

BIOLOGICAL SCOPING, WETLAND DELINEATION & BOTANICAL SURVEY REPORT

for

7720 North Highway 1
Little River, CA 95456
APN 121-280-15-00
Mendocino County

Property Owners:

Cally Dym
41425 Little Lake Road
Mendocino, CA 95460



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1. PROJECT SUMMARY

A biological survey and wetland delineation was conducted on parcel APN 121-280-15-00 by Wynn Coastal Planning & Biology (WCPB) to locate potential Environmentally Sensitive Habitat Areas (ESHAs) - special status plants and communities, wetlands and riparian areas, and special status animals and/or their habitats and to determine if they would be directly or indirectly impacted by the proposed development. The proposed development consists of:

The proposed development is to build a 5-unit inn, ancillary to the Little River Inn. This also includes associated infrastructure including a housekeeping building, welcome center, patio, paved driveway and parking, walkways and landscaping, ground and roof-mounted solar panels, connections to an existing well and water tanks, septic system with primary and secondary leach fields, and connection to utilities. Two 2,500-gallon water tanks and a propane-fired generator are proposed on the neighboring Van Damme parcel, also operated by Little River Inn. A portion of the existing gravel driveway may be removed and revegetated.

The study area (**Figure 1**) is located 3.3 miles south of Mendocino in the town of Little River, within the California Coastal Zone. Located on the headlands, the 5.25-acre property can be accessed from an existing driveway on the west side of Highway One.

WCPB staff biologists conducted floristic and ESHA surveys on April 21, May 20, July 6 & 8 of 2016, April 27 and December 14 of 2017, March 6 & 7, June 4 & 21 of 2018 and May 20, 2021, for a total of 26.15 person hours. Additional site visits to delineate resources and update observation data were conducted on February 10 and April 7, 2022. Four types of presumed ESHA were identified within the study area according to the definitions by the California Coastal Act (CCA) and Mendocino County Local Coastal Plan (LCP) (**Figure 2**).

Wetland ESHA – An approximately 2,500ft² **wetland**, delineated by WCPB, was present in the eastern portion of the subject parcel east of the existing driveway and a presumed **Coastal Act wetland** was observed off property in the southwestern corner of the study area.

Riparian ESHA - **Riparian** vegetation was present along the intermittent stream to the north of the parcel.

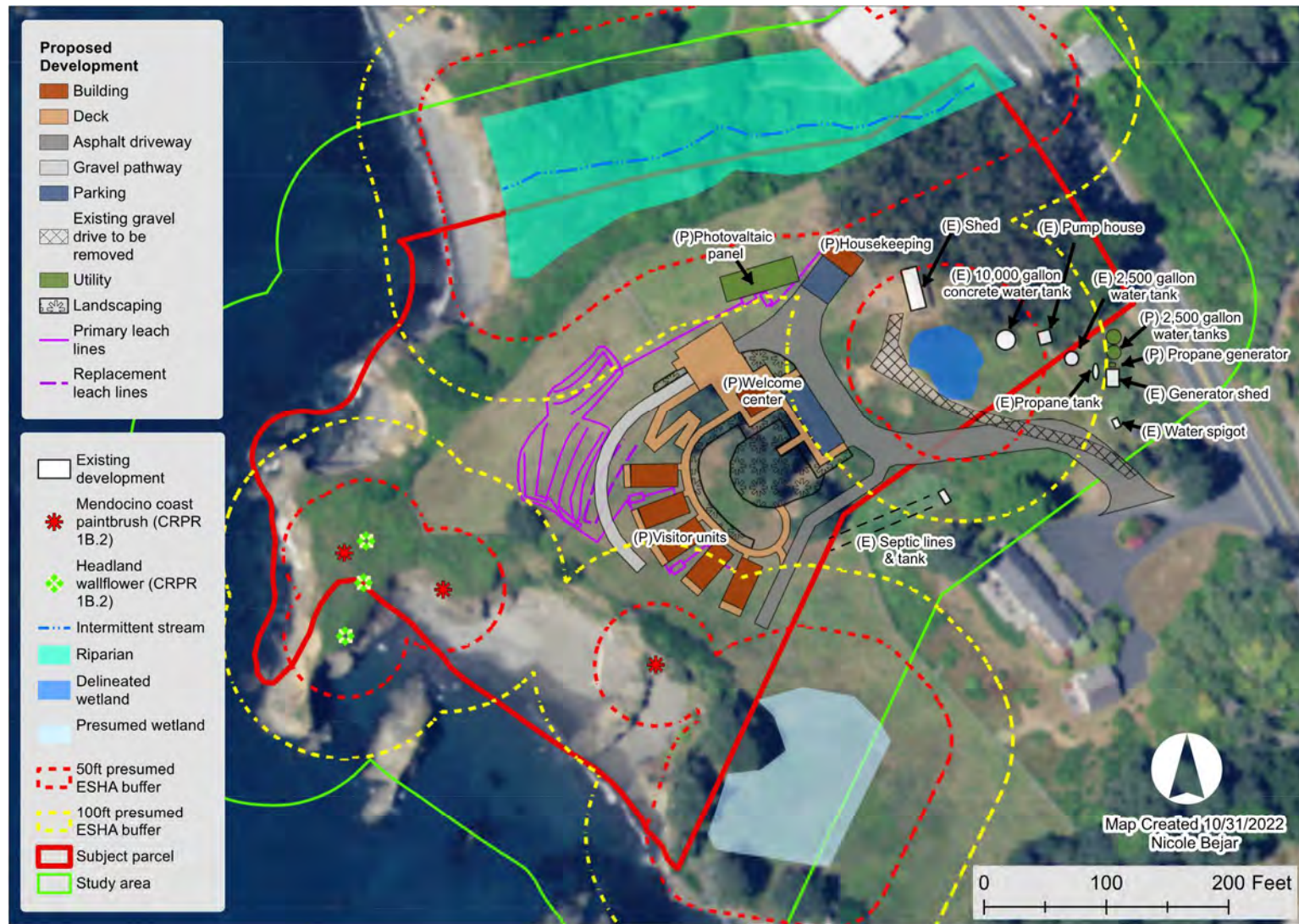
Stream ESHA – An **intermittent stream** runs along the northern property line from under Highway One to the Pacific Ocean.

Special Status Plant ESHA - Two species of special status plants were identified on the property: **Mendocino coast paintbrush** (*Castilleja mendocinensis* CRPR 1B.2) and **headland wallflower** (*Erysimum concinnum* CRPR 1B.2).

This analysis has been performed by WCPB, and is the culmination of our professional opinion, research, and data collection. The County of Mendocino (County), California Department of Fish and Wildlife (CDFW), and U.S. Fish and Wildlife Service (USFWS) should also be consulted regarding this project to obtain all necessary permits and obtain their concurrence with our findings and recommendations, and to make recommendations of their own, including concurrence of the boundaries of the sensitive areas and appropriate avoidance and protective measures.



Figure 1. Location of Dym parcel APN 121-280-15-00.



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Development & Presumed ESHA Map

Figure 2. Presumed Environmentally Sensitive Habitat Areas (ESHAs) identified in the study area, 50 and 100ft buffers, and proposed and existing development.

2. PROJECT DESCRIPTION

The proposed development is to build a 5-unit inn, ancillary to the Little River Inn. This also includes associated infrastructure including a housekeeping building, welcome center, patio, paved driveway and parking, walkways and landscaping, ground and roof-mounted solar panels, connections to an existing well and water tanks, septic system with primary and secondary leach fields, and connection to utilities. Two 2,500-gallon water tanks and a propane-fired generator are proposed on the neighboring Van Damme parcel, also operated by Little River Inn. A portion of the existing gravel driveway may be removed and revegetated. **Figure 2** shows the footprint of the proposed development.

3. STUDY AREA DESCRIPTION

3.1. General Site Description

The parcel is 5.25 acres in size and is located on a bluff top on the western side of the highway in the town of Little River. The property is located on a large terrace with an elevation of about 65 feet. A large mound with Bishop pine trees growing on top of it is present in the center of the property.

3.2. Land-Use History

There is a small barn and a few livestock paddocks and livestock fencing currently on the property (**Figure 3**). During WCPB's 2021 and 2022 site visits the paddocks were being used for goats. A T-Sheet map produced in 1909 (**Figure 4**) shows that the parcel was developed with presumably livestock fencing and a small building along the bluff edge. The Little River school house was across the street and the surrounding lands were used for cultivation. Little River was a bustling logging town in 1909 with a larger population then, than current times. When reviewing Google Earth, past imagery from 1998 shows that the parcel has stayed relatively the same since that time (**Figure 5**). The concrete water storage container and fencing is apparent in the photo and the fenced-in area was mowed and maintained like it is presently. The tree canopy of the Eucalyptus groves and Bishop pine trees has grown in size over the years.



Figure 3. Photo of paddock and small barn at the parcel.

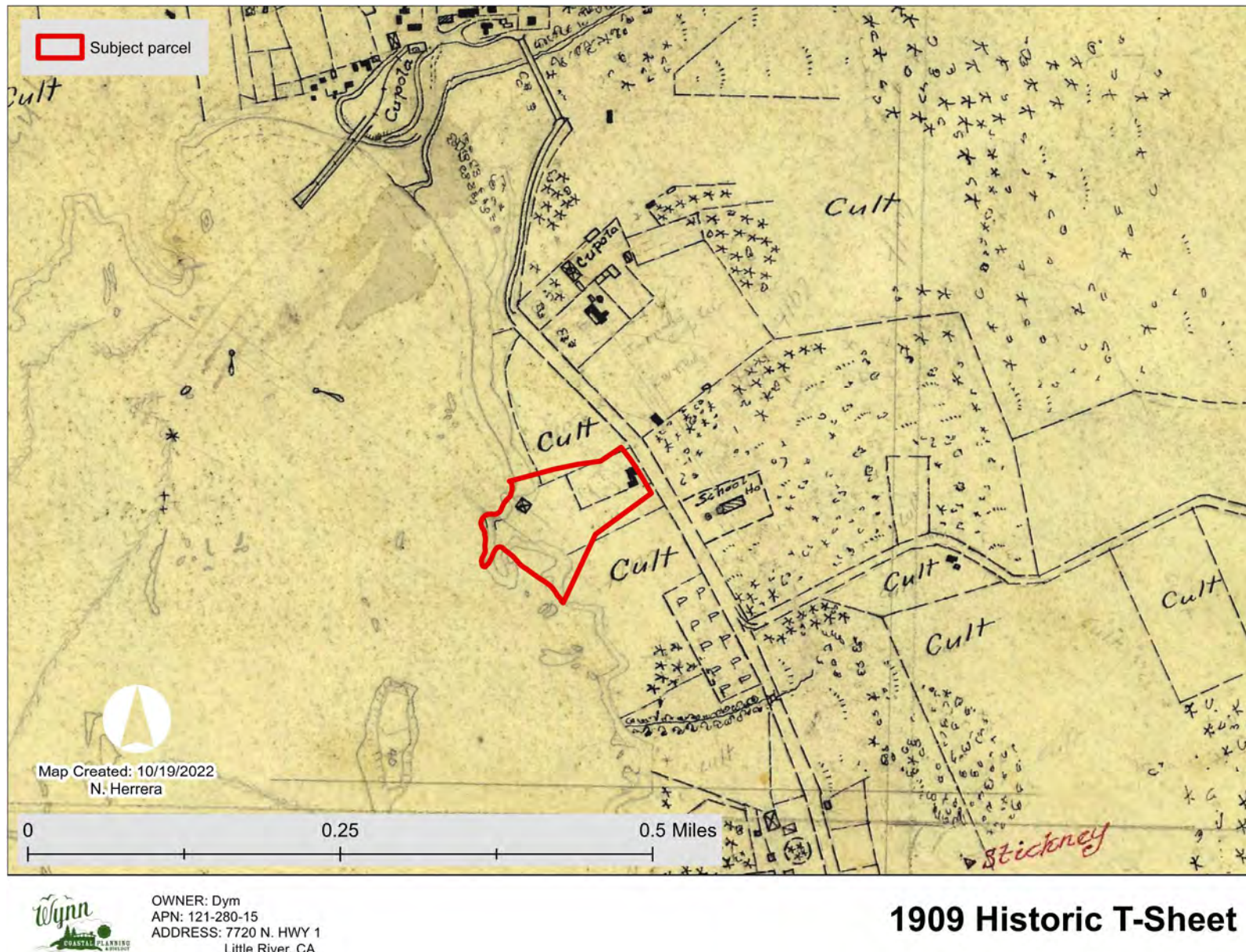


Figure 4. 1909 Historic T-sheets map with parcel boundary roughly overlaid.

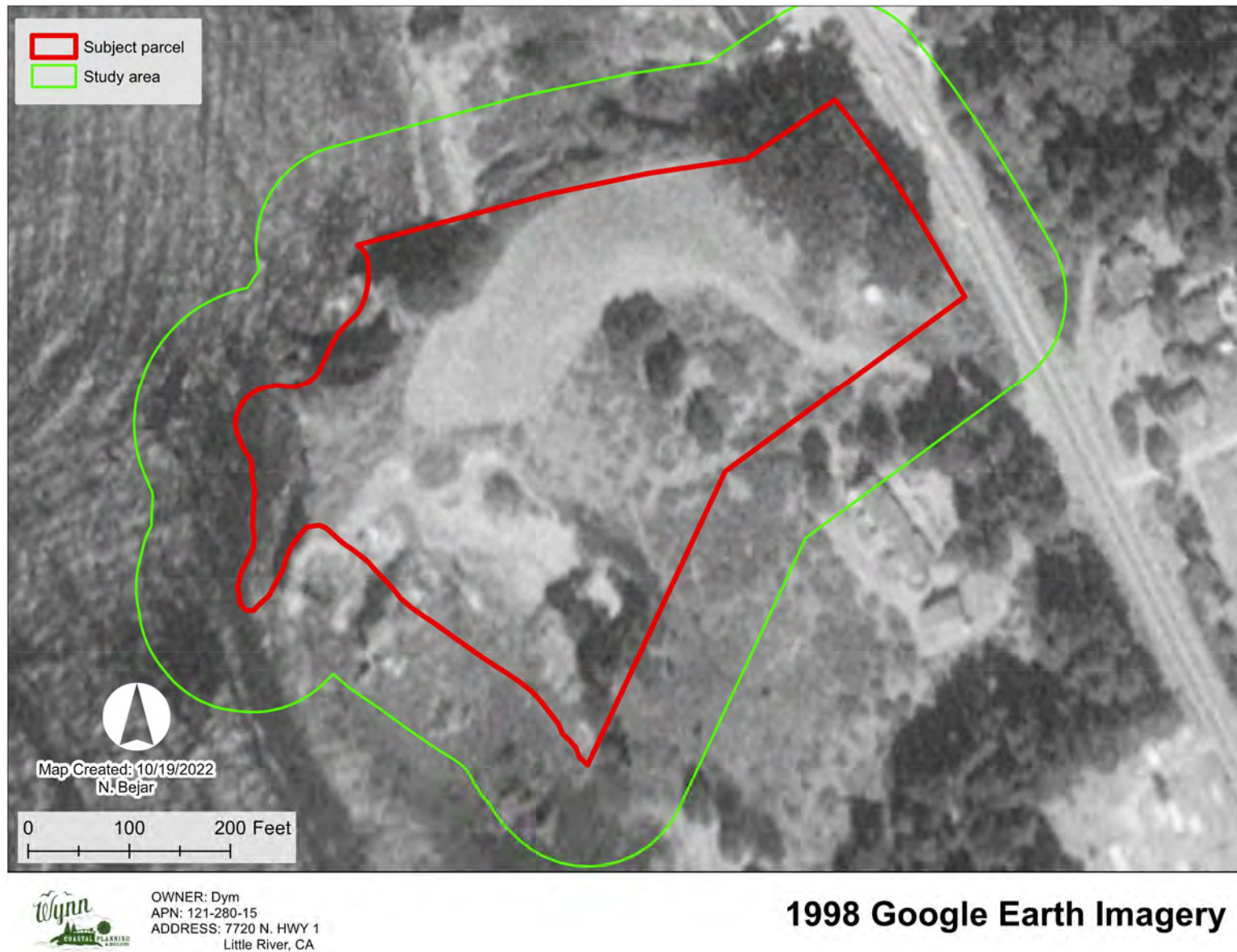


Figure 5. Map of study area with 1998 aerial photo of the subject parcel and study area roughly overlaid.

3.3. Topography and Soils

The elevation of the study area is about 65 feet above sea level. Two types of soil have been mapped by the Natural Resource Conservation Service in the study area: Bruhel-Shinglemill complex, 2 to 15% slopes and Cabrillo-Heeser complex, 0 to 5% slopes. Bruhel-Shinglemill complex, 2 to 15% slopes, is found on marine terraces and is listed on the hydric soils list due to the inclusion of 25% Shinglemill, 5% Flumeville, and 5% Tropaquepts soils within the complex. Cabrillo-Heeser complex, 0 to 5% slopes, is a soil with slow permeability and is listed on the hydric soils list due to the inclusion of Tropaquepts soils, which make up ~3% of the soil complex. According to the NRCS mapping results, both of the soil types within the study area meet hydric soil criteria (USDA Natural Resource Conservation Service, 2001; **Appendix A**). It should be noted that when a given soil is listed on the National Hydric Soils List as a hydric soil, that does not necessarily mean a wetland is present. Soil complexes are mapped at a coarse resolution and contain a number of components, any one of which may or may not be hydric, and which may or may not be present in the particular mapped location.

3.4. Climate and Hydrology

The Mendocino Coast has a Mediterranean climate with average annual precipitation of 40.24 inches (WRCC, Station Fort Bragg 5N, average for years 1895-2016), with the majority of rain occurring in winter months (November through March).

The USFWS National Wetlands Inventory was consulted and showed a freshwater emergent wetland and a freshwater forested/shrub wetland in the small ravine on the northern side of the property which is referred to as a riparian area for the purposes of this report. The western edge of the parcel is adjacent to an estuarine and marine wetland as the property borders the Pacific Ocean (**Appendix B**). Ground surveys and a wetland delineation revealed an Army Corps of Engineers wetland on the eastern portion of the parcel just east of the existing road and a presumed Coastal Act wetland just off the property in the southwestern corner of the study area. The eastern wetland was delineated following the US Army Corp of Engineers (ACOE) methodology for: Western Mountains, Valleys, and Coast Region (Version 2.0) and the western wetland is presumed based on the limits of hydrophytic vegetation observed onsite.

3.5. Vegetation and Natural Communities

The majority of the parcel is vegetated with non-native invasive grassland and native coyote brush scrub habitat (**Figure 6**). The coyote brush scrub habitat extends to the bluff edge transitioning from a mosaic of dominant coyote brush, non-native grass, blackberry, and poison oak to a mosaic of dominant coyote brush, blue blossom (*Ceanothus thyrsiflorus*) and coastal silk tassel (*Garrya elliptica*) at the bluff edge. In the center of the parcel are several established bishop pine trees. Adjacent and to the east of the bishop pine trees are *Rubus ursinus* brambles and a small French broom shrubland. A riparian area borders the northern edge of the parcel with a large stand of eucalyptus in the north eastern corner. At the end of the driveway a patch of spreading rush (*Juncus patens*) is present. Along the bluff edge at various locations are two special status plants – Mendocino paintbrush (*Castilleja mendocinensis* CRPR 1B.2) and headland wallflower (*Erysimum concinnum* CRPR 1B2).



Figure 6. Plant communities and vegetation map.



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3.6. Adjacent Lands

Lands surrounding the study area include residential development, Little River market and gas station, post office, a restaurant, visitor accommodation units (Little River Inn), and undeveloped land.

3.7. Existing Development

Fencing is present throughout the property creating livestock paddocks. A well is present near the eastern side of the parcel along with water tanks. A driveway extends from Highway One into the parcel with a small turnaround area. Under the canopy of the eucalyptus trees is an old livestock shed (**Figure 3**). Several other outbuildings also exist on the property.

4. SURVEY METHODOLOGY

4.1. Scoping Tables

Scoping tables were created for the special-status plant species and wildlife with the potential to occur in the study area by reviewing the most up-to-date species lists for the California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDDB) and the California Native Plant Society (CNPS).

For purposes of this evaluation, special-status plant species are vascular plants that are (1) designated as rare, threatened, or endangered by the state or federal governments; or (2) are proposed for rare, threatened, or endangered status; and/or (3) are state or federal candidate species, and/or (4) considered species of concern by the USFWS and/or (5) are included on the California Rare Plant Rank (CRPR) List 1A, 1B, & 2.

Maps were created using the California Natural Diversity Database CNDDDB for records within 1 mile of the study area (**Figure 7 and Figure 8**). The CNDDDB is a database consisting of historical observations of special-status plant species, wildlife species, and natural plant communities. CNDDDB was used to help compile a list of special status plants and animals with potential to occur in the study area. This list was not limited to species presented in the maps, it includes all species indicated by a search of all quads with similar geology, habitats, and vegetation to those found in the project area. Because the CNDDDB is limited to reported sightings, it is not a comprehensive list of plant species that may occur in a particular area. However, it is useful in refining the list of special-status plant species that have the potential to occur on a particular site.

A database search was performed using the CNPS *Electronic Inventory*, which allows users to query the *Inventory of Rare and Endangered Plants of California* using a set of search criteria (e.g. quad name, habitat type). A target list of special-status plant species with the potential to occur on the site was developed through interpretation of the CNDDDB and CNPS query results. The biological scoping tables with special status resources potential occurrences in the study area are presented in **Appendix C: Tables 1, 2, and 3**. While directed by query results, surveys were not restricted only to those species indicated by this literature review. Field surveys and subsequent reporting were comprehensive and floristic in nature.

Additional information, (e.g. morphological characteristics, range, habitat and bloom period) was collected for each of the special-status plant species that had the potential to occur within the study area. WCPB staff botanists reviewed these characteristics for each of the plants on the target list prior to initiating fieldwork.

The botanical survey of the study area was conducted primarily adhering to the protocol described by the California Department of Fish and Wildlife in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018).

Additional database review was conducted to assess the potential for wetlands to occur in the area prior to field work. Aerial photography was assessed for features with “wet” characteristics and the

Inventory of National Wetlands database was viewed with the subject parcel boundaries to see if any predetermined wetlands occur in the study area.

4.2. Field Surveys

WCPB staff biologists conducted surveys on April 21, May 20, July 6 & 8 of 2016, April 27 and December 14 of 2017, March 6 & 7, June 4 & 21 of 2018 and May 20, 2021, for a total of 26.15 person hours, to compile a full floristic list of plants occurring in the study area and to identify any rare resources having the potential to meet the LCP ESHA definitions. Additional site visits to delineate resources and update observation data were conducted on February 10, and April 7, 2022. To ensure potential ESHA plants were evident and identifiable, offsite **reference plant populations** were visited prior to the project field surveys. Verified offsite reference site plants observed by WCPB staff during the 2017 floristic seasons included: Point Reyes blennosperma (*Blennosperma nanum* var. *robustum*), Blasdale's bent grass (*Agrostis blasdalei*), seacoast angelica (*Angelica lucida*), swamp harebell (*Campanula californica*), Mendocino coast paintbrush (*Castilleja mendocinensis*), supple daisy (*Erigeron supplex*), headland wallflower (*Erysimum concinnum*), short-leaved evax (*Hesperis matronalis* var. *brevifolia*), Point Reyes horkelia (*Horkelia marinensis*), thin-lobed horkelia (*Horkelia tenuiloba*), harlequin lotus (*Hosackia gracilis*), Baker's goldfields (*Lasthenia californica* ssp. *bakeri*), perennial goldfields (*Lasthenia californica* ssp. *macrantha*), coast lily (*Lilium maritimum*), coastal bluff morning glory (*Calystegia purpurata* ssp. *saxicola*), deceiving sedge (*Carex saliniformis*), great burnet (*Sanguisorba officinalis*), early blue violet (*Viola adunca*), and corn lily (*Veratrum fimbriatum*).

All identifiable plant species located during the surveys were identified to the lowest taxonomic level necessary to determine the presence of special status plant species and are listed in **Table 1 (Appendix C)**. *The Jepson Manual: Vascular Plants of California* (Baldwin 2012) was used to determine the taxonomic nomenclature. *A manual of California Vegetation Second Edition* (Sawyer 2009), *Classification of the Vegetation Alliances and Associations of Sonoma County, CA, V. 2* (Klein 2015) and the *List of Vegetation Alliances and Associations* (CDFW 2010) were used to classify and describe representative plant communities present. A potential for false negative survey results exists. For example, a rare plant could be eaten by deer around the time when they would have been evident and identifiable and therefore not be detected during surveys. Some plants remain dormant and do not become evident and identifiable every year. Climatic conditions are different each year and may have unpredictable effects on the bloom windows of each species. Heavy rains, for example, may cause one species to bloom early and another species to bloom later than in normal years. Well timed site visits and frequent observations at known reference sites reduce the chance of error.

4.3. Wetland and Riparian Delineation

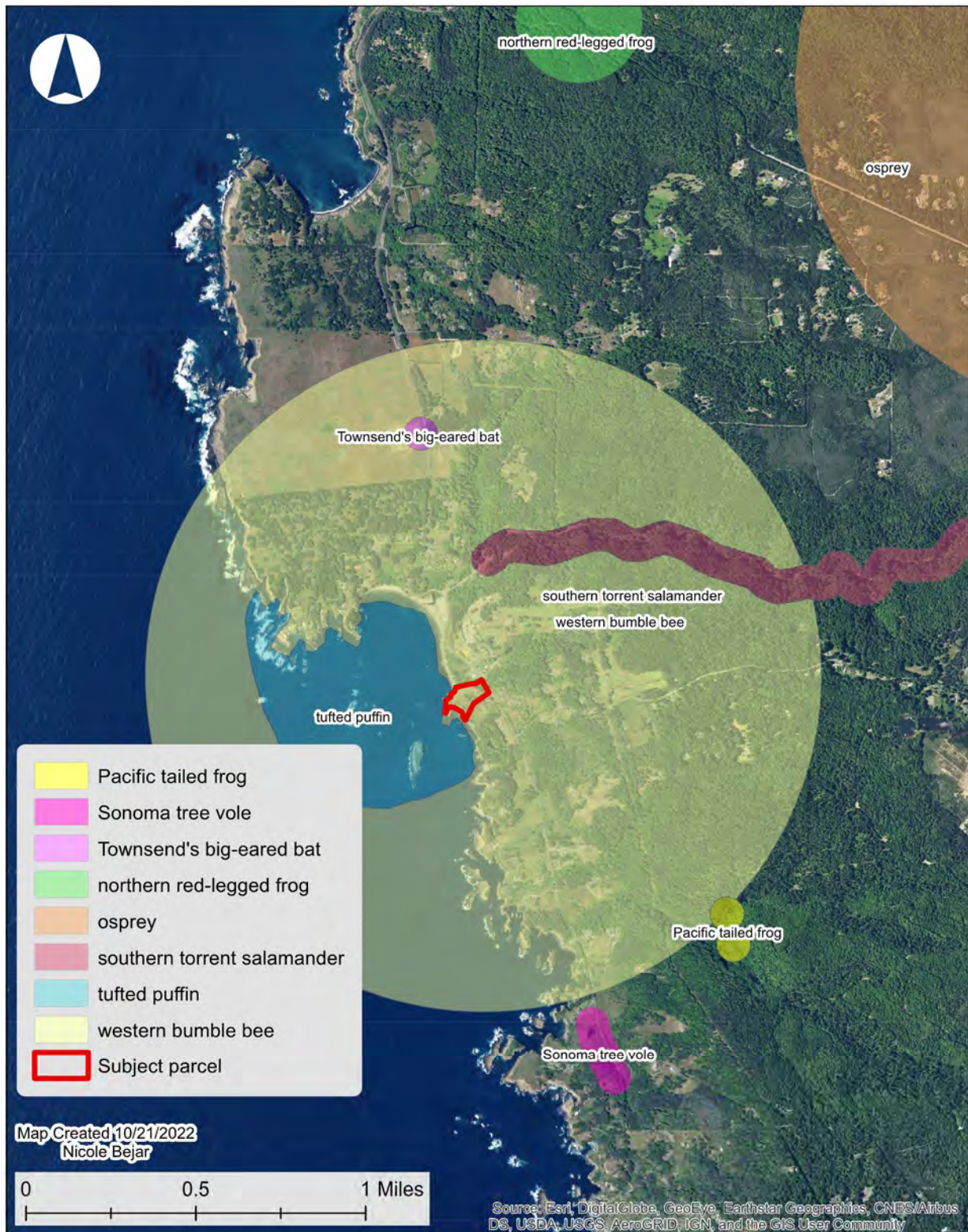
Wetland delineation field work began with examination of the topography and searching for surface hydrology and hydrophytic plants. Further analyses were performed at six sample points where wetland soils, hydrophytic vegetation, and hydrology were inspected according to the US Army Corp of Engineers (ACOE) methodology for: Western Mountains, Valleys, and Coast Region (Version 2.0). Wetland data sheets for these sample points are presented in **Appendix D**. Sampling points are marked in the field with 24-inch wooden stakes with colored flagging and labeled in Sharpie marker. Locations of sampling points are depicted on the Wetland Delineation Map in **Figure 20**. The ACOE recognizes wetlands where hydrophytic vegetation, hydric soils, and hydrology are all present. In the California Coastal Zone, wetlands are recognized if any one of the three ACOE parameters (hydrophytic vegetation, hydric soils, or hydrology) is present. Wetlands reported and mapped in this report are both Coastal Act wetlands and Army Corps wetlands; a distinction is made where important.



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CNDDDB Flora

Figure 7. Rare flora reported to CDFW in the proximity of the study area and recorded in the CNDDDB database.



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GP/ZONE: RR10/RR
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CNDDDB Fauna

Figure 8. Rare fauna reported to CDFW in the proximity of the study area and recorded in the CNDDDB database.

5. SURVEY RESULTS

Biological field surveys were performed that identified the following: plants, plant communities, wetlands, special status animals and animal habitat in the study area.

5.1. Plants – Presumed ESHAs observed

The CDFW's California Native Diversity Database (CNDDB) BIOS, *Version 5* (2016), was used to inform the search on special status flora previously reported in the vicinity of the project area. One hundred fifty-one species of herbs, grasses, sedges, rushes, ferns, shrubs, and trees were identified in the study area and are listed in **Appendix E**. Two special status plant species were observed during the floristic surveys: **Mendocino coast paintbrush** (*Castilleja mendocinensis* CRPR 1B.2) and **headland wallflower** (*Erysimum concinnum* CRPR 1B2). Locations where special status plants were observed are mapped in **Figure 2**.

5.1.1. Mendocino coast paintbrush (*Castilleja mendocinensis* CRPR 1B.2)

Mendocino coast paintbrush (*Castilleja mendocinensis*) is a perennial herb that is endemic to the coastline of Mendocino County and isolated occurrences in Humboldt County. This special status plant is hemiparasitic, partially relying on the roots of host plants to obtain nutrients. Based on experience, WCPB presume one of the main host plants to be seaside daisy (*Erigeron glaucus*). Mendocino coast paintbrush occurred in 3 places along the bluff edge on the western side of the study area. Additional plants may occur in areas that were not safely accessible along the bluff edge. In addition to this rare paintbrush species, more common Wight's paintbrush (*Castilleja wightii*) was also observed on the subject parcel.

5.1.2. Headland wallflower (*Erysimum concinnum* CRPR 1B.2)

Headland wallflower (*Erysimum concinnum*) is a biennial or short-lived perennial in the mustard family (*Brassicaceae*) that is found only slightly beyond the border of California into Oregon. Headland wallflower was present in several location along the bluff edge and over 30 plants were observed. Headland wallflower was confined to the bluff edge behind the grazing/safety fence ().



Figure 9. Headland wallflowers observed in the study area.

5.2. Plant Communities Observed – Presumed ESHA observed

5.2.1. Coyote brush scrub (*Baccharis pilularis* Shrubland Association G4)

Coyote brush scrub was the most abundant plant community within the study area. This plant community was characterized by the presence of coyote brush (*Baccharis pilularis*) at a density of from between 10% absolute cover to ~80% absolute cover (**Figure 10 & Figure 11**). The coyote brush scrub in some areas throughout the parcel had a higher abundance of poison oak (*Toxicodendron diversilobum*), blue blossom (*Ceanothus thyrsiflorus*), or coast silk tassel (*Garrya elliptica*) along the bluff edge. At the edge of Highway One, pampas grass (*Cortaderia jubata*), scotch broom (*Cytisus scoparius*), and cotoneaster (*Cotoneaster spp.*) were co-dominant. Plant species between the coyote brush shrubs include the majority of those listed within the non-native grassland plant community described below. In addition to the grassland species the following species were characteristic of the coyote brush scrub habitat: wild radish (*Raphanus sativus*), California blackberry (*Rubus ursinus*), bracken fern (*Pteridium aquilinum*), poison hemlock (*Conium maculatum*), wild carrot (*Daucus pusillus*), bull thistle (*Cirsium vulgare*), Italian thistle (*Cardus pycnocephalus*), rough hedge nettle (*Stachys rigida*), and cowparsnip (*Heracleum maximum*).

Two small areas with a higher density coastal silk tassel and blue blossom were included in the coyote brush association. The Manual of California Vegetation defines a stand of vegetation as a, “spatially continuous unit of vegetation with uniform composition, structure, and environmental conditions” (CNSP 2022). While the coast silk tassel and blue blossom present were not uniformly distributed throughout the plant community the occurrences were not a large enough of an area to constitute its own plant communities and therefore, were lumped in with the *Baccharis pilularis* Shrubland Association. This is consistent with the description of the *Baccharis pilularis* Shrubland Alliance in Manual of California Vegetation.



Figure 10. Coyote brush scrub habitat located on the bluff edge.



Figure 11. Coyote brush scrub looking east towards the Bishop pine trees at the center of the parcel.

5.2.2. Common velvet grass - sweet vernal grass meadow (*Holcus lanatus* - *Anthoxanthum odoratum* Semi-Natural Association)

Non-native grassland is the second most abundant plant community within the study area (Figure 12). The majority of the grasslands on the parcel were vegetated with a mosaic of sweet vernal grass (*Anthoxanthum odoratum*), common velvet grass (*Holcus lanatus*), and ripgut brome (*Bromus diandrus*). Emergent cotoneasters and coyote brush appear along the fence edges. A couple large patches of Douglas iris (*Iris douglasiana*) occurred within the non-native grassland (Figure 13). Other species present within the mosaic of non-native grassland habitat included: bracken fern (*Pteridium aquilinum*), English plantain (*Plantago lanceolata*), common sheep sorrel (*Rumex acetosella*), scarlet pimpernel (*Lysimachia arvensis*), and pale flax (*Linum bienne*).



Figure 12. Non-native grassland dominated by sweet vernal grass and common velvet grass.



Figure 13. Douglas iris patches with emergent coyote brush.

5.2.3. Red alder groves (*Alnus rubra* Forest Association G5 S4)

A red alder (*Alnus rubra*) riparian area was observed just north of the subject parcel in the northern tip of the study area (**Figure 14**). The riparian area runs from Highway One west to the Pacific Ocean along a drainage. The overstory vegetation was dominated by red alder and arroyo willow (*Salix lasiolepis*) and other willow species (*Salix* spp.). The understory vegetation was dominated by English ivy (*Hedera helix*) and other species present included Cascara buckthorn (*Frangula purshiana*), sword fern (*Polystichum munitum*), thimbleberry (*Rubus parviflorus*), Scotch broom (*Cytisus scoparius*), red elderberry (*Sambucus racemosa*), California blackberry (*Rubus ursinus*), and fuchsia (*Fuchsia* sp.).



Figure 14. Red alder forest along drainage.

5.2.4. French broom patches (*Genista monspessulana* Semi-Natural Association)

A small French broom community is located at the center of the parcel (**Figure 15**). The French broom is the dominant shrub with emergent coyote brush surrounding the French broom. Smaller French broom plants are spreading outwards indicating that this invasive community may be expanding. Between the broom plants, non-native grasses dominate the herbaceous layer. Other plants characteristic of the non-native grassland are also found in this community.



Figure 15. French broom patches

5.2.5. Spreading rush patch (*Juncus patens* Herbaceous Association G4? S4?)

A small spreading rush (*Juncus patens*) patch was observed in a small swale at the edge of the driveway (**Figure 16**) and in the southwestern corner just off property (**Figure 17**). While *Juncus patens* is the dominant plant found here, non-native grasses surround the *Juncus* along with invasive pampas grass (*Cortaderia jubata*), and blue gum (*Eucalyptus globulus*). A wetland delineation was conducted in this smaller patch to delineate the edges of the wetland and was determined to be an Army Corps of Engineers wetland. The larger spreading rush patch was observed just off property in the southeastern corner of the study area in a shallow depression. This larger patch is a presumed Coastal Act wetland due to the dominance of spreading rush, a plant that often grows as a hydrophyte. A wetland delineation was not conducted in that area because it was off property and not close enough to the project area to warrant a protocol level investigation.



Figure 16. Smaller spreading rush patch adjacent to existing driveway.



Figure 17. Spreading rush patch off property in southwest corner of study area.

5.2.6. Eucalyptus groves (*Eucalyptus globulus* Provision Semi-Natural Association)

At the north-eastern edge of the property is a large stand of eucalyptus trees (*Eucalyptus globulus*) (Figure 18). The trees are over fifty feet tall and, presumably due to shading and the allelopathic nature of the fallen leaves, understory vegetation is sparse and lacks diversity. However, Scotch broom (*Cytisus scoparius*) and most notably English ivy (*Hedera helix*) have dominated the understory. Small Scotch broom plants are present and English ivy has created a thick mat of vines and leaves. The English ivy has also taken advantage of the eucalyptus trees and has climbed up the canopy.



Figure 18. Eucalyptus trees with English ivy growing up the tree trunks,

5.2.7. California blackberry brambles (*Rubus ursinus* Shrubland Association G4S3)

California blackberry (*Rubus ursinus*) occurred mostly at the southern edge of the parcel (Figure 19). These areas were vegetated with a predominance of California blackberry and otherwise were vegetated with the species listed in the description for common velvet grass – sweet vernal grass meadow above.

California blackberry brambles are denoted as a sensitive plant community in CDFW's *California Natural Community List*; however, patches of almost exclusively California blackberry can quickly develop after the removal of a disturbance regime such as mowing or grazing and are not easily disturbed. A more diverse and well-established patch of blackberry brambles would be considered as a potential ESHA but this low-quality California blackberry bramble was not considered a potential ESHA for the purpose of this report.



Figure 19. California blackberry brambles.

5.2.8. Bishop pine trees

A small group of Bishop pines (*Pinus muricata*) trees are present near the center of the parcel and a few additional Bishop pines occur within the study area. Bishop pine trees are not considered to be a rare plant in and of themselves but Bishop pine forest (*Pinus muricata* Forest Alliance) can be considered a sensitive natural community ESHA. In WCPB's professional opinion the small number of pines within the study area do not rise to the level of a "forest" due to their small number and lack of understory species that would be associated with a forest stand. The Bishop pine trees present were not treated as ESHA for the purpose of this report.

5.3. Wetland Delineation – Army Corps of Engineers and Coastal Act Wetland presumed ESHAs

On March 6 & 7 and June 4, 2018, a routine level study of hydrology, soils, and vegetation indicators was conducted within portions of the study area. The results were recorded from sampling points on data sheets (Appendix G) from the Regional Supplement to the Army Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Locations of sampling points are depicted on the Wetland Delineation Map (Figure 20). The wetland hydrology, hydric soils, and hydrophytic vegetation indicators used to make wetland determinations are summarized below. Sampling points are marked in the field with 24-inch wooden stakes with colored flagging and labeled in a Sharpie marker. A 30-foot radius plot size was studied for trees present, a 20-foot radius for shrubs present, a 10-foot radius for herbs present, and a 10-foot radius for woody vines

present. **Sample Point SP02, SP03, SP04, and SP05 were determined by the surveyors to be upland** as no hydric soil, hydrology, or hydrophytic vegetation indicators were observed. **Sample Point SP01 was determined to be within an ACOE three-parameter defined wetland.** Hydric soil, hydrology, and hydrophytic vegetation indicators were observed at the time of sampling at SP01. Protocol level sample points were only conducted in areas that both showed a potential for being wetland and which occurred in locations with the potential to be affected by the project proposal.

5.3.1. Sampling Point SP01 – ACOE Wetland – Presumed ESHA

This area was examined due to the dominance of spreading rush (*Juncus patens*). The sample point was at dug the western extent of this area. Dominant plant species at this sample point were spreading rush (FACW), tall fescue (*Festuca arundinacea* FAC), and rattlesnake grass (*Briza maxima* FACU). The hydrophytic vegetation parameter was met. A soil pit was dug to 20" and hydric soils were observed exhibiting the indicator: redox dark surface (F6). The hydrologic soil parameter was met. Saturation (A3) was observed at 12" so the wetland hydrology parameter was met. *Since all three wetland parameters were met, Sample Point SP01 was determined by the surveyors to occur within ACOE three-parameter defined wetland.* The extent of the surrounding wetland delineated was based on the contiguous area dominated by spreading rush.

5.3.2. Sampling Point SP02 – Upland

This area was examined because the topography was slightly concave and across the driveway from SP01. Dominant plant species at this sample point were common velvet grass (*Holcus lanatus* FAC), pampas grass seedlings (*Cortaderia jubata* FACU), and rattlesnake grass (UPL). The hydrophytic vegetation parameter was not met. A soil pit was dug to 22" and no hydric soil or wetland hydrology indicators were observed. *As no wetland parameters were met, SP02 was determined to be upland.*

5.3.3. Sampling Point SP03 - Upland

This area was examined to determine the western boundary of the wetland because it was adjacent to SP01. Dominant plant species at this sample point were tall fescue (FAC) and rattail sixweeks grass (*Festuca myuros* FACU). The hydrophytic vegetation parameter was not met. A soil pit was dug to 22" and no hydric soil or wetland hydrology indicators were observed. *As no wetland parameters were met, SP03 was determined to be upland.*

5.3.4. Sampling Point SP04 – Upland

This area was examined to determine the southern boundary of the wetland. The dominant plant species at this sample point was common velvet grass (FAC). Even though the dominance test was met due to common velvet grass being a facultative plant, the hydrophytic vegetation parameter was determined to not be met because common velvet grass is not a strong wetland indicator plant. A wetland indicator status of FAC means a plant occurs in both wetland and non-wetland areas. This non-native, invasive grass takes advantage of the coastal fog and can grow in drier soil conditions on the coast. A soil pit was dug to 20" and no hydric soil or wetland hydrology indicators were observed. *As neither the hydric soil nor wetland hydrology parameters were met, it was concluded that the Holcus lanatus is not growing as a hydrophyte and SP04 was determined to be upland.*

5.3.5. Sampling Point SP05 – Upland

This area was examined due to presence of some facultative wetland plants. Dominant plant species at this sample point were coyote brush (*Baccharis pilularis* NI) and California brome (*Bromus sitchensis* var. *carinatus* NI). The hydrophytic vegetation parameter was not met. A soil pit was dug to 26" and no hydric soil or wetland hydrology indicators were observed. *As no wetland parameters were met, SP05 was determined to be upland.*

5.3.6. Sampling Point SP06 – Upland

This area is located at the northwestern corner of the pasture and was examined due to the presence of spreading rush and the topography sloping toward this location. Dominant plant species at this sample point were common velvet grass (FAC) and self-heal (*Prunella vulgaris*

FACU). The hydrophytic vegetation parameter was not met. A soil pit was dug to 24" and no hydric soil or wetland hydrology indicators were observed. *As no wetland parameters were met, SP06 was determined to be upland.*

A field assessment analyzing topography, hydrophytic vegetation, and presence of surface water was used to identify a presumed Coastal Act wetland in the southwestern corner of the study area off property. Within the Coastal Zone of California, areas dominated by plants that regularly occur as hydrophytes can meet the Coastal Commission's "one parameter" definition of Coastal Act wetland. The topographic position and underlying soil characteristics for this area has enabled water drainage to collect seasonally in a small depression dominated by spreading rush (*Juncus patens* FACW). No surface water was observed at the time of the site visits. The boundaries of wetlands were determined by observing where spreading rush dominated the vegetation cover.

A riparian area surrounding an intermittent stream was identified just north of the property line that runs from Highway One to the Pacific Ocean. The overstory was dominated by red alder (*Alnus rubra* FAC) and willows (*Salix* spp.). Red alders often grow in the riparian zone along rivers or streams and are equally likely to occur in wetlands and non-wetlands (FAC). Vegetation in the understory included: Cascara buckthorn (*Frangula purshiana* FACU), sword fern (*Polystichum munitum* FACU), and English ivy (*Hedera helix* NI).



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Wetland Map

Note: ESHAs are based off aerial imagery and locations are approximate.

Figure 20. Wetland delineation map depicting wetland sample points, presumed and delineated wetlands and riparian habitat.

5.4. Wildlife - Potential Occurrences

The California Department of Fish and Wildlife (CDFW) California Native Diversity Database (CNDDDB) BIOS, Version 5 (2016), was used to inform the search on fauna previously reported in the vicinity of the project area (**Figure 8**). No special-status wildlife was observed during the field biological surveys, but suitable habitat for special status wildlife species was identified. Descriptions below are for wildlife species with moderate to high potential to occur, and for State or Federally Endangered or Threatened Species with potential to occur. A complete list of special status wildlife with the potential to occur at the project site can be found in **Table 3 of Appendix C**.

5.4.1. Invertebrates

5.4.1.1. Lotis Blue butterfly (*Lycaeides argyrognomon lotis*) (G5TH SH)

This Federally Endangered butterfly species has not been seen since 1983, it is primarily from Mendocino County but historically recorded in northern Sonoma and possibly Marin Counties. This species inhabits wet meadows, damp coastal prairie, and potentially bogs or poorly drained sphagnum-willow bogs where soils are waterlogged and acidic. The presumed larval host plant, harlequin lotus (*Hosackia gracilis*), was not observed in the study area and therefore, no further surveys are recommended at this time.

5.4.1.2. Behren's silverspot butterfly (*Speyeria zerene behrensi*) (G5T1 S1)

Behren's silverspot is known historically from the town of Mendocino, Mendocino County, south to the area of Salt Point State Park, Sonoma County. Now presumed to be from Manchester south to the Salt Point area. This species inhabits coastal terrace prairie with caterpillar host plant western dog violet, and adult nectar sources such as thistles, asters, etc. The larval host plant, western dog violet (*Viola adunca*), was not observed in the study area and therefore, no further surveys are recommended at this time.

5.4.1.3. Western Bumblebee (*Bombus occidentalis*) (G2G3 S1)

Western bumblebee (*Bombus occidentalis*) is not a Federal or State protected species but is listed as a California Natural Diversity Database S1 species, an indication that there are limited known occurrences in California. The project area is in the former historical range of this species. Bumblebees observed during botanical surveys did not demonstrate the field markings of the western bumble bee, which include a conspicuous white tip of the abdomen. No further surveys are recommended at this time.

5.4.2. Fish

5.4.2.1.

No freshwater habitat capable of supporting fish was observed within the study area.

5.4.3. Amphibians

5.4.3.1. Northern red-legged frog (*Rana aurora* G4 S3) and California red-legged frog (*Rana draytonii* G2S3 S2S3)

The northern red-legged frog (*Rana aurora*) is listed as a California Department of Fish and Wildlife Species of Special Concern. The California red-legged frog (*Rana draytonii*) is also listed a Species of Special Concern as well as being federally threatened. The range of the northern red-legged frog extends from the southwest British Colombia coast to central Mendocino County. The range of the California red-legged frog extends from central Mendocino County to northern Baja California. The two species overlap in a narrow area in between Big River (Mendocino) and Mills Creek (near Irish Beach) which the study area is located within. Both the northern and California red-legged frog are often found in woods adjacent to streams and streambanks with plant cover. Both species breed in permanent water sources, including lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Red-legged frogs disperse overland between bodies of water and have been found up to two-miles

from water, therefore, all portions of the project area may be dispersal habitat for the red-legged frog.

Mitigation measures in Section 7 address how to minimize impacts to all potentially occurring amphibians including prohibiting sediment transport into the wetland and riparian area to protect potential frog and salamander habitat. It is also recommended that the contractor be trained to recognize amphibians and contact a qualified biologist if any are found onsite during construction activities.

5.4.3.2. Southern torrent salamander (*Rhyacotriton variegatus*) (G3G4 S2S3)

This Species of Special Concern occurs primarily in cold, well-shaded permanent streams and spring seepages in redwood, Douglas fir, mixed conifer, montane riparian and montane hardwood-conifer habitats. On land it normally occurs only within the splash zone or on moss-covered rock rubble with trickling water. The wetland and riparian area within the study area are unlikely to be suitable habitat for this salamander as the riparian area and wetlands onsite only hold standing water after storm events and not year-round. This species is also not expected to be impacted by development as it does not stray far from the splash zone of streams and seeps so it should be sufficiently protected by wetland/riparian buffers.

5.4.3.3. Red-bellied newt (*Taricha rivularis*) (G4 S2)

This Species of Special Concern inhabits primarily redwood forest, but also found within mixed conifer, valley-foothill woodland, montane hardwood and hardwood-conifer habitats. Rapid-flowing, permanent streams are required for breeding and larval development. No suitable breeding habitat was present within the study area. This species may range up to a mile from streams and may therefore be found in upland habitat during portions of the year. Identification and avoidance training for construction workers should include a discussion of this species.

5.4.3.4. Pacific tailed frog (*Ascaphus truei*) (G4 S2S3)

Pacific tailed frogs are found on the coast from Anchor Bay in Mendocino County to the Oregon border. This Species of Special Concern occurs in montane hardwood-conifer, redwood, Douglas-fir, and ponderosa pine habitats. Pacific tailed frogs require rocky high-gradient streams and occurrences are mapped over a mile southeast of the study area according to the CNDDB database. The frog requires permanent, rocky streams so no suitable habitat is present within the study area. Pacific tailed frogs usually stay within streams, however, after heavy rains they can be found in the woods away from streams. Since construction is generally halted during large rain events when the frogs could be wandering anyway it should be sufficiently protected by riparian buffers and avoidance mitigation measures

5.4.4. Birds

5.4.4.1. Nesting birds

Resident and migratory birds that are present during the nesting season may nest in the habitat present within the study area. Nesting requirements are highly variable. Some birds nest in burrows, others on the ground, in vegetation, brush, trees, rocky outcrops, or on man-made structures. The bird nesting season typically extends from February to August. The Migratory Bird Treaty Act protects special status and common birds and their nests while they are in the process of nesting. If construction is to occur during the breeding season (February to August), a pre-construction survey is recommended to ensure that no nesting birds will be disturbed during development. No nesting surveys are recommended if activity occurs in the non-breeding season.

5.4.4.2. Tufted puffin (*Fratercula cirrhata*) (G5 S1S2)

This Species of Special Concern winters on the open ocean and nests on rocky islands and cliffs along the coastline from northern California to Alaska and across the Pacific Ocean in northeastern Asia. The birds have periodically been seen resting or nesting on the islands off

the coast of Mendocino Headlands State Park. No puffins were observed from the bluff edge and proposed development will not impact the bluff edge. No further surveys are recommended.

5.4.5. Mammals

5.4.5.1. Sonoma tree vole (*Arborimus pomo* G3 S3)

This Species of Special concern requires fresh Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), Sitka spruce (*Picea sitchensis*), Monterey pine (*Pinus radiata*), or Bishop pine (*P. muricata*) needles for food. Occurrences of Sonoma tree vole are mapped in the CNDDB database south of the study area; however, no evidence of this species, such as clumps of tree-needle resin ducts was observed during the surveys. A small clump of Bishop pines were present in the center of property; however, the trees are not connected to a larger Bishop pine forest which would provide suitable habitat for the rodent. Due to lack of habitat connectivity, no further surveys are recommended.

5.4.5.2. Townsend's big-eared bat (*Corynorhinus townsendi* G5 S2S3)

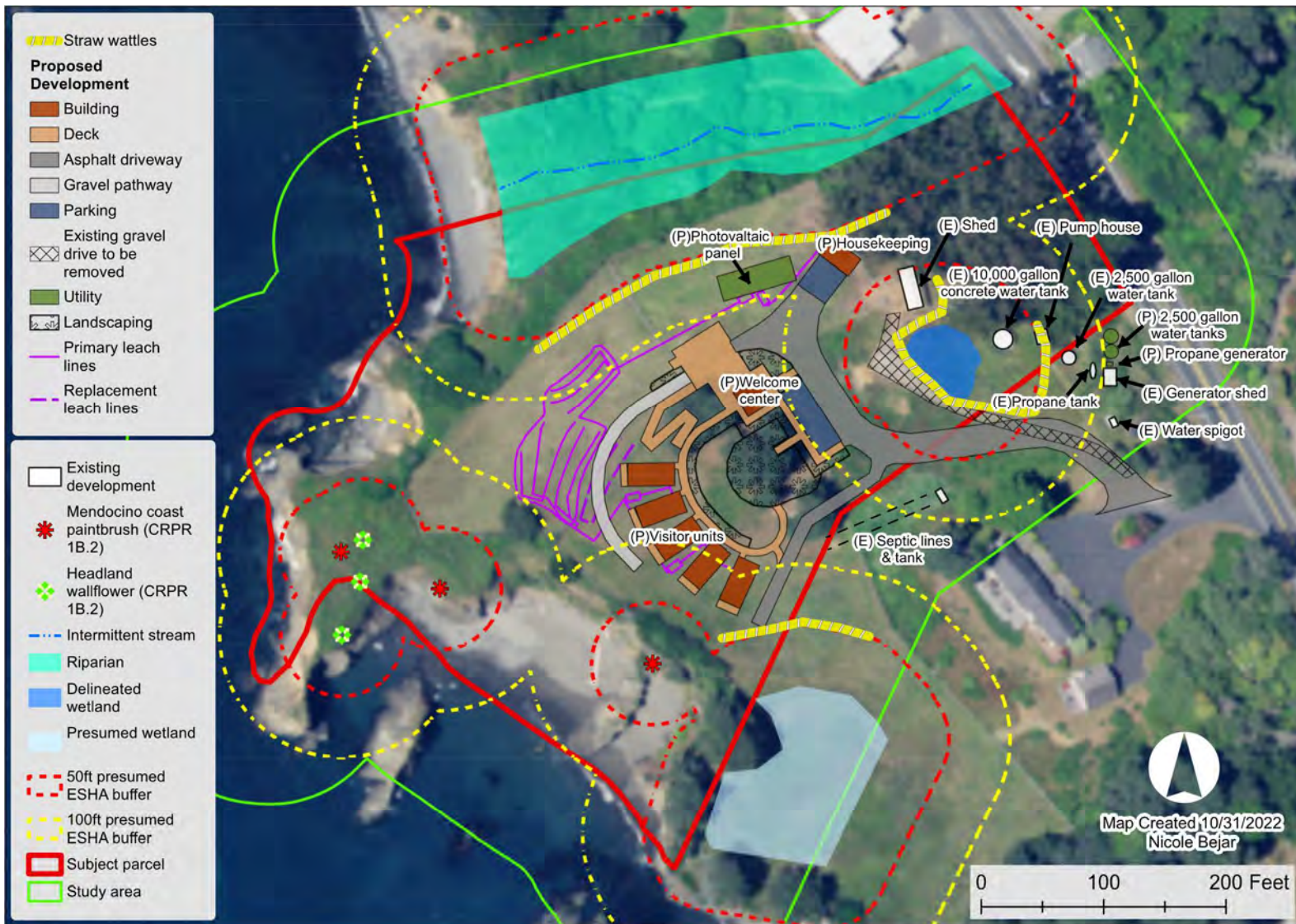
The Townsend's big-eared bat is generally found in dry uplands throughout the west but can also occur in mesic forest habitats along the coast. They require spacious cavern-like structures for roosting during all stages of their life. This Species of Special Concern has an occurrence recorded in the CNDDB database north of the study area. These bats usually roost in caves or large tree hollows, however, have the potential to roost in the existing structures onsite. If development is to occur during months are roosting for reproduction or hibernation, pre-construction surveys should occur. Bats should be excluded from existing buildings prior to construction work on the buildings that may affect the bats if they are present.

6. REDUCED BUFFER ANALYSIS SUMMARY

A Reduced Buffer Analysis (**Appendix H**) was conducted to assist in the determination of suitable protection for potential sensitive species and presumed sensitive habitat in the study area. As a result of the buffer analysis, we conclude that a 50ft buffer for the **Mendocino coast paintbrush, headland wallflower, stream, Coastal Act wetland, and riparian area** will sufficiently protect these resources from the impacts of the proposed development. The proposed development is consistent with the type of development in the surrounding area and development was specifically designed to avoid special status resources by 50ft or greater as much as possible. A portion of the proposed driveway, possible removal of the existing gravel driveway, and some utility line trenching will be within the 50ft EHSA buffer of the **delineated wetland**. Section 4 of the Reduced Buffer Analysis addresses development proposed within the buffers. Through the Reduced Buffer Analysis process, necessary mitigation measures were created (**Section 7**) to ensure all impacts from proposed development will have a less than significant effect on special status resources.

7. MITIGATION MEASURES

The proposed project has been analyzed relative to its proximity to natural resources to determine its potential disturbance to sensitive species, utilizing the methods and results gathered above and the Reduced Buffer Analysis of the Mendocino County's Local Coastal Program (**Appendix H**). As a result of those analyses, we believe that potential impacts to ESHA habitats can be minimized or avoided if the project utilizes the mitigation measures we recommend below. A map depicting recommended straw wattle locations is presented in **Figure 21**.



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Straw Wattle Placement

Figure 21. Recommended straw wattle placement map for construction.

The following mitigation measures are recommended to minimize impacts for development to Mendocino coast paintbrush, headland wallflower, wetlands, streams, and riparian. These measures will serve to prevent negative impacts to potential resources located within 100 feet from the proposed development.

7.1. Potential Impact to Birds

Construction in the study area has the potential to disturb birds during the nesting season. Removal of vegetation and construction activity near trees and vegetated areas has the potential to disturb birds' nesting process.

7.1.1. Avoidance Measure: Seasonal avoidance

No nesting bird surveys are recommended if activity occurs in the **non-breeding season** (September to January) (**Table 1**). If development is to occur during the **breeding season** (February to August), a pre-construction survey is recommended within 14 days of the onset of construction to ensure that no nesting birds will be disturbed during development.

7.1.2. Avoidance Measure: Nest Avoidance

If active special status bird nests are observed, no ground disturbance activities shall occur within a 100-foot exclusion zone. These exclusion zones may vary depending on species, habitat and level of disturbance. The exclusion zone shall remain in place around the active nest until all young are no longer dependent upon the nest. A biologist should monitor active nest sites weekly during the breeding season to ensure the buffer is sufficient to protect the nest sites from potential disturbance.

7.1.3. Avoidance Measure: Construction activities only during daylight hours

Construction should occur during daylight hours to limit disturbing construction noise and minimize artificial lights.

7.2. Potential Impact to Bats

Construction in the study area has the potential to impact special status bat species. Bats are vulnerable when roosting for reproduction when young are not yet able to fly, and during hibernation because they can die of cold or malnutrition if hibernation is disturbed. No special features such as hollow trees, abandoned buildings, or other cave analogs, which could serve as roosting or hibernation refugium, are present; therefore, the potential for negative impacts to bats is minimal. Temperatures on the Mendocino Coast usually do not drop low enough to necessitate bat hibernation.

7.2.1. Avoidance Measure: Pre-construction surveys for bats

Construction will ideally occur between September 1st and October 31 after the young have matured and prior to the bat hibernation period. **If it is necessary to disturb potential bat roost sites between November 1 and August 31**, pre-construction surveys should be performed by a qualified biologist 14 days prior to the onset of development activities.

Pre-construction bat surveys involve surveying trees, rock outcrops, and buildings subject to construction for evidence of bat use (guano accumulation, or acoustic or visual detections). If evidence of bat use is found, then biologists shall conduct acoustic surveys under appropriate conditions using an acoustic detector, to determine whether a site is occupied.

Table 1. Months surveys are or are not needed for birds and bats.

Months During Which Pre-Construction Surveys Are Not Required For Birds & Bats												
	January	February	March	April	May	June	July	August	September	October	November	December
Birds												
Bats												
		Pre-Construction Surveys Are NOT Needed										
		Pre-Construction Surveys Are Needed										

7.2.1. Avoidance Measure: Roost buffer

If active bat roosts are observed, no ground disturbance activities shall occur within a minimum 50-foot exclusion zone. These exclusion zones may vary depending on species, habitat and level of disturbance. The exclusion zone shall remain in place around the active roost until all young are no longer dependent upon the roost.

7.2.2. Avoidance measure: Construction activities only during daylight hours

Construction should occur during daylight hours to limit disturbing construction noise and minimize artificial lights.

7.3. Potential Impact to Special Status Amphibians

Construction activities will involve walking across areas where amphibians may be traveling. Staging of materials and removal of construction debris could also disturb special status amphibians that may be hiding underneath these materials. To minimize impacts to amphibians, the following avoidance measures should be followed.

7.3.1. Avoidance Measure: Contractor education

Within two weeks prior to construction activities, project contractors will be trained by a qualified biologist in the identification of the frogs and salamanders that occur along the Mendocino County coast. Workers will be trained to differentiate between special status and common species and instructed on actions and communications required to be conducted in the event that special status amphibians are observed during construction.

7.3.2. Avoidance Measure: Pre-construction search

During ground disturbing activities, construction crews will begin each day with a visual search around the staging and impact area to detect the presence of amphibians.

7.3.3. Avoidance Measure: Careful debris removal

During construction and debris removal, any wood stockpiles should be moved carefully by hand in order to avoid accidental crushing or other damage to amphibians.

7.3.4. Avoidance Measure: No construction during rain event

If a rain event occurs during the ground disturbance period, all ground disturbing activities will cease for a period of 48 hours, starting after the rain stops.

Prior to resuming construction activities, trained construction crew member(s) will examine the site for the presence of special status amphibians.

If no special status amphibians are found during inspections, ground-disturbing activities may resume.

If a special status amphibian is detected, construction crews will stop all ground disturbing work

and will contact the California Department of Fish and Wildlife (CDFW) or a qualified biologist. Clearance from CDFW will then be needed prior to reinitiating work. CDFW will need to be consulted and will need to be in agreement with protective measures needed for any potential special status amphibians.

7.4. Potential Impacts to Mendocino Coast Paintbrush, and Headland Wallflower

There is a potential for ground compaction, vegetation disturbance, or construction adjacent to the Mendocino coast paintbrush, and headland wallflower to negatively impact these plant communities.

7.4.1. Avoidance Measure: 50ft buffer

A suitable buffer should be established between special status plant communities and proposed development. A RBA has been conducted and a buffer distance of 50ft was found to be suitable to protect the special status resources present. No construction or materials staging shall occur within 50ft of the special status plant communities identified and mapped as presumed ESHA. Coordination with CDFW for concurrence that 50ft is an appropriate buffer distance is recommended.

7.4.2. Avoidance Measure: Existing fence buffer

An existing cattle/safety fence runs along the edge of the bluff. The Mendocino coast paintbrush, and headland wallflower are behind this existing fence so these presumed ESHAs are not expected to be impacted by development. No construction, materials stockpiling, or materials disposal shall occur beyond the existing bluff fence.

7.4.3. Avoidance Measure: Staging area plan

Stage all building materials and construction vehicles in upland areas greater than 50 feet from all ESHAs.

7.4.4. Avoidance Measure: Clean heavy machinery

Heavy machinery such as and not limited to excavators and skid steers that may be used onsite have the potential to spread invasive plant material from use on other sites. Heavy machinery that is used in dirt shall be power washed offsite to eliminate seeds and other propagules.

7.5. Potential Impact to Wetlands, Stream, and Riparian Areas

There is a potential for ground compaction, vegetation disturbance, or construction adjacent to the wetlands, stream, and riparian area to negatively impact these habitats. There is also a potential for rain to carry sediment from construction areas into wetland, stream, and riparian habitats.

7.5.1. Avoidance Measure: Straw wattles & orange construction fencing

Straw wattles shall be installed along the 50ft ESHA buffers for the presumed Coastal Act wetland and riparian area, separating the wetlands/riparian and their buffer zones from the construction related impact area. Since a portion of the driveway will be within the 50ft delineated wetland buffer and the exiting gravel drive adjacent to the wetland will be removed, for this area, straw wattles shall be installed along the edge of the wetland. Orange construction fencing shall be paired with the straw wattles around the delineated wetland, but the fencing is not necessary for the other wattle locations since contractors are not likely to accidentally encroach into these areas. No materials storage, heavy equipment use or other impacts shall occur within the wetlands area. Straw wattles shall be properly installed to intercept liquids leaving the construction area. All wattles and orange construction fencing shall be maintained in a functional manner through the duration of construction and until all disturbed soil is stabilized.

7.5.2. Avoidance Measure: Construction during dry season

Construction that occurs within the 50ft wetland buffer (proposed driveway, existing gravel drive removal, and utility trenching) should occur during the dry season (generally mid-April through mid-October but is dependent on seasonal weather conditions) to limit potential impacts such as runoff into the wetland.

7.5.3. Avoidance Measure: Employ Best Management Practices (BMPs)

Standard Best Management Practices shall be employed to assure minimization of erosion resulting from construction. Ground disturbance shall be limited to the minimum necessary and disturbed soil areas shall be stabilized as soon as feasible. Areas of bare soil should be seeded with native erosion control seed mix and/or covered with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw).

8. DISCUSSION

It is the professional opinion of the WCPB biologists that the proposed project will have a less than significant impact on the special status natural resources present and it is the least impacting and most feasible location that will allow for the proposed development.

Four types of presumed ESHAs were identified within the study area:

Wetland ESHA – An approximately 2,500ft² **wetland**, delineated by WCPB, was present in the eastern portion of the subject parcel east of the existing driveway and a presumed **Coastal Act wetland** was observed off property in the southwestern corner of the study area.

Riparian ESHA - **Riparian** vegetation was present along the intermittent stream to the north of the parcel.

Stream ESHA – An intermittent **stream** runs along the northern property line from under Highway One to the Pacific Ocean.

Special Status Plant ESHA - Two species of special status plants were identified on the property: **Mendocino coast paintbrush** (*Castilleja mendocinensis* CRPR 1B.2) and **headland wallflower** (*Erysimum concinnum* CRPR 1B.2).

The project was specifically designed to avoid all presumed ESHAs by 50ft or greater where feasible. A Reduced Buffer Analysis (**Appendix H**) was conducted to assist in the determination of suitable protection for potential sensitive species and presumed sensitive habitat in the study and it was determined that a 50ft buffer for the **Mendocino coast paintbrush, headland wallflower, Coastal Act wetland, stream, and riparian area** will sufficiently protect these resources from the impacts of the proposed development. Some development will necessarily occur within 50ft of the **delineated wetland** including a portion of the proposed driveway, possible removal of the existing gravel drive, and some utility line trenching. The existing cattle/safety fence along the bluff edges will serve to protect the ESHAs behind it including Mendocino coast paintbrush, headland wallflower, stream, and the riparian area. Mitigation measures to avoid potential impacts from runoff from bare soils include installing straw wattles and orange construction fencing, covering areas of bare soil with native erosion control mix and/or biodegradable erosion control materials, and conducting construction within 50ft of the delineated wetland only during the dry season. If all mitigation measures are followed, the proposed development is not expected to have significant negative impacts on any of the special status natural resources present.

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10. INVESTIGATOR BIOGRAPHIES

Contributing Biologists

Asa B Spade graduated from Humboldt State University with a Bachelor of Science majoring in Environmental Science, with a concentration in Landscape Ecosystems as well as a minor in Botany. Since that time, he has been working in the natural resources field, first with Mendocino County Environmental Health and later with California State Parks and the Department of Fish and Game. He has been trained in Army Corps wetland delineation by the Coastal Training Program at Elkhorn Slough and in Advanced Wetland Delineation by the Wetland Science and Coastal Training Program. He has been trained in the environmental compliance process for wetland projects in San Francisco bay and outer coastal areas. In 2011 Asa completed training to survey for California red-legged frog held by Elkhorn Slough Coastal Program. In 2015 he attended a Townsend's big eared bat basal hollow habitat assessment and survey methods workshop taught by Michael Baker, Leila Harris, and Adam Hutchins. Asa has trained with the Carex Working Group in identifying grasses and sedges of Northern California as well as a CNPS sedge workshop taught by CA Fish and Wildlife staff biologist Gordon Leppig. In 2019, he completed a training for burrowing owls taught by Dr. Lynne Trulio through the Elkhorn Slough Coastal Training Program and completed foothill yellow legged frog training taught by David Cook and Jeff Alvarez. Asa conducted field work for the Classification and Mapping of Mendocino Cypress Woodland and Related Vegetation using CNPS/CDFW Rapid Assessment/Relevé protocol. In 2021 Asa completed training by Jeff Alvarez and Jeff Wilcox on the eradication of bullfrogs within the range of California red-legged and foothill yellow legged frog. He is on the Fish and Wildlife Service approved list for Point Arena mountain beaver surveys and has done surveys for Behren's silverspot butterfly, Northern spotted owl, Sonoma tree vole, foothill yellow-legged frog and the California red-legged frog. He has contributed natural resources expertise to more than 200 coastal development projects in Mendocino County.

Nicole Herrera graduated from Gonzaga University with a Bachelor's Degree in Environmental Studies and a minor in Biology. After graduating, she worked as an intern for The Nature Conservancy conducting vegetation monitoring for the endangered golden-cheeked warbler. She served as an AmeriCorps member for the Watershed Stewards Program which aims to conserve, restore, and enhance anadromous watersheds for future generations. She worked as a fisheries technician conducting salmonid monitoring and habitat restoration for various agencies, including the California Department of Fish and Wildlife, Pacific States Marine Fisheries Commission, and the Bureau of Land Management. She also has experience planning and implementing northern spotted owl, Sonoma tree vole, and amphibian surveys. She has been trained in U.S. Army Corps of Engineers wetland delineation by the Wetland Training Institute, Inc. She is on the U.S. Fish and Wildlife Service's approved list for Point Arena mountain beaver and Behren's silverspot butterfly surveys. She completed the Bullfrog Control in California Field Workshop 2021 led by Jeff Alvarez and Jeff Wilcox held at a UC Berkeley Field Station.

Wyatt Dooley graduated from University of California Santa Barbara with a Bachelor's of Science in Environmental Studies and a minor in Geology. After graduating, he worked for Fish and Wildlife and Pacific States Marine Fisheries as a technician researching salmon. He has also worked abroad in New Zealand as a conservation ranger helping on restoration projects and controlling invasive species. Additionally, he has received training in Army Corp wetland delineation by San Francisco State University and the Wetland Science and Coastal Training Program, training from CNPS-CDFW on vegetation rapid assessment and relevé methods, is on the US Fish and Wildlife Service's approved list for Point Arena Mountain Beaver Surveys, and received a specialization in ArcGIS through University of California Davis. He has also received training in *Carex* keying and identification through CNPS taught by CA Fish and Wildlife staff biologist Gordon Leppig (March 2018). In October of 2019, he also completed a training through Laguna de Santa Rosa Foundation for foothill yellow legged frog taught by David Cook and Jeff Alvarez.

Suzie Woolhouse has a B.S. degree in Environmental Studies and an M.S. degree in Biology both from San José State University. Her Masters was funded by the United States Forest Service to study rare plants that grow on Serpentine soils. This work was done mostly in and around the Feather River Canyon in Plumas National Forest and included field and lab studies of six rare plants as well as a presentation at the 7th International Conference on Serpentine Ecology in Coimbra, Portugal. A paper from this work was recently published in the journal *Molecular Ecology* and her photo was featured on the cover. She has worked as a biologist at the Santa Clara Valley Water district and most recently as a naturalist at the Mendocino Outdoor Science School.



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mendocino County, Western Part, California



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

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individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

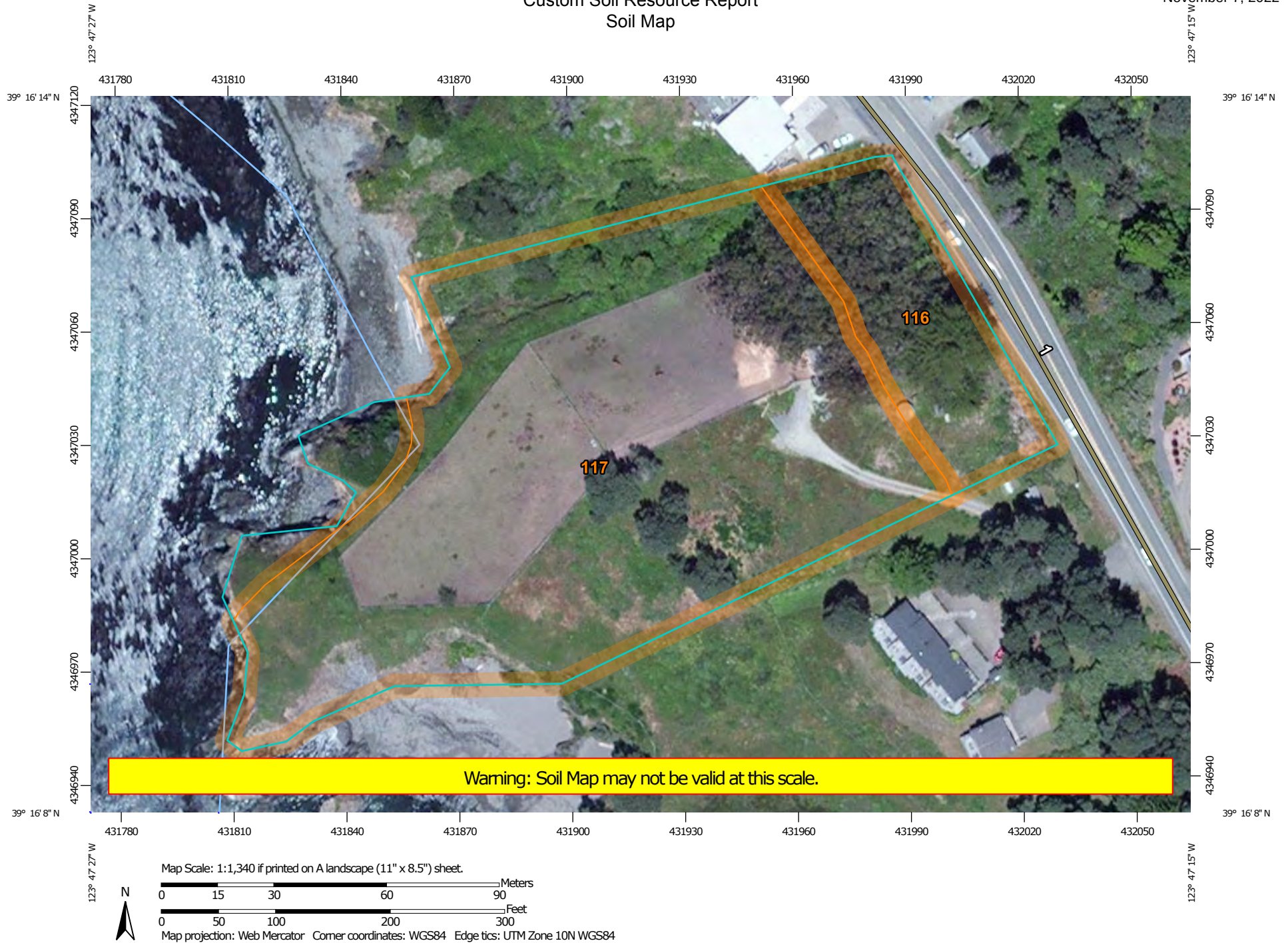
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mendocino County, Western Part, California
Survey Area Data: Version 10, Sep 30, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2010—Jun 27, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Map Unit Legend

Mendocino County, Western Part, California (CA694)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
116	Bruhel-Shinglemill complex, 2 to 15 percent slopes	0.7	15.5%
117	Cabrillo-Heeser complex, 0 to 5 percent slopes	3.8	80.1%
Totals for Area of Interest		4.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

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intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

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Mendocino County, Western Part, California

116—Bruhel-Shinglemill complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: hmk1
Elevation: 50 to 1,300 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Bruhel and similar soils: 50 percent
Shinglemill and similar soils: 25 percent
Minor components: 23 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bruhel

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 21 inches: clay loam
H3 - 21 to 41 inches: gravelly clay loam
H4 - 41 to 45 inches: weathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Shinglemill

Setting

Landform: Marine terraces

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Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Fluvio-marine deposits derived from sedimentary rock

Typical profile

H1 - 0 to 8 inches: loam

H2 - 8 to 15 inches: loam

H3 - 15 to 25 inches: clay loam

H4 - 25 to 63 inches: sandy clay

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 12 to 30 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Hydric soil rating: Yes

Minor Components

Flumeville

Percent of map unit: 5 percent

Landform: Marine terraces

Hydric soil rating: Yes

Tropaquepts

Percent of map unit: 5 percent

Landform: Marine terraces

Hydric soil rating: Yes

Abalobadiah

Percent of map unit: 5 percent

Hydric soil rating: No

Gibney

Percent of map unit: 5 percent

Hydric soil rating: No

Unnamed, gentler or steeper slopes

Percent of map unit: 3 percent

Hydric soil rating: No

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117—Cabrillo-Heeser complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hmkm
Elevation: 20 to 240 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Cabrillo and similar soils: 50 percent
Heeser and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cabrillo

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fluvio-marine deposits derived from sandstone

Typical profile

H1 - 0 to 26 inches: sandy loam
H2 - 26 to 35 inches: sandy clay loam
H3 - 35 to 50 inches: sandy clay loam
H4 - 50 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Ecological site: Sandy Loam Terrace (Perennial Grass) (R004XB060CA)

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Hydric soil rating: No

Description of Heeser

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandstone

Typical profile

H1 - 0 to 34 inches: sandy loam
H2 - 34 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: Sandy Loam Terrace (Perennial Grass) (R004XB060CA)
Hydric soil rating: No

Minor Components

Biaggi

Percent of map unit: 5 percent
Hydric soil rating: No

Crispin

Percent of map unit: 5 percent
Hydric soil rating: No

Sirdrak

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, gentler or steeper slopes

Percent of map unit: 3 percent
Hydric soil rating: No

Tropaquepts

Percent of map unit: 3 percent
Landform: Marine terraces
Hydric soil rating: Yes

Custom Soil Resource Report

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U.S. Fish and Wildlife Service

National Wetlands Inventory

Dym Biological Scoping, Wetland Delineation & Botanical Survey Report
November 7, 2022

DYM - 7720 Hwy 1 Little River



U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

August 8, 2016

- | | | |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Forested/Shrub Wetland | Other |
| Estuarine and Marine Wetland | Freshwater Pond | Riverine |
| Freshwater Emergent Wetland | Lake | |

WYNN COASTAL PLANNING & BIOLOGY

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix C. Species Rarity Ranking System and Definitions

FED: federal status includes federally rare (**FR**), threatened (**FT**), or endangered (**FE**)

STATE: California state status includes rare (**CR**), threatened (**CT**), or endangered (**CE**)

CNPS: California Native Plant Society ranked inventory of native California plants thought to be at risk

CNPS Ranking

List 1A (1A) Presumed extinct in California.

List 1B (1B) Rare, threatened, or endangered in California and elsewhere.

List 2 (2) Rare, threatened or endangered in California but more common elsewhere.

List 3 (3) More information needed, a review list.

List 4 (4) Species of limited distribution, a watch list.

Threat Code extensions and their meanings:

.1 - Seriously endangered in California

.2 – Fairly endangered in California

.3 – Not very endangered in California

G-RANK: Global Ranking - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.

SPECIES OR NATURAL COMMUNITY LEVEL

G1 = Less than 6 viable element occurrences (Eos) OR less than 1,000 individuals OR less than 2,000 acres.

G2 = 6-20 Eos OR 1,000-3,000 individuals OR 2,000-10,000 acres.

G3 = 21-80 Eos OR 3,000-10,000 individuals OR 10,000-50,000 acres.

G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

GH - All sites are historical so possibly extinct; the element has not been seen for at least 20 years, but suitable habitat still exists (**SH** = All California sites are historical and possibly extinct).

GX - All sites are extirpated; this element is extinct in the wild (**SX** = All California sites are extirpated).

Appendix C. Species Rarity Ranking System and Definitions

GXC - Extinct in the wild; exists in cultivation.

G1Q - The element is very rare, but there are taxonomic questions associated with it.

T - Rank applies to a subspecies or variety.

S-RANK: STATE RANKING - The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

S1 = Less than 6 viable Eos OR less than 1,000 individuals OR less than 2,000 acres

S1.1 = very threatened

S1.2 = threatened

S1.3 = not very threatened OR no current threats known

S2 = 6-20 Eos OR 1,000-3,000 individuals OR 2,000-10,000 acres

S2.1 = very threatened

S2.2 = threatened

S2.3 = not very threatened OR no current threats known

S3 = 21-80 Eos or 3,000-10,000 individuals OR 10,000-50,000 acres

S3.1 = very threatened

S3.2 = threatened

S3.3 = not very threatened OR no current threats known

S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.

S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK.

Notes:

1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take a bird's eye or aerial view when ranking sensitive elements rather than simply counting Eos.
2. Uncertainty about the rank of an element is expressed in two major ways:
By expressing the rank as a range of values: e.g., S2S3 means the rank is somewhere between S2 and S3.
By adding a ? to the rank: e.g., S2? This represents more certainty than S2S3, but less than S2.
3. Other symbols

Special Status Plant Scoping List

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
<i>Abronia umbellata</i> var. <i>breviflora</i> Pink sand-verbena	Coastal dunes	Jun-Oct	1B.1	N	N	S1	G4G5T	N
<i>Agrostis blasdalei</i> Blasdale's bent grass	Coastal dunes, coastal bluff scrub, coastal prairie.	May- Jul	1B.2	N	N	S2	G2	N
<i>Arctostaphylos nummularia</i> ssp. <i>Mendocinoensis</i> Pygmy manzanita	Closed-cone coniferous forest. Acidic sandy-clay soils in dwarfed coniferous forest.	Jan	1B.2	N	N	SH	G3?THQ	N
<i>Astragalus agnicidus</i> Humboldt milk- vetch	Openings, disturbed areas, roadsides, broadleaved upland forest, North coast coniferous forest	Apr-Sep	1B.1	N	CE	S3	G3	N
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> Coastal marsh milk-vetch	Coastal dunes (mesic), coastal scrub, coastal salt marshes and swamps, and streamsides	Apr-Oct	1B.2	N	N	S2	G2T2	N
<i>Blennosperma nanum</i> var. <i>robustum</i> Point Reyes blennosperma	Coastal prairie, coastal scrub	Feb-Apr	1B.2	N	CR	S2	G4T2	N
<i>Calamagrostis crassiglumis</i> Thurber's reed grass	Coastal scrub (mesic), freshwater marshes and swamps.	May-Aug	2B.1	N	N	S2	G3Q	N
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> Coastal bluff morning-glory	Coastal bluff scrub, Coastal dunes, Coastal scrub, North Coast coniferous forest.	Mar-Sep	1B.2	N	N	S2S3	G4T2T3	N
<i>Campanula californica</i> Swamp harebell	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes and swamps, and North Coast coniferous forests.	Jun-Oct	1B.2	N	N	S3	G3	N
<i>Carex californica</i> California sedge	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes and swamps (often on margins or drier areas).	May-Aug	2B.3	N	N	S2	G5	N
<i>Carex lenticularis</i> var. <i>limnophila</i> Lagoon sedge	Shores, beaches, often gravelly, bogs and fens, marshes and swamps, North Coast coniferous forest.	Jun-Aug	2B.2	N	N	S1	G5T5	N
<i>Carex livida</i> Livid sedge	Bogs and Fens	Jun	2A	N	N	SH	G5	N
<i>Carex lyngbyei</i> Lyngbye's sedge	Brackish or freshwater marshes and swamps	Apr-Aug	2B.2	N	N	S3	G5	N
<i>Carex saliniformis</i> Deceiving sedge	Mesic sites of coastal prairie, coastal scrub, and meadows, seeps, marshes and swamps (coastal salt)	Jun-Jul	1B.2	N	N	S2	G2	N
<i>Carex viridula</i> ssp. <i>Viridula</i> Green yellow sedge	Bogs and fens, marshes and swamps (freshwater), north coast coniferous forest (mesic).	Jun-Nov	2B.3	N	N	S1.3	G5T5	N
<i>Castilleja affinis</i> ssp. <i>litoralis</i> Oregon coast paintbrush	Sandy sites in coastal bluff scrub and coastal scrub; coastal dunes.	Jun	2B.2	N	N	S3	G4G5T4	N
<i>Castilleja ambigua</i> var. <i>humboldtiensis</i> Humboldt Bay owl's-clover	Coastal salt marshes and swamps.	Apr-Aug	1B.2	N	N	S2	G4T2	N
<i>Castilleja mendocinensis</i> (<i>Castilleja latifolia</i> ssp. <i>Mendocinensis</i>) Mendocino Coast paintbrush	Coastal bluff scrub, coastal scrub, closed-cone coniferous forest, coastal dunes, coastal prairie.	Apr-Aug	1B.2	N	N	S2	G2	Y
<i>Chorizanthe howellii</i> Howell's spineflower	Sandy, often disturbed, areas of coastal prairie and coastal scrub, and coastal dunes	May - Jul	1B.2	FE	CT	S1	G1	N

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
<i>Clarkia amoena ssp. whitneyi</i> Whitney's farewell-to- spring	Coastal bluff scrub, coastal scrub.	Jun-Aug	1B.1	N	N	S1	G5T1	N
<i>Collinsia corymbosa</i> Round-headed Chinese-houses	Coastal dunes, coastal prairie.	Apr-June	1B.2	N	N	S1	G1	N
<i>Cornus canadensis</i> Bunchberry	Bogs and fens, meadows and seeps, North Coast coniferous forest.	May-Jul	2B.2	N	N	S2	G5	N
<i>Cuscuta pacifica var. papillata</i> Mendocino dodder	Coastal dunes (interdune depressions).	Jul-Oct	1B.2	N	N	S1	G5T1	N
<i>Erigeron supplex</i> Supple daisy	Coastal bluff scrub, coastal prairie.	May-Jul	1B.2	N	N	S2	G2	N
<i>Erysimum concinnum</i> Headland wallflower	Coastal bluff scrub, coastal dunes, coastal prairie.	Feb-Jul	1B.2	N	N	S3	G3	Y
<i>Erysimum menziesii</i> (<i>Erysimum menziesii ssp. eurekaense</i> , <i>Erysimum menziesii ssp. menziesii</i> , <i>Erysimum menziesii ssp. yadonii</i>) Menzies' wallflower	Localized on coastal dunes and coastal strand.	Mar-Sep	1B.1	FE	CE	S1	G1	N
<i>Erythronium revolutum</i> Coast\Mahogany fawn lily	Mesic, streambanks. Bogs and fens; broadleafed upland forests; North Coast coniferous forest.	Mar-Aug	2B.2	N	N	S3	G4	N
<i>Fritillaria roderickii</i> (<i>Fritillaria biflora var. biflora</i>) Roderick's fritillary	Coastal bluff scrub, coastal prairie, valley and foothill grassland.	Mar-May	1B.1	N	CE	S1.1	G1Q	N
<i>Gilia capitata ssp. chamissonis</i> Blue coast gilia	Coastal dunes, coastal scrub.	Apr-Jul	1B.1	N	N	S2	G5T2	N
<i>Gilia capitata ssp. pacifica</i> Pacific gilia	Coastal bluff scrub, openings in chaparral, coastal prairie, valley and foothill grassland.	Apr-Aug	1B.2	N	N	S2	G5T3T4	N
<i>Gilia capitata ssp. tomentosa</i> Woolly-headed gilia	Serpentine, rocky, outcrops of coastal bluff scrub and calley and foothill grassland.	May-Jul	1B.1	N	N	S2	G5T2	N
<i>Gilia millefoliata</i> Dark-eyed gilia	Coastal dunes	Apr-Jul	1B.2	N	N	S2	G2	N
<i>Glyceria grandis</i> American manna grass	Bogs and fens, wet meadows and seeps, marshes, swamps, streambanks, and lake margins	Jun-Aug	2B.3	N	N	S3	G5	N
<i>Hemizonia congesta ssp. Congesta</i> Seaside tarplant	Sometimes roadsides. Valley and foothill grassland	Apr-Nov	1B.2	N	N	S1S2	G5T1T2	N
<i>Hesperevax sparsiflora var. brevifolia</i> Short-leaved evax	Sandy coastal bluffs; coastal dunes, coastal dune mat, and sandy openings in wet dune meadows. Coastal bluff scrub. Rocky, grassy slopes. In areas of sparse vegetation cover in sandy substrate.	Mar-Jun	1B.2	N	N	S2	G4T3	N
<i>Hesperocyparis pygmaea</i> (<i>Cupressus pygmaea</i> , <i>Cupressus goveniana ssp. pigmaea</i> , <i>Callitropsis pygmaea</i>) Pygmy cypress	Closed-cone coniferous forests, usually podzol-like	NA	1B.2	N	N	S1	G1	N
<i>Horkelia marinensis</i> Point Reyes horkelia	Sandy, coastal dunes, coastal scrub, coastal prairie	May-Sep	1B.2	N	N	S2	G2	N

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
<i>Horkelia tenuiloba</i> Thin-lobed horkelia	Mesic openings or sandy sites in broadleaved upland forests, chaparral, and valley and foothill grassland.	May-Aug	1B.2	N	N	S2	G2	N
<i>Hosackia gracilis</i> (<i>Lotus formosissimus</i>) Harlequin lotus	Wetlands, roadsides, Broadleaved upland forest, Coastal bluff scrub, Closed-cone coniferous forest, Cismontane woodland, Coastal prairie, Coastal scrub, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Valley and foothill grassland	Mar-Jul	4.2	N	N	S3	G4	N
<i>Juncus supiniformis</i> Hair-leaved rush	Bogs and fens; freshwater marshes and swamps near the coast.	Apr-Jul	2B.2	N	N	S1	G5	N
<i>Kopsiopsis hookeri</i> (<i>Boschniakia hookeri</i>) Small groundcone	North Coast coniferous forest	Apr-Aug	2B.3	N	N	S1S2	G4G5	N
<i>Lasthenia californica ssp. bakeri</i> Baker's goldfields	Openings in closed-cone coniferous forest; coastal scrub; meadows and seeps; marshes and swamps.	Apr-Oct	1B.2	N	N	SH	G3TH	N
<i>Lasthenia californica ssp. macrantha</i> Perennial goldfields	Coastal bluff scrub, coastal dunes, and coastal scrub.	Jan-Nov	1B.2	N	N	S2	G3T2	N
<i>Lasthenia conjugens</i> Contra Costa goldfields	Mesic sites in cismontane woodlands, alkaline playas, valley and foothill grasslands, vernal pools	Mar-Jun	1B.1	FE	N	S1.1	G1	N
<i>Lathyrus palustris</i> Marsh Pea	Bogs and fens; mesic sites of coastal prairies, coastal scrub, lower montane coniferous forests, and North Coast coniferous forests.	Mar- Aug	2B.2	N	N	S2	G5	N
<i>Lilium maritimum</i> Coast lily	Broadleaved upland forests, closed-cone coniferous forests, coastal prairies, coastal scrub, freshwater marshes and swamps. Roadsides and roadside ditches.	May-Aug	1B.1	N	N	S2	G2	N
<i>Microseris paludosa</i> Marsh microseris/silverpuffs	Closed-cone coniferous forests, cismontane woodlands, coastal scrub, valley and foothill grasslands. (A 1968 collection from Point Arena (3.2 km to N, between Hwy. 1 and beach) is the northernmost occurrence and is disjunct from southern populations.	Apr-Jul	1B.2	N	N	S2	G2	N
<i>Oenothera wolfii</i> Wolf's evening- primrose	Sandy, usually mesic sites in coastal bluff scrub, coastal dunes, coastal prairie, and lower montane coniferous forests. (Along roads on vertical cutbanks and in grassy median. On disturbed sterile soil; upper stabilized dunes; rocky slopes protected above strand; vertical cliffs above the ocean.)	May-Oct	1B.1	N	N	S1	G2	N
<i>Packera bolanderi var. bolanderi</i> (<i>Senecio bolanderi var. bolanderi</i>) Seacoast ragwort	Sometimes roadsides, Coastal Scrub, North coast coniferous forest	Jan-Aug	2B.2	N	N	S2S3	G4T4	N
<i>Phacelia insularis var. continentis</i> North Coast phacelia	Sandy, sometimes rocky, sites in coastal bluff scrub; coastal dunes. (Rocky, thin soil with native and non-native grasses and forbs. Sandy pastureland and grazed coastal prairie.)	Mar-May	1B.2	N	N	S2	G2T2	N
<i>Pinus contorta ssp. bolanderi</i> Bolander's beach pine	Closed-cone coniferous forests with podzol-like soils. Associated with Mendocino cypress and bishop pine, and Mendocino pygmy cypress forests	Jul-Aug	1B.2	N	N	S2	G5T2	N
<i>Piperia candida</i> White-flowered rein orchid	Sometimes serpentinite, Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest	Mar-Sep	1B.2	N	N	S3	G3	N
<i>Pleuropogon hooverianus</i> North Coast semaphore grass	open areas, mesic, broadleaved upland forest, meadows and seeps, North coast coniferous forest.	Apr-Jun	1B.1	N	CT	S2	G2	N
<i>Potamogeton epihydrus</i> Ribbonleaf pondweed	Marshes and swamps (assorted shallow freshwater)	Jun-Sep	2B.2	N	N	S2.2?	G5	N

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
<i>Puccinellia pumila</i> Dwarf alkali grass	Coastal salt marshes and swamps; meadows and seeps, mineral spring meadows.	Jul	2B.2	N	N	SH	G4?	N
<i>Rhynchospora alba</i> White beaked-rush	Bogs and fens (sometimes in Mendocino pygmy forests); meadows and seeps; marshes and swamps (freshwater).	Jul-Aug	2B.2	N	N	S2	G5	N
<i>Sanguisorba officinalis</i> Great burnet	Bogs and fens, broadleaved upland forests, meadows and seeps, marshes and swamps, North Coast coniferous forests, riparian forests, Serpentine seepage areas and along stream borders.	Jul-Oct	2B.2	N	N	S2	G5?	N
<i>Sidalcea calycosa ssp. rhizomata</i> Point Reyes checkerbloom	Freshwater marshes and swamps near the coast.	Apr-Sep	1B.2	N	N	S2	G5T2	N
<i>Sidalcea malviflora ssp. patula</i> Siskiyou checkerbloom	Often roadcuts, coastal bluff scrub; coastal prairie; North coast coniferous forest	May-Aug	1B.2	N	N	S2	G5T2	N
<i>Sidalcea malviflora ssp. purpurea</i> Purple-stemmed checkerbloom	Broadleaved upland forest, coastal prairie	May-Jun	1B.2	N	N	S1	G5T1	N
<i>Trifolium buckwestiorum</i> Santa Cruz clover	Gravelly margins of broadleaved upland forests, cismontane woodlands, coastal prairie. (Common associates include <i>Juncus bufonius</i> , <i>Soliva sessilis</i> , <i>Danthonia californica</i> , and <i>Bromus hordeaceus</i> . In Mendocino Co., most collections from ~5 miles up Garcia River.)	Apr-Oct	1B.1	N	N	S2	G2	N
<i>Trifolium trichocalyx</i> Monterey clover	Closed-cone coniferous forest (sandy, openings, burned areas).	Apr-Jun	1B.1	FE	CE	S1	G1	N
<i>Triquetrella californica</i> Coastal triquetrella	Soil of Coastal bluff scrub, coastal scrub,	NA	1B.2	N	N	S2	G2	N
<i>Viola adunca</i> Western dog violet	Yellow pine forest, red fir forest, lodgepole forest, redwood forest, mixed evergreen forest, subalpine forest, alpine fell-fields, wetland riparian. Common and widespread on open sea bluffs to red fir forest.	Apr-Aug	not ranked	N	N	?	?	N
<i>Viola palustris</i> Alpine marsh violet	Coastal Bogs and Fens; Coastal Scrub (mesic)	Mar-Aug	2B.2	N	N	S1S2	G5	N

Sensitive Natural Communities and Alliances Occurring in Coastal and Inland Mendocino County								
Alliance Scientific Name	Association Scientific Name	Alliance Common Name	Alliance Global Rank	Alliance State Rank	Association Global Rank	Association Rank State	Rare ?	Present?
Woodland and Forest Alliances, Associations, and Stands								
<i>Abies grandis</i>	<i>Abies grandis</i> – <i>Picea sitchensis</i> / <i>Gaultheria shallon</i> / <i>Polystichum munitum</i>	Grand fir forest	G4	S2	G1	S1	Y	N
	<i>Abies grandis</i> – <i>Tsuga heterophylla</i> / <i>Polystichum munitum</i>	Grand fir forest	G4	S2	G2	S1	Y	N
<i>Acer macrophyllum</i>	<i>Acer macrophyllum</i>	Bigleaf maple forest	G4	S3			Y	N
	<i>Acer macrophyllum</i> – <i>Pseudotsuga menziesii</i> / <i>Adenocaulon bicolor</i>	Bigleaf maple forest	G4	S3			Y	N
	<i>Acer macrophyllum</i> – <i>Pseudotsuga menziesii</i> / <i>Corylus cornuta</i>	Bigleaf maple forest	G4	S3			Y	N
	<i>Acer macrophyllum</i> – <i>Pseudotsuga menziesii</i> / <i>Dryopteris arguta</i>	Bigleaf maple forest	G4	S3			Y	N
	<i>Acer macrophyllum</i> – <i>Pseudotsuga menziesii</i> / <i>Philadelphus lewisii</i>	Bigleaf maple forest	G4	S3			Y	N
	<i>Acer macrophyllum</i> – <i>Pseudotsuga menziesii</i> / <i>Polystichum munitum</i>	Bigleaf maple forest	G4	S3			Y	N
<i>Acer negundo</i>	<i>Acer negundo</i>	Box-elder forest	G5	S2			Y	N
	<i>Acer negundo</i> – <i>Salix gooddingii</i>	Box-elder forest	G5	S2			Y	N
<i>Aesculus californica</i>	<i>Aesculus californica</i>	California buckeye groves	G3	S3			Y	N
	<i>Aesculus californica</i> – <i>Umbellularia californica</i> / <i>Diplacis aurantiacus</i>	California buckeye groves	G3	S3	G3	S3?	Y	N
	<i>Aesculus californica</i> – <i>Umbellularia californica</i> / <i>Holodiscus discolor</i>	California buckeye groves	G3	S3			Y	N
	<i>Aesculus californica</i> / <i>Datisca glomerata</i>	California buckeye groves	G3	S3			Y	N
	<i>Aesculus californica</i> / <i>Lupinus albus</i>	California buckeye groves	G3	S3			Y	N
	<i>Aesculus californica</i> / <i>Toxicodendron diversilobum</i> / moss	California buckeye groves	G3	S3			Y	N
<i>Alnus rhombifolia</i>	<i>Alnus rhombifolia</i>	White alder groves	G4	S4	G2Q		Y	N
<i>Arbutus menziesii</i>	<i>Arbutus menziesii</i> – <i>Quercus agrifolia</i>	Madrone forest	G4	S3	G3	S3?	Y	N
	<i>Arbutus menziesii</i> – <i>Umbellularia californica</i>	Madrone forest	G4	S3			Y	N
	<i>Arbutus menziesii</i> – <i>Umbellularia californica</i> – (<i>Notholithocarpus densiflorus</i>)	Madrone forest	G4	S3	G3	S3?	Y	N
	<i>Arbutus menziesii</i> – <i>Umbellularia californica</i> – <i>Quercus kelloggii</i>	Madrone forest	G4	S3	G3	S3?	Y	N
<i>Fraxinus latifolia</i>	<i>Fraxinus latifolia</i>	Oregon ash groves	G4	S3			Y	N
	<i>Fraxinus latifolia</i> – <i>Alnus rhombifolia</i>	Oregon ash groves	G4	S3			Y	N
	<i>Fraxinus latifolia</i> / <i>Cornus sericea</i>	Oregon ash groves	G4	S3			Y	N
	<i>Fraxinus latifolia</i> / <i>Toxicodendron diversilobum</i>	Oregon ash groves	G4	S3			Y	N
<i>Hesperocyparis macrocarpa</i>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress stands	G1	S1			Y	N
<i>Hesperocyparis pigmaea</i>	<i>Hesperocyparis pigmaea</i> – <i>Pinus contorta</i> ssp. <i>bolanderi</i> – <i>Pinus muricata</i> / <i>Rhododendron macrophyllum</i>	Mendocino pygmy cypress woodland	G1	S1			Y	N
	<i>Hesperocyparis pigmaea</i> – <i>Pinus contorta</i> ssp. <i>bolanderi</i> / <i>Rhododendron columbianum</i>	Mendocino pygmy cypress woodland	G1	S1			Y	N
	<i>Hesperocyparis pigmaea</i> – <i>Pinus muricata</i> / <i>Arctostaphylos nummularia</i>	Mendocino pygmy cypress woodland	G1	S1			Y	N
	<i>Hesperocyparis pigmaea</i> / <i>Cladonia implexa</i>	Mendocino pygmy cypress woodland	G1	S1			Y	N
	<i>Hesperocyparis pigmaea</i> / <i>Cladonia bellidiflora</i>	Mendocino pygmy cypress woodland	G1	S1			Y	N
	<i>Hesperocyparis pigmaea</i> / <i>Usnea subfloridana</i>	Mendocino pygmy cypress woodland	G1	S1			Y	N
<i>Notholithocarpus densiflorus</i>	<i>Notholithocarpus densiflorus</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Acer circinatum</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Acer macrophyllum</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Arbutus menziesii</i>	Tanoak forest	G4	S3	G3	S3	Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Arbutus menziesii</i> / <i>Ceanothus integrifolius</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Calocedrus decurrens</i> / <i>Festuca californica</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Chamaecyparis lawsoniana</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Chrysopsis chrysophylla</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Cornus nuttallii</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Cornus nuttallii</i> / <i>Toxicodendron diversilobum</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Pinus lambertiana</i> / <i>Toxicodendron diversilobum</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Quercus chrysopsis</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Quercus kelloggii</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> – <i>Umbellularia californica</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> / <i>Corylus cornuta</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> / <i>Frangula californica</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> / <i>Gaultheria shallon</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> / <i>Mahonia nervosa</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> / <i>Quercus vaccinifolia</i> – <i>Rhododendron macrophyllum</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> / <i>Toxicodendron diversilobum</i> – <i>Lonicera hispidula</i> var. <i>vacillans</i>	Tanoak forest	G4	S3			Y	N
	<i>Notholithocarpus densiflorus</i> / <i>Vaccinium ovatum</i>	Tanoak forest	G4	S3			Y	N
<i>Picea sitchensis</i>	<i>Picea sitchensis</i> – <i>Tsuga heterophylla</i>	Sitka spruce forest	G5	S2			Y	N
	<i>Picea sitchensis</i> / <i>Maianthemum dilatatum</i>	Sitka spruce forest	G5	S2			Y	N
	<i>Picea sitchensis</i> / <i>Polystichum munitum</i>	Sitka spruce forest	G5	S2	G4?		Y	N
	<i>Picea sitchensis</i> / <i>Rubus spectabilis</i>	Sitka spruce forest	G5	S2	G3		Y	N
<i>Pinus contorta</i> ssp. <i>contorta</i>	<i>Pinus contorta</i> ssp. <i>contorta</i>	Beach pine forest	G5	S3			Y	N
	<i>Pinus contorta</i> ssp. <i>contorta</i> – <i>Picea sitchensis</i>	Beach pine forest	G5	S3			Y	N
<i>Pinus lambertiana</i>	<i>Pinus lambertiana</i> – <i>Chrysopsis chrysophylla</i> / <i>Quercus vaccinifolia</i> – <i>Quercus sadleriana</i>	Sugar pine forest	G4	S3			Y	N
<i>Pinus muricata</i> – <i>Pinus radiata</i>	<i>Pinus muricata</i>	Bishop pine – Monterey pine forest	G3	S3	G3?	S3?	Y	N
	<i>Pinus muricata</i> – (<i>Arbutus menziesii</i>) / <i>Vaccinium ovatum</i>	Bishop pine – Monterey pine forest	G3	S3	G2	S2	Y	N
	<i>Pinus muricata</i> – <i>Chrysopsis chrysophylla</i> / <i>Arctostaphylos nummularia</i>	Bishop pine – Monterey pine forest	G3	S3	G2	S2	Y	N
	<i>Pinus muricata</i> – <i>Notholithocarpus densiflorus</i>	Bishop pine – Monterey pine forest	G3	S3	G3	S3	Y	N
	<i>Pinus muricata</i> – <i>Pseudotsuga menziesii</i>	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus muricata</i> / <i>Arctostaphylos glandulosa</i>	Bishop pine – Monterey pine forest	G3	S3	G2	S2	Y	N
	<i>Pinus muricata</i> / <i>Arctostaphylos</i> spp.	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus muricata</i> / <i>Comarostaphylos diversifolia</i> ssp. <i>planifolia</i>	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus muricata</i> / <i>Xerophyllum tenax</i>	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus radiata</i> – <i>Pinus muricata</i> / <i>Arctostaphylos tomentosa</i> – <i>Arctostaphylos hookeri</i>	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus radiata</i> – <i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i>	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus radiata</i> / <i>Arctostaphylos tomentosa</i> – <i>Vaccinium ovatum</i>	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus radiata</i> / <i>Toxicodendron diversilobum</i>	Bishop pine – Monterey pine forest	G3	S3			Y	N
	<i>Pinus radiata</i> plantations	Bishop pine – Monterey pine forest	G3	S3	GNR	SNR	N	N
<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i>	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Acer macrophyllum</i>) / <i>Polystichum munitum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Calocedrus decurrens</i>) / <i>Festuca californica</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i> – <i>Alnus rubra</i>) / riparian	Douglas fir – tanoak forest	G3	S3			Y	N

Sensitive Natural Communities and Alliances Occurring in Coastal and Inland Mendocino County								
Alliance Scientific Name	Association Scientific Name	Alliance Common Name	Alliance Global Rank	Alliance State Rank	Association Global Rank	Association Rank State	Rare ?	Present?
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i> – <i>Tsuga heterophylla</i>) / <i>Vaccinium ovatum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i> – <i>Umbellularia californica</i>) / <i>Vaccinium ovatum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i>) / <i>Acer circinatum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i>) / <i>Gaultheria shallon</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i>) / <i>Mahonia nervosa</i> / <i>Linnaea borealis</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i>) / <i>Vaccinium ovatum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i>) / <i>Rhododendron occidentale</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chamaecyparis lawsoniana</i>) / <i>Vaccinium parvifolium</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chrysolepis chrysophylla</i>) / <i>Gaultheria shallon</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chrysolepis chrysophylla</i>) / <i>Pteridium aquilinum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Chrysolepis chrysophylla</i>) / <i>Rhododendron macrophyllum</i> – <i>Gaultheria shallon</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Pinus lambertiana</i>)	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Quercus chrysolepis</i>) / <i>Mahonia nervosa</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Quercus chrysolepis</i>) / <i>Mahonia nervosa</i> – <i>Gaultheria shallon</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Quercus chrysolepis</i>) / <i>rockpile</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Quercus chrysolepis</i>) / <i>Toxicodendron diversilobum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Quercus chrysolepis</i>) / <i>Vaccinium ovatum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Quercus chrysolepis</i> , <i>Quercus kelloggii</i>) / <i>Toxicodendron diversilobum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Quercus kelloggii</i>) / <i>Rosa gymnocarpa</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – (<i>Umbellularia californica</i>) / <i>Toxicodendron diversilobum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Iris</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – <i>Thuja plicata</i> / <i>Vaccinium ovatum</i> – <i>Gaultheria shallon</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Acer circinatum</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Achlys triphylla</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Aralia californica</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Chimaphila umbellata</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Cornus nuttallii</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Corylus cornuta</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Gaultheria shallon</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Mahonia nervosa</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Quercus vaccinifolia</i> – <i>Holodiscus discolor</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Rhododendron macrophyllum</i>	Douglas fir – tanoak forest	G3	S3	G2	S2	Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Taxus brevifolia</i>	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Toxicodendron diversilobum</i> – (<i>Lonicera hispidula</i>)	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Vaccinium ovatum</i> – (<i>Gaultheria shallon</i>)	Douglas fir – tanoak forest	G3	S3			Y	N
	<i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> / <i>Whipplea modesta</i>	Douglas fir – tanoak forest	G3	S3			Y	N
<i>Salix laevigata</i>	<i>Salix laevigata</i>	Red willow thickets	G3	S3	GNR		Y	N
	<i>Salix laevigata</i> – <i>Cornus sericea</i> / <i>Scirpus microcarpus</i>	Red willow thickets	G3	S3	G3	S3?	Y	N
	<i>Salix laevigata</i> – <i>Salix lasiolepis</i>	Red willow thickets	G3	S3			Y	N
	<i>Salix laevigata</i> – <i>Salix lasiolepis</i> / <i>Artemisia douglasiana</i> – <i>Rubus ursinus</i>	Red willow thickets	G3	S3			Y	N
	<i>Salix laevigata</i> – <i>Salix lasiolepis</i> / <i>Baccharis salicifolia</i>	Red willow thickets	G3	S3			Y	N
	<i>Salix laevigata</i> / <i>Rosa californica</i>	Red willow thickets	G3	S3			Y	N
	<i>Salix laevigata</i> / <i>Salix lasiolepis</i> / <i>Artemisia douglasiana</i>	Red willow thickets	G3	S3			Y	N
<i>Sequoia sempervirens</i>	<i>Sequoia sempervirens</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Acer macrophyllum</i> – <i>Umbellularia californica</i>	Redwood forest	G3	S3	G3	S3	Y	N
	<i>Sequoia sempervirens</i> – <i>Acer macrophyllum</i> / <i>Polypodium californicum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Alnus rubra</i> / <i>Rubus spectabilis</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Arbutus menziesii</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Arbutus menziesii</i> / <i>Vaccinium ovatum</i>	Redwood forest	G3	S3	G3	S3	Y	N
	<i>Sequoia sempervirens</i> – <i>Chrysolepis chrysophylla</i> / <i>Arctostaphylos glandulosa</i>	Redwood forest	G3	S3	G2	S2?	Y	N
	<i>Sequoia sempervirens</i> – <i>Hesperocyparis pigmaea</i>	Redwood forest	G3	S3	G1	S1	Y	N
	<i>Sequoia sempervirens</i> – <i>Notholithocarpus densiflorus</i> / <i>Carex globosa</i> – <i>Iris douglasiana</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Notholithocarpus densiflorus</i> / <i>Vaccinium ovatum</i>	Redwood forest	G3	S3	G3	S3	Y	N
	<i>Sequoia sempervirens</i> – <i>Pinus muricata</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Pseudotsuga menziesii</i> – <i>Arbutus menziesii</i>	Redwood forest	G3	S3			Y	N

Sensitive Natural Communities and Alliances Occurring in Coastal and Inland Mendocino County								
Alliance Scientific Name	Association Scientific Name	Alliance Common Name	Alliance Global Rank	Alliance State Rank	Association Global Rank	Association Rank State	Rare ?	Present?
	<i>Sequoia sempervirens</i> – <i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Pseudotsuga menziesii</i> – <i>Notholithocarpus densiflorus</i> – <i>Chamaecyparis lawsoniana</i> / <i>Vaccinium ovatum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Pseudotsuga menziesii</i> – <i>Umbellularia californica</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Pseudotsuga menziesii</i> / <i>Rhododendron macrophyllum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Pseudotsuga menziesii</i> / <i>Vaccinium ovatum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Tsuga heterophylla</i> / <i>Polystichum munitum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Tsuga heterophylla</i> / <i>Rubus spectabilis</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Tsuga heterophylla</i> / <i>Vaccinium ovatum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> – <i>Umbellularia californica</i>	Redwood forest	G3	S3	G3	S3	Y	N
	<i>Sequoia sempervirens</i> / <i>Pteridium aquilinum</i> – <i>Woodwardia fimbriata</i>	Redwood forest	G3	S3	G3	S3	Y	N
	<i>Sequoia sempervirens</i> / <i>Blechnum spicant</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> / <i>Mahonia nervosa</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> / <i>Marah fabaceus</i> – <i>Vicia sativa</i> ssp. <i>nigra</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> / <i>Oxalis oregana</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> / <i>Polystichum munitum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> / <i>Pteridium aquilinum</i>	Redwood forest	G3	S3			Y	N
	<i>Sequoia sempervirens</i> / <i>Pteridium aquilinum</i> – <i>Trillium ovatum</i>	Redwood forest	G3	S3			Y	N
<i>Sequoiadendron giganteum</i>	<i>Sequoiadendron giganteum</i> – <i>Pinus lambertiana</i> / <i>Cornus nuttallii</i>	Giant sequoia forest	G3	S3			Y	N
<i>Tsuga heterophylla</i>	<i>Tsuga heterophylla</i> – <i>Pseudotsuga menziesii</i> – <i>Chamaecyparis lawsoniana</i>	Western hemlock forest	G5	S2			Y	N
<i>Umbellularia californica</i>	<i>Umbellularia californica</i>	California bay forest	G4	S3	G3	S3	Y	N
	<i>Umbellularia californica</i> – <i>Acer macrophyllum</i>	California bay forest	G4	S3	G3	S3?	Y	N
	<i>Umbellularia californica</i> – <i>Aesculus californica</i> / <i>Holodiscus discolor</i>	California bay forest	G4	S3	G3	S3	Y	N
	<i>Umbellularia californica</i> – <i>Alnus rhombifolia</i>	California bay forest	G4	S3	G3	S3	Y	N
	<i>Umbellularia californica</i> – <i>Arbutus menziesii</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> – <i>Juglans californica</i> / <i>Ceanothus spinosus</i>	California bay forest	G4	S3	G3		Y	N
	<i>Umbellularia californica</i> – <i>Notholithocarpus densiflorus</i>	California bay forest	G4	S3	G3	S3	Y	N
	<i>Umbellularia californica</i> – <i>Platanus racemosa</i>	California bay forest	G4	S3	G3		Y	N
	<i>Umbellularia californica</i> – <i>Pseudotsuga menziesii</i> / <i>Rhododendron occidentale</i>	California bay forest	G4	S3	G3	S3?	Y	N
	<i>Umbellularia californica</i> – <i>Quercus agrifolia</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> – <i>Quercus agrifolia</i> / <i>(Genista monspessulana)</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> – <i>Quercus agrifolia</i> / <i>Heteromeles arbutifolia</i> – <i>Toxicodendron diversilobum</i> / <i>Melica torreyana</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> – <i>Quercus agrifolia</i> / <i>Toxicodendron diversilobum</i> (Corylus cornuta)	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> – <i>Quercus chrysolepis</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> – <i>Quercus wislizeni</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> / <i>Ceanothus oliganthus</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> / <i>Polystichum munitum</i>	California bay forest	G4	S3			Y	N
	<i>Umbellularia californica</i> / <i>Toxicodendron diversilobum</i>	California bay forest	G4	S3			Y	N
Shrub Alliance, Associations, and Stands								
<i>Arctostaphylos (nummularia, sensitiva)</i>	<i>Arctostaphylos nummularia</i>	Glossy leaf manzanita chaparral	G2G3	S2S3	G2	S2	Y	N
<i>Cornus sericea</i>	<i>Cornus sericea</i>	Red osier thickets	G4	S3?			Y	N
	<i>Cornus sericea</i> – <i>Salix exigua</i>	Red osier thickets	G4	S3?			Y	N
	<i>Cornus sericea</i> – <i>Salix lasiolepis</i>	Red osier thickets	G4	S3?			Y	N
	<i>Cornus sericea</i> / <i>Senecio triangularis</i>	Red osier thickets	G4	S3?			Y	N
<i>Diplacus aurantiacus</i>	<i>Diplacus aurantiacus</i>	Bush monkeyflower scrub	G3	S3?	G3		Y	N
<i>Garrya elliptica</i>	<i>Garrya elliptica</i>	Coastal silk tassel scrub	G3?	S3?			Y	N
<i>Holodiscus discolor</i>	<i>Holodiscus discolor</i> – <i>Arctostaphylos patula</i>	Ocean spray brush	G4	S3			Y	N
	<i>Holodiscus discolor</i> – <i>Keckia corymbosa</i>	Ocean spray brush	G4	S3			Y	N
	<i>Holodiscus discolor</i> – <i>Sambucus racemosa</i>	Ocean spray brush	G4	S3			Y	N
	<i>Holodiscus discolor</i> / <i>Achnatherum occidentale</i> – <i>Eriogonum nudum</i>	Ocean spray brush	G4	S3			Y	N
	<i>Holodiscus discolor</i> / <i>Mimulus suksdorfii</i>	Ocean spray brush	G4	S3			Y	N
	<i>Holodiscus discolor</i> / <i>Sedum obtusatum</i> ssp. <i>boreale</i> – <i>Cryptogramma acrostichoides</i>	Ocean spray brush	G4	S3			Y	N
<i>Lupinus chamissonis</i> – <i>Ericameria ericoides</i>	<i>Ericameria ericoides</i>	Silver dune lupine – mock heather scrub	G3	S3			Y	N
	<i>Lupinus chamissonis</i>	Silver dune lupine – mock heather scrub	G3	S3			Y	N
	<i>Lupinus chamissonis</i> – <i>Ericameria ericoides</i>	Silver dune lupine – mock heather scrub	G3	S3	G2		Y	N
<i>Morella californica</i>	<i>Morella californica</i>	Wax myrtle scrub	G3	S3			Y	N
<i>Quercus chrysolepis</i> (shrub)	<i>Quercus chrysolepis</i>	Canyon live oak chaparral	G3	S3			Y	N
	<i>Quercus chrysolepis</i> – <i>Ceanothus integriramus</i>	Canyon live oak chaparral	G3	S3			Y	N
<i>Rhododendron columbianum</i>	<i>Rhododendron columbianum</i>	Western Labrador-tea thickets	G4	S2?			Y	N
	<i>Rhododendron columbianum</i> / <i>Pinus contorta</i> ssp. <i>murrayana</i>	Western Labrador-tea thickets	G4	S2?			Y	N
<i>Rhododendron occidentale</i>	<i>Rhododendron occidentale</i>	Western azalea patches	G3	S2?			Y	N
<i>Rosa californica</i>	<i>Rosa californica</i>	California rose briar patches	G3	S3			Y	N
	<i>Rosa californica</i> – <i>Baccharis pilularis</i>	California rose briar patches	G3	S3			Y	N
	<i>Rosa californica</i> / <i>Schoenoplectus</i> spp.	California rose briar patches	G3	S3			Y	N
<i>Rubus (parviflorus, spectabilis, ursinus)</i>	<i>Gaultheria shallon</i> – <i>Rubus spectabilis</i> – <i>Rubus parviflorus</i>	Coastal brambles	G4	S3			Y	N
	<i>Ribes aureum</i>	Coastal brambles	G4	S3			Y	N
	<i>Rubus parviflorus</i>	Coastal brambles	G4	S3			Y	N
	<i>Rubus parviflorus</i> – <i>Rubus spectabilis</i> – <i>Rubus ursinus</i>	Coastal brambles	G4	S3			Y	N
	<i>Rubus spectabilis</i>	Coastal brambles	G4	S3			Y	N
	<i>Rubus ursinus</i>	Coastal brambles	G4	S3			Y	N
<i>Salix lasiolepis</i>	<i>Salix lasiolepis</i>	Arroyo willow thickets	G4	S4			Y	N
<i>Salix sitchensis</i>	<i>Salix sitchensis</i>	Sitka willow thickets	G4	S3?			Y	N
<i>Sambucus nigra</i>	<i>Sambucus nigra</i>	Blue elderberry stands	G3	S3			Y	N
	<i>Sambucus nigra</i> – <i>Heteromeles arbutifolia</i>	Blue elderberry stands	G3	S3			Y	N
	<i>Sambucus nigra</i> / <i>Leymus condensatus</i>	Blue elderberry stands	G3	S3			Y	N
Herbaceous Alliance, Associations, and Stands								
<i>Abronia latifolia</i> – <i>Ambrosia chamissonis</i>	<i>Abronia latifolia</i> – <i>Erigeron glaucus</i>	Dune mat	G3	S3			Y	N
	<i>Abronia latifolia</i> – <i>Leymus mollis</i>	Dune mat	G3	S3			Y	N
	<i>Ambrosia chamissonis</i>	Dune mat	G3	S3			Y	N
	<i>Ambrosia chamissonis</i> – <i>Abronia maritima</i> – <i>Cakile maritima</i>	Dune mat	G3	S3			Y	N
	<i>Ambrosia chamissonis</i> – <i>Abronia umbellata</i>	Dune mat	G3	S3			Y	N
	<i>Ambrosia chamissonis</i> – <i>Eriophyllum staechadifolium</i> – (<i>Lupinus arboreus</i>)	Dune mat	G3	S3			Y	N
	<i>Ambrosia chamissonis</i> – <i>Malacothrix incana</i> – <i>Carpobrotus chilensis</i> – <i>Poa douglasii</i>	Dune mat	G3	S3			Y	N
	<i>Artemisia pycnocephala</i> – <i>Calystegia sorkanella</i>	Dune mat	G3	S3			Y	N
	<i>Artemisia pycnocephala</i> – <i>Cardonema ramosissimum</i>	Dune mat	G3	S3	G3		Y	N
	<i>Artemisia pycnocephala</i> – <i>Ericameria ericoides</i>	Dune mat	G3	S3			Y	N

Sensitive Natural Communities and Alliances Occurring in Coastal and Inland Mendocino County								
Alliance Scientific Name	Association Scientific Name	Alliance Common Name	Alliance Global Rank	Alliance State Rank	Association Global Rank	Association Rank State	Rare ?	Present?
	<i>Artemisia pycnocephala</i> – <i>Poa douglasii</i>	Dune mat	G3	S3			Y	N
	<i>Artemisia pycnocephala</i> – <i>Polygonum paronychia</i>	Dune mat	G3	S3			Y	N
	<i>Cakile maritima</i> – <i>Abronia maritima</i>	Dune mat	G3	S3			Y	N
	<i>Cakile maritima</i> – <i>Ambrosia chamissonis</i> – <i>Carpobrotus edulis</i>	Dune mat	G3	S3			Y	N
	<i>Calystegia macrostegia</i> – <i>Erigeron glaucus</i> – <i>Malacothrix incana</i>	Dune mat	G3	S3			Y	N
	<i>Poa douglasii</i> – <i>Lathyrus littoralis</i>	Dune mat	G3	S3			Y	N
<i>Bromus carinatus</i> – <i>Elymus glaucus</i>	<i>Bromus carinatus</i>	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
	<i>Elymus glaucus</i>	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
	<i>Pteridium aquilinum</i> – Grass	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
	<i>Thermopsis californica</i> – <i>Bromus carinatus</i> – Annual Brome	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
<i>Calamagrostis canadensis</i>	<i>Calamagrostis canadensis</i>	Bluepoint reed grass meadows	G5	S3	GNR		Y	N
<i>Calamagrostis canadensis</i>	<i>Calamagrostis canadensis</i> – <i>Carex utriculata</i>	Bluepoint reed grass meadows	G5	S3			Y	N
	<i>Calamagrostis canadensis</i> – <i>Dodecatheon redolens</i>	Bluepoint reed grass meadows	G5	S3			Y	N
	<i>Calamagrostis canadensis</i> – <i>Scirpus microcarpus</i>	Bluepoint reed grass meadows	G5	S3			Y	N
<i>Calamagrostis nutkaensis</i>	<i>Calamagrostis nutkaensis</i>	Pacific reed grass meadows	G4	S2			Y	N
	<i>Calamagrostis nutkaensis</i> – <i>Carex (obnupta)</i> – <i>Juncus (patens)</i>	Pacific reed grass meadows	G4	S2			Y	N
	<i>Calamagrostis nutkaensis</i> / <i>Baccharis pilularis</i>	Pacific reed grass meadows	G4	S2			Y	N
<i>Camassia quamash</i>	<i>Camassia quamash</i> / <i>Sphagnum subsecundum</i>	Small camas meadows	G4?	S3?			Y	N
<i>Carex barbarae</i>	<i>Carex barbarae</i>	White-root beds	G2?	S2?			Y	N
<i>Carex densa</i>	<i>Carex densa</i> – <i>Juncus xiphioides</i>	Dense sedge marshes	G2?	S2?			Y	N
	<i>Carex densa</i> – <i>Lolium perenne</i> – <i>Juncus spp.</i>	Dense sedge marshes	G2?	S2?			Y	N
<i>Carex nudata</i>	<i>Carex nudata</i>	Torrent sedge patches	G3	S3			Y	N
<i>Carex obnupta</i>	<i>Carex obnupta</i>	Slough sedge swards	G4	S3			Y	N
	<i>Carex obnupta</i> – <i>Juncus lescurii</i>	Slough sedge swards	G4	S3			Y	N
	<i>Carex obnupta</i> – <i>Juncus patens</i>	Slough sedge swards	G4	S3			Y	N
<i>Danthonia californica</i>	<i>Danthonia californica</i>	California oat grass prairie	G4	S3			Y	N
	<i>Danthonia californica</i> – (<i>Briza maxima</i> – <i>Vulpia bromoides</i>)	California oat grass prairie	G4	S3			Y	N
	<i>Danthonia californica</i> – <i>Aira caryophylla</i>	California oat grass prairie	G4	S3	G3		Y	N
	<i>Danthonia californica</i> – <i>Arrhenatherum elatius</i>	California oat grass prairie	G4	S3			Y	N
	<i>Danthonia californica</i> – <i>Elymus elymoides</i>	California oat grass prairie	G4	S3			Y	N
	<i>Danthonia californica</i> – <i>Nassella pulchra</i>	California oat grass prairie	G4	S3			Y	N
<i>Darlingtonia californica</i>	<i>Darlingtonia californica</i>	California pitcher plant fens	G4?	S3			Y	N
<i>Deschampsia cespitosa</i>	<i>Deschampsia cespitosa</i>	Tufted hair grass meadows	G5	S4?			Y	N
	<i>Deschampsia cespitosa</i> – <i>Anthoxanthum odoratum</i>	Tufted hair grass meadows	G5	S4?			Y	N
	<i>Deschampsia cespitosa</i> – <i>Bistorta bistortoides</i>	Tufted hair grass meadows	G5	S4?			Y	N
	<i>Deschampsia cespitosa</i> – <i>Danthonia californica</i>	Tufted hair grass meadows	G5	S4?			Y	N
	<i>Deschampsia cespitosa</i> – <i>Eryngium armatum</i>	Tufted hair grass meadows	G5	S4?			Y	N
	<i>Deschampsia cespitosa</i> – <i>Holcus lanatus</i>	Tufted hair grass meadows	G5	S4?			Y	N
	<i>Deschampsia cespitosa</i> – <i>Horkelia marinensis</i>	Tufted hair grass meadows	G5	S4?			Y	N
	<i>Deschampsia cespitosa</i> var. <i>holciformis</i>	Tufted hair grass meadows	G5	S4?			Y	N
<i>Elymus glaucus</i> Montane	<i>Elymus glaucus</i> – <i>Carex feta</i>	Blue wild rye montane meadows	G3?	S3?	G2?		Y	N
	<i>Elymus glaucus</i> – <i>Carex pellita</i>	Blue wild rye montane meadows	G3?	S3?			Y	N
	<i>Elymus glaucus</i> – <i>Heracleum maximum</i>	Blue wild rye montane meadows	G3?	S3?			Y	N
<i>Eryngium aristulatum</i>	<i>Eryngium aristulatum</i> – <i>Lupinus bicolor</i>	California button-celery patches	G2	S2			Y	N
	<i>Hemizonia congesta</i>	California button-celery patches	G2	S2			Y	N
<i>Festuca idahoensis</i>	<i>Festuca californica</i>	Idaho fescue grassland	G4	S3?			Y	N
	<i>Festuca idahoensis</i> – <i>Achillea millefolium</i>	Idaho fescue grassland	G4	S3?			Y	N
	<i>Festuca idahoensis</i> – <i>Bromus carinatus</i>	Idaho fescue grassland	G4	S3?			Y	N
	<i>Festuca idahoensis</i> – <i>Danthonia californica</i>	Idaho fescue grassland	G4	S3?			Y	N
	<i>Festuca idahoensis</i> – <i>Festuca rubra</i>	Idaho fescue grassland	G4	S3?			Y	N
<i>Festuca rubra</i>	<i>Festuca rubra</i>	Red fescue grassland	G4	S3?			Y	N
<i>Frankenia salina</i>	<i>Frankenia salina</i>	Alkali heath marsh	G4	S3			Y	N
	<i>Frankenia salina</i> – <i>Distichlis spicata</i>	Alkali heath marsh	G4	S3			Y	N
	<i>Frankenia salina</i> – <i>Limonium californicum</i> – <i>Monanthochloa littoralis</i> – <i>Sarcocornia pacifica</i>	Alkali heath marsh	G4	S3			Y	N
<i>Glyceria (elata, striata)</i>	<i>Glyceria elata</i>	Manna grass meadows	G4	S3?			Y	N
	<i>Glyceria elata</i> – <i>Lotus oblongifolius</i>	Manna grass meadows	G4	S3?			Y	N
	<i>Glyceria elata</i> – <i>Scirpus microcarpus</i>	Manna grass meadows	G4	S3?			Y	N
	<i>Glyceria striata</i>	Manna grass meadows	G4	S3?			Y	N
<i>Grindelia (camporum, stricta)</i>	<i>Grindelia stricta</i>	Gum plant patches	G2G3	S2S3			Y	N
<i>Heterotheca (oregona, sessiliflora)</i>	<i>Heterotheca oregona</i>	Goldenaster patches	G3	S3	G3	S3	Y	N
	<i>Heterotheca sessiliflora</i>	Goldenaster patches	G3	S3	G3	S3	Y	N
<i>Hordeum brachyantherum</i>	<i>Hordeum brachyantherum</i>	Meadow barley patches	G2	S2	G2		Y	N
	<i>Hordeum brachyantherum</i> – <i>Poa pratensis</i>	Meadow barley patches	G2	S2			Y	N
	<i>Hordeum brachyantherum</i> – <i>Polypogon monspeliensis</i>	Meadow barley patches	G2	S2			Y	N
<i>Hydrocotyle (ranunculoides, umbellata)</i>	<i>Hydrocotyle ranunculoides</i>	Mats of floating pennywort	G4	S3?			Y	N
	<i>Hydrocotyle ranunculoides</i> – <i>Schoenoplectus pungens</i>	Mats of floating pennywort	G4	S3?			Y	N
<i>Isoetes (bolanderi, echinospora, howellii, nuttallii, occidentalis)</i>		Quillwort beds	G3	S3?				N
<i>Juncus (oxymeris, xiphioides)</i>	<i>Juncus oxymeris</i>	Iris-leaf rush seeps	G2?	S2?			Y	N
	<i>Juncus xiphioides</i>	Iris-leaf rush seeps	G2?	S2?			Y	N
<i>Juncus lescurii</i>	<i>Juncus (lescurei) – Distichlis spicata</i>	Salt rush swales	G3	S2?			Y	N
	<i>Juncus lescurei</i>	Salt rush swales	G3	S2?			Y	N
<i>Lasthenia glaberrima</i>	<i>Lasthenia glaberrima</i> – <i>Lupinus bicolor</i>	Smooth goldfields vernal pool bottoms	G2	S2			Y	N
	<i>Lasthenia glaberrima</i> – <i>Pleuropogon californicus</i>	Smooth goldfields vernal pool bottoms	G2	S2			Y	N
	<i>Lasthenia glaberrima</i> – <i>Trifolium variegatum</i>	Smooth goldfields vernal pool bottoms	G2	S2			Y	N
<i>Leymus cinereus</i> – <i>Leymus triticoides</i>	<i>Leymus triticoides</i> – <i>Bromus spp.</i> – <i>Avena spp.</i>	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
	<i>Leymus triticoides</i> – <i>Carduus pycnocephalus</i> – <i>Geranium dissectum</i>	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
	<i>Leymus triticoides</i> – <i>Lolium perenne</i>	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
	<i>Leymus triticoides</i> – <i>Poa secunda</i>	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
<i>Leymus condensatus</i>	<i>Leymus condensatus</i>	Giant wild rye grassland	G3	S3			Y	N
<i>Leymus mollis</i>	<i>Leymus mollis</i> – <i>Abronia latifolia</i> – (<i>Cakile sp.</i>)	Sea lyme grass patches	G4	S2			Y	N
	<i>Leymus mollis</i> – <i>Ammophila arenaria</i>	Sea lyme grass patches	G4	S2			Y	N
	<i>Leymus mollis</i> – <i>Carpobrotus edulis</i>	Sea lyme grass patches	G4	S2			Y	N
<i>Mimulus (guttatus)</i>	<i>Mimulus guttatus</i>	Common monkey flower seeps	G4?	S3?			Y	N
	<i>Mimulus guttatus</i> – (<i>Mimulus spp.</i>)	Common monkey flower seeps	G4?	S3?			Y	N
	<i>Mimulus guttatus</i> – <i>Vulpia microstachys</i>	Common monkey flower seeps	G4?	S3?			Y	N
<i>North Coast Bluff Scrub</i>								N
<i>Nuphar lutea</i>		Yellow pond-lily mats	G5	S3?				N
<i>Oenanthe sarmentosa</i>	<i>Oenanthe sarmentosa</i>	Water-parsley marsh	G4	S2?			Y	N
<i>Oxyria digyna</i>	<i>Draba lemmonii</i> – <i>Oxyria digyna</i>	Mountain sorrel patches	G4	S3?			Y	N
<i>Poa secunda</i>	<i>Poa secunda</i> – <i>Bromus rubens</i>	Curly blue grass grassland	G4	S3?			Y	N
	<i>Poa secunda</i> ssp. <i>secunda</i>	Curly blue grass grassland	G4	S3?			Y	N
<i>Sarcocornia pacifica (Salicornia depressa)</i>	<i>Salicornia bigelovii</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Atriplex prostrata</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Boboschoenus maritimus</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Brassica nigra</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Cotula coronopifolia</i>	Pickleweed mats	G4	S3			Y	N

Sensitive Natural Communities and Alliances Occurring in Coastal and Inland Mendocino County								
Alliance Scientific Name	Association Scientific Name	Alliance Common Name	Alliance Global Rank	Alliance State Rank	Association Global Rank	Association Rank State	Rare ?	Present?
	<i>Sarcocornia pacifica</i> – <i>Distichlis spicata</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Echinochloa crus-galli</i> – <i>Polygonum</i> – <i>Xanthium strumarium</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Frankenia salina</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Grindelia stricta</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Jaumea carnosa</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Jaumea carnosa</i> – <i>Distichlis spicata</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Lepidium latifolium</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> – <i>Spartina foliosa</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> / <i>algae</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> / <i>annual grasses (Polypogon, Hordeum, Lolium)</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> <i>Managed</i>	Pickleweed mats	G4	S3			Y	N
	<i>Sarcocornia pacifica</i> <i>Tidal</i>	Pickleweed mats	G4	S3			Y	N
<i>Schoenoplectus (acutus, californicus)</i>	<i>Schoenoplectus californicus</i>	Hardstem and California bulrush marshes	GU	S3S4			Y	N
	<i>Schoenoplectus californicus</i> – <i>Schoenoplectus acutus</i>	Hardstem and California bulrush marshes	GU	S3S4			Y	N
	<i>Schoenoplectus californicus</i> – <i>Schoenoplectus acutus</i> / <i>Rosa californica</i>	Hardstem and California bulrush marshes	GU	S3S4			Y	N
	<i>Schoenoplectus californicus</i> – <i>Typha latifolia</i>	Hardstem and California bulrush marshes	GU	S3S4			Y	N
<i>Scirpus microcarpus</i>	<i>Scirpus microcarpus</i>	Small-fruited bulrush marsh	G4	S2	G4		Y	N
<i>Sparganium (angustifolium)</i>	<i>Sparganium angustifolium</i>	Mats of bur-reed leaves	G4	S3?			Y	N
<i>Trifolium variegatum</i>	<i>Trifolium variegatum</i>	White-tip clover swales	G3?	S3?			Y	N
	<i>Trifolium variegatum</i> – <i>Juncus bufonius</i>	White-tip clover swales	G3?	S3?			Y	N
	<i>Trifolium variegatum</i> – <i>Lolium perenne</i> – <i>Leontodon saxatilis</i>	White-tip clover swales	G3?	S3?			Y	N

Special-Status Wildlife with Potential Occurrence on the Project Site.								
Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
INVERTEBRATES								
<i>Bombus caliginosus</i>	Obscure Bumblebee	None	None	G4?	S1S2	IUCN:VU	Inhabits open grassy coastal prairies and Coast Range meadows. Nesting occurs underground as well as above ground in abandoned bird nests. Males patrol circuits in search of mates. Reported to DPW as within 5 miles of project site is an This species is very similar to the common yellow-faced bumblebee (<i>Bombus vosnesenskii</i>), differentiated by the structure of the male genitalia. he obscure bumblebee tends to have longer hairs, however, and yellow hairs are found on the underside of the abdomen.	N
<i>Bombus occidentalis</i>	Western bumble bee	None	Candidate Endangered	G2G3	S1	USFS:S	Populations in central California have declined since the 1990's. It visits flowers in a variety of habitats. Identified by a white patch on its abdomen hind tip. None recorded from coastal Mendocino County at http://www.xerces.org/bumblebees .	N
<i>Coelus globosus</i>	Globose dune beetle	None	None	G1G2	S1S2	IUCN:VU	Subterranean beetle that tunnels through sand under dune vegetation. Since coastal dune habitat in California is diminishing, the beetle is a special-status species.	N
<i>Danaus plexippus pop. 1</i>	monarch - California overwintering population	None	None	G4T2T3	S2S3	USFS:S	Ranges from North and South America and the Caribbean to Australia, New Zealand, the oceanic islands of the Pacific, Mauritius, the Canary Islands of the Atlantic, and, most recently, Western Europe. A predominantly open country, frost intolerant species whose range of breeding habitats is greatly dependent upon the presence of asclepiad flora (milkweeds). The monarch requires dense tree cover for overwintering, and the majority of the present sites in California are associated with Eucalyptus trees, specifically the blue gum, Eucalyptus globulus. These trees were introduced from Australia and have filled the role of native species that have been reduced by logging.	N
<i>Helminthoglypta arrosa pomoensis</i>	Pomo bronze shoulderband snail	None	None	G2G3T1	S1	IUCN:DD	Found near the coast in heavily-timbered redwood canyons of Mendocino County, from Big River and Russian Gulch watersheds. Found under redwoods. Generally, in somewhat moist duff. Found in scrub in forest opening under a power line in Russian Gulch.	N
<i>Lycaeides argyrognomon lotis</i>	lotis blue butterfly	Endangered	None	G5TH	SH	XERCES:CI	Not seen since 1983. It is primarily from Mendocino County but historically from northern Sonoma and possibly Marin Counties. Inhabits wet meadows, damp coastal prairie, and potentially bogs or poorly-drained sphagnum-willow bogs where soils are waterlogged and acidic. Presumed host plant is <i>Hosackia gracilis</i> .	N
<i>Noyo interseassa</i>	Ten Mile shoulderband snail	None	None	G2	S2	None	Known from a few locations in Mendocino County with limited habitat information. Known from Ten Mile Dunes.	N
<i>Speyeria zerene behrensii</i>	Behren's silverspot butterfly	Endangered	None	G5T1	S1	XERCES:CI	Historically from near the City of Mendocino, Mendocino County, south to the area of Salt Point State Park, Sonoma County. Now presumed to be from Manchester south to Salt Point area. Inhabits coastal terrace prairie with caterpillar host plants: violet (<i>Viola adunca</i>) and adult nectar sources: thistles, asters, etc.	N
FISH								
<i>Cottus gulosus</i>	rifle sculpin	None	None	G5	S3S4	CDFW:SSC	Found in many increasingly isolated watersheds in the Central Valley drainage and the central coast. Lives in permanent, cool, headwater streams where riffles and rocky substrates predominate. Such streams are clear and shaded, with moderate gradients.	N
<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	G4	S4	AFS:VU BLM:S CDFW:SSC USFS:S	Anadromous lamprey found in freshwater rivers around the Pacific Rm, from Japan to Baja California. Adult Pacific Lamprey spawn in habitat similar to salmon: low gradient stream reaches, in gravel, often at the tailouts of pools and riffles.	N
<i>Eucyclogobius newberry</i>	tidewater goby	Endangered	None	G3	S3	AFS:EN IUCN:VU	Brackish water habitats along the California coast from Agua Hedionda lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	N
<i>Lampetra ayresii</i>	River lamprey	None	None	G5	S3	AFS:VU CDFW:SSC	Anadromous lamprey that uses riffle and side channel habitats for spawning and for ammocoete rearing where good water quality is essential. Adult Pacific Lamprey spawn in habitat similar to salmon: low gradient stream reaches, in gravel, often at the tailouts of pools and riffles.	N
<i>Lampetra richardsoni</i>	western brook lamprey	None	None	G4G5	S3S4	CDFW:SSC USFS:S	Live in coastal streams from southeastern Alaska south to California and inland in the Columbia and Sacramento-San Joaquin River drainages. Need clear, cold water in little disturbed watersheds as well as clean gravel near cover (boulders, riparian vegetation, logs etc.) for spawning. Additionally, they need habitats with slow moving water and fine sediments for rearing.	N
<i>Lavinia symmetricus navarroensis</i>	Navarro roach	None	None	G4T1T2	S2S3	CDFW:SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams. Found in the lower, warmer reaches of streams in the Russian and Navarro River drainages.	N
<i>Lavinia symmetricus parvipinnis</i>	Gualala roach	None	None	G4T1T2	S2S3	CDFW:SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams.	N
<i>Oncorhynchus gorbuscha</i>	pink salmon	None	None	G5	S1	None	In North America, they're found from the Arctic coast in Alaska and territories in Canada to central California, although they do not reproduce in significant numbers south of Puget Sound. Pink salmon do not reside in fresh water for an extended period. Require beds of loose, silt-free, coarse gravel for spawning.	N
<i>Oncorhynchus kisutch pop. 4</i>	coho salmon - central California coast ESU	Endangered	Endangered	G5T2T3Q	S2	AFS:EN	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	N
<i>Oncorhynchus mykiss irideus pop. 16</i>	steelhead-northern California DPS	Threatened	None	G5T2T3Q	S2S3	AFS:TH	Cool, swift, shallow water and clean loose gravel for spawning.	N
<i>Oncorhynchus tshawytscha pop. 17</i>	chinook salmon - California coastal ESU	Threatened	None	G5T2Q	S2	AFS:TH	Adults depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27° C lethal to adults.	N
<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened	G5	S1	None	Inhabits estuaries along the Pacific Coast, from San Francisco Bay to Alaska. Open water of estuaries, both in seawater and freshwater areas, typically in the middle or deeper areas of the water column.	N
AMPHIBIANS & REPTILES								
<i>Rhyacotriton variegatus</i>	southern torrent (=seep) salamander	None	None	G3G4	S2S3	CDFW:SSC IUCN:LC USFS:S	Found in Coastal redwood, Douglas fir, mixed conifer, montane riparian, and montane hardwood-conifer forests from northern California south to Point Arena. Aquatic habitat includes permanent cold creeks, streams and seepages with low water flow, associated with moss-covered rocks within trickling water and the splash zone of waterfalls; old-growth coniferous forests with closed canopy; <50% cobble in creeks, remainder mixture of pebble, gravel and sand.	N
<i>Ascaphus truei</i>	Pacific tailed frog	None	None	G4	S3S4	CDFW:SSC IUCN:LC	Occurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine habitats. Coastal from Anchor Bay, Mendocino Co. to Oregon border. Cold, clear, rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for cover for adults, eggs, and larvae. After heavy rains, adults may be found in the woods away from the stream.	N
<i>Dicamptodon ensatus</i>	California giant salamander	None	None	G3	S2S3	CDFW:SSC IUCN:NT	Found along the West Coast of North America from northern California to southern British Columbia. Found in a variety of aquatic habitats, including lakes, ponds, rivers, and streams. They prefer fast moving water to slow moving water. Cover is used for hiding, protection from the sun, and brooding eggs.	N
<i>Rana aurora</i>	northern red-legged frog	None	None	G4	S3	CDFW:SSC USFS:S	Found in humid forests, woodlands, grasslands, and streambeds in northwestern California. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season. Integration zone between northern and California species is between Manchester and Elk.	N

Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
<i>Rana boylei</i>	foothill yellow-legged frog	None	Endangered	G3	S3	BLM:S CDFW:SSC IUCN:NT USFS:S	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying.	N
<i>Rana draytoni</i>	California red-legged frog	Threatened	None	G2S3	S2S3	CDFW:SSC IUCN:VU	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	N
<i>Taricha rivularis</i>	red-bellied newt	None	None	G2	S2	CDFW:SSC IUCN:LC	Occur in coastal California north of San Francisco Bay, in Sonoma, Lake, Mendocino, and Humboldt counties, at elevations between 150-450'. Range confined to the coast redwood belt, but not restricted to redwood forests. Adults migrate from terrestrial to aquatic habitats seasonally for breeding.	N
<i>Emys marmorata marmorata</i>	western pond turtle	None	None	G3G4	S3	BLM:S CDFW:SSC IUCN:VU USFS:S	Former scientific name: <i>Chrysemys marmorata marmorata</i> . Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites. Nests sites may be found up to 0.5 km from water.	N
BIRDS								
<i>Accipiter cooperii</i>	Cooper's hawk (nesting)	None	None	G5	S4	CDFW:WL IUCN:LC	Nesting: woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood plains; also, live oaks.	N
<i>Accipiter gentilis</i>	northern goshawk (nesting)	None	None	G5	S3	BLM:S CDF:S CDFW:SSC IUCN:LC USFS:S	Nesting: within and in vicinity of coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodge pole pine, Jeffrey pine, and aspens are typical nest trees. Northern goshawks typically nest in conifer forests containing large trees and an open understory on the west slope of the Sierra. There is historic nesting in Big River and Pudding Creek. Winter migrant on the coast.	N
<i>Accipiter striatus</i>	sharp-shinned hawk (nesting)	None	None	G5	S4	CDFW:WL IUCN:LC	Nesting: ponderosa pine, black oak, riparian deciduous, mixed conifer and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft. of water. Nests in dense, even-aged, single-layered forest canopy, usually nests in dense, pole and small-tree stands of conifers, which are cool, moist, well shaded, with little ground-cover, near water.	N
<i>Agelaius tricolor</i>	tricolored blackbird (nesting colony)	None	Threatened	G1G2	S1S2	BLM:S CDFW:SSC IUCN:EN NABCI:RWL USFWS:BCC	Nesting colony: highly colonial species, most numerous in central valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, such as cattails and foraging area with insect prey within a few km of the colony. Known inland from McGuire's Pond.	N
<i>Ammodramus savannarum</i>	grasshopper sparrow (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Nesting: dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting. Summer (breeding) resident in Mendocino County known from north of Ten Mile River.	N
<i>Aquila chrysaetos</i>	golden eagle (nesting & wintering)	None	None	G5	S3	BLM:S CDF:S CDFW:FP CDFW:WL IUCN:LC	Nesting and wintering: rolling foothills mountain areas, sage-juniper flats, desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	N
<i>Ardea alba</i>	great egret (nesting colony)	None	None	G5	S4	CDF:S IUCN:LC	Rookery: colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	N
<i>Ardea herodias</i>	great blue heron (nesting colony)	None	None	G5	S4	CDF:S IUCN:LC	Rookery: colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	N
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	None	None	G5T2T3	S3	CDFW:WL USFWS:BCC	Found from western United States to northwestern Mexico. Breed in coastal sagebrush, chaparral, and other open, scrubby habitats. In chaparral.	N
<i>Asio flammeus</i>	short-eared owl (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Found throughout much of North America and Eurasia. Prefer to live in marshes and bogs; they inhabit open, treeless areas.	N
<i>Asio otus</i>	long-eared owl (nesting)	None	None	G5	S3?	CDFW:SSC IUCN:LC	Range extends throughout temperate North America, through Europe and the former Soviet Union as far east as Japan. Inhabits dense vegetation close to grasslands, as well as open forests shrub lands from sea level up to 2000 m elevation.	N
<i>Athene cunicularia</i>	burrowing owl (burrow sites and some winter sites)	None	None	G4	S3	BLM:S CDFW:SSC IUCN:LC USFWS:BCC	Burrow sites: open, dry annual or perennial grasslands, deserts and scrublands, and dunes characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	N
<i>Brachyramphus marmoratus</i>	marbled murrelet (nesting)	Threatened	Endangered	G3	S2	CDF:S IUCN:EN NABCI:RW	Nesting: feeds near-shore; nests inland along coast, from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir. Presence of platforms (flat surface at least four inches in diameter) appears to be the most important stand characteristic for predicting murrelet presence. Stands can be: 1) mature (with or without an old-growth component); 2) old-growth; 3) young coniferous forests with platforms; and 4) include large residual trees in low densities sometimes less than one tree per acre.	N
<i>Buteo regalis</i>	ferruginous hawk (wintering)	None	None	G4	S3S4	CDFW:WL IUCN:LC USFWS:BCC	Usually east of the coastal belt, uncommon migrant in coastal Mendocino County seen in open areas such as Bald Hill and Manchester. Feeding habitat in open, treeless areas. Does not breed in California.	N
<i>Cerorhinca monocerata</i>	rhinoceros auklet (nesting colony)	None	None	G5	S3	CDFW:WL IUCN:LC	Breeds from California (the Channel Islands) to the Aleutian Islands in Alaska in North America. Winters both in offshore and inshore waters, exhibiting some migration. Nests in burrows dug into the soil, or in natural caves and cavities between 1 and 5 m deep.	N
<i>Chaetura vauxi</i>	Vaux's swift (nesting)	None	None	G5	S2S3	CDFW:SSC IUCN:LC	Nesting: redwood, Douglas fir, and other coniferous forests. Nests in large hollow trees and snags. Often nests in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes. The most important habitat requirement appears to be an appropriate nest-site in a large, hollow tree. Forages over most terrains and habitats, often high in the air. Shows an apparent preference for foraging over rivers and lakes.	N
<i>Charadrius nivosus nivosus</i>	western snowy plover (nesting)	Threatened	None	G3T3	S2	CDFW:SSC NABCI:RWL USFWS:BCC	Nesting: federal listing applies only to the Pacific coastal population. Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting. Sand spits, dune-backed beaches, unvegetated beach strands, open areas around estuaries, and beaches at river mouths are the preferred coastal habitats for nesting. Less common nesting habitat includes salt pans, coastal dredged spoil disposal sites, dry salt ponds, and salt pond levees and islands.	N
<i>Circus hudsonius</i>	Northern harrier (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Northern harriers prefer sloughs, wet meadows, marshlands, swamps, prairies, plains, grasslands, and shrublands and perch on structures such as fence posts. Nesting habitat: nest on the ground, usually near water, or in tall grass, open fields, clearings, or on the water on a stick foundation, willow clump, or sedge tussock. Most nests built within patches of dense, often tall, vegetation (e.g., cattails) in undisturbed areas. They usually nest near hunting grounds. Foraging: They need open, low woody or herbaceous vegetation for nesting and hunting.	N
<i>Contopus cooperi</i>	olive-sided flycatcher (nesting)	None	None	G4	S3	CDFW:SSC IUCN:NT NABCI:YWL USFWS:BCC	Breeds in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds. Tall standing dead trees are used as perch trees for catching flying insects. Accordingly, an open canopy is a key components of suitable habitat. Nest is an open cup of twigs, rootlets, and lichens, placed out near tip of horizontal branch of a tree.	N
<i>Egretta thula</i>	Snowy egret (nesting colony)	None	None	G5	S4	IUCN:LC	Rookery: colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	N
<i>Elanus leucurus</i>	white-tailed kite (nesting)	None	None	G5	S3S4	BLM:S CDFW:FP IUCN:LC	Nesting: rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland, open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. Winter congregation of at least 20 birds seen at Manchester State Park in early 2000's. One nest known from a THP in Albion ~2006; nest was at the edge of conifer forest with no pasture immediately adjacent.	N

Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
<i>Falco columbarius</i>	Merlin (wintering)	None	None	G5	S3S4	CDFW:WL IUCN:LC	General wintering habitat. Uncommon winter migrants on the coast. Habitat apparently similar to breeding habitat, (open forest and grasslands). Regularly hunts prey (e.g., shorebirds) concentrated on tidal flats. Often winters in cities throughout its range, where frequently perches on buildings, power poles, and tall trees. Also winters in open woodland, grasslands, open cultivated fields, marshes, estuaries, and seacoasts. Frequents open habitats at low elevation near water and tree stands.	N
<i>Falco peregrinus anatum</i>	American peregrine falcon (nesting)	Delisted	Delisted	G4T4	S3S4	CDP:S CDFW:FP USFWS:BCC	Nesting: near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	N
<i>Fratercula cirrhata</i>	tufted puffin (nesting colony)	None	None	G5	S1S2	CDFW:SSC IUCN:LC	Nesting colony: open-ocean bird; nests along the coast on islands, islets, or (rarely) mainland cliffs free of human disturbance and mammalian predators. Nests in burrows or rock crevices when sod or earth is unavailable for burrowing. Occurs year-round offshore near breeding colonies in northern California, but more common in winter. Breeding records from Goat Rock, Mendocino Headlands State Park.	N
<i>Haematopus bachmani</i>	Black oystercatcher (nesting)	None	None	G5	SNR	IUCN:LC USFWS:BCC	From the Aleutian Islands to Baja California, the forage on intertidal macroinvertebrates along gravel or rocky shores and in the southern part of their range nest primarily on rocky headlands and offshore rocks.	N
<i>Haliaeetus leucocephalus</i>	bald eagle (nesting & wintering)	Delisted	Endangered	G5	S3	CDP:S CDFW:FP IUCN:LC USFS:S USFWS:BCC	Nesting and wintering: ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter. Known from winter in Lake Cleone, MacKerricher State Park and Little River.	N
<i>Hydrobates homochroa</i>	ashy storm-petrel (nesting colony)	None	None	G2	S2	BLM:S CDFW:SSC IUCN:EN NABCI:RWL USFWS:BCC	Nests on several islands off the coast of California in the USA and northern Mexico. Usually found out on the open ocean, and nests on rocky island terrain.	N
<i>Icteria virens</i>	yellow-breasted chat (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Breeds from the southern plains of Canada to central Mexico. Breeds in areas of dense shrubbery, including abandoned farm fields, clearcuts, powerline corridors, fencerows, forest edges and openings, swamps, and edges of streams and ponds. Its habitat often includes blackberry bushes.	N
<i>Larus californicus</i>	California gull (nesting)	None	None	G5	S4	CDFW:WL IUCN:LC	Colony nesters and usually occurring on an island or vegetated offshore rock.	N
<i>Melanerpes lewis</i>	Lewis' woodpecker (nesting)	None	None	G4	S4	IUCN:LC NABCI:YWL USFWS:BCC	Breed in open ponderosa pine forests and burned forests with a high density of standing dead trees (snags). They also breed in woodlands near streams, oak woodlands, orchards, and pinyon-juniper woodlands.	N
<i>Pandion haliaetus</i>	Osprey (nesting)	None	None	G5	S4	CDP:S CDFW:WL IUCN:LC	Nesting: ocean shore, bays, fresh-water lakes, and larger streams. Large nests built in tree-tops within 6-7 to 15 miles of good fish-producing body of water. Flattened portions of partially broken off snags, trees, rocks, dirt pinnacles, cacti, and numerous man-made structures such as utility poles and duck blinds are used for nests. Furthest nest inland may be McGuire's Pond.	N
<i>Passerculus sandwichensis alaudinus</i>	Bryant's savannah sparrow	None	None	G5T2T3	S2S3	CDFW:SSC	Breeds widely across northern and central North America and winters primarily in the southern United States, Baja California, and mainland Mexico south to Guatemala and northern Honduras. Breed in open areas with low vegetation, including most of northern North America from tundra to grassland, marsh, and farmland.	N
<i>Pelecanus occidentalis californicus</i>	California brown pelican (nesting colony & communal roosts)	Delisted	Delisted	G4T3T4	S3	BLM:S CDFW:FP USFS:S	Range extends from British Columbia, Canada to Nayarit, Mexico, while their breeding range is between the Channel Islands and Central Mexico. Typically found on rocky or vegetated offshore islands, in harbors and marinas, in estuaries, and in shallow breakwaters and sheltered bays.	N
<i>Phalacrocorax auritus</i>	double-crested cormorant (nesting colony)	None	None	G5	S4	CDFW:WL IUCN:LC	Rookery site: colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	N
<i>Picoides nuttallii</i>	Nuttall's woodpecker (nesting)	None	None	G4G5	SNR	ABC:WL:BCC IUCN:LC	Ranging from west of the Cascade mountains and in the Sierra Nevada from southern Oregon to Northern Baja California. Nests are excavated in dead branches or snags of various trees, usually in close association with oak woodlands and riparian zone, habitat vulnerable to development. At least one Mendocino Coast record from 2011 Audubon Christmas Bird Count.	N
<i>Progne subis</i>	purple martin (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Nesting: inhabits woodlands, low elevation coniferous forest of Douglas fir, Ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures such as weep holes in bridges. Nest often located in tall, isolated trees and snags. Nesting on the Mendocino Coast known, in part, from Juan Creek, Ten Mile, Noyo, and Big River, and snags from Ten Mile River to Pudding Creek. Need open foraging habitats.	N
<i>Riparia riparia</i>	bank swallow (nesting)	None	Threatened	G5	S2	BLM:S IUCN:LC	Near water; fields, marshes, streams, lakes. Typically seen feeding in flight over (or near) water at all seasons. Nests in colonies in vertical banks of dirt or sand, usually along rivers or ponds, seldom away from water.	N
<i>Selasphorus rufus</i>	rufous hummingbird (nesting)	None	None	G5	S1S2	IUCN:LC USFWS:BCC	Breeds in open or shrubby areas, forest openings, yards and parks, and sometimes in forests, thickets, and meadows. Late winter and spring migrant on the California coast. Breeding range from southeast Alaska and as far south as northwestern California.	N
<i>Selasphorus sasin</i>	Allen's hummingbird (nesting)	None	None	G5	SNR	ABC:WL:BCC IUCN:LC USFWS:BCC	Breeds only along a narrow strip of coastal California and southern Oregon. Nests in densely vegetated areas and forests. An early migrant compared with most North American birds, arriving in summer breeding grounds as early as January. Breeds in moist coastal areas, scrub, chaparral, and forests. Winters in forest edge and scrub clearings with flowers.	N
<i>Setophaga occidentalis</i>	hermit warbler (nesting)	None	None	G4G5	SNR	CDFW:SSC	Breeding range is relatively limited to the Pacific Coast and the Cascade and Sierra Nevada mountain ranges of Washington, Oregon, and California. Some winter along the coastal central and southern California, but most winter primarily in the mountains of western Mexico and Central America. Nesting habitats in Pacific northwest are coniferous forests with a high canopy volume, generally preferring mature stands of pine and Douglas fir. Avoids areas with a high	N
<i>Setophaga petechia</i>	yellow warbler (nesting)	None	None	G5	S3S4	CDFW:SSC USFWS:BCC	Nests from the Arctic Circle to Mexico. Bushes, swamp edges, streams, gardens. Breeds in a variety of habitats in east, including woods and thickets along edges of streams, lakes, swamps, and marshes, favoring willows, alders, and other moisture-loving plants.	N
<i>Sphyrapicus ruber</i>	red-breasted sapsucker (nesting)	None	None	G5	S4	None	Breeds primarily in coniferous forests, but also uses deciduous and riparian habitat, as well as orchards and power line corridors. The nest is a hole usually dug in a live deciduous tree (e.g. alder, willow, madrone) with possible preference for larger trees showing decay-softened wood.	N
<i>Strix occidentalis caurina</i>	northern spotted owl	Threatened	Threatened	G3G4T3	S2	CDP:S IUCN:NT NABCI:YWL	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests w/patches of big trees. High, multistory canopy dominated by big trees, many trees w/cavities or broken tops, woody debris, and space under	N

Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
Mammals								
<i>Antrozous pallidus</i>	pallid bat	None	None	G4	S3	BLM:S CDFW:SSC IUCN:LC USFS:S WBWG:H	A wide variety of habitats deserts, grasslands, shrublands, woodlands and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting. A yearlong resident in most of the range. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings where there is protection from high temperatures.	N
<i>Aptodontia rufa nigra</i>	Point Arena mountain beaver	Endangered	None	G5T1	S1	CDFW:SSC IUCN:LC	Generally known from 2 miles north of Bridgeport Landing to 5 miles south of the town of Point Arena. Coastal areas often near springs or seepages; mesic coastal scrub, northern dune scrub, edges of conifer forests, and riparian plant communities. North facing slopes of ridges and gullies with friable soils and thickets of undergrowth.	N
<i>Arborimus pomo</i>	Sonoma tree vole	None	None	G3	S3	CDFW:SSC IUCN:NT	Species split into red tree vole and Sonoma tree vole; approximate boundary between two species is Klamath River. Inhabits north coast fog belt from Oregon border to Sonoma Co. in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of pine, grand fir, hemlock or spruce.	N
<i>Antrozous pallidus</i>	pallid bat	None	None	G4	S3	BLM:S CDFW:SSC IUCN:LC USFS:S WBWG:H	Occur in semi-arid and arid landscapes in western North America. They are found primarily in grasslands, shrub-steppe, and desert environments with rocky outcrops, but also dry open oak or ponderosa forest, and open farmland. Roosts are most commonly rock crevices but buildings, bridges, live trees and snags are also used.	N
<i>Corynorhinus townsendi</i>	Townsend's big-eared bat	None	None	G4	S2	BLM:S CDFW:SSC IUCN:LC USFS:S WBWG:H	Generally found in the dry uplands throughout the West, but also occur in mesic coniferous and deciduous forest habitats along the Pacific coast. Unequivocally associated with areas containing caves and cave-analogs for roosting habitat. Requires spacious cavern-like structures for roosting during all stages of its life cycle. Typically, they use caves and mines, but have been noted roosting in large hollows of redwood trees, attics and abandoned buildings, lava tubes, and under bridges. Extremely sensitive to disturbance.	N
<i>Eumetopias jubatus</i>	Steller (=northern) sealion	Delisted	None	G3	S2	IUCN:EN MMC:SSC	Inhabit the colder temperate to subarctic waters of the North Pacific Ocean. They need both terrestrial and aquatic habitats. They mate and give birth on land, at traditional sites called rookeries. Haulout and rookery sites usually consist of beaches (gravel, rocky, or sand), ledges, and rocky reefs.	N
<i>Eumops perotis californicus</i>	western mastiff bat	None	None	G4G5T4	S3S4	BLM:S CDFW:SSC WBWG:H	Found from the coast of the southwestern United States into central Mexico and southeast to Cuba. Suitable habitat for the western mastiff bat consists of extensive open areas with potential roost locations having vertical faces to drop off from and take flight, such as crevices in rock outcroppings and cliff faces, tunnels and tall buildings. Habitats include coastal and desert scrublands, annual and perennial grasslands, conifer and deciduous woodlands, as well as palm oases.	N
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	G3G4	S3S4	IUCN:LC WBWG:M	Ranges throughout California in coastal and montane forests. May be found anywhere in California during spring and fall migrations. Primarily a forest (tree-roosting) bat associated with north temperate zone conifer and mixed conifer/hardwood forests. Prefers forested (frequently coniferous) areas adjacent to lakes, ponds, and streams. During migration, sometimes occurs in xeric areas. Roosts in dead or dying trees with exfoliating bark, extensive vertical cracks, or cavities, rock crevices, and occasionally under wood piles, in leaf litter, under foundations, and in buildings, mines and caves. The primary threat is likely loss of roosting habitat due to logging practices that fail to accommodate	N
<i>Lasius blossevillei</i>	western red bat	None	None	G4	S3	CDFW:SSC IUCN:LC WBWG:H	Locally common in some areas of California from Shasta County south to the Mexican border. California Central Valley is the species' primary breeding region. Species appears to be strongly associated with riparian habitats for roosting and foraging, particularly mature stands/large diameter of	N
<i>Lasius cinereus</i>	hoary bat	None	None	G3G4	S4	IUCN:LC WBWG:M	Most widespread North American bat. Solitary species that winters along the coast and in southern California. Roosts in foliage of trees near ends of branches. Blends with the bark of trees. Highly associated with forested habitats but can be found in suburbs with old, large trees.	N
<i>Martes caurina humboldtensis</i>	Humboldt marten	Proposed Threatened	Endangered	G4G5T1	S1	CDFW:SSC USFS:S	Endemic to the coastal forests of northwestern California with a historical range described as "the narrow northwest humid coast strip, chiefly within the redwood belt" from the Oregon border to northern Sonoma county. However, the one known remnant Humboldt marten population occurs in the north-central portion of the described range in an area dominated by Douglas-fir and tanoak. Typically associated with closed-canopy, late-successional, mesic coniferous forests with complex physical structure near the ground. Very rare on the Mendocino coast.	N
<i>Myotis evotis</i>	long-eared myotis bat	None	None	G5	S3	BLM:S IUCN:LC WBWG:M	Widespread in California, but generally is believed to be uncommon in most of its range. It avoids the arid Central Valley and hot deserts, occurring along the entire coast and interior mountains. Found in nearly all brush, woodland, and	N
Key for Counties: MEN: Mendocino, SO: Sonoma, CL: Clear Lake, HB: Humboldt, TR: Trinity								

Floristic List	
Taxon By Family	Common Name
FERNS AND ALLIES	
Dennstaedtiaceae	
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	bracken; western bracken; hairy bracken fern
Dryopteridaceae	
<i>Athyrium filix-femina</i>	lady fern
<i>Dryopteris arguta</i>	western wood fern; shield fern
<i>Polystichum munitum</i>	western sword fern
Equisetaceae	
<i>Equisetum arvense</i>	field horsetail; common horsetail
<i>Equisetum telmateia</i>	giant horsetail
Polypodiaceae	
<i>Polypodium californicum</i>	California polypody
GYMNOSPERMS	
Cupressaceae	
<i>Hesperocyparis macrocarpa</i>	Monterey cypress
Pinaceae	
<i>Abies grandis</i>	grand fir; lowland fir
<i>Pinus muricata</i>	Bishop pine; prickly-cone pine; bull pine
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas fir
DICOTS	
Aizoaceae	
<i>Carpobrotus chilensis</i>	sea fig
<i>Carpobrotus edulis</i>	sea fig, hottentot fig, iceplant
Anacardiaceae	
<i>Toxicodendron diversilobum</i>	poison oak
Apiaceae	
<i>Angelica hendersonii</i>	Henderson's angelica
<i>Conium maculatum</i>	poison hemlock
<i>Daucus pusillus</i>	rattlesnake weed, American wild carrot
<i>Heracleum maximum</i>	common cow parsnip
<i>Osmorhiza berteroi</i>	mountain sweetcicely, sweet cicely
<i>Sanicula crassicaulis</i>	Pacific sanicle, gamble weed, Pacific blacksnakeroot
Apocynaceae	
<i>Vinca major</i>	greater periwinkle, periwinkle
Aquifoliaceae	
<i>Ilex aquifolium</i>	English holly
Araliaceae	
<i>Hedera helix</i>	English ivy
Asteraceae	
<i>Achillea millefolium</i>	yarrow
<i>Anaphalis margaritacea</i>	pearly everlasting
<i>Artemisia douglasiana</i>	mugwort, wormwood, Douglas' sagewort
<i>Baccharis pilularis</i>	coyote brush
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Erigeron canadensis</i>	Canada horseweed, horseweed
<i>Erigeron glaucus</i>	seaside daisy
<i>Eriophyllum lanatum</i> var. <i>arachnoideum</i>	spiderweb sunflower
<i>Eriophyllum staechadifolium</i>	seaside golden yarrow, seaside wooly sunflower, lizard's tail

Floristic List	
Taxon By Family	Common Name
<i>Gamochaeta calviceps</i>	purple everlasting
<i>Grindelia stricta</i>	coastal gumweed
<i>Hypochaeris radicata</i>	rough cat's ear, hairy cat's ear
<i>Leontodon saxatilis</i>	lesser hawkbit
<i>Matricaria discoidea</i>	pineapple weed
<i>Senecio glomeratus</i>	cut-leafed erectites, New Zealand fireweed
<i>Senecio minimus</i>	little erectites, Australian fireweed
<i>Silybum marianum</i>	milk thistle
<i>Soliva sessilis</i>	common soliva, Field burrweed
<i>Sonchus asper ssp. asper</i>	prickly sow thistle
<i>Sonchus oleraceus</i>	common sow thistle
<i>Symphyotrichum chilense</i>	california aster
<i>Taraxacum officinale</i>	Common dandelion
Betulaceae	
<i>Alnus rubra</i>	red alder, Oregon alder
Brassicaceae	
<i>Cardamine oligosperma</i>	Idaho bittercress, bitter cress
<i>Erysimum menziesii ssp. concinnum</i>	headland wallflower, coast wallflower
<i>Nasturtium officinale</i>	water cress
<i>Raphanus sativus</i>	wild radish
Caprifoliaceae	
<i>Lonicera hispidula</i>	hairy honeysuckle
<i>Lonicera involucrata var. ledebourii</i>	coast twinberry, Twinberry honeysuckle
Caryophyllaceae	
<i>Cerastium arvense</i>	field chickweed, meadow chickweed
<i>Spergularia rubra</i>	red sandspurry
Crassulaceae	
<i>Dudleya farinosa</i>	north coast dudleya, Bluff lettuce, Powdery liveforever
Cucurbitaceae	
<i>Marah oregana</i>	coast wild-cucumber; wild cucumber, coast manroot
Ericaceae	
<i>Gaultheria shallon</i>	salal
Fabaceae	
<i>Acmispon parviflorus</i>	Hill lotus
<i>Cytisus scoparius</i>	Scotch broom
<i>Genista monspessulana</i>	French broom
<i>Lathyrus latifolius</i>	perennial sweet pea, everlasting pea
<i>Lotus corniculatus</i>	bird's-foot trefoil, Birdfoot deervetch
<i>Lupinus arboreus</i>	coastal bush lupine, tree lupine
<i>Lupinus littoralis</i>	seashore lupine
<i>Medicago arabica</i>	burclover, spotted butclover
<i>Medicago polymorpha</i>	California burclover, Bur clover, Bur medic
<i>Trifolium dubium</i>	shamrock, Shamrock clover, Suckling clover
<i>Trifolium glomeratum</i>	Clustered clover
<i>Trifolium repens</i>	white clover
<i>Trifolium subterraneum</i>	subterranean clover
<i>Vicia americana var. americana</i>	American vetch
<i>Vicia gigantea</i>	giant vetch
<i>Vicia sativa</i>	vetch

Floristic List	
Taxon By Family	Common Name
Fagaceae	
<i>Notholithocarpus densiflorus var. densiflorus</i>	tanoak
Garryaceae	
<i>Garrya elliptica</i>	coast silk tassel
Geraniaceae	
<i>Geranium dissectum</i>	cut-leaved geranium
<i>Geranium molle</i>	dove's-foot geranium, crane's bill
Hydrophyllaceae	
<i>Phacelia californica</i>	California phacelia, rock phacelia
Lamiaceae	
<i>Prunella vulgaris var. lanceolata</i>	lance-leaf self-heal
<i>Stachys ajugoides</i>	ajuga hedge nettle, bugle hedgenettle
<i>Stachys rigida</i>	rough hedgenettle
Lythraceae	
<i>Lythrum hyssopifolia</i>	hyssop loosestrife
Malvaceae	
<i>Malva parviflora</i>	cheeseweed mallow
Myrtaceae	
<i>Eucalyptus globulus</i>	blue gum, Tasmanian bluegum
Orobanchaceae	
<i>Castilleja mendocinensis</i>	Mendocino coast Indian paintbrush
<i>Castilleja wightii</i>	Wight's paintbrush
Oxalidaceae	
<i>Oxalis corniculata</i>	creeping woodsorrel, yellow sorrel
<i>Oxalis pes-caprae</i>	Bermuda buttercup
<i>Oxalis articulata ssp. rubra</i>	windowbox woodsorrel
Plantaginaceae	
<i>Plantago lanceolata</i>	English plantain, ribwort, narrow leaved plantain, ribgrass
<i>Veronica americana</i>	American speedwell, American brooklime
Polygonaceae	
<i>Eriogonum latifolium</i>	coast buckwheat
<i>Rumex acetosella</i>	common sheep sorrel
<i>Rumex crispus</i>	curly dock
Portulacaceae	
<i>Claytonia perfoliata</i>	miner's lettuce
Primulaceae	
<i>Lysimachia arvensis</i>	scarlet pimpernel, poor man's weathervane
Rhamnaceae	
<i>Ceanothus thyrsiflorus var. griseus</i>	Carmel ceanothus
<i>Frangula purshiana</i>	cascara buckthorn
Rosaceae	
<i>Cotoneaster</i> sp.	cotoneaster
<i>Fragaria chiloensis</i>	beach strawberry
<i>Fragaria vesca</i>	woodland strawberry, wood strawberry, California Strawberry
<i>Horkelia californica var. californica</i>	California horkelia
<i>Malus</i> sp.	apple tree
<i>Rosa nutkana var. nutkana</i>	Nootka rose
<i>Rubus armeniacus</i>	Himalaya-berry, Himalayan blackberry
<i>Rubus parviflorus</i>	thimbleberry

Floristic List		
Taxon By Family		Common Name
	<i>Rubus ursinus</i>	California blackberry
Rubiaceae		
	<i>Galium</i> sp.	
	<i>Galium spurium</i>	stickywilly, cleavers, common bedstraw, goose grass
Salicaceae		
	<i>Salix</i> sp.	willow
Scrophulariaceae		
	<i>Scrophularia californica</i>	California figwort, California bee plant
MONOCOTS		
Agavaceae		
	<i>Chlorogalum pomeridianum</i>	soaproot, amole
Alliaceae		
	<i>Allium dichlamydeum</i>	coastal onion
Amaryllidaceae		
	<i>Narcissus pseudonarcissus</i>	daffodil
Iridaceae		
	<i>Iris douglasiana</i>	Douglas' iris
	<i>Sisyrinchium bellum</i>	blue-eyed grass
	<i>Watsonia bulbillifera</i>	bulbil bugle lily
Juncaceae		
	<i>Juncus bufonius</i> var. <i>bufonius</i>	toad rush
	<i>Juncus occidentalis</i>	slender juncus, Western rush
	<i>Juncus patens</i>	common rush, spreading rush
	<i>Luzula comosa</i>	hairy wood rush
Poaceae		
	<i>Agrostis capillaris</i>	colonial bentgrass
	<i>Agrostis gigantea</i>	creeping bentgrass, giant bentgrass, redtop
	<i>Agrostis hallii</i>	Hall's bent grass, Hall redtop
	<i>Aira praecox</i>	yellow hairgrass, little hairgrass
	<i>Anthoxanthum odoratum</i>	sweet vernal grass
	<i>Avena barbata</i>	slender wild oat
	<i>Briza maxima</i>	big quaking grass; rattlesnake grass
	<i>Bromus carinatus</i>	California brome
	<i>Bromus catharticus</i>	rescue brome
	<i>Bromus maritimus</i>	maritime brome
	<i>Bromus diandrus</i>	ripgut brome; ripgut
	<i>Bromus hordeaceus</i>	soft chess
	<i>Bromus vulgaris</i>	narrow-flowered brome
	<i>Cortaderia jubata</i>	Andes grass, purple pampass grass
	<i>Dactylis glomerata</i>	orchard-grass
	<i>Danthonia californica</i>	California oatgrass, wild oatgrass
	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	blue wildrye; blue wild rye
	<i>Festuca arundinacea</i>	tall fescue, meadow fescue
	<i>Festuca bromoides</i>	brome fescue
	<i>Festuca myuros</i>	rattail sixweeks grass
	<i>Festuca rubra</i>	red fescue
	<i>Holcus lanatus</i>	velvet grass
	<i>Hordeum murinum</i> ssp. <i>glaucum</i>	blue foxtail, smooth barley
	<i>Poa annua</i>	annual blue grass

Floristic List	
Taxon By Family	Common Name
<i>Poa kelloggii</i>	Kellogg's bluegrass
<i>Poa unilateralis</i>	ocean bluff blue grass
<i>Polypogon australis</i>	Chilean beardgrass, rabbitfoot grass
<i>Rytidosperma penicillatum</i>	purple awned wallaby grass; hairy oat grass

ENVIRONMENTALLY SENSITIVE HABITAT AREAS DEFINED

Definition of Environmentally Sensitive Habitat Area

The Mendocino County Local Coastal Plan (LCP) and the California Coastal Act (CCA) define an Environmentally Sensitive Habitat Area (ESHA) as:

“any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments”.

[emphasis given]

The Mendocino County LCP and California Coastal Commission (CCC) have identified specific types of ESHAs including: wetlands, sand dunes, estuaries, streams, rivers, lakes, open coastal waters, coastal waters, riparian habitats, other resource areas, special status species, and the habitat of special status species. For the purpose of this report, the following definitions were used to assess potential ESHAs present in the study area.

Wetland ESHAs

The Mendocino County Local Coastal Plan (LCP) and the California Coastal Act (CCA) define wetlands as:

“Lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.”

California Coastal Commission Administrative Regulations (Section 13577 (b)) provide the following detailed definition:

“Wetlands are lands 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 or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance 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.” In summary, a wetland in the coastal zone falls under CCA jurisdiction if any of the following conditions are present: wetland hydrology, dominance of wetland vegetation (hydrophytes), and/or presence of hydric soils.”

The Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas (CCC 1981) use the CCA definition to establish technical criteria to delineate wetlands. These guidelines consider wetland hydrology as the most important parameter to identify a wetland within the coastal zone: “the single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water, and this is the feature used to describe wetlands in the Coastal Act. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil, and therefore only plants adapted to these wet conditions (hydrophytes) could thrive in these wet (hydric) soils. Thus, the presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria.” The saturation of soil in a wetland must be at or near the surface (approximately one foot or less) for a period of time (usually more than two weeks) in order to facilitate anaerobic

soil reduction processes that produce wetland conditions.

Identifying the presence of either wetland classified plants or hydric soils is referred to as the “one parameter approach.” This approach can be useful because wetland plants, wetland hydrology, and/or hydric soils often co-occur, especially in natural undisturbed areas. However, situations do exist where wetland classified plants are found in the absence of other wetland conditions. These areas are not wetlands and a delineation study must carefully scrutinize whether the wetland classified plants that are growing as hydrophytes in anaerobic soil conditions caused by wetland hydrology or not.

Examples of hydrophytic plants growing in non-wetland conditions include:

- 1) Deep-rooted trees (e.g., willows), capable of persisting in the presence of surface water or in dry conditions by tapping into deep groundwater sources; and,
- 2) Wetland-classified plants that are also salt-tolerant (e.g., alkali heath) can grow in the presence of either wetland conditions or saline soil conditions, but not necessarily both.

Similarly, hydric soils can be found in the absence of wetland hydrology or wetland classified plants. For example, hydric soils have been observed in upland areas where historic disturbances exposed substratum and in densely vegetated grasslands (Mollisols). A wetland delineation must determine if the hydric soil indicators are a result of frequent anaerobic conditions in the presence of hydrology or due to another cause.

In the Coastal Zone, the California Coastal Commission presumes an area is a wetland if any one of the following three-wetland indicators is present: wetland hydrology, wetland plants, or hydric soils. Exceptions to this exist if there is strong positive evidence of upland conditions, which should be obtained during the wet season. Evidence of upland conditions could include the following observations: a given area saturates only ephemerally following a substantial rainfall, soil is very permeable with no confining layer, or the land is steep and drains rapidly.

Hydrology: Depressions, seeps, and topographic low areas in the Study Area are surveyed for primary and secondary hydrological indicators. Primary indicators of wetland hydrology that offer direct evidence include: visible inundation or saturation, surface sediment deposits, oxidized root channels, and drift lines. Secondary indicators that offer indirect evidence include algal mats, shallow restrictive layers in the soil, or vegetation meeting the FAC-neutral test.

Soils: The Study Area is examined for hydric soil indicators according to Natural Resources Conservation Service guidelines (USDA 2006) where horizon depths, color, redoximorphic features, and texture characterize soil profiles. Soils formed under anaerobic wetland conditions generally have a low chroma matrix color, designated 0, 1, or 2, and contain mottles or other redoximorphic features. Soil color and chroma was determined using a Munsell soil color chart (Gretag Macbeth 2000) to identify soils as hydric.

Plants: The US Army Corps of Engineers developed a classification system for plant species known to occur in wetlands. The plant species are categorized based on the frequency that they have been observed in wetlands. Species classified as obligate (OBL), Facultative Wetland (FACW), and Facultative (FAC) are considered hydrophytic. If more than 50 percent of the plant species in a given area are hydrophytic, the area meets the wetland vegetation criterion and is presumed to be a jurisdictional wetland under the CCA.

Areas identified as potential wetlands by the presence of wetland plants are also examined for indicators of wetland hydrology. Positive indicators of wetland hydrology can include direct evidence (primary indicators) such as surface water, saturation, sediment deposits, and surface soil cracks, or indirect evidence (secondary indicators) such as drainage patterns and water-stained leaves.

Riparian ESHAs

The Mendocino County LCP recognizes drainages with associated riparian vegetation to be ESHAs. The Technical Criteria (CCC 1981) defines riparian vegetation as:

“that association of plant species which grows adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other freshwater bodies. Riparian plant species and wetland plant species either require or tolerate a higher level of soil moisture than dryer upland vegetation, and are therefore generally considered hydrophytic.”

Special Status Species ESHAs

Special status species and their habitats are defined as ESHAs by the CCA and Mendocino County LCP. Special-status species include those species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing by the USFWS or CDFW. In addition, CDFW Species of Special Concern are given special consideration under the California Environmental Quality Act (CEQA). Species of Concern may only be protected as ESHAs if they are ranked by CDFW as imperiled in California (S3 or less). Plant species on California Native Plant Society (CNPS) Lists 1 or 2 are also considered special status species and are protected as ESHAs.

APPENDIX “F”

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7720 N Hwy 1 City/County: Little River, Mendocino Sampling Date: 06 MAR 2018
Applicant/Owner: Dym State: CA Sampling Point: SP01
Investigator(s): Asa Spade Section, Township, Range: S8 T16N R17W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2
Subregion (LRR): A Lat: 39° 16.177' Long: 123° 47.318° Datum: NAD83
Soil Map Unit Name: Cabrillo-Hesser complex 0-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	
Remarks: <u>Placed pit here due to presence of Juncus patens. SP is at western extent of area with Juncus</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B)
1. <u>Eucalyptus globulus</u>	<u>4</u>	<u>NO</u>		
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
Sapling/Shrub Stratum (Plot size: <u>20'r</u>) 1. <u>NONE</u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u>4</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Herb Stratum (Plot size: <u>10'r</u>) 1. <u>Juncus patens</u> <u>30</u> <u>Yes</u> <u>FACW</u> 2. <u>Festuca arundinacea</u> <u>25</u> <u>Yes</u> <u>FAC</u> 3. <u>Briza maxima</u> <u>25</u> <u>Yes</u> <u>FACU</u> 4. <u>Oxalis articulata</u> <u>3</u> <u>NO</u> <u>UPL</u> 5. <u>Holcus lanatus</u> <u>10</u> <u>NO</u> <u>FAC</u> 6. <u>Festuca myuros</u> <u>10</u> <u>NO</u> <u>FACU</u> 7. <u>Geranium carolinianum</u> <u>1</u> <u> </u> <u>UPL</u> 8. <u>Sonchus asper</u> <u>1</u> <u> </u> <u>FACU</u> 9. <u>Vicia sativa</u> <u>1</u> <u> </u> <u>UPL</u> 10. <u> </u> 11. <u> </u> <u>106</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>10'r</u>) 1. <u>NONE</u> 2. <u> </u> <u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u> </u>				
Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>				

Remarks: Canopy of Eucalyptus within 30'r but not high enough cover to use in calculation
No Hydrophytic vegetation. indicators met.

SOIL

Sampling Point: SP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR2/1	100	—	—	—	—	clay loam	sand grains not visible
6-12	10YR2/1	97	10YR5/8	3	C	M	clay loam	sand grains not visible
12-20+	10YR2/1	97	10YR5/8	3	C	M	loam	20% large sand small gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 2 cm Muck (A10)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ Red Parent Material (TF2)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)	☐ Very Shallow Dark Surface (TF12)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
☐ Thick Dark Surface (A12)	☒ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: layer between 12-20+ inches had significant large sand/small gravel content thus more porous + filled with water

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ FAC-Neutral Test (D5)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)
☐ Inundation Visible on Aerial Imagery (B7)		
☐ Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☒ No ☐ Depth (inches): 14"

Saturation Present? Yes ☒ No ☐ Depth (inches): 12"

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: walls of pit glistening and water leaking out @ 12" deep higher gravel content between 12-20" + water table was @ 14" when pit was reexamined on 3/7/2018

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7720 N Hwy 1 City/County: Little River, Mendocino Sampling Date: 06 MAR 2018
Applicant/Owner: Dym State: CA Sampling Point: SP02
Investigator(s): Asa Spade Section, Township, Range: S8 T16N R17W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): A Lat: 39°16.192 Long: 123°47.325 Datum: NAD83
Soil Map Unit Name: Cabrillo-Neeser complex 0-5% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation NO, Soil NO, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: <u>Slight concave area to sub driveway across from Juncus patch @ SP01</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. <u>None</u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
Sapling/Shrub Stratum (Plot size: <u>20'r</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>None</u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
Herb Stratum (Plot size: <u>10'r</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Nolcus lanatus</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Cortaderia jubata seedlings</u>	<u>35</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Briza maxima</u>	<u>25</u>	<u>Yes</u>	<u>UPL</u>	
4. <u>leafy cross? Brassica campestris?</u>	<u>2</u>	<u>NO</u>	<u>NIUPL</u>	
5. <u>Lygimachia arvensis</u>	<u>1</u>	<u>NO</u>	<u>FAC</u>	
6. <u>Raphanus sativa</u>	<u>2</u>	<u> </u>	<u>UPL</u>	
7. <u>Baccharis pilularis seedlings</u>	<u>1</u>	<u> </u>	<u>UPL</u>	
8. <u>Pseudognaphalium luteoalbum</u>	<u>1</u>	<u> </u>	<u>FACW</u>	
9. <u>Juncus patens</u>	<u>1</u>	<u> </u>	<u>FACW</u>	
10. <u>Tarbellium subteranum</u>	<u>1</u>	<u> </u>	<u>NIUPL</u>	
11. <u>Linum brene</u>	<u>1</u>	<u> </u>	<u>NIUPL</u>	
Woody Vine Stratum (Plot size: <u>10'r</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1. <u>None</u>				
2. <u> </u>				
% Bare Ground in Herb Stratum <u>2%</u>				
Remarks: <u>No hydrophytic vegetation indicators met</u>				

SOIL

Sampling Point: SP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-8	10YR3/1	100	—	—	—	Sandy loam	~30% sharp rocks (F:11)
8-22+	10YR2/1	100	—	—	—	loam	~5% rocks, sand grains visible

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____Hydric Soil Present? Yes _____ No XRemarks: No hydric soil indicators observed soil is black but sand grains are visible w/ naked eye

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____ No _____	Depth (inches): _____
Water Table Present?	Yes _____ No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____ No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7720 N HWY 1 City/County: Little River, Mendocino Sampling Date: 3/6/18
 Applicant/Owner: Dym State: CA Sampling Point: SPO3
 Investigator(s): Asa Spade Section, Township, Range: S8 T16N R17W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR): A Lat: 39° 16.196 Long: 123° 47.319 Datum: NAD83
 Soil Map Unit Name: Cabrillo-Heiser complex 0-5% slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2. <u> </u>			
3. <u> </u>			
4. <u> </u>			
0 = Total Cover			

Sapling/Shrub Stratum (Plot size: <u>20'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2. <u> </u>			
3. <u> </u>			
4. <u> </u>			
5. <u> </u>			
0 = Total Cover			

Herb Stratum (Plot size: <u>10'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Festuca arundinacea</u>	30	Yes	FAC
2. <u>Juncus patens</u>	5	No	
3. <u>Poa annua</u>	15		
4. <u>Helcus lanatus</u>	1		
5. <u>Poa pratensis</u>	1		
6. <u>Festuca myuros</u>	40	Yes	FACU
7. <u>Sand spurry</u>	5	No	
8. <u>Medicago polymorpha</u>	10		
9. <u>Pseudoglycyphium luteus</u>	3		
10. <u> </u>			
11. <u> </u>			
110 = Total Cover <u>55/22</u>			

Woody Vine Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>			
2. <u> </u>			
= Total Cover			

% Bare Ground in Herb Stratum

Remarks: No hydrophytic vegetation indicators met.

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by:
 OBL species x 1 =
 FACW species x 2 =
 FAC species x 3 =
 FACU species x 4 =
 UPL species x 5 =
 Column Totals: (A) (B)
 Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: SP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-5	10YR 2/1	90	10YR 4/4	10	C	M	loam	note 1
5-14	10YR 2/1	99	5YR 4/6	1	C	M	loam	no gravel
14-20	10YR 2/1	100	—	—	—	—	Sandy clay loam	
20-22+	10YR 2/1	95	10YR 6/8	5	C	M	Sandy clay	small specks of brownish yellow

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)	☒ Sandy Redox (S5)	☐ 2 cm Muck (A10)
☐ Histic Epipedon (A2)	☒ Stripped Matrix (S6)	☐ Red Parent Material (TF2)
☐ Black Histic (A3)	☒ Loamy Mucky Mineral (F1) (except MLRA 1)	☐ Very Shallow Dark Surface (TF12)
☐ Hydrogen Sulfide (A4)	☒ Loamy Gleyed Matrix (F2)	☐ Other (Explain in Remarks)
☐ Depleted Below Dark Surface (A11)	☒ Depleted Matrix (F3)	
☐ Thick Dark Surface (A12)	☒ Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
☐ Sandy Mucky Mineral (S1)	☒ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☒ Redox Depressions (F8)	

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks: note 1: 30% sharp gravel, small pockets of dark yellowish brown sand

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	☐ Secondary Indicators (2 or more required)
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drainage Patterns (B10)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Geomorphic Position (D2)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Shallow Aquitard (D3)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ FAC-Neutral Test (D5)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Raised Ant Mounds (D6) (LRR A)
☐ Inundation Visible on Aerial Imagery (B7)		☐ Frost-Heave Hummocks (D7)
☐ Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes _____ No ☒	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No ☒
Water Table Present?	Yes _____ No ☒	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes ☒ No _____	Depth (inches): 14"	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7720 N Hwy 1 City/County: L. H. River, Mendocino Sampling Date: 07 MAR 2018
Applicant/Owner: Dym State: CA Sampling Point: SM4
Investigator(s): Asa Spade Section, Township, Range: S8 T16N R17W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): slight concave Slope (%): 1
Subregion (LRR): A Lat: 39°16.195 Long: 123°47.304 Datum: NAD83
Soil Map Unit Name: Cabrillo-Hecser complex 0-5% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: <u>Hydrophytic vegetation is not met because Holcus lanatus is not a strong wetland indicator plant as it is an invasive that's able to grow in many areas.</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>None</u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>20'r</u>)				
1. <u>None</u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover				
Herb Stratum (Plot size: <u>10'r</u>)				
1. <u>Holcus lanatus</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Festuca arundinaceae</u>	<u>15</u>	<u>NO</u>	<u>FAC</u>	
3. <u>Juncus patens</u>	<u>15</u>	<u> </u>	<u>FACW</u>	
4. <u>Cordyline jubata</u>	<u>2</u>	<u> </u>	<u> </u>	
5. <u>Geranium carolinianum</u>	<u>1</u>	<u> </u>	<u> </u>	
6. <u>Vicia sativa</u>	<u>1</u>	<u> </u>	<u> </u>	
7. <u>Rubus ursinus</u>	<u>2</u>	<u> </u>	<u> </u>	
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
11. <u> </u>				
				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
= Total Cover <u>96</u>				
Woody Vine Stratum (Plot size: <u>10'r</u>)				
1. <u>Rubus ursinus</u>	<u>2</u>	<u>NO</u>	<u> </u>	
2. <u> </u>				
= Total Cover <u>2</u>				
% Bare Ground in Herb Stratum <u>20% thatch</u>				
Remarks: <u>Placed Rubus ursinus into Herb stratum due to <5% coverage</u> <u>Hydrophytic Vegetation is not present because Holcus lanatus takes advantage of coastal fog and is able to grow in drier soil conditions than other areas.</u>				

SOIL

Sampling Point: SP04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR2/1	100	—	—	—	—	loam	sand grains visible
10-15	10YR2/1	100	—	—	—	—	sandy clay	saturated
15-20+	10YR3/1	85	10YR 6/8	15	C	M	sandy clay	Not saturated, diffuse boundaries

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____Hydric Soil Present? Yes _____ No XRemarks: Hydric soils not observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <u>X</u> No _____	Depth (inches): <u>10-15"</u>

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: saturation in soil between 10" and 15" deep not saturated below 15".
A restrictive layer. Hydrology not observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7720 NNWyl City/County: Little River, Mendo Sampling Date: 07 MAR 2018
Applicant/Owner: Dym State: CA Sampling Point: SP05
Investigator(s): Asa Spade Section, Township, Range: S8 T16N R17W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 4
Subregion (LRR): A Lat: 39°16.192 Long: 123°47.300 Datum: NAD83
Soil Map Unit Name: Cabrillo Hecker complex 0-5% slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. <u>None</u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
Sapling/Shrub Stratum (Plot size: <u>20'r</u>) 1. <u>Baccharis pilularis</u> <u>6</u> <u>Yes</u> <u>NI</u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> = Total Cover <u>0</u>				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Herb Stratum (Plot size: <u>10'r</u>) 1. <u>Bromus carinatus</u> <u>30</u> <u>Yes</u> <u>NI</u> 2. <u>Festuca arundinacea</u> <u>10</u> <u>No</u> 3. <u>Holcus lanatus</u> <u>10</u> <u> </u> 4. <u>Stachys rigida</u> <u>4</u> <u> </u> 5. <u>Geranium carolinianum</u> <u>2</u> <u> </u> 6. <u>Cordia alliodora</u> <u>1</u> <u> </u> 7. <u> </u> 8. <u> </u> 9. <u> </u> 10. <u> </u> 11. <u> </u> = Total Cover <u>57</u>				
Woody Vine Stratum (Plot size: <u>10'r</u>) 1. <u>Rubus ursinus</u> <u>3</u> 2. <u> </u> = Total Cover <u>29.5</u> = <u>11.4</u>				
% Bare Ground in Herb Stratum <u>40% Thatch</u> = Total Cover <u> </u>				
Remarks: <u>added Rubus ursinus to Herb stratum due to low coverage. Hydrophytic vegetation not observed.</u>				

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7720 N HWY 1 City/County: Little River Mendocino Sampling Date: 04 JUN 2018
 Applicant/Owner: Dym State: CA Sampling Point: SP06
 Investigator(s): AaB Spade Wyatt Dooley Section, Township, Range: S8 T16N R17W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 5
 Subregion (LRR): A Lat: 39° 16.206 Long: -123° 47.363 Datum: NAD83
 Soil Map Unit Name: Cabrillo - Heuser complex 0-5% slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation NO, Soil NO, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks: <u>Location @ NW corner of Eastern pasture. This location has Juncus patens not present within the rest of the pasture. Topography also runs water this direction.</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>None</u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
= Total Cover				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum (Plot size: <u>20'r</u>)				
1. <u>None</u>				
2. <u> </u>				
3. <u> </u>				
= Total Cover				
Herb Stratum (Plot size: <u>10'r</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Nolcus linatus</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Juncus patens</u>	<u>7</u>	<u>no</u>	<u>FACW</u>	
3. <u>Anthoxanthum odoratum</u>	<u>20</u>		<u>FACU</u>	
4. <u>Rubus ursinus</u>	<u>2</u>		<u>FACU</u>	
5. <u>Iris douglasiana</u>	<u>3</u>		<u>NI</u>	
6. <u>Equisetum arvense</u>	<u>3</u>		<u>FAC</u>	
7. <u>Carex hendersonii</u>	<u>1</u>		<u>FAC</u>	
8. <u>Juncus occidentalis</u>	<u>1</u>		<u>FACW</u>	
9. <u>Bromus hordeaceus</u>	<u>10</u>		<u>FACU</u>	
10. <u>Prunella vulgaris</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	
11. <u>Plantago lanceolata</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
103 = Total Cover <u>51.5</u> <u>20.6</u>				
Woody Vine Stratum (Plot size: <u>10'r</u>)				
1. <u>Rubus ursinus</u> added to herbs				
2. <u> </u>				
= Total Cover				
% Bare Ground in Herb Stratum <u>1 bare soil</u>				
Remarks: <u>No hydrophytic vegetation indicators met.</u>				

SOIL

Sampling Point: SP06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-21	10YR2/1	99	5YR5/8	1	C	M	loam	soft masses sand visible
21-26+	10YR5/1	80	10YR6/8	20	C	M	sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (except MLRA 1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- | |
|---|
| ☐ 2 cm Muck (A10) |
| ☐ Red Parent Material (TF2) |
| ☐ Very Shallow Dark Surface (TF12) |
| ☐ Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Higher clay content @ 21"
Depth (inches): 21"Hydric Soil Present? Yes ☐ No ☒Remarks: No hydric soil indicators met

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| ☐ Surface Water (A1) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| ☐ Drainage Patterns (B10) |
| ☐ Dry-Season Water Table (C2) |
| ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Geomorphic Position (D2) |
| ☐ Shallow Aquitard (D3) |
| ☐ FAC-Neutral Test (D5) |
| ☐ Raised Ant Mounds (D6) (LRR A) |
| ☐ Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present?	Yes ☐ No ☒	Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – Dym	
(A)	Buffer Areas. A buffer area shall be established adjacent to all environmentally sensitive habitat areas. The purpose of this buffer area shall be to provide for a sufficient area to protect the environmentally sensitive habitat from degradation resulting from future developments and shall be compatible with the continuance of such habitat areas.
	The proposed development is to build a 5-unit inn, ancillary to the Little River Inn. This also includes associated infrastructure including a housekeeping building, welcome center, patio, paved driveway and parking, walkways and landscaping, ground and roof-mounted solar panels, connections to an existing well and water tanks, septic system with primary and secondary leach fields, and connection to utilities. Two 2,500 gallon water tanks and a propane-fired generator are proposed on the neighboring Van Damme parcel, also operated by Little River Inn. A portion of the existing gravel driveway may be removed and revegetated. There are four types of presumed Environmentally Sensitive Habitat Areas (ESHAs) within 100ft of the proposed development. Wetland ESHA – An approximately 2,500ft² delineated wetland was present in the eastern portion of the subject parcel east of the existing driveway and a presumed Coastal Act wetland was observed off property in the southwestern corner of the study area. Riparian ESHA - Riparian vegetation was present along the stream to the north of the parcel. Stream ESHA – An intermittent stream runs just north of the northern property line from under Highway One to the Pacific Ocean. Special Status Plant ESHA - Two species of special status plants were identified on the property: Mendocino coast paintbrush (<i>Castilleja mendocinensis</i> CRPR 1B.2) and headland wallflower (<i>Erysimum concinnum</i> CRPR 1B.2). Mitigation measures within Section 7 of the Biological Scoping, Wetland Delineation, & Botanical Survey Report addresses the potential impacts from proposed development and how they can be avoided or minimized so that impacts are reduced to less than significant levels. Proposed development will be within 100ft of ESHA buffers. Most development is proposed outside of 50ft ESHA buffers with the exception of a portion of the driveway, the possible removal of the existing gravel drive, and some utility trenching which will be within 50ft buffers and will be further discussed in Section 4 of this Reduced Buffer Analysis (RBA). Wynn Coastal Planning and Biology (WCPB) recommends that all proposed development within the 50ft wetland ESHA buffer should be conducted during the dry season (generally mid-April through mid-October, but is dependent on seasonal weather conditions). Areas of bare soil should be seeded with native erosion control seed mix and/or covered with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw). Straw wattles shall be installed prior to the construction between the wetland and proposed development in order to protect all special status resources behind them. Orange construction fencing shall be paired with the straw wattles around the delineated wetland, but the fencing is not necessary for the other wattle locations since contractors are not likely to accidentally encroach into these areas.

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – Dym	
(1)	Width. <i>The width of the buffer area shall be a minimum of one hundred (100) feet, unless an applicant can demonstrate, after consultation and agreement with the California Department of Fish and Game, and County Planning staff, that one hundred (100) feet is not necessary to protect the resources of that particular habitat area from possible significant disruption caused by the proposed development. The buffer area shall be measured from the outside edge of the Environmentally Sensitive Habitat Areas and shall not be less than fifty (50) feet in width. New land division shall not be allowed which will create new parcels entirely within a buffer area. Developments permitted within a buffer area shall generally be the same as those uses permitted in the adjacent Environmentally Sensitive Habitat Area.</i>
	Based on the analysis below WCPB recommends buffer distances for the following presumed ESHAs: • Wetland – 50ft buffer • Riparian – 50ft buffer • Stream – 50ft buffer • Mendocino coast paintbrush - 50ft buffer • Headland wallflower – 50ft buffer Buffer areas were measured based from the center GPS point of special status plants, the outside edge (dripline of vegetation) of the riparian area, the edge of the top of bank for the stream, and outside edge of spreading rush (<i>Juncus patens</i>) within the wetlands resulting from ground surveys and aerial photo interpretation. It is the professional opinion of WCPB that a buffer area of 100ft is not necessary to protect the special status resources from the specified proposed development and subsequent use of the property. Most development will be greater than 50ft from presumed ESHAs with the exception of a portion of the driveway, the possible removal of the existing gravel drive, and some utility trenching. Consultation with California Department of Fish and Wildlife (CDFW) is recommended to obtain their opinion on the buffers recommended by WCPB. CDFW and County Planning Staff opinions will be needed to determine the final appropriate buffer widths between ESHAs and proposed development. New land division will <u>not</u> be occurring for the proposed project.
1 (a)	Biological Significance of Adjacent Lands. <i>Lands adjacent to a wetland, stream, or riparian habitat area vary in the degree to which they are functionally related to these habitat areas. Functional relationships may exist if species associated with such areas spend a significant portion of their life cycle on adjacent lands. The degree of significance depends upon the habitat requirements of the species in the habitat area (e.g. nesting, feeding, breeding, or resting).</i> <i>Where a significant functional relationship exists, the land supporting this relationship shall also be considered to be part of the ESHA, and the buffer zone shall be measured from the edge of these lands and be sufficiently wide to protect these functional relationships. Where no significant functional relationships exist, the buffer shall be measured from the edge of the wetland, stream, or riparian habitat that is adjacent to the proposed development.</i>

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – Dym	
	The surrounding upland coyote brush scrub, common velvet grass – sweet vernal grass meadow, and eucalyptus groves are not functionally related to the riparian, stream, and wetlands and therefore, should not be considered part of the ESHAs. 50ft ESHA buffers should be measured from the edges of the riparian vegetation dripline and the spreading rush in the wetlands. Special status amphibians have the potential to be present in these upland communities while moving between water sources. Special status migratory bird species may use these upland areas for feeding, nesting, resting or breeding. Standing water was only observed in the wetlands immediately after large rain events so amphibians are not likely to use the wetlands onsite for breeding. Pre-construction nesting bird surveys and amphibian avoidance training are listed as mitigation measures to protect these animals that have the potential to be present. The 50ft buffer zones should be sufficiently wide to protect these special status resources; however, additional measures are listed in Section 7 of the Biology Report to avoid and minimize impacts to ESHA.
1(b)	<i>Sensitivity of Species to Disturbance.</i> <i>The width of the buffer zone shall be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permitted development. Such a determination shall be based on the following after consultation with the Department of Fish and Game or others with similar expertise:</i> <i>(1b-i) Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;</i> <i>(1b-ii) An assessment of the short-term and long-term adaptability of various species to human disturbance;</i> <i>(1b-iii) An assessment of the impact and activity levels of the proposed development on the resource.</i>
	A buffer width of 50ft from the wetlands, riparian, stream, Mendocino coast paintbrush, and headland wallflower presumed ESHAs should be sufficient to ensure that the resources themselves and the potential sensitive species of plants and animals within them are not disturbed significantly by proposed development. A portion of the driveway, possible removal of the existing gravel drive, and some utility line trenching will be within the 50ft buffer of the delineated wetland; however, additional measures such as limiting construction within 50ft buffers during the dry season, installing straw wattles between the wetland and development, and seeding areas with bare soil with native erosion control seed mix and/or covering with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw) will help buffer the wetland from impacts. The Mendocino coast paintbrush, headland wallflower, stream, and riparian are already behind a safety fence along the bluff edge that will also serve to protect these resources from disturbance associated with the project. The eastern delineated wetland is adjacent to an existing driveway and has been previously disturbed by dust created by vehicles accessing the property. Within the past few years, the fenced pastures on the property have been grazed by goats.
1(c)	<i>Susceptibility of Parcel to Erosion.</i> <i>The width of the buffer zone shall be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel and to what degree the development will change the potential for erosion. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.</i>
	The subject parcel generally slopes north towards the drainage and west towards the Pacific Ocean. A high point is present in the center of the parcel with a steeper slope around all sides of this point. The parking area is proposed east of this point while the visitor accommodation units are proposed west of this point. There is potential for erosion as the eastern edge of the high point will need to be cut to accommodate the parking spots and paths are being installed to the units. The units will be elevated on concrete stilts along the slope so minimal leveling will be required for the project. Mitigation measures have been recommended in Section 7 of the main biological report to avoid or minimize potential for erosion to impact resources present.
1(d)	<i>Use of Natural Topographic Features to Locate Development.</i> <i>Hills and bluffs adjacent to ESHA's shall be used, where feasible, to buffer habitat areas. Where otherwise permitted, development should be located on the sides of hills away from ESHA's. Similarly, bluff faces should not be developed, but shall be included in the buffer zone.</i>

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – Dym	
	Both proposed development and presumed ESHAs are present on both sides of the high point/hill on the property so it cannot be used to buffer ESHAs from development. No bluff faces are proposed for development.
1(e)	<i>Use of Existing Cultural Features to Locate Buffer Zones.</i> <i>Cultural features (e.g. roads and dikes) shall be used, where feasible, to buffer habitat areas. Where feasible, development shall be located on the side of roads, dikes, irrigation canals, flood control channels, etc., away from the ESHA.</i>
	Mendocino coast paintbrush, headland wallflower, stream, and riparian area are all on, along, or below the bluff edge so geotechnical setbacks and safety fencing will buffer these special status resources from development.
1(f)	<i>Lot Configuration and Location of Existing Development.</i> <i>Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance shall be required as a buffer zone for any new development permitted. However, if that distance is less than one hundred (100) feet, additional mitigation measures (e.g. planting of native vegetation) shall be provided to ensure additional protection. Where development is proposed in an area that is largely undeveloped, the widest and most protective buffer zone feasible shall be required.</i>
	The adjacent properties are developed with visitor accommodation units to the south and east, the Little River Market to the north, and the Pacific Ocean to the west. Development is proposed within the town center of Little River in an area that is largely already developed. The parcel is currently developed with an existing gravel road, sheds, above-ground concrete water tank, and wildlife/safety fencing. Mitigation measures listed in Section 7 of the Biology Report will ensure additional protection for presumed ESHAs since development will be within the 100ft ESHA buffer.
1(g)	<i>Type and Scale of Development Proposed.</i> <i>The type and scale of the proposed development will, to a large degree, determine the size of the buffer zone necessary to protect the ESHA. Such evaluations shall be made on a case-by-case basis depending upon the resources involved, the degree to which adjacent lands are already developed, and the type of development already existing in the area.</i>
	The surrounding parcels are developed with visitor accommodation units and the Little River Market so the type of development proposed is consistent with the type of development already existing in the area. The project was designed to avoid most ESHAs by greater than 50ft. A portion of the proposed driveway, possible removal of the existing gravel drive, and some utility trenching will necessarily be within the 50ft buffer of the delineated wetland.
(2)	<i>Configuration.</i> <i>The buffer area shall be measured from the nearest outside edge of the ESHA (e.g. for a wetland from the landward edge of the wetland; for a stream from the landward edge of riparian vegetation or the top of the bluff).</i>
	Buffer areas were measured from the center of GPS points for special status plants, the outside edge (dripline of vegetation) of the riparian area, the top of banks of the stream, and the outside edge of spreading rush (<i>Juncus patens</i>) within the wetlands resulting from ground surveys and aerial photo interpretation. Presumed ESHAs were delineated and mapped through field visits as well as referencing aerial imagery and using ArcGIS to interpolate a 50ft buffer surrounding each of these presumed ESHAs.
(3)	<i>Land Division.</i> <i>New subdivisions or boundary line adjustments shall not be allowed which will create or provide for new parcels entirely within a buffer area.</i>

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – Dym	
	No new subdivisions or boundary line adjustments are proposed.
(4)	<i>Permitted Development.</i> <i>Development permitted within the buffer area shall comply at a minimum with the following standards:</i>
4(a)	<i>Development shall be compatible with the continuance of the adjacent habitat area by maintaining the functional capacity, their ability to be self-sustaining and maintain natural species diversity.</i>
	Development within the recommended 50-ft buffer area consists of a portion of the driveway, possible removal of the existing gravel drive, and some utility line trenching. The proposed development has the potential to impact the delineated wetland onsite. Avoidance and minimization measures are included as Section 7 in the Biological Report to prevent impacts to the wetland. Mitigation measures include installing straw wattles and orange construction fencing, limiting construction within the 50ft buffer to the dry season, and seeding areas of bare soil with native erosion control seed mix and/or covering with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw). The proposed driveway will allow the wetland to maintain its functional capacity, its ability to be self-sustaining, and maintain species diversity. The wetland has persisted despite the existing driveway being directly adjacent to it so the proposed driveway, which is farther away, is not expected to negatively impact the ESHA. The removal of the existing gravel driveway has the potential to have a temporary impact, but would overall improve the quality of the wetland over time. The wetland present is relatively low in quality and function. It supports spreading rush, a common native plant, but has been mowed for years and is not special animal habitat.
4(b)	<i>Structures will be allowed within the buffer area only if there is no other feasible sites available on the parcel.</i>
	There are no other feasible alternatives for the proposed driveway that are less impacting. The proposed driveway will connect to an existing private drive off of Highway One. The existing private drive serves visitor accommodation units on the parcel to the south of the subject parcel that are also operated by Little River Inn. The driveway cannot veer more south and west to avoid the 50ft wetland buffer due to an existing septic system that serves the visitor accommodation units on the property to the south. The driveway cannot enter from the eastern side of the parcel directly off Highway One because it will require the driveway to go directly through the wetland or even more of the driveway will have to pass through the wetland ESHA buffer. Proposing the driveway along the eastern property line also places the development closer to the riparian area and stream. An existing utility pole in the north eastern corner also prevents the driveway from being proposed in this location.
4(c)	<i>Development shall be sited and designed to prevent impacts, which would degrade adjacent habitat areas. The determination of the best site shall include consideration of stream, access, soil type, vegetation, hydrological characteristics, elevation, topography, and distance from natural stream channels. The term "best site" shall be defined as the site having the least impact on the maintenance of the biological and physical integrity of the buffer strip or critical habitat protection area and on the maintenance of the hydrologic capacity of these areas to pass a one hundred (100) year flood without increased damage to the coastal zone natural environment or human systems.</i>
	The "best site" is as proposed. All other project components besides a portion of the driveway, removal of the existing gravel drive, and utility trenching are proposed outside of 50ft ESHA buffers. Due to constraints from existing development and other ESHAs on the property the driveway is designed in the best feasible location. The functionality of the wetland will not be degraded due to the proximity of the proposed development. The removal of the existing gravel driveway has the potential to cause a temporary impact; however, over time it will improve the quality of the wetland by limiting human disturbance immediately adjacent to the wetland in the future.
4(d)	<i>Development shall be compatible with the continuance of such habitat areas by maintaining their functional capacity and their ability to be self-sustaining and to maintain natural species diversity.</i>

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – Dym	
	The proposed driveway, removal of existing gravel drive, and utility trenching will allow for the wetland to maintain its functional capacity, ability to be self-sustaining, and maintain natural species diversity. However, it should be noted that the wetland onsite is already disturbed and low quality so the 50ft buffer is not as necessary to protect low quality wetlands compared to high quality wetlands. The wetland onsite is generally a low quality wetland due lack of native plant species diversity, surface water, and animal habitat. The only native plant recorded within the soil pit vegetation plot was spreading rush (<i>Juncus patens</i>). Most of the plot was dominated by non-native, invasive vegetation such as tall fescue (<i>Festuca arundinacea</i>) and rattlesnake grass (<i>Briza maxima</i>). Standing water is only present in the wetland immediately after a large rain event and the ground is otherwise squishy or damp during the rainy season and is dry during the dry season. This means that amphibian species cannot utilize this wetland for breeding, but may use it as a damp refuge when crossing overland. The removal of the existing gravel drive is expected to improve the conditions of the wetland.
4(e)	<i>Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel. Mitigation measures, such as planting riparian vegetation, shall be required to replace the protective values of the buffer area on the parcel, at a minimum ratio of 1:1, which are lost as a result of development under this solution.</i>
	The project has been strategically designed to avoid impacts to ESHA as much as possible. There is no other feasible location that is less impacting for the proposed development. To mitigate for potential impacts, straw wattles and orange construction fencing shall be installed in between the existing gravel drive and the wetland. The straw wattles should be installed just north and east of the wetland since the property slopes towards the wetland in these locations. Construction within 50ft of the wetland should only occur during the dry season to limit the potential of runoff. Areas of bare soil from construction shall be covered with native erosion control seed mix and/or biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw).
4(f)	<i>Development shall minimize the following: impervious surfaces, removal of vegetation, amount of bare soil, noise, dust, artificial light, nutrient runoff, air pollution, and human intrusion into the wetland and minimize alteration of natural landforms.</i>
	The proposed driveway is made of asphalt so it will be impervious. The asphalt driveway will slightly increase runoff during large rain events; however, the permeable natural ground should have the capacity to slow and absorb the water. One young tree will be removed to make room for the driveway; development was designed with the intent to retain trees on the property where possible. The Coastal Zoning Code requires exterior lights to be downcast and shielded, and building and air quality requirements are expected to address dust, air pollution and nutrient runoff issues.
4(g)	<i>Where riparian vegetation is lost due to development, such vegetation shall be replaced at a minimum ratio of one to one (1:1) to restore the protective values of the buffer area.</i>
	No riparian vegetation will be removed as part of the project.
4(h)	<i>Above ground structures shall allow peak surface water flows from a one hundred (100) year flood to pass with no significant impediment.</i>
	The development is not proposed in a 100-year flood zone.
4(i)	<i>Hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic, shall be protected.</i>
	The proposed driveway, removal of existing gravel drive, and utility trenching is not expected to negatively impact hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes. Subsurface flow patterns will not be impacted by the driveway. The wetland will be avoided and protected during construction with straw wattles and orange construction fencing; however, it should be noted that there is no

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – Dym	
	biological diversity in the wetland to protect. Removing the existing gravel drive will overall improve wetland habitat, but limiting run off and dust from cars driving on the existing drive. Very narrow underground trenches are needed for utility lines so impacts are expected to be minimal.
4(j)	<i>Priority for stream conveyance from a development site shall be through the natural stream environment zones, if any exist, in the development area. In the stream system design report or development plan, the capacity of natural stream environment zones to convey runoff from the completed development shall be evaluated and integrated with the stream system wherever possible. No structure shall interrupt the flow of groundwater within a buffer strip. Foundations shall be situated with the long axis of interrupted impermeable vertical surfaces oriented parallel to the groundwater flow direction. Piers may be allowed on a case-by-case basis.</i>
	The project will not change stream patterns.
4(k)	<i>If findings are made that the effects of developing an ESHA buffer area may result in significant adverse impacts to the ESHA, mitigation measures will be required as a condition of project approval. Noise barriers, buffer areas in permanent open space, land dedication for erosion control, and wetland restoration, including off-site stream improvements, may be required as mitigation measures for developments adjacent to environmentally sensitive habitats. (Ord. No. 3785 (part), adopted 1991)</i>
	No compensatory mitigation is recommended because impacts occur only within buffer area and not within the wetland ESHA itself. Avoidance and minimization measures have been provided that should allow the project to avoid causing significant adverse impacts to the wetland.

APPENDIX “I”

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APPENDIX “J”

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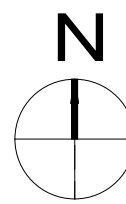
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D

C

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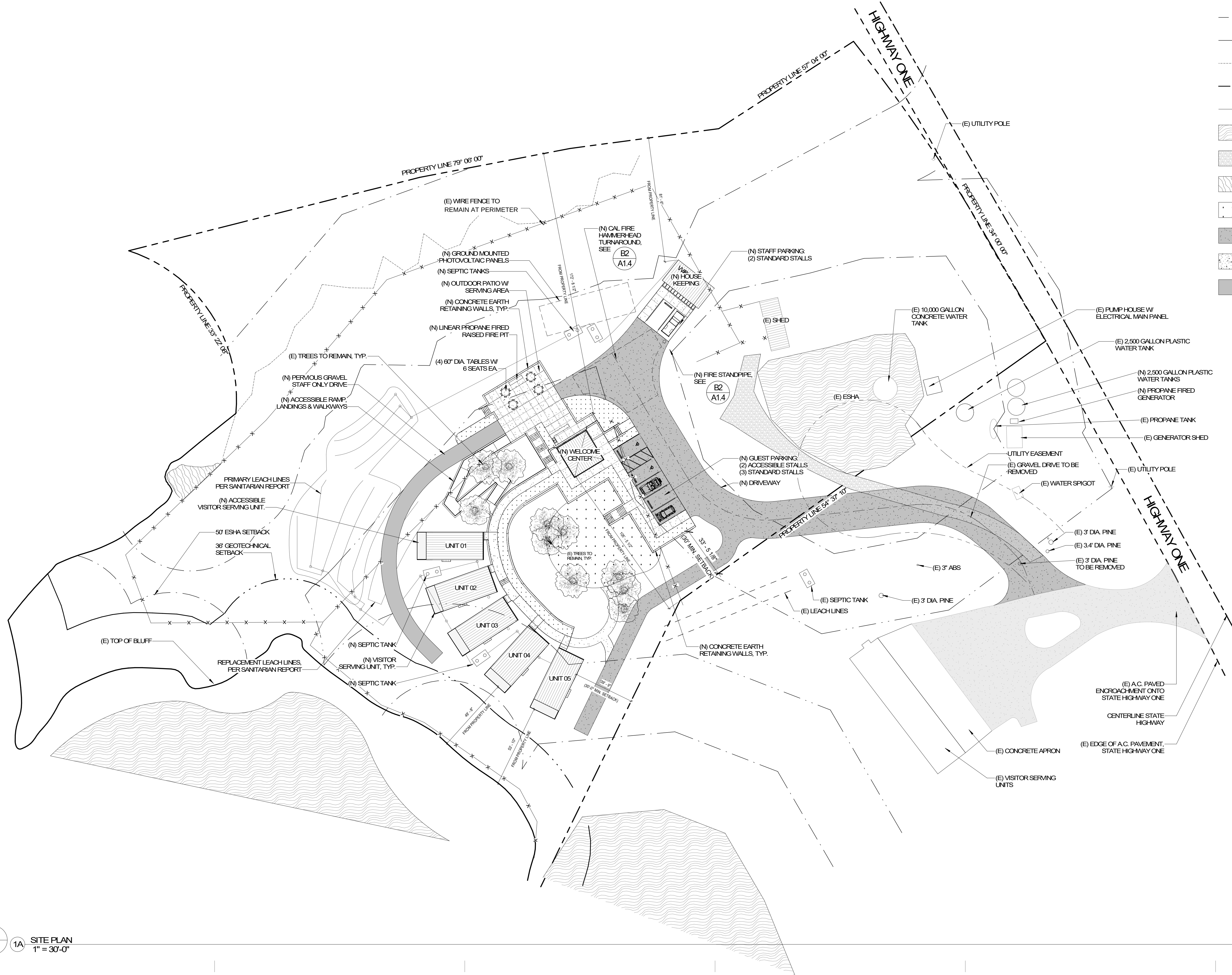
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1A

SITE PLAN
1" = 30'-0"

A



	PROPERTY LINE
	EASEMENT
	50' ESHA BUFFER
	100' ESHA BUFFER
	EDGE OF RIPARIAN ESHA
	36' GEOTECHNICAL SETBACK
	(E) WIRE FENCE
	(E) WETLAND
	(E) PERVIOUS GRAVEL
	(E) COASTAL SILK TASSEL SCRUB
	(E) PLANTING
	(N) ASPHALT
	(N) CONCRETE
	(N) PERVIOUS GRAVEL

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SITE PLAN

NEW VISITOR SERVING UNITS FOR:
LITTLE RIVER INN
EXPANSION
7720 NORTH HIGHWAY 1
LITTLE RIVER, CALIFORNIA

ISSUE DATE

REVISIONS

DRAWN	MS
CHECKED	TN
DATE	11-2-2022
SCALE	1" = 30'-0"
SHEET	
A1.2	
OF	SHEET