Mortality in tanoak was observed 2 years later in 2004. Infection of the pathogen that causes SOD has since spread over an estimated 5,547 thousand acres in Humboldt County (UCCE Humboldt 2019). Because the spores of *P. ramorum* are found in soil, water, and plant material, the biggest concerns with regard to the spread of SOD are the drafting of water, movement of soils, and movement of vegetation. The pathogen has been found in low levels at two locations outside of the project site: in the main stem of the Van Duzen River at Grizzly Creek, approximately 6.5 miles downstream of the Bridgeville Substation; and in the Eel River near Holmes, approximately 4 miles east of Monument Ridge (UCCE Humboldt 2019). Aerial surveys conducted by the U.S. Forest Service in 2014 for SOD-consistent tanoak mortality suggest pockets of mortality along the Van Duzen River near Bridgeville (UCCE Humboldt 2018). However, documented infection of tanoak trees has only occurred near the town of Weott, approximately 7 miles southeast of the biological study area (UCCE Humboldt 2019).

Humboldt County Weed Management Area

The HCWMA, a consortium of public agencies, nonprofit organizations, and private citizens, recognizes a number of nonnative invasive plants specific to Humboldt County. The mission of the HCWMA is for members to work cooperatively with willing landowners and managers to reduce the extent and threat of invasive weeds within their scope of authority to promote healthy agricultural and ecological ecosystems.



Source: CDFW BIOS; Stantec

Figure 3.5-7. Habitat Conservation Plan Lands in the Project Site Vicinity

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