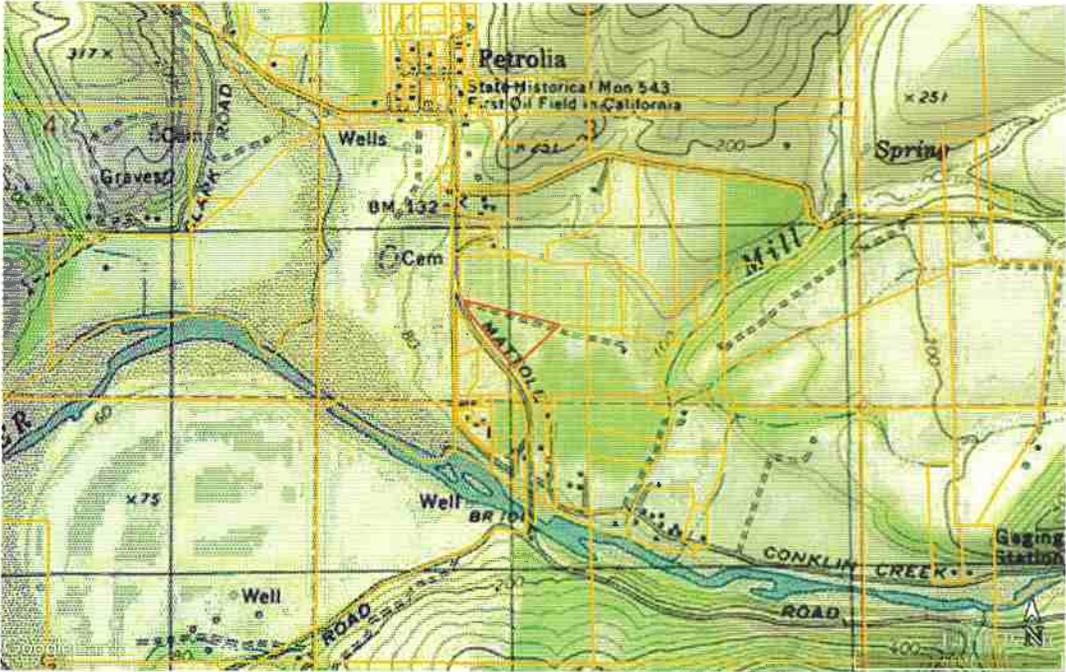




Biological Reconnaissance Survey Report

APN: 105-081-011
29615 Mattole Rd. Petrolia, CA 95558



Prepared for:
Ms. Evelyn Smith
01/10/2019



Emerald Hills Environmental LLC
920 Samoa Blvd., Suite 203
Arcata, CA 95521



Olofson Environmental, Inc.
1830 Embarcadero Cove, Suite 100
Oakland, CA 94606

List of Abbreviated Terms

CDFW California Department of Fish and Wildlife

CESA California Endangered Species Act

CEQA California Environmental Quality Act

CNDDDB California Natural Diversity Data Base

CNPS California Native Plant Society

DPS Distinct Population Segment

EFH Essential Fish Habitat

ESA Endangered Species Act

ESU Evolutionary Significant Unit

FMP Fishery Management Plans

LSA Lake and Streambed Alteration

MBTA Migratory Bird Treaty Act

MSA Magnuson-Stevens Fishery Conservation and Management Act

NMFS National Marine Fisheries Service

NOAA National Oceanic and Atmospheric Administration

USFWS United States Fish and Wildlife Service

1. Introduction

1.1 Project Location

The Project is located at the at 29615 Mattole Rd. Petrolia, CA 95558. The Study Area considered in this report includes parcel boundaries for APN 105-081-011 and the adjacent habitats. The parcel is zoned as Unclassified and designated as Rural Residential Agriculture under the current Humboldt County General Plan.

1.2 Project Description

The Operator is applying for 10,000 ft² of outdoor cultivation area. Cultivation is proposed to take place in 6 agriculture exempt hoop houses (Cultivation Areas 1-6); Cultivation Areas 2-5 will be 20'x100' (2,000 ft.2), Cultivation Areas 1 and 6 will be 20'x50' (1,000 ft.2). The four proposed 2,000 ft.2 hoop houses will account for 8,000 ft.2 of cultivation area, and the two 1,000 ft.2 hoop houses will account for 2,000 ft.2 of cultivation area, for a total of 10,000 ft.2 of cultivation area. Approximately 1,750 plants will be grown spaced 2 ft. from center in 30 gal. smart pots. Each hoop house will be designed with two 3 ft. pathways for plant inspection, maintenance, and irrigation.

The proposed cultivation area is sited on +/- 2% slope. The project will not require any grading, excavation, timber harvest, surface water diversion, sustained ambient noise level increase, or other means of significant habitat alteration. The project is located on relatively flat land (+/- 2%), is accessed via paved roads, private roads on the site are surfaced with gravel and well compacted with little to know signs of erosion and as such do not pose significant risk of sediment delivery/ runoff to surface waters.

No generator or any other significant noise source shall be used for cultivation activities. Cultivation activities shall not result in sustained increased noise levels relative to pre-existing ambient noise.

1.3 Scope of Report

This report provides a description of biological resources in the vicinity of the proposed project, a summary of relevant state and federal regulations related to the protection of biological and wetland resources, and factors to consider in evaluating the potential impacts of the proposed project activities. The biological resources were identified through a review of available background information. This report is not an official protocol-level survey for listed species and is based on information available at the time of the study. Further field investigations are required to determine habitat quality and presence of species in the Study Area.



Figure 1: Map of Study Area

2. Methods

Background literature and database searches were conducted to determine the potential occurrence of special-status species and biological communities within the Study Area based on presence of unique habitat features, proximity to reported occurrences, and geographic range of subject species. The search focused on reported occurrences for the Petrolia 7.5' USGS quadrangle where the project is located and the surrounding quads: Cape Mendocino, Capetown, Taylor Peak, Buckeye Mountain, Cooksie Creek, and Shubrick Peak. General references were also consulted to evaluate the potential for unique biological communities and special-status animal species. The review included, but was not limited to, the following sources:

- A Guide to Wildlife Habitats in California (CDFW 1988)
- A Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009)
- California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDDB) (CDFW 2018a)
- CNDDDB/Spotted Owl Viewer on-line database for the reported sightings of northern spotted owl (CDFW 2018b)
- CNPS Inventory of Rare and Endangered Vascular Plants of California on-line inventory (CNPS 2018)
- Calscape web application of CNPS
- CalFlora on-line database
- Jepson eFlora on-line database
- NRCS Web Soil Survey
- USFWS Information Planning and Consultation (IPaC) website (USFWS 2018)
- The National Marine Fisheries Service (NOAA 2018)

From these sources, an initial list of special-status species was considered for potential occurrence within the planning area. This list was then refined by analyzing the suitable microhabitat types required by each species as well as their historic and present ranges relative to the boundaries of the Study Area. Then, the potential for each species to occur within the Study Area was evaluated using the following criteria:

- **Unlikely:** Species or biological community is not expected to occur at the study area. Habitat is unsuitable and/or species is presumed extirpated.
- **Potentially Present:** Species or biological community may possibly occur at the Study Area. Further field investigations are required to assess habitat quality and/or species presence.

3. Environmental Setting

The Parcel is located approximately 1,300 ft. from Mill Creek, 1,200 ft. from the Mattole River, and 2,200 ft. from the North Fork Mattole River in the Lower Mattole Watershed. The parcel is approximately 5 miles inland from the ocean in Petrolia, an unincorporated community in Humboldt County. It is located below 100ft elevation. The habitat at the Study Area can be described as the urban interface of mixed-conifer forest.

An analysis of the soil types within the Study Area was conducted through the NRCS Web Soil Survey. The dominant soil type is Fluventic Haplustepts with 0 to 2 percent slopes. This soil type was formed in well-drained, loamy alluvial deposits.

3.1 Possible Habitats

The following is a list and description of all possible habitat types that can be on the property through a GIS analysis. GIS shapefiles of the habitat types were obtained from CDFW.

Annual Grassland (AGS)

Annual grassland habitat occurs throughout the state in patches of various sizes. They are described as habitats of open grassland that are composed primarily of annual plant species including wild oats, ripgut brome, red brome, and foxtail fescue. Species composition is related to precipitation and are found in moist lightly grazed areas. Annual grasslands occupy what was once pristine native grassland consisting of perennial bunchgrasses. Many wildlife species use annual grasslands for foraging. Common species include burrowing owl, coyote, and common garter snake.

Observation: It is likely that the site and cultivation area contains a mix of perennial and annual grasses. The grass is kept mowed and species identification was not possible during the EHE site visit.

Barren (BAR)

Barren habitat, defined by the permanent absence of vegetation, occurs throughout California at every elevation. Any habitat with <2% total vegetation cover by herbaceous, desert, or non-wildland species and <10% cover by tree or shrub species is defined this way. It includes rocky intertidal and subtidal zones, sandy beaches, mudflats, vertical river banks and canyon walls, exposed alpine rock, and even pavement and buildings. Because there is little or no vegetation, the structure of the substrate is the critical component for wildlife considerations. For example, rock ledges provide nesting habitat for cormorants and many hawks and falcons. Open gravel or sand is nesting habitat for some wading birds, gulls, terns, and nightjars. Vertical areas of friable soils are bank swallow nesting habitat, while rocky river canyon walls provide foraging habitat for some bats.

Observation: No BAR habitat was observed during EHE site visit.

Coastal Scrub (CSC)

Coastal Scrub occurs discontinuously in a narrow strip throughout the length of California with elevation ranges from sea level to about 900 m (3000 ft). Structure of the plant associations that comprise Coastal Scrub is typified by low to moderate-sized shrubs with mesophytic leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow root system

(Harrison et al. 1971, Bakker 1972). Though vegetation productivity is lower in Coastal Scrub than in adjacent chaparral habitats associated with it (Gray 1982), Coastal Scrub appears to support numbers of vertebrate species roughly equivalent to those in surrounding habitats (Stebbins 1978). Though not exclusively, the Federal and State listed endangered peregrine falcon, Morro Bay kangaroo rat and the Santa Cruz long-toed salamander all occur in Coastal Scrub. A subspecies of the black-tailed gnatcatcher, a California Department of Fish and Game Species of Special Concern (Remsen 1978), is found exclusively in southern sage scrub.

Observation: No CSC habitat was observed during EHE site visit.

Douglas Fir (DFR)

Douglas-fir habitat occurs in the north Coast Range from Sonoma County north to the Oregon border and in the Klamath Mountains of California and Oregon. This habitat usually occurs at elevations from 150 to 600 m (500 to 2000 ft) in the Coast Range and from 300 to 1200 m (1000 to 4000 ft) in the Klamath Mountains. It can occur at higher elevations if abundant precipitation is present (Sawyer 1980). This habitat forms a complex mosaic of forest expression due to the geologic, topographic, and successional variation typical within its range. Douglas Fir habitat supports abundant wildlife species including birds, amphibians, and small mammals. Bird species typical of this habitat include spotted owl, western flycatcher, chestnut-backed chickadee, golden-crowned kinglet, Hutton's vireo, solitary vireo, hermit warbler, and varied thrush. Among amphibians and reptiles, the distributions of northwestern salamander, Pacific giant salamander, Olympic salamander, Del Norte salamander, black salamander, clouded salamander, tailed frog, and northwestern garter snake are largely coincident with the distribution of Douglas Fir habitat. Typical mammals include fisher, deer mouse, dusky-footed woodrat western redbacked vole, creeping vole, Douglas' squirrel, Trowbridge's shrew, and shrew-mole.

Observation: A few conifer trees were observed during the EHE site visit but were not identified to species. While present, conifers were not dominant and DFR habitat is not likely to occur at anyplace on the site.

Fresh Emergent Wetland (FEW)

Fresh emergent wetland habitats are non-tidal waters characterized by emergent herbaceous hydrophytes that prosper in an anaerobic environment (Kramer 1988). They occur on virtually all exposures and slopes where a basin or depression that is saturated or at least periodically flooded is present. Fresh emergent wetlands can be found at all elevations in California but are typically below 2270 m (7500 ft). They are some of the most highly productive habitats in California, housing mammals, reptiles, amphibians, and more than 160 species of birds. The acreage of fresh emergent wetlands has decreased dramatically across California due to drainage and conversion to agriculture (Humboldt Regional Transportation Plan 2014).

Observation: No FEW habitat was observed during the EHE site visit.

Lacustrine (LAC)

Lacustrine habitats are found throughout California at all elevations. Lacustrine habitats are inland depressions or dammed riverine channels containing standing water (Cowardin 1979). This habitat can vary from large lakes to small ponds less than one hectare. This includes

permanent lacustrine systems that support fish to intermittent types. Phytoplankton is found in open water in lacustrine habitats and is responsible for primary productivity in this habitat. Lacustrine systems provide habitats for many fish as well as 18 mammals, 101 birds, 9 reptiles and 22 amphibians.

Observation: No LAC habitat was observed during the EHE site visit.

Montane Hardwood-Conifer (MHC)

Montane Hardwood-Conifer occurs throughout California and is somewhat continuous from Santa Cruz County northward through outer coast range into Oregon, usually some distance inland from the coast (Cheatham and Haller 1975). It can also be found on north facing slopes of the inner north coast ranges, the Santa Lucia Mountains, as well as small patches extending to Santa Barbara County (Cheatham and Haller 1975). Montane Hardwood-Conifer also occurs somewhat continuously down the Sierra Nevada to the transverse ranges. Elevations range from 300 to 10 m (1000 to 4000 ft) in the north to 605 to 1760 m (2000 to 6000 ft) in the south. Isolated patches of MHC can be found throughout the transverse and peninsular ranges of southern California. Geographically and biologically, Montane Hardwood-Conifer is transitional between dense coniferous forests and montane hardwood, mixed chaparral, or open woodlands and savannahs. Montane Hardwood-Conifer provides habitat for a variety of wildlife species. Moreover, mast crops are an important food source for many birds as well as mammals. Canopy cover and understory vegetation are variable which makes the habitat suitable for numerous species. In mesic areas, many amphibians are found in the detrital layer.

Observation: Sparse MHC Habitat was observed during the EHE site visit. This habitat exists on the northern western portion of the site, approximately 300 ft. from the cultivation area.

Montane Hardwood (MHW)

The Montane Hardwood habitat ranges throughout California mostly west of the Cascade-Sierra Nevada crest, ranging from 100 m (300 ft) near the Pacific Ocean to 2745 m (9000 ft) in southern California. Typically, MHW is composed of a pronounced hardwood tree layer with an infrequent and poorly developed shrub stratum and a sparse herbaceous layer. In the Coast Range and Klamath Mountains, canyon live oak often forms pure stands on steep canyon slopes and rocky ridge tops, replaced at higher elevations by huckleberry oak (Parker and Matyas 1981). Acorns are a major resource that MHW habitats provide to wildlife that includes scrub and Steller's jays, acorn woodpecker, western gray squirrel, wild turkey, mountain quail, band-tailed pigeon, California ground squirrel, dusky-footed woodrat, black bear, and mule deer. The forest floor provides habitat for many amphibians and reptiles, including Mount Lyell salamander, ensatina, relictual slender salamander, western fence lizard, and sagebrush lizard. Snakes include rubber boa, western rattlesnake, California mountain kingsnake, and sharp tailed snake.

Observation: Due to presence of conifers MHW habitat does not occur at the site.

Montane Riparian (MRI)

Montane riparian habitats are found in the Klamath, Coast and Cascade ranges and in the Sierra Nevada south to about Kern County, usually below 2440 m (8000 ft). Water may be permanent or ephemeral (Marcot 1979). MRI generally occurs as a dense grove of broad-leaved deciduous trees up to 30 m tall, with a sparse understory. West of the Klamath Mountains, black

cottonwood is a dominant hardwood, or it may be codominant with bigleaf maple. Along the immediate coast north of San Luis Obispo county, MRI consists mostly of red alder. Like other riparian habitats, MRI has exceptionally high value for many wildlife species (Thomas 1979, Marcot 1979, Sands 1977), providing water, thermal cover, migration corridors and diverse nesting and feeding opportunities for amphibians, reptiles, birds and mammals. The southern rubber boa and Sierra Nevada red fox are among the rare, threatened or endangered wildlife that use MRI habitats during their life cycles.

Observation: No MRI Habitat was observed during the EHE site visit. No surface water course, wetland, or wet area exists on the property. The closest watercourses to the study area are the Mattole River (1,200 ft.), Mill Creek (1,200 ft.), the North Fork Mattole River (2,200 ft).

Pasture (PAS)

Pasture vegetation is a mix of perennial grasses and legumes that normally provide 100 percent canopy closure. Height of vegetation varies, according to season and livestock stocking levels, from a few inches to two or more feet on fertile soils before grazing. Old or poorly drained pastures may have patches of weeds in excess of two feet in height. Pastures are used by a variety of wildlife depending upon geographic area and types of adjacent habitats. Ground-nesting birds, including waterfowl, pheasant, and sandhill crane, nest in pastures if adequate residual vegetation is present at the onset of the nesting season. Some of the highest pheasant counts by Department of Fish and Game biologists have been recorded in irrigated pastures in Stanislaus County. Flood irrigation of pastures provides feeding and roosting sites for many wetland-associated birds, including shorebirds, wading birds, gulls, waterfowl, and raptors. Antelope, deer, and elk also graze these pastures when they provide adequate, adjacent escape cover. The endangered Aleutian goose in Del Norte County and the Sacramento and San Joaquin valleys requires pastures that are sufficiently grazed to keep them low and open.

Observation: No PAS habitat was observed during the EHE site visit, grass at site re regularly mowed and does not reach a height to allow for canopy closure.

Perennial Grassland (PGS)

Perennial grassland habitat occurs along the California coast from Monterey County northward. Perennial grassland habitats are dominated by perennial grasses and forbs and can be variable depending upon the mix of plant species at a particular site. Species composition is determined by factors such as grazing which will change the vertical habitat structure found at a site. In Humboldt County, common species include California oatgrass, American dunegrass, and Kentucky bluegrass. Perennial grassland provides habitat for many species including small mammals including western harvest mouse and California vole. Perennial grasslands also provide feeding habitat for turkey, red-tailed hawk and western bluebird.

Observation: It is likely that the site and cultivation area contains a mix of perennial and annual grasses. The grass is kept mowed and species identification was not possible during the EHE site visit.

Riverine (RIV)

Riverine habitats occur throughout California - usually from sea level to 2438 m (8000 ft) - and include all wetlands and deepwater habitats within a channel that periodically or continuously contains moving water (Cowardin et al 1979). They often provide connectivity between two

bodies of standing water (Humboldt Regional Transportation Plan 2014). Healthy riverine systems support a variety of invertebrate species, including the nymphs of mayflies, caddisflies, and stoneflies (Grenfell 1988). Additionally, riverine systems provide important hunting, resting, and foraging habitat for waterfowl, insectivorous birds, bald eagles, and mammals including river otters.

Observations: No RIV Habitat exists at the site. Mattole River (1,200 ft.), Mill Creek (1,200 ft.), the North Fork Mattole River (2,200 ft) are the closest Riverine habitats.

Urban (URB)

The urban habitat occurs throughout California and is the result of modifying presettlement vegetation and introducing new species. The structure of urban vegetation varies, including tree groves with continuous canopy, street strips with variable tree spacing, lawns with and without shade trees, and shrub cover. Urban wildlife habitat is often a mixture of native and exotic species, both of which may provide valuable food or other resources. Monoculture is commonly observed within individual design units, however the overall mosaic may be more valuable as wildlife habitat than the individual units. Moving outward from the urban downtown area, through urban residential, to suburbia, there is a progression outward of decreasing development and increasing vegetative cover. Wildlife diversity also increases while species density decreases (Thomas and DeGraaf 1975) and proportionately greater numbers of native species occur.

Observation: Habitat in and around the site has been significantly modified from presettlement conditions and can be considered URB habitat. Vegetation at the site contains continuous canopy of native trees, species of grass at the site have not been identified but are likely non-native.

Valley Foothill Riparian (VRI)

Valley-foothill riparian habitats occur in the Central Valley as well as the foothills of the Sierra Nevada and Coast Ranges. Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. Valley foothill riparian are characterized by hot, dry summers and mild, wet winters. Dominant species in the canopy are cottonwood and valley oak. In the sub-canopy, white alder and Oregon ash dominate. California blackberry, poison oak, and poison-hemlock are a few species that dominate the understory. Valley foothill riparian habitats provide food, water, and migration corridors for wildlife. 147 species of birds have been recorded as nestors or winter visitors in valley foothill riparian habitats (Laymon 1985).

Observation: No VRI Habitat was observed during the EHE site visit. No surface water course, wetland, or wet area exists on the property. The closest watercourses to the study area are the Mattole River (1,200 ft.), Mill Creek (1,200 ft.), the North Fork Mattole River (2,200 ft).

Wet Meadow (WTM)

Wet Meadows occur throughout virtually every forest type of the Sierra and Pacific Northwest floristic provinces and as inclusions in the northern coastal prairie and sagebrush steppe (Barbour and Major 1977). Where conditions are favorable, Wet Meadows occur in the Transverse and Peninsular ranges of Southern California. In the Sierra Nevada and Cascade ranges, Wet Meadows usually occur above 1200 m (3940 ft) in the north and above 1800 m

(5900 ft) in the south. In the Klamath Mountains, Wet Meadows occur in the California red fir zone at 1400 m (4600 ft) to 1950 m (6400 ft) elevation. In late summer, small mammals may visit Wet Meadows that have dried. However, the meadows are generally too wet to provide suitable habitat for small mammals. Mule deer and elk may feed in Wet Meadows, seeking especially forbs and palatable grasses. Waterfowl, especially mallard ducks, frequent streams flowing through Wet Meadows. Yellow-headed and red-winged blackbirds occasionally nest in Wet Meadows with tall vegetation and with adequate water to discourage predators (Storer and Usinger 1963). The striped racer is the common snake of Wet Meadows in the Sierra Nevada and Cascade Range. Various frog species are abundant in Wet Meadows throughout California. Six species of trout (Brown, cutthroat, golden, rainbow, eastern brook, and Mackinaw) inhabit streams of the Sierra Nevada (Storer and Usinger 1963), and presumably may occur in perennial streams of wet meadows. In the southern Sierra Nevada, the golden trout is the important fish of meadow habitats at high elevations.

Observations: No WTM habitat was observed during the EHE site visit.

3.2 Observed or Likely Habitats

With consideration of the above list, a mix of the following habitats were observed by EHE staff or are likely to occur at the site:

- Annual Grassland
- Montane Hardwood-Conifer
- Perennial Grassland
- Urban

4. Biological Resources

Biological resources include special status species, habitats, and biological communities. The following biological resources were determined to potentially occur in the Study Area.

4.1 Special-Status Species

In California, special-status species include those plants and animals that are afforded legal protection under the federal and California Endangered Species Acts (ESA and CESA, respectively) and other regulations. Consideration of these species must be included during project evaluation in order to comply with CEQA and in consultation with state and federal resource agencies.

Special-status species of California include, but may not be limited to:

- Species listed or proposed for listing as threatened or endangered under the federal ESA.
- Species listed or proposed for listing as threatened or endangered under CESA.
- Species that are recognized as candidates for future listing by agencies with resource management responsibilities such as USFWS, NMFS, and CDFW.
- Species defined by CDFW as California Species of Special Concern.
- Species classified as Fully Protected by CDFW (California Fish and Game Code 3511).
- Plant species, subspecies, and varieties defined as rare or threatened by the California Native Plant Protection Act (California Fish and Game Code 1900).
- Plant species listed by the California Native Plant Society (CNPS) as List 1 and 2.
- Species that otherwise meet the definition of rare, threatened, or endangered pursuant to 15380 of the CEQA Guidelines.
- A Guide to Wildlife Habitats in California (CDFW 1988)

Special-status species that may potentially occur in the Study Area are identified below and in Appendix 1. A map of Spotted Owl critical habitat, observations and activity centers can be found in Appendix 2.

4.1.1 Plants and Mosses

Eighteen special-status plant species have been documented in the vicinity of the proposed project (Appendix 1). Based on site conditions, six of the eighteen species identified could potentially occur in the Study Area: Oregon coast paintbrush, Oregon polemonium, Pacific gilia, shore-leaved evax, Siskiyou checkerbloom, and wolf's evening primrose.

<i>Species Description</i>	<i>Project-Specific Recommendations</i>
Coastal Marsh Milk-vetch. <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	
Coastal marsh milk-vetch is a perennial herb that is native and endemic to California with a CNPS rating of 1B.2 (rare, threatened, or endangered in CA and elsewhere). Typically, it is associated with wetland-riparian zones, but has also been found in the Humboldt area on sandy flats and disturbed areas. This species is potentially present within the study area because suitable habitat is available within the quadrangle,	Based on site specific observation there is no riparian habitat on the parcel. This species will not be present.

<p>and the species has been observed downstream of the Study Area's abutting watershed.</p>	
<p>Howell's Montia. <i>Montia howellii</i></p>	
<p>Howell's montia is an annual herb that is native to California and western North America with a CNPS ranking of 2B.2 (rare, threatened, or endangered in CA; common elsewhere). Its community associations include redwood forest, freshwater wetlands, and wetland-riparian zones. It grows in small, low mats, and its inflorescence bears 2-6 small, white flowers. This plant is potentially present at the site because it has been observed in abutting quadrangles.</p>	<p>Based on site specific observation there is no redwood forests, wetlands, or riparian habitats on the parcel. This species will not be present.</p>
<p>Oregon Coast Paintbrush. <i>Castilleja litoralis</i></p>	
<p>The Oregon coast paintbrush is a perennial herb that is native to California and western North America with a CNPS rating of 2B.2 (rare, threatened, or endangered in CA, but common elsewhere). In the Humboldt area, this paintbrush has been found on rocky banks, grassy slopes, and coastal scrub habitat. This species is potentially present within the study area because suitable habitat is available within the quadrangle, and the species has been observed downstream of the Study Area's abutting watershed.</p>	<p>Based on sight specific observations there is no suitable habitat for this species at the site.</p>
<p>Leafy reed grass. <i>Calamagrostis foliosa</i></p>	
<p>Leafy reed grass is a perennial bunchgrass endemic to northern California, from Mendocino County northward, where it grows in the forests and scrub on the coastline below 3,500 ft. Due to its limited distribution it is included on CNPS list 4.2 (watch list, moderately threatened in California). Plants form a tuft of stems 30 to 60 centimeters tall with leaves mostly located around the base of the stems. The flower cluster is a dense, narrow sheaf of spikelets up to 12 centimeters long. The fruit of each spikelet is tipped with a bent awn. They have been recorded within 180m of the project site but most recently in 1951 (Calflora).</p>	<p>The site has been historically managed to preclude the establishment on tall grasses and shrubs. This species is not present at the site.</p>
<p>Oregon polemonium. <i>Polemonium carneum</i></p>	
<p>Oregon polemonium is a perennial herb that is native to California, is found outside of California, but is confined to western North American with CNPS ranking of 2B.2 - rare, threatened, or endangered in California but common elsewhere. This plant produces one or more stems that is nearly one meter in height. Their leaves are compound with up to 21 leaflets each that are sticky-haired lance-shaped. The inflorescence is an open, spreading cluster of 3 - 7 cm flowers each. The flowers are widely bell-shaped with a five-lobed corolla. These plants grow in lowlands and in prairies to moderate elevations in the mountains, and inhabits woody thickets, open and moist forests, and even roadsides. They are potentially present at the study area because suitable habitats are present onsite.</p>	<p>The site has been historically managed to preclude the establishment on tall grasses and shrubs. Based on activities described in the Cultivation and Operations Plan, suitable habitat will not be disturbed in a manner that precludes the establishment of this species.</p>

Pacific Gilia. <i>Gilia capitata</i> ssp. <i>Pacifica</i>	
Pacific gilia is an annual herb that is native to California, is also found outside of California, but is confined to western North America with CNPS ranking of 1B.2 - rare, threatened, or endangered in California and elsewhere. These bluish-purple flowered plants can be found on coastal bluff scrub, chaparral, coastal prairie, valley and foothill grasslands. These plants are potentially present at the study area because grassland habitats are present, and the site also falls within the Calscape plant range.	Based on activities described in the Cultivation and Operations Plan, suitable habitat will not be disturbed in a manner that precludes the establishment of this species.
Short-leaved evax. <i>Hesperovax sparsiflora</i> var. <i>Brevifolia</i>	
Short-leaved evax is an annual herb that is native to California and Oregon. It is both federally and state listed as endangered with CNPS ranking of 1B.2 - rare, threatened, or endangered in California and elsewhere. This woolly plant can reach a maximum height of 18 cm with oval to rounded or scoop-shaped leaves on short petioles and contains greenish or whitish disc florets. These plants can be found in coastal bluff scrub, coastal prairies and north coast coniferous forest. They are potentially present at the study area.	Based on activities described in the Cultivation and Operations Plan, suitable habitat will not be disturbed. Should future activities require work in or around coniferous forest a protocol level survey should be completed.
Siskiyou checkerbloom. <i>Sidalcea malviflora</i> ssp. <i>Patula</i>	
The Siskiyou checkerbloom is a rhizomatous, perennial herb that is native to California and has a CNPS ranking of 1B.2 (rare, threatened, or endangered in CA and elsewhere). The checkerbloom is typically associated with coastal bluff scrub, coastal prairie, and north coast coniferous forest; in the Humboldt area, it has also been observed in open grasslands and cattle pastures. This species is potentially present at the study area because suitable habitats are present adjacent to the property, and several observations have been recorded within the Petrolia quadrangle.	Based on activities described in the Cultivation and Operations Plan, suitable habitat will not be disturbed. Should future activities require work in or around coniferous forest a protocol level survey should be completed.
Wolf's Evening Primrose. <i>Oenothera wolfii</i>	
Wolf's evening primrose is a perennial herb that is native to California and Oregon and has a CNPS rating of 1B.1 (rare, threatened, or endangered in CA and elsewhere). It grows in coastal prairie, dunes, and coastal forest and woodland habitat. This primrose often hybridizes with species within the <i>Oenothera</i> genus. This species is potentially present within the study area because suitable habitats are in and adjacent to the property.	Based on activities described in the Cultivation and Operations Plan, suitable habitat will not be disturbed. Should future activities require work in or around woodland a protocol level survey should be completed.

4.1.2 Animals Species

Twenty-five special-status animal species have been documented in the vicinity of the proposed project (Appendix 1). Based on the conditions at the site, nine of the twenty-five special-status animal species may potentially occur in the Study Area. These special-status animal species are described below.

Reptiles and Amphibians

<i>Species Description</i>	<i>Project-Specific Recommendations</i>
Foothill Yellow Legged Frog. <i>Rana boylei</i>	
The foothill yellow legged frog is a medium sized frog (1.5-3.2 inches in length) and a California Species of Special Concern and State Candidate for Threatened Species. Their coloring is gray or brown and typically matches the surrounding background of its habitat. They are found in rocky streams, riparian habitats, or isolated pools. They are potentially present onsite because the site falls within the frog's historical range.	Based on sight specific observations there is no suitable habitat for this species at the site.
Pacific Tailed Frog. <i>Ascaphus truei</i>	
Pacific tailed frogs (1-2 inches in length) are endemic to the Pacific Northwest are a California Species of Special Concern. The male frogs have tails that are used for reproduction through internal fertilization. These frogs are colored similar to rocks found near streams. Pacific tailed frogs are potentially present on site because the site falls within IUCN habitat distribution and they were found in ponds and riparian habitat less than 1.5 miles away from the study area.	Based on sight specific observations there is no suitable habitat for this species at the site.
Red-bellied Newt. <i>Taricha rivularis</i>	
Red-bellied newt is a California Species of Special Concern. It is a medium-sized salamander (2.7 - 3.5 inches in length) with grainy skin and dark eyes. They are brownish black above and tomato red bellied. These salamanders are stream and river dweller and can also be found in coastal woodlands, redwood forests, and riparian habitats along the coast of California. They are potentially present at the study area because the site provides suitable habitat with coastal woodland.	Based on activities described in the Cultivation and Operations Plan, suitable habitat will not be disturbed. Should future activities require work in or around East Mill Creek, riparian habitat or surrounding woodlands a protocol level survey should be completed.
Western Pond Turtle. <i>Emys marmorata</i>	
Western pond turtles are the only native freshwater turtle along the West Coast and are listed as a California Species of Special Concern. In the Humboldt region, these turtles have been found in mixed oak-fir forests, open prairies, and riparian habitats. Western pond turtles are potentially present on site because the study area provides suitable habitat, and because they have been observed within 950m of the property boundary in the riparian corridor adjacent of the Mattole River.	Based on sight specific observations there is no suitable habitat for this species in the cultivation area and no impact is expected based on activities described in the Cultivation and Operations Plan.

Mammals

<i>Species Description</i>	<i>Project-Specific Recommendations</i>
American Badger. <i>Taxidea taxus</i>	
The American badger is listed as a Species of Special Concern in California. They are associated with many habitat types including lower montane coniferous forest, but tend to prefer open grasslands, fields, and pastures - probably due to their prey preference of ground squirrels and pocket gophers. American badgers are easily identifiable by their large foreclaws and distinctive white markings on their head. They are potentially present at the study area because the site provides suitable habitat, and because one was observed in the property's abutting watershed in an adjacent quadrangle.	Based on field observations and activities described in the Cultivation and Operations Plan, no likely den sites will be disturbed and impacts to hunting habitat will be inconsequential. No traps or rodenticides are used on site.

Birds

<i>Species Description</i>	<i>Project-Specific Recommendations</i>
Cooper's Hawk. <i>Accipiter cooperii</i>	
Cooper's hawk is a species on CDFW Watch List. It is a medium sized hawk with broad, rounded wings and a very long tail. Males are 14.6 - 15.3 inches in length on average while females are 14.6 - 17.7 inches in length on average. Adults are blue-gray above with warm reddish bars on the underparts and thick dark bands on the tail while juveniles are brown above and crisply streaked with brown on the upper breast. They can be found in wooded habitats from deep forests to backyards. They are potentially present at the study area because the site provides suitable habitat and it also falls within the IUCN distribution area.	Based on activities described in the Cultivation and Operations Plan, no likely nesting sites will be disturbed, impacts to hunting habitat will be inconsequential, and no sustained increase in noise levels will occur. No rodenticides are used on site. Should future activities require removal of trees a protocol level survey should be conducted.
Golden Eagle. <i>Aquila chrysaetos</i>.	
The golden eagle is a fully protected species in California. They inhabit a variety of habitats including forest, shrub lands, and grasslands. Golden eagles are potentially to be present in the study area because it provides suitable habitat. An observation was added to CNDDDB less than 4 miles away from the study area in an adjacent quadrangle. The study sight falls within IUCN distribution area.	Based on activities described in the Cultivation and Operations Plan, no likely nesting sites will be disturbed, impacts to hunting habitat will be inconsequential, and no sustained increase in noise levels will occur. No rodenticides are used on site. Should future activities require removal of trees a protocol level survey should be conducted.

<i>Species Description</i>	<i>Project-Specific Recommendations</i>
<p>Great Blue Heron. <i>Ardea herodias</i></p> <p>Great blue heron is a California Species of Special Concern. It is the largest of the North American herons with long legs, sinuous neck, and thick dagger-like bills. Great blue herons are blue-gray in color with a wide black stripe over the eye. They can be found in both fresh and saltwater habitats, from open coast, marshes, sloughs, riverbanks, and lakes to backyard goldfish ponds. They also forage in grasslands and agricultural fields. Great blue herons are potentially present at the study site because suitable habitats are present. They were also observed less than 4 miles away from the site in Petrolia Quad.</p>	<p>Based on activities described in the Cultivation and Operations Plan, no nesting sites or hunting habitat will be impacted. No rodenticides are used on site. Should future activities require removal of trees a protocol level survey should be conducted.</p>
<p>Northern Spotted Owl. <i>Strix occidentalis caurina</i></p> <p>The northern spotted owl is listed as threatened under the Endangered Species Act. They are found in northern California and require forests with dense canopy cover of old growth trees. They are medium-sized, brown, with dark eyes. They hunt small forest mammals by perching and pouncing on their prey. Mapped critical habitat for the spotted owl is approximately 1.15 miles away from the site.</p>	<p>Based on activities described in the Cultivation and Operations Plan, no likely nesting sites will be disturbed, impacts to hunting habitat will be inconsequential, and no sustained increase in noise levels will occur. No rodenticides are used on site. Should future activities require removal of trees a protocol level survey should be conducted.</p>

4.1.3 Other Protected Bird Species

All nesting native bird species are protected under both federal and state law. Federal regulations protect migratory birds, and their nests, eggs, and nestlings, under the Migratory Bird Treaty Act (MBTA). Birds and their nests are also protected under California Fish and Game Code 3503 and 3503.5.

Any project activities during the bird breeding season (typically February 1 to August 31) may require measures to protect native nesting birds, potentially including preconstruction surveys, avoidance measures, and monitoring.

4.2 Special-Status Habitats and Biological Communities

Sensitive biological communities and protected habitats that are potentially present in the Study Area are discussed below.

4.2.1 Designated Critical Habitat

Critical habitat is defined in Section 3(5)A of the federal ESA as the specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.

The Study Area is in proximity to the designated critical habitat for three special-status species: north coast steelhead, Chinook salmon, and northern spotted owl.

North Coast Steelhead Critical Habitat

The Mattole River, located in the Petrolia quad, is critical habitat for steelhead salmon. This habitat is important for rearing and spawning and is critical for the recovery of the species. The site is located approximately 1,200 ft. from the Mattole River North Coast Steelhead critical habitat.

Chinook Salmon Critical Habitat

The Mattole River, located in the Petrolia quad, is critical habitat for Chinook salmon. This habitat is important for rearing and spawning and is critical for the recovery of the species. The site is located approximately 1,200 ft. from the Mattole River Chinook salmon critical habitat.

Northern Spotted Owl Critical Habitat

Within the nine-quad area there is designated critical habitat for the northern spotted owl. Northern spotted owls live in forests characterized by dense canopy of mature and old growth trees. The site is located approximately 1.15 mi. (6,000 ft.) from mapped Northern Spotted Owl critical habitat.

Compliance with the ESA would require further evaluation to ensure that project activities would not adversely affect critical habitat for these species.

4.2.2 Essential Fish Habitat

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), regional fishery management councils establish Essential Fish Habitat (EFH) for federally managed species covered under regional Fishery Management Plans (FMP). EFH is defined as “those waters or substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (MSA Section 3). Impacts on EFH can result from the reduction in the quality and quantity of habitat, direct effects (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), and site-specific or habitat-wide impacts.

The Mattole River, which in the Petrolia quad, is an EFH for Chinook and coho salmon. Compliance with the MSA is accomplished through consultation with NMFS. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with NMFS regarding potentially adverse effects of their actions on EFH.

4.2.3 Sensitive Natural Communities

Sensitive Natural Communities are listed by CDFW in the CNDDDB due to the rarity of the community in the state or throughout its entire range (globally). Additionally, habitats identified by CDFW as Areas of Significant Biological Importance are included as a sensitive natural community. The Study Area contains a sensitive natural communities, Coastal Douglas Fir Western Hemlock Forest described below.

Coastal Douglas Fir Western Hemlock Forest

The Coastal Douglas Fir Western Hemlock Forest community is categorized by CNPS as a North Coast Coniferous Forest, which occurs on well-drained, moist sites in the wetter regions of the North Coast Ranges. While this community is prevalent in Oregon and Washington, it is confined to Northern California and is listed by the state as "Imperiled." Most of the low-elevation stands on industrial and private lands have been logged in the last 50 years, so stands are young. Older stands occur in Mendocino and Six Rivers national forests, particularly in the Yolla Bolly-Middle Eel and North Fork wilderness areas. Mixed stands of *Q. chrysolepis* occur in canyons of the Eel, Mad, and Russian rivers inland from the redwood belt (Jimerson et al. 1996). In addition to Douglas-fir and western hemlock, common species include madrone, redwood, and California bay laurel.

4.2.4 California Lakes and Streambeds

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code. The Lake and Streambed Alteration (LSA) Program reviews projects that would alter any river, stream, or lake and conditions projects to conserve existing fish and wildlife resources.

An LSA Notification will be submitted to CDFW for Cannabis Cultivation. Water is being sourced from a well, should a determination hydrologic connectivity to surface waters be made, the appropriate LSA Agreement should be obtained.

5. General Recommendations

The assessments and recommendations in this reconnaissance-level biological survey are based on desktop-level research, with a site visit. Site visits by qualified biologists have not been carried out at the time of preparation of this report. Biological surveys of the Study Area would be required to determine the presence of special-status species and resources, and would be unnecessary for protecting these resources under circumstances where habitat or environment was not going to be adversely affected by the cannabis operation. Specific recommendations and thoughts on the potentially-present species were included in Section 4. Following are additional general recommendations for work within potential special status species habitat.

Permitting Agencies

The proposed cultivation operation is not expected to impact sensitive biological communities, including wetland habitats and waterways, and thus should not require specific permits that are associated with such potential impacts. If the project is modified beyond the current area or activities such that it may impact sensitive biological communities, including wetland habitats or waterways, the project may require permit authorization from county, state, and/or federal regulatory agencies, including:

- Section 404 Nationwide Permit from the Corps of Engineers
- Section 1602 Streambed Alteration Agreement from the CDFW
- Section 7 consultation with USFWS for impacts to ESA listed species and their habitat
- Section 7 consultation with NMFS for impacts to fish species, critical habitat, and EFH
- Streamside Management Area Ordinance from Humboldt County

Protection of Watershed and Nearby Habitat

Cultivation areas should be in stable areas and have adequate vegetation buffers to prevent irrigation runoff. Efforts should be made to prevent groundwater contamination through irrigation runoff. Pesticides should be applied only when winds are low to minimize drift that could affect sensitive habitats. Consultation with CDFW and regulatory agencies will be required to be compliant with specific mitigation efforts to protect stream habitats.

Site Drainage

Erosion control measures should be implemented to avoid runoff into the nearby watershed as per the Site Management Plan being prepared by EHE. This includes implementing measures at cultivation sites and roads.

Pest Management Plan

A pest management plan should be developed to minimize the use of insecticides. This plan will rely on cultural and biological controls as the first means of defense against the proliferation of pest populations. No rodenticides should ever be used under any circumstance.

Hazardous Materials Storage and Usage

All fertilizers and pesticides should be stored in a weather and wildlife proof facility equipped with a means of secondary containment in the event of a spill. Storage and application of pesticides will meet label specifications. The Material Safety Data Sheets for all fertilizers and pesticides will be kept onsite. All precautions will be taken to avoid pesticide runoff, groundwater contamination, and drift that could negatively impact surrounding sensitive habitats.

6. References

- Airola, D. A., and R. H. Barrett. 1985. Foraging and habitat relationships of insect-gleaning birds in a Sierra Nevada mixed conifer forest. *Condor* 87:205-216.
- Arroyo-Cabrales, J. & Álvarez-Castañeda, S.T. 2017. *Corynorhinus townsendii*. The IUCN Red List of Threatened Species 2017: e.T17598A21976681. <http://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T17598A21976681.en>. Downloaded on 20 December 2018.
- Arroyo-Cabrales, J. & Álvarez-Castañeda, S.T. 2017. *Myotis evotis*. The IUCN Red List of Threatened Species 2017: e.T14157A22059133. <http://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T14157A22059133.en>. Downloaded on 20 December 2018.
- Bakker, E. 1972. An island called California. Univ. of California Press, Berkeley.
- Barbour, M. G., and J. Major eds. 1977. Terrestrial vegetation of California. John Wiley and Sons, New York.
- Barrett, R. H. 1980. Mammals of California oak habitats: management implications. Pages 275-291 In T. R. Plumb, tech. coord. Ecology, management, and utilization of California oaks. U.S. Dep. Agric., For. Serv. (Berkeley, Calif.), Gen. Tech. Rep. PSW-44.
- Calflora: Information on California plants for education, research and conservation. [web application]. 2018. Berkeley, California, <https://www.calflora.org/> (Accessed: December 20, 2018).
- California Department of Fish and Wildlife (CDFW), 1988. A Guide to Wildlife Habitats of California. California Fish and Game, Sacramento, CA.
- California Department of Fish and Wildlife (CDFW), 2018a. California Natural Diversity Database (CNDDDB) GIS Database. Biogeographic Data Branch, Sacramento, CA. Data dated December, 2018.
- California Department of Fish and Wildlife (CDFW). 2018b. BIOS – Biogeographic Information and Observation System, CNDDDB/Spotted Owl Viewer. California Department of Fish and Game. Sacramento, CA. Accessed at: <http://bios.dfg.ca.gov/>.
- California Native Plant Society (CNPS). 2018. Inventory of Rare and Endangered Plants (online edition, v7-11). California Native Plant Society. Sacramento, CA. Accessed at: <http://www.cnps.org/inventory>.
- Calscape: Web application of the California Native Plant Society, <https://calscape.org/>, (Accessed: December 20, 2018).
- Cheatham, N. H., and J. R. Haller. 1975. An annotated list of California habitat types. Univ. of California Natural Land and Water Reserve System, unpubl. manuscript
- Cowardin, L. M. V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Dep. Interior, Fish and Wildl. Serv. FWS/OBS - 79/31.

- Grenfell, W. E. 1988. California Wildlife Habitat Relationships System: Riverine. California Interagency Wildlife Task Group.
- Griffin, J. R., and W. B. Critchfield. 1972. The distribution of forest trees in California. U.S. Dep. Agric., For. Serv. (Berkeley, Calif), Res. Pap. PSW-82.
- Gordon, D. T. 1978. White and red fir cone production in northeastern California: report of a 16-year study. U.S. Dep. Agric., For. Serv. (Berkeley, Calif.), Res. Note PSW-330
- Gray, J. T. 1982. Community structure and productivity in Ceanothus chaparral and coastal sage scrub of southern California. Ecol. Monogr. 52:415-435.
- Hanes, T. L. 1977. California chaparral. Pages 417-469 In M. G. Barbour and J. Major, eds. Terrestrial vegetation of California. John Wiley and Sons, New York.
- Harrison, A., E. Small, and H. Mooney. 1971. Drought relationships and distribution of two Mediterranean climate Californian plant communities. Ecology 52:869-875.
- Humboldt Regional Transportation Plan 2013/2014 Update. 2014. Humboldt County Association of Governments, Eureka, CA.
- Holland, R. 1986. [Preliminary Descriptions of the Terrestrial Natural Communities of California \(PDF\)](#).
- Jepson Flora Project (eds.) 2018, Jepson eFlora, <http://ucjeps.berkeley.edu/eflora/>, accessed on (December 20, 2018).
- Jimerson, T.M., McGee, E.A., Jones, D.W., Svlich, R.J., Hotalen, E., DeNitto, G., Laurent, T., Tenpas, J.D., Smith, M.E., Hefner-McClelland, K., Mattison, J. 1996
- Kramer, G. 1988. California Wildlife Habitat Relationships System: Fresh Emergent Wetland. California Interagency Wildlife Task Group.
- Light, J. T. 1973. Effects of oxidant air pollution on the forest ecosystem of the San Bernardino Mountains. Pages B1-B14 In O.C. Taylor, ed. Oxidant air pollutant effects on a western coniferous forest ecosystem. Statewide Air Pollution Res. Center, Univ. of California, Riverside
- Laymon, S. A. 1984. Riparian bird community structure and dynamics: Dog Island, Red Bluff, California, Pages 587-597 In R. E. Warner and K. M. Hendrix, California riparian systems: ecology, conservation and productive management. Univ. of California Press, Berkeley.
- Marcot, B. G., ed. 1979. Introduction Vol. I. California wildlife/habitat relationships program north coast/ cascades zone. U.S. Dep. Agric., For. Serv., Six Rivers Nat'l. Forest, Eureka, Calif.
- Storer, T. I., and R. L. Usinger. 1963. Sierra Nevada natural history . . . an illustrated handbook. Univ. of California Press, Berkeley.
- McBride, J. R. 1988. California Wildlife Habitat Relationships System: Jeffrey Pine. California Interagency Wildlife Task Group.
- Moyle, P. B., 2002. Inland Fishes of California. University of California Press, Berkeley, California.
- Parker, I., and W. J. Matyas. 1981. CALVEG: a classification of Californian vegetation. U.S. Dep. Agric., For. Serv., Reg. Ecol. Group, San Francisco.

- Remsen, J. V. 1978. Bird species of special concern in California. Calif. Dep. Fish and Game, Wildl. Manage. Br. (Sacramento, Calif.), Adm. Rep. 78-1.
- Sands, A., ed. 1977. Riparian forests in California, their ecology and conservation. Univ. of California, Davis, Inst. Of Ecol. Publ. No. 15.
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, CA. 1300 pp.
- Sawyer, J. O. 1980. Douglas fir-tanoak-Pacific madrone 234. Pages 111-112 In F. H. Eyre, ed. Forest cover types of the United States and Canada. Soc. Amer. Foresters, Washington, D.C
- Stebbins, R. 1978. Appendix I: Use of habitats in the East Bay Regional Parks by free living vertebrate animals. In J. Nicole, ed. Vegetation management principles and policies for the East Bay Regional Park District East Bay Reg. Park Dist., Oakland, Calif
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at the following link: <https://websoilsurvey.sc.egov.usda.gov/>. Accessed December 21 2018.
- Thomas, J. W., tech ed. 1979. Wildlife habitats in managed forests in the Blue Mountains of Oregon and Washington. U.S. Dept. of Agric., For. Serv. Handbook No. 553.
- Thomas, J. W., and R. M. DeGraaf. 1975. Wildlife habitats in the city. Pages 48-68 In Proceedings, Wildlife in Urban Canada, Univ. of Guelph, Ontario.
- USFWS. 2018. IPaC Trust Resources Report. Available online: <https://ecos.fws.gov/ipac/>. Generated December 20, 2018.
- Verner, J. 1980a. Birds of California oak habitats: management implications. Pages 246- 264 In T. R. Plumb, tech. coord. Ecology, management, and utilization of California oaks. U.S. Dep. Agric., For. Serv. (Berkeley Calif.) Gen. Tech. Rep. PSW-44.
- Verner, J. 1988. California Wildlife Habitat Relationships System: Blue Oak-Foothill Pine. California Interagency Wildlife Task Group.

7. Appendix 1: Petrolia 9-Quad Special Status Species List

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
<i>Plants</i>				
Coastal marsh milk- vetch	<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	--/--/1B.2	Coastal dunes; Coastal scrub; Marsh & swamp; Wetland	Potentially present. Found in wetlands, including Mattole R. and estuary.
Oregon coast paintbrush	<i>Castilleja litoralis</i>	--/--/2B.2	Coastal bluff scrub; Coastal dunes; Coastal scrub	Potentially present in coastal scrub and dune habitat types, including within Mattole R. estuary. Within Calscape estimate of plant range.
Bluff wallflower	<i>Erysimum concinnum</i>	--/--/1B.2	Coastal bluff scrub; Coastal dunes; Coastal prairie	Unlikely. Prefers coastal cliffs and bluffs.
Pacific gilia	<i>Gilia capitata</i> ssp. <i>pacifica</i>	--/--/1B.2	Chaparral; Coastal bluff scrub; Coastal prairie; Valley & foothill grassland	Potentially present in coastal scrub and grassland habitat types. Within Calscape plant range.
Dark-eyed gilia	<i>Gilia millefoliata</i>	--/--/1B.2	Coastal dunes	Unlikely. Prefers coastal dune habitat.
Short-leaved evax	<i>Hesperevax sparsiflora</i> var. <i>brevifolia</i>	--/--/1B.2	Coastal bluff scrub; Coastal dunes; Coastal prairie	Potentially present in coastal scrub and prairie habitat types. Known at Mattole R. mouth bluffs.
Beach layia	<i>Layia carnosa</i>	FE/CE/1B.1	Coastal dunes; Coastal scrub	Unlikely. Prefers coastal dune habitat.
Howell's montia	<i>Montia howellii</i>	--/--/2B.2	Meadow & seep; North coast coniferous forest; Vernal pool; Wetland	Potentially present in redwood forest, montane coniferous forest, and wetland habitat types.
Wolf's evening- primrose	<i>Oenothera wolfii</i>	--/--/1B.1	Coastal bluff scrub; Coastal dunes; Coastal prairie	Potentially present in coastal scrub, site is within Calscape possible range for plant.

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
Seacoast ragwort	<i>Packera bolanderi</i> <i>var. bolanderi</i>	--/--/2B.2	Coastal scrub; North coast coniferous forest	Unlikely. Outside Calcscape estimated plant range, no known occurrences nearby.
Oregon polemonium	<i>Polemonium</i> <i>carneum</i>	--/--/2B.2	Coastal prairie; Coastal scrub; Lower montane coniferous forest	Potentially present in coastal scrub and lower montane coniferous habitat types.
Tracy's romanzoffia	<i>Romanzoffia</i> <i>tracyi</i>	--/--/2B.3	Coastal bluff scrub; Coastal scrub	Unlikely. Rocky ocean bluffs.
Siskiyou checkerbloom	<i>Sidalcea</i> <i>malviflora</i> ssp. <i>patula</i>	--/--/1B.2	Coastal bluff scrub; Coastal prairie; North coast coniferous forest	Potentially present in coastal scrub and prairie and coniferous forest habitats.
Leafy reed grass	<i>Calamagrostis</i> <i>foliosa</i>	--/Rare/4.2	Coastal bluff scrub; North coast coniferous forest	Potentially present in coastal scrub and coniferous forest habitat types. CNDDDB observations within 500 m of site.
Giant fawn lily	<i>Erythronium</i> <i>oregonum</i>	--/--/2B.2	Cismontane woodland; Meadow & seep; Ultramafic	Unlikely. Prefers higher elevations than found on site.
Coast fawn lily	<i>Erythronium</i> <i>revolutum</i>	--/--/2B.2	Bog & fen; Broadleaved upland forest; North coast coniferous forest; Wetland	Unlikely. Prefers higher elevations than found on site.
White-flowered rein orchid	<i>Piperia candida</i>	--/--/1B.2	Broadleaved upland forest; Lower montane coniferous forest; North coast coniferous forest; Ultramafic	Unlikely. Prefers higher elevations than found on site.
Hitchcock's blue- eyed grass	<i>Sisyrinchium</i> <i>hitchcockii</i>	--/--/1B.1	Cismontane woodland; Valley & foothill grassland	Unlikely. Prefers higher elevations than found on site, no records since 1938.
vertebrates				

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
Western bumble bee	<i>Bombus occidentalis</i>	S/--	Broadleaved upland forest; Cismontane woodland; Closed- cone coniferous forest; Coastal oak woodland; Lower montane coniferous forest; North coast coniferous forest; Upper montane coniferous forest	Unlikely to be present. Last recorded in Petrolia area in 1976.
Fish				
Pacific lamprey	<i>Entosphenus tridentatus</i>	--/SSC	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters; South coast flowing waters	Potentially present. Study area provides suitable habitat with creek flowing through. Observed less than 2.5 miles away from study area in adjacent quad.
Coho salmon - southern Oregon / northern California ESU	<i>Oncorhynchus kisutch pop. 2</i>	FT/CT	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters	Potentially present. Study area provides suitable habitat. Observed in river less than 1.5 miles away from study area in Petrolia Quad.
Steelhead - northern California DPS	<i>Oncorhynchus mykiss irideus pop. 16</i>	FT/--	Aquatic; Sacramento/San Joaquin flowing waters	Potentially present. Study area provides suitable habitat. Observed in river less than 1.5 miles away from study area in Petrolia Quad.
Summer-run steelhead trout	<i>Oncorhynchus mykiss irideus pop. 36</i>	--/SSC	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters	Potentially present. Study area provides suitable habitat. Observed in river less than 1.5 miles away from study area in Petrolia Quad.

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
<i>Amphibia reptiles</i>				
Pacific tailed frog	<i>Ascaphus truei</i>	--/SSC	Aquatic; Klamath/North coast flowing waters; Lower montane coniferous forest; North coast coniferous forest; Redwood; Riparian forest	Potentially present. Observed less than 1.5 miles away from study area in Petrolia Quad.
Northern red-legged frog	<i>Rana aurora</i>	--/SSC	Klamath/North coast flowing waters; Riparian forest; Riparian woodland	Potentially present. Observed in 2016 in adjacent quad. Study area provides suitable habitat with East Mill Creek flowing through study area.
Foothill yellow-legged frog	<i>Rana boylei</i>	--/CC	Aquatic; Chaparral; Cismontane woodland; Coastal scrub; Klamath/North coast flowing waters; Lower montane coniferous forest; Meadow & seep; Riparian forest; Riparian woodland; Sacramento/San Joaquin flowing waters	Potentially present. Study area provides suitable habitat. Observed in study area in the past.
Southern torrent salamander	<i>Rhyacotriton variegatus</i>	--/SSC	Lower montane coniferous forest; Oldgrowth; Redwood; Riparian forest	Potentially present. Study area provides suitable habitat. Observed in adjacent quad.
Red-bellied newt	<i>Taricha rivularis</i>	--/SSC	Broadleaved upland forest; North coast coniferous forest; Redwood; Riparian forest; Riparian woodland	Potentially present. Study area provides suitable habitat. Creek runs through study area.

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
Western pond turtle	<i>Emys marmorata</i>	--/SSC	Aquatic; Artificial flowing waters; Klamath/North coast flowing waters; Klamath/North coast standing waters; Marsh & swamp; Sacramento/San Joaquin flowing waters; Sacramento/San Joaquin standing waters; South coast flowing waters; South coast standing waters; Wetland	Potentially present. Study area provides suitable habitat. Observed 400 m away from study area in Petrolia Quad.
Birds				
Cooper's hawk	<i>Accipiter cooperii</i>	--/WL	Cismontane woodland; Riparian forest; Riparian woodland; Upper montane coniferous forest Broadleaved upland forest; Cismontane woodland; Coastal prairie; Great Basin grassland; Great Basin scrub; Lower montane coniferous forest; Pinon & juniper woodlands; Upper montane coniferous forest; Valley & foothill grassland	Potentially present. Study area provides suitable habitat. Falls within IUCN distribution area.
Golden eagle	<i>Aquila chrysaetos</i>	BCC/SSC		Potentially present. Study area provides suitable habitat. Observed less than 4 miles away from study area in adjacent quad. Falls within IUCN distribution area.
Great egret	<i>Ardea alba</i>	--/SSC	Brackish marsh; Estuary; Freshwater marsh; Marsh & swamp; Riparian forest; Wetland	Potentially present. Study area provides suitable habitat. Observed less than 4 miles away from study area in Petrolia Quad.
Great blue heron	<i>Ardea herodias</i>	--/SSC	Brackish marsh; Estuary; Freshwater marsh; Marsh & swamp; Riparian forest; Wetland	Potentially present. Study area provides suitable habitat. Observed less than 4 miles away from study area in Petrolia Quad.

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
Marbled murrelet	<i>Brachyramphus marmoratus</i>	FT/CE	Breeds in coniferous forests near coasts, nesting on large horizontal branches high up in trees. Winters at sea.	Unlikely. Study area is outside of designated critical habitat.
Western snowy plover	<i>Charadrius nivosus nivosus</i>	FT/SSC	Barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds.	Unlikely. No suitable habitat in site.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	FT/CE	Deciduous woodlands with gaps and clearings. Rare and restricted to cottonwood-dominated forests that line larger rivers running through arid country.	Unlikely. No suitable habitat in site.
Tufted puffin	<i>Fratercula cirrhata</i>	--/SSC	Protected deepwater coastal communities	Unlikely to be present. No suitable habitat in study area.
Double-crested cormorant	<i>Phalacrocorax auritus</i>	--/WL	Riparian forest; Riparian scrub; Riparian woodland	Potentially present. Study area provides suitable habitat.
Northern spotted owl	<i>Strix occidentalis caurina</i>	FT/CT	North coast coniferous forest, Subalpine coniferous forest, Lower montane coniferous forest; Oldgrowth	Potentially Present. Adjacent to established Critical Habitat.

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
Sonoma tree vole	<i>Arborimus pomo</i>	--/SSC	North coast coniferous forest; Oldgrowth; Redwood	Unlikely to be present. No suitable habitat in study area.
American badger	<i>Taxidea taxus</i>	--/SSC	Alkali marsh; Alkali playa; Alpine; Alpine dwarf scrub; Bog & fen; Brackish marsh; Broadleaved upland forest; Chaparral; Chenopod scrub; Cismontane woodland; Closed-cone coniferous forest; Coastal bluff scrub; Coastal dunes; Coastal prairie; Coastal scrub; Freshwater marsh; Interior dunes; lone formation; Limestone; Lower montane coniferous forest; Marsh & swamp; Meadow & seep; Montane dwarf scrub; North coast coniferous forest; Oldgrowth; Pavement plain; Redwood; Riparian forest; Riparian scrub; Riparian woodland; Salt marsh; Ultramafic; Upper montane coniferous forest; Valley & foothill grassland	Potentially present. Study area provides suitable habitat.
North American porcupine	<i>Erethizon dorsatum</i>	--/--	Broadleaved upland forest; Cismontane woodland; Closed- cone coniferous forest; Lower montane coniferous forest; North coast coniferous forest; Upper montane coniferous forest	Unlikely to be present. Last observed 1960.

Appendix 1: Petrolia 9-Quad Special Status Species List

Common name	Scientific Name	Status: Federal/ State/ Rare Plant Rank	Habitat Type(s)	Potential for Species Occurrence in Study Area
Fisher - West Coast DPS	<i>Pekania pennanti</i>	--/ CT	North coast coniferous forest; Oldgrowth; Riparian forest	Unlikely to be present. Last observed 1934.

LISTING STATUS CODES

Federal (USEWS):

FE = Listed as Endangered (in danger of extinction) by the federal government.

FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the federal government.

FC = Federal candidate species

MSFCMA = Magnuson-Stevens Fishery Conservation and Management Act

State (CDFW):

CE = Listed as Endangered by the State of California.

CT = Listed as Threatened by the State of California.

CC = Candidate for listing by the State of California

CSC = California Species of Special Concern.

FP = Fully Protected

California Native Plant Society (CNPS):

List 1A=Plants presumed extinct in California.

List 1B=Plants rare, Threatened, or Endangered in California and elsewhere.

List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere.

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

.1 – Seriously endangered in California.

.2 – Fairly endangered in California.

.3 – Not very endangered in California.

Other Listing Status:

**Special animal—listed on CDFW's Special Animals List

