NATURAL RESOURCES STUDY

FOR

CASPAR POINT ROAD CULVERT
CASPAR, CA
MENDOCINO COUNTY
APN 017-450-05 & 017-450-07

prepared for:
Caspar Point Road
Road Association

prepared by:
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January 5, 2022

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1.0 Summary and Background

Flooding has been documented by private property owners along Caspar Point Road, a private road in Caspar, for the past several years, in the vicinity of the unnamed stream that flows through a culvert approximately 330 feet west of the intersection of Caspar Road and Caspar Point Road. There is a five-foot diameter culvert that conveys water under the private roadway that is rusted through and in need of replacement. Residents of Caspar Point Road have been interested in addressing the issue, however this has been challenging because there was no road maintenance association, and it has taken time for the easement holders to work together to develop a plan and form a maintenance association.

During the spring and summer of 2021, Spade Natural Resources Consulting visited the site during the bloom windows for potentially present special status plant species of concern. This study documents the findings of the 2021 surveys, in order to support the issuance of permits needed to perform the work necessary to correct failing culvert issues at this location.

The project area is located in the Coastal Zone, west of Highway 1, and is within the private roadway. The project area is a relatively flat coastal terrace vegetated by non-native grasses and forbs, with a significant invasive gorse presence. The unnamed stream flows through the project area to the ocean, at a point which is located approximately 900 feet northwest of the culvert.

The biological scoping survey has been conducted to facilitate the issuance of a permit for development within the Coastal Zone in Mendocino County. Mapping locations are approximate and a professional survey is recommended if greater accuracy is needed. The determinations outlined in this study reflect the professional opinion of Spade Natural Resources Consulting. Agencies may need to be consulted to determine if they are in agreement.

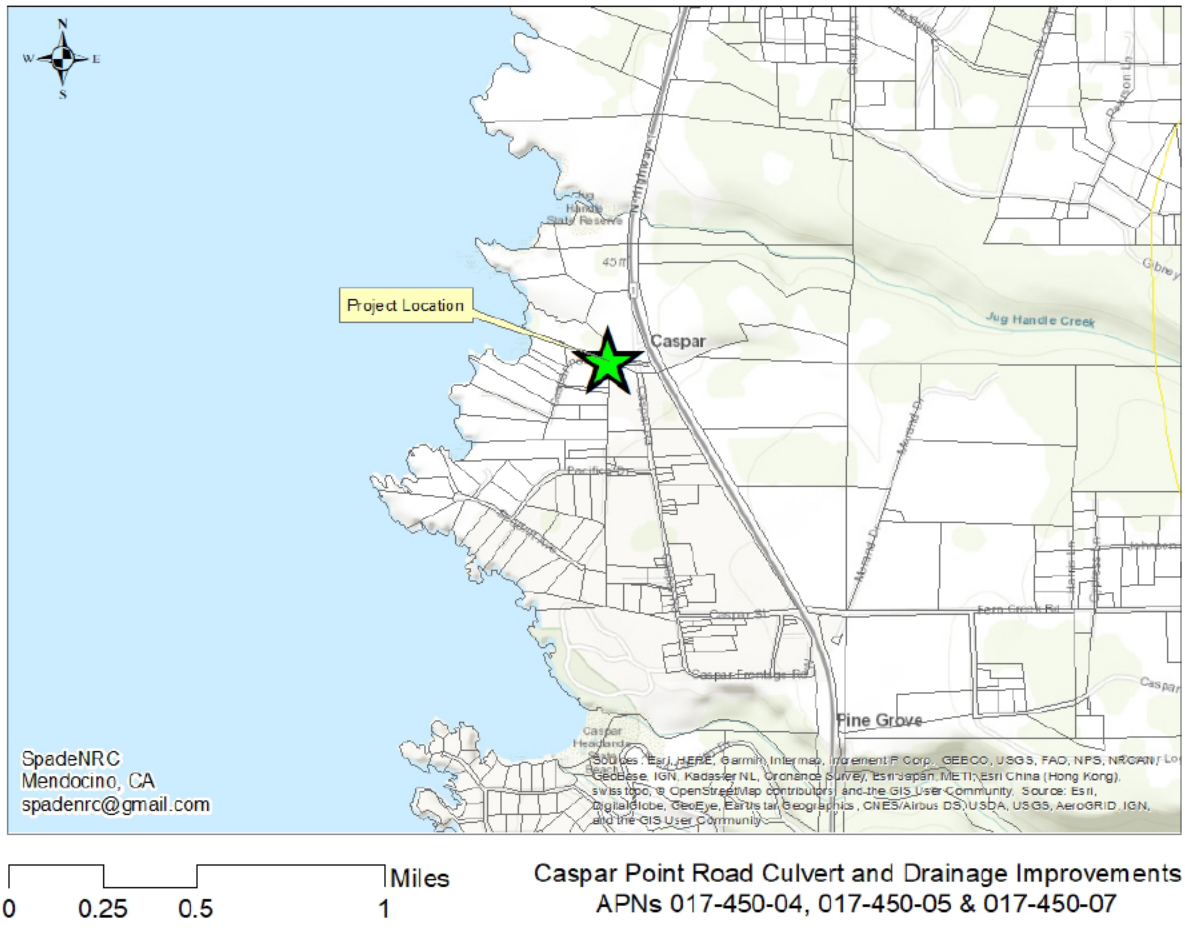


Figure 1. Project location.

2.0 Project Site Description

2.1 General Site Description

The project location is on the north side of the town of Caspar, west of Highway One, just south of Jug Handle State Park. The site is relatively flat. Caspar Point Road is a private gravel roadway. The project area is located on a coastal terrace at approximately 60 feet above sea level and 900 feet east of the ocean.

2.2 Vegetation, Hydrology, and Soils

Non-native grassland is prominent, with thick invasive gorse present where recent removal has not occurred. The unnamed stream is present nearly year-round due to ponding. If it drained better it would probably be a seasonal stream. It is vegetated by Soils are mapped as Tropaquepts, 0 to 15 percent slopes, according to the Natural Resources Conservation Service Web Soil Mapper (see Custom Soil Resource Report, included as Appendix D). Tropaquepts is included on the Natural Resources Conservation Service hydric soils list.

3.0 Methods

3.1 Wildlife Scoping Survey

Wildlife scoping surveys were based on the scoping lists in Tables 1-3 in Appendix A, and were conducted within the building envelope. The investigator, Teresa R. Spade, has a Bachelor's Degree in Natural Resources Planning and Interpretation.

Surveys were conducted by walking the project area, and documenting all observed habitat for special status wildlife species.

3.2 Botanical Survey

Survey methodology was informed by guidance provided in the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Per the CDFW 2018 protocol, special status plants, for the purposes of this document, include all plants that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the Endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA (50 C.F.R., § 17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.)4. In CESA, "endangered species" means a native species or subspecies of plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish & G. Code, § 2062). "Threatened species" means a native species or subspecies of plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by CESA (Fish & G. Code, § 2067). "Candidate species" means a native species or subspecies of plant that the California Fish and Game Commission has formally noticed as being under review by CDFW for addition to either the list of endangered species or the list of threatened species, or a species for which the California Fish and Game Commission has published a notice of proposed regulation to add the species to either list (Fish & G. Code, § 2068).
- Listed as rare under the California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish & G. Code, § 1901).

- Meet the definition of rare or endangered under CEQA Guidelines section 15380, subdivisions (b) and (d), including:
    - Plants considered by CDFW to be "rare, threatened or endangered in California." This includes plants tracked by the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1 or 2;
    - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This may include plants tracked by the CNDDB and CNPS as CRPR 3 or 4.
- Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include plants that are at the outer limits of their known geographic range or plants occurring on an atypical soil type.

To the extent possible, natural communities or vegetation alliances are described and mapped based on the online Manual of California Vegetation (Sawyer and Keeler Wolf, 2009). Sensitive natural communities are determined by the most current version of the California Department of Fish and Wildlife's List of California Terrestrial Natural Communities found online at the VegCamp website.

Surveys were based on the scoping lists in Tables 1-3 in Appendix A, and were conducted throughout the property. The investigator was Teresa R. Spade, AICP. Teresa R. Spade has a BS degree in Natural Resources Planning and Interpretation. She has 15 years of experience working in land use planning and natural resources, and is a certified planner per the American Institute of Certified Planners. She has contributed to hundreds of coastal development projects in Mendocino County. She has been trained in Army Corps wetland delineation by Richard Chinn Environmental Training in Sacramento, CA. She is on the Fish and Wildlife Service approved list for Point Arena mountain beaver surveys and has surveyed for the Federally Endangered Behren's silverspot butterfly.

3.2.1 Botanical Survey Literature Review

Existing records of special-status plant and animal species occurrences were reviewed to determine which special-status species have the potential to occur in the project vicinity. The following sources were consulted:

- California Native Plant Society (CNPS) Electronic Inventory occurrence records, nine-quad search centering in the Mendocino USGS 7.5 minute quadrangle.
- California Natural Diversity Data Base (CNDDB) occurrence records for the Mendocino 7.5 minute quadrangle.

- Aerial imagery and topographic maps analysis, to gather baseline info regarding habitat in the project area.

3.2.2 Botanical Survey Field Methods

The surveys were conducted on April 21, June 24, and July 21, 2021, using as guidance the floristic survey protocol recommended in CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (March 20, 2018). Field survey schedules to identify special status plants were determined based on the known blooming periods of these species, the geographic location, the natural communities present, and the weather patterns of the year in which the surveys were conducted. Plant species are identified to the taxonomic level necessary to determine rarity and listing status. Nearby accessible known occurrences of sensitive plant species are expected to be observed to determine that the plants are identifiable at the time of the survey.

Botanical surveys are conducted by field observers walking throughout the project area, and areas within 100 feet, in a systematic method sufficient to ensure thorough coverage. All plant species detected within the project area are recorded. The location of any found special status plant or plant community was recorded using a Global Positioning System (GPS) where available, or by use of a detailed map (1:24,000 or larger) showing the locations and boundaries of each special status plant community and population in relation to the project area, with occurrences and boundaries marked as accurately as possible. In areas under the forest canopy, GPS is less accurate. A professional survey by a land surveyor is recommended if a greater degree of accuracy is desired, where special status plants or habitats are found within 100 feet of the project area. Where the number of individual species is small, that number is counted. Where large populations are observed, the number of individuals is estimated. A meter by meter population estimating square is used to estimate larger populations. To the extent possible, information is provided on the percentage of each special status plant in each life stage observed such as seeding, vegetative, flowering, and fruiting. The density of populations is provided, describing whether special status plants are present in a relatively low, medium or high density. Photographs are also taken of special status plants and vegetation alliances, showing identifying features.

For known occurrences, any adverse conditions, such as disease, drought, predation, fire, herbivory or other disturbances that may preclude the presence or identification of potentially present special status plants or vegetation alliances are considered when making a negative finding. If adverse conditions exist during survey efforts, the known occurrence is considered still potentially present until surveys are repeated during appropriate times of the year for proper identification, when normal conditions are present and known reference sites are consulted to verify that blooms or other identifying features should be visible.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Caspar Point Road Culvert

November 14, 2021

Wetlands

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

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.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

4.0 Survey Results

4.1 Special Status Plants

Site visits occurred on April 21, June 24 and July 21, 2021. Areas surveyed included the presumed development area, consisting of the vicinity of the culvert, and downstream areas that may need to be impacted to improve drainage, as well as areas within 100 feet. No special status plant species were observed during full floristic botanical survey efforts.

4.2 Vegetation Alliances/Associations

Vegetation alliances/Associations observed in the project area are shown in Figure 3 and are described below.

4.2.1 Common Velvet Grass – Sweet Vernal Grass Meadow

Holcus lanatus – Anthoxanthum odoratum Semi-Natural Alliance (GNA SNA)

Overall, the non-native grassland is characterized by the presence of purple velvet grass (*Holcus lanatus*) with some patches seasonally dominated by rattlesnake grass (*Briza maxima*), and a patch of California blackberry (*Rubus ursinus*) near the roadway. Himalaya blackberry (*Rubus armeniacus*), bull thistle (*Cirsium vulgare*), wild radish (*Raphinus sativus*), ripgut brome (*Bromus diandrus*) and sword fern (*Polystichum munitum*) also characteristic. Gorse (*Ulex europaeus*) is present in patches throughout.

4.2.2 Red Alder Forest

Alnus rubra Forest Alliance (G5 S4)

The unnamed stream is sparsely vegetated with an overstory in which red alder (*Alnus rubra*) is dominant. Wax myrtle (*Morella californica*) patches are present and willow is present. Mountain bog bulrush (*Scirpus microcarpus*) dominates the understory on the banks of the stream with bracken (*Pteridium aquilinum*) and Himalaya blackberry (*Rubus armeniacus*).

Although this is considered a common vegetation alliance, it is protected as a riparian area Environmentally Sensitive Habitat Area, in association with the unnamed stream.

Vegetation Alliance Map

0 50 100 200 Feet

Caspar Point Road Culvert and Drainage Improvements
APNs 017-450-04, 017-450-05 & 017-450-07

4.2.3 Broom Patches

***Cytisus scoparius – Genista monspessulana – Cotoneaster spp.* Shrubland Semi-Natural Alliance (GNA SNA)**

Gorse (*Ulex europaeus*) is a non-native invasive brush layer species that is problematic in the Caspar area both as an invasive that is difficult to eradicate, and as a fire hazard, as this species is thick and oily. It is present in the project area. This vegetation type is characterized under the Broom Patches vegetation alliance.

4.2.3 Eucalyptus – Tree of Heaven – Black Locust Groves

***Eucalyptus spp. – Ailanthus altissima – Robinia pseudoacacia* Woodland Semi-Natural Alliance (GNA SNA)**

Patches of non-native mature eucalyptus (*Eucalyptus globulus*) are present as a portion of the landscaping near the residence in the project area.

4.3 Special Status Wildlife Habitat

4.3.1 Invertebrates

Lotis blue butterfly

Figure 4. Male and female lotis blue butterflies (photo credit USFWS File Photograph)

The Lotis blue (*Lycaeides argyrognomon lotis* [aka *Lycaeides idas lotis*]) was first recognized as a Federally Endangered species in 1976. At that time, it was sighted at a single location in a sphagnum bog, approximately two miles north of the town of Mendocino. It was last observed there in 1983.

Little is known of the Lotis blue butterfly's habitat requirements and ecology, however other northern California *Lycaeides idas* typically occur in wet meadows, bogs, seeps, springs, and along the shorelines of streams. Coastal lotus (*Hosackia gracilis*) is a presumed larval food plant.

No coastal lotis was found on the property or in the project area. The site does not contain potential habitat for Lotus blue butterfly.

Behren's silverspot butterfly

Figure 5. Male and female Behren's silverspot butterflies (photo credit SpadeNRC).

The Behren's silverspot (*Speyeria zerene behrensii*) is Federally Endangered, listed December 5, 1997. The known historic range is along the coast from near the Town of Mendocino in Mendocino County to Salt Point State Park in Sonoma County. The larval food plant is currently thought to be early blue violet (*Viola adunca*), based on studies of the closely related coastal subspecies, Oregon silverspot butterfly (*Speyeria zerene hoppolyta*). It inhabits coastal terrace prairie habitat in areas with a strong ocean influence.

The project area is within the range of this species. The larval foodplant, early blue violet, was not found during the botanical site visits.

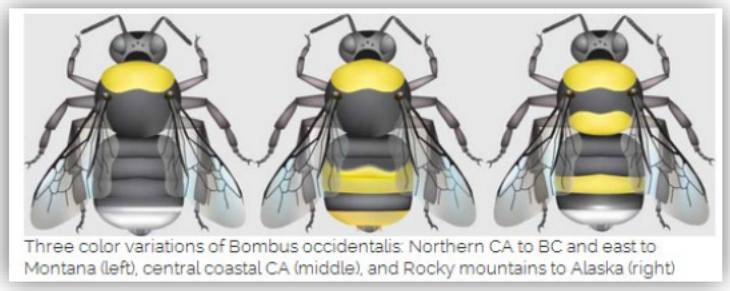
Obscure bumblebee

Obscure bumblebee (*Bombus caliginosus*) is an IUCN vulnerable ranked species in decline along the west coast of the United States, which is its native range. This species is very similar to the common yellow-faced bumblebee (*Bombus vosnesenskii*), differentiated by the structure of the male genitalia. The obscure bumblebee tends to have longer hairs, however, and yellow hairs are found on the underside of the abdomen.

This species is found in open, grassy, coastal prairies and coast range meadows. The Mendocino Coast is within the historic range for obscure bumblebee. The project area may be considered an appropriate habitat area for Obscure bumblebee.

Western bumble bee

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. Little is known about the overwintering habitat requirements for this species, however it is believed that loose bare ground and evergreen needle litter in wooded and open areas may be important for overwintering habitat. The Mendocino Coast is determined to be a location where there is not enough survey information on presence in open canopy forest. The project area is located in an area that is undersampled in open canopy forest for this species (Xerces Society, 2020). The project area has the potential to provide habitat for Western Bumblebee.



Three color variations of Bombus occidentalis: Northern CA to BC and east to Montana (left), central coastal CA (middle), and Rocky mountains to Alaska (right)

Mendocino Leptonetid Spider (*Calileptoneta wapiti*) G1 S1

Leptonetid spiders, or cave spiders, are typically found in moist protected areas, including leaf litter, moss, rotting logs, and caves. These tiny spiders have iridescent legs. Calileptoneta have six eyes, arranged in one of two distinctive patterns. They can be recognized by the placement of the posterior median eyes well behind the main ocular cluster (Adams 2014). Mendocino leptonetid spiders have been found in the north coast coniferous forest (California Department of Fish and Wildlife, 2018). The project area does not contain quality habitat for Mendocino Leptonetid Spiders.

4.3.2 Amphibians

Northern red-legged frog

Northern red-legged frog (*Rana aurora aurora*) is listed as a California Department of Fish and Wildlife Species of Special Concern. The range extends from the southwest British Colombia coast to central Mendocino County. Often found in woods adjacent to streams and streamsides with plant cover, Northern red-legged frog breeds in permanent water sources, including lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.

The unnamed stream may be breeding habitat for northern red-legged frogs. They may also be found in upland portions of the project area during migration.

Pacific Tailed Frog

Pacific tailed frog (*Ascaphus truei*) is not a Federal or State protected species but is a California State Species of Concern. Their known range is coastal from Anchor Bay, Mendocino County, north to the Oregon border. They inhabit 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.

The unnamed stream and nearby areas may be habitat for Pacific tailed frog.

Foothill Yellow-Legged Frog

Foothill yellow-legged frog (*Rana boylii*) is listed as an Endangered Species under the California Endangered Species Act. This frog species is present year-round along most of the coast of California, in northwestern California, and in the western Sierra Foothills. This frog species is found in or near rocky

streams in many habitat types, including but not limited to mixed coniferous forest, coastal scrub, and wet meadows. Foothill yellow-legged frog is rarely found away from permanent water.

The unnamed stream may be habitat for Foothill yellow-legged frog.

Red-bellied newt

Red-bellied newts (*Taricha rivularis*) are a California Department of Fish and Wildlife Species of Special Concern that are found in cool, damp redwood forests. The project area does not contain adequate habitat for red-bellied newt.

Southern torrent salamander

Southern torrent salamander (*Rhyacotriton variegatus*) is a California State Species of Special Concern. This salamander is found in permanent cold forest streams and seeps among rocks and pebbles. They are found in northwestern California south to Point Arena, and are found within water and in the splash zone of water. The project area does not contain habitat for this species.

4.3.3 Birds

Nesting Birds and Special Status Birds

Special status and nesting birds protected under the Migratory Bird Treaty Act may be present on or near the property. Nesting habitats can include trees, brush, grassy areas, and sometimes man-made structures, burrows, or on the ground. While no nests or nesting activity were observed during the survey effort, there is a potential for presence for nesting birds in the study area during the nesting season, including but not limited to special status species.

Ashy Storm Petrel

Ashy storm petrel are present during the winter on the Mendocino Coast. They generally remain over the open sea, but nest on land. Nesting sites include natural cavities, sea caves, or rock crevices on islands and on the mainland. They breed at offshore islands roughly from San Francisco into Mexico.

Winter habitat for ashy storm petrel may be located in areas closer to the bluff. The project area is not habitat for ashy storm petrel.

Tufted puffin

The tufted puffin (*Fratercula cirrhata*) is sparsely found along the Mendocino coast year-round. They nest on islands and occasionally on coastal cliffs, in burrows on island cliffs, grassy island slopes, or in loose rock. Most breeding occurs in Del Norte and Humboldt County. Tufted puffins feed on medium sized fish such as smelt, herring, and perch, and also eat some crustaceans and squid.

The project area does not contain habitat for tufted puffin.

Marbled murrelet

Figure 7. Marbled murrelet (photo credit Thomas Hamer, Hamer Environmental LP).

The marbled murrelet (*Branchyramphus marmoratus*)(Fig. 11) has been listed as Federally Threatened since September 28, 1992. The range extends along the coast from Alaska to Northern Monterey Bay in Central California. Marbled murrelets forage on the coast and nest in old growth forests.

The project area does not contain old growth forest.

Osprey

Osprey are present during the summer on the Mendocino Coast. They use large trees, snags and dead topped trees in open forest habitats for cover and nesting. Osprey feed mostly on fish, and are generally found near large bodies of water. They nest on a platform of sticks on top of large snags, dead topped trees, on cliffs and on human made structures. They usually nest within around 1300 feet of fish-producing water, but may nest up to one mile from water. The eucalyptus trees within 100 feet of the project area may provide habitat for osprey, but it is unlikely.

Purple Martin

Purple martin (*Progne subis*) is an uncommon to rare summer resident in conifer and riparian habitats, and found during migration in open habitats such as grasslands and wet meadows. This species often nests in tall, old, isolated trees above water, and in old woodpecker cavities. They can also be found in nest boxes and nesting on the underside of bridges that span water. This species feeds on insects, and occasionally nuts. There is no habitat in the project area for purple martin.

4.3.4 Mammals

Special Status Bats

Special Status Bats in General

Many species of bats roost in hollowed areas, crevices, or under bark of trees in forested areas near water, and, several special status species require a nearby fresh water source for feeding over and for drinking, because they do not have a good urine concentrating ability. There is a potential for presence of special status bats within the wooded areas near the project area. The project area may provide for habitat for feeding over and for drinking water.

Townsend's Big Eared Bat

Townsends big-eared bat (*Corynorhinus townsendii*) is a California Department of Fish and Wildlife Species of Special Concern. Mesic habitats are preferred. This species requires caves, mines, tunnels, buildings or other human-made structures for roosting. Hibernation occurs individually or in small clusters in a variety of locations including buildings, rocky crevices, caves, tunnels, hollow trees, and spaces under loose bark. The project area may provide for feeding habitat and for drinking water.

Sonoma Tree Vole

Sonoma tree vole (*Arborimus pomo*) is listed as a G3 S3 Species of Special Concern. The state listing indicates the species is considered vulnerable in its range due to a restricted range, relatively few populations, recent and widespread declines or other factors.

The Sonoma tree vole range is located along the coast from Sonoma County through Mendocino, Humboldt, and Trinity County. The total population is unknown but is estimated at over 10,000. Preferred habitat is considered mesic old growth Douglas Fir Forest; however Sonoma tree voles are known to live in other coniferous forests. They are known to eat primarily Douglas fir (*Pseudotsuga menziesii*) needles but eat grand fir (*Abies grandis*) needles as well, and have been found in Bishop pine (*Pinus muricata*) in Mendocino County. They may also eat the inner bark of twigs. Sonoma tree voles live in the tree canopy and are thought to have limited dispersal capabilities, and so are threatened by canopy removal and fragmentation (Blois and Natureserve 2008).

There is no habitat for Sonoma Tree Vole in the project area.

4.4 Wetlands and Watercourses

The unnamed stream is the only identified watercourse in the project area, and by necessity, the project must occur within the stream, as the project consists of replacement of the culvert, and may also consist of

changes to the bed and bank downstream of the culvert to promote better flow and prevent pooling and flooding in the vicinity of the roadway during heavy storms.

5.0 Discussion

Overall, the project area is located in the road corridor in a rural residential neighborhood that is significantly impacted by development including roadway and residential development, and the adjacent fields are dominated by non-native and invasive plants. The unnamed stream and associated red alder forest riparian areas have been identified as Environmentally Sensitive Habitat Areas. Work, by necessity, will need to occur within these sensitive areas, and minimization measures are recommended in Section 5.1.

Additionally, the project area may be habitat for special status and protected nesting birds, and special status bats, frogs, and bumblebees, including Foothill yellow-legged frog, northern red-legged frog, Pacific tailed frog, Obscure bumblebee and Western bumblebee. There is a low potential for presence of nesting osprey in the nearby eucalyptus trees, and a low potential for presence of feeding and drinking special status bats, including but not limited to Townsend's big eared bat. Avoidance measures are indicated in Section 5.1 below.

5.1 Avoidance Measures

5.1.1 Special Status Birds and Bats

The bird breeding season typically extends from February to August. Ideally, the clearing of vegetation and the initiation of construction can be done in the non-breeding season between September and January. If these activities cannot be done in the non-breeding season, a qualified biologist shall perform preconstruction breeding bird surveys within 14 days of the onset of construction or clearing of vegetation. If active breeding bird nests are observed, no ground disturbance activities shall occur within a minimum 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 the nest site weekly during the breeding season to ensure the buffer is sufficient to protect the nest site from potential disturbances.

As with birds, bat roost and hibernation sites can change from year to year, so pre-construction or demolition surveys are usually necessary to determine the presence or absence of bat roost sites in a given area. Pre-construction bat surveys do not need to be performed if work or vegetation removal is conducted between September 1 and October 31, after young have matured and prior to the bat

hibernation period. However, if it is necessary to disturb potential bat roost sites between November 1 and August 31, pre-construction surveys should be conducted. Pre-construction bat surveys involve surveying trees, rock outcrops, and buildings subject to removal or demolition 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. If bats are found, a minimum 50-foot buffer should be implemented around the roost tree. Removal of roost trees should occur in September and October, or after the bats have left the roost. In summary, no impacts would be expected and therefore no preconstruction surveys would be required for the species above if vegetation removal (including standing dead trees) is scheduled for the months of September or October. The months of November through August would require a bird and/or bat survey dependent on the time of year.

5.1.2 Stream and Riparian Protection Measures

Culvert replacement and any changes to the bed and/or bank of the stream will require a Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife. Standard minimization measures will be outlined in that agreement and will need to be adhered to. This will include conducting work during the dry season, when water present will be limited to isolated pools. Any loss of riparian vegetation resulting from the project will need to be replaced at a ratio of at least 1:1.

5.1.3 Special Status Amphibian Avoidance

Within two weeks prior to construction or vegetation removal, project contractors will be trained by a qualified biologist in the identification of the Northern red-legged frog, Pacific tailed frog, and Foothill yellow-legged frog. Construction crews will begin each day with a visual search around all stacked or stored materials, as well as in and near the stream corridor and any pools or present water, to detect the presence of special status amphibians. If a special status amphibian is detected, construction or demolition crews cease all ground disturbing activity within 100 feet, and will contact the California Department of Fish and Wildlife or a qualified biologist who will provide assistance. Ground disturbing activities within 100 feet will be allowed to proceed after clearance is given from CDFW and/or the qualified biologist.

If a rain event occurs during the construction period, all construction-related activities will cease for a period of 48 hours after the rain stops. Prior to resuming construction or demolition activities, trained construction crew member(s) will examine the site for the presence of special status amphibians. If no special status amphibians are found, construction activities may resume.

5.1.4 Special Status Invertebrate Impact Minimization Measures

Ground disturbance should be limited to necessary impacts to facilitate the development. Western bumblebee may nest in the ground under leaf litter. To the extent feasible, flowering native vegetation that could provide forage for Western bumblebee should be retained at the site. This species has a short tongue length and potential food sources at the site may include both open structured flowers as well as those with a long corolla tube (via nectar robbing)(Hatfield et al, 2012). Select food sources include *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum* plant species (Koch, et al, 2012). Food plants for Obscure bumblebee include but are not limited to *Baccharis, Cirsium, Lupinus, Lotus, Gridelia,* and *Phacelia* species (Koch 2012).

Appendix A. Scoping Tables
Table 1. CNPS Nine Quad Search

Inventory of Rare and Endangered Plants of California

73 matches found. Click on scientific name for details

Search Criteria: CRPR is one of **[1A:1B:2A:2B:3:4]**, Quad is one of **[3912337:3912347:3912346:3912336:3912326:3912327]**

Search:

Scientific Name	Common Name	Blooming Period	Fed List	State List	Global Rank	State Rank	CA Rare Plant Rank
Abronia umbellata var. *breviflora*	pink sand-verbena	Jun-Oct	None	None	G4G5T2	S2	1B.1
Agrostis blasdalei	Blasdale's bent grass	May-Jul	None	None	G2	S2	1B.2
Angelica lucida	sea-watch	Apr-Sep	None	None	G5	S3	4.2
Arctostaphylos nummularia ssp. *mendocinoensis*	pygmy manzanita	Jan	None	None	G3?T1	S1	1B.2
Astragalus agnicidus	Humboldt County milk-vetch	Apr-Sep	None	CE	G2	S2	1B.1
Blennosperma nanum var. *robustum*	Point Reyes blennosperma	Feb-Apr	None	CR	G4T2	S2	1B.2
Calamagrostis bolanderi	Bolander's reed grass	May-Aug	None	None	G4	S4	4.2
Calamagrostis crassiglumis	Thurber's reed grass	May-Aug	None	None	G3Q	S2	2B.1
Calystegia purpurata ssp. *saxicola*	coastal bluff morning-glory	(Mar)Apr-Sep	None	None	G4T2T3	S2S3	1B.2
Campanula californica	swamp harebell	Jun-Oct	None	None	G3	S3	1B.2
Carex californica	California sedge	May-Aug	None	None	G5	S2	2B.2
Carex lenticularis var. *limnophila*	lagoon sedge	Jun-Aug	None	None	G5T5	S1	2B.2
Carex livida	livid sedge	Jun	None	None	G5	SH	2A
Carex lyngbyei	Lyngbye's sedge	Apr-Aug	None	None	G5	S3	2B.2
Carex saliniformis	deceiving sedge	Jun(Jul)	None	None	G2	S2	1B.2
Castilleja ambigua var. *ambigua*	johnny-nip	Mar-Aug	None	None	G4T4	S3S4	4.2
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover	Apr-Aug	None	None	G4T2	S2	1B.2

Scientific Name	Common Name	Blooming Period	Fed List	State List	Global Rank	State Rank	CA Rare Plant Rank
Castilleja litoralis	Oregon coast paintbrush	Jun	None	None	G3	S3	2B.2
Castilleja mendocinensis	Mendocino Coast paintbrush	Apr-Aug	None	None	G2	S2	1B.2
Ceanothus gloriosus var. *exaltatus*	glory brush	Mar-Jun(Aug)	None	None	G4T4	S4	4.3
Ceanothus gloriosus var. *gloriosus*	Point Reyes ceanothus	Mar-May	None	None	G4T4	S4	4.3
Chorizanthe howellii	Howell's spineflower	May-Jul	FE	CT	G1	S1	1B.2
Chrysosplenium glechomifolium	Pacific golden saxifrage	Feb-Jun	None	None	G5?	S3	4.3
Clarkia amoena ssp. *whitneyi*	Whitney's farewell-to-spring	Jun-Aug	None	None	G5T1	S1	1B.1
Collinsia corymbosa	round-headed Chinese-houses	Apr-Jun	None	None	G1	S1	1B.2
Coptis laciniata	Oregon goldthread	(Feb)Mar-May(Sep-Nov)	None	None	G4?	S3?	4.2
Cornus canadensis	bunchberry	May-Jul	None	None	G5	S2	2B.2
Cuscuta pacifica var. *papillata*	Mendocino dodder	(Jun)Jul-Oct	None	None	G5T1	S1	1B.2
Darlingtonia californica	California pitcherplant	Apr-Aug	None	None	G4	S4	4.2
Erigeron supplex	supple daisy	May-Jul	None	None	G2	S2	1B.2
Erysimum concinnum	bluff wallflower	Feb-Jul	None	None	G3	S2	1B.2
Erysimum menziesii	Menzies' wallflower	Mar-Sep	FE	CE	G1	S1	1B.1
Gilia capitata ssp. *pacifica*	Pacific gilia	Apr-Aug	None	None	G5T3	S2	1B.2
Gilia millefoliata	dark-eyed gilia	Apr-Jul	None	None	G2	S2	1B.2
Glehnia littoralis ssp. *leiocarpa*	American glehnia	May-Aug	None	None	G5T5	S2S3	4.2
Hemizonia congesta ssp. *congesta*	congested-headed hayfield tarplant	Apr-Nov	None	None	G5T2	S2	1B.2
Hemizonia congesta ssp. *tracyi*	Tracy's tarplant	(Mar)May-Oct	None	None	G5T4	S4	4.3
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	Mar-Jun	None	None	G4T3	S3	1B.2
Hesperocyparis pygmaea	pygmy cypress		None	None	G1	S1	1B.2

Scientific Name	Common Name	Blooming Period	Fed List	State List	Global Rank	State Rank	CA Rare Plant Rank
Horkelia marinensis	Point Reyes horkelia	May-Sep	None	None	G2	S2	1B.2
Hosackia gracilis	harlequin lotus	Mar-Jul	None	None	G3G4	S3	4.2
Juncus supiniformis	hair-leaved rush	Apr-May(Jun-Jul)	None	None	G5	S1	2B.2
Kopsiopsis hookeri	small groundcone	Apr-Aug	None	None	G4?	S1S2	2B.3
Lasthenia californica ssp. bakeri	Baker's goldfields	Apr-Oct	None	None	G3T1	S1	1B.2
Lasthenia californica ssp. macrantha	perennial goldfields	Jan-Nov	None	None	G3T2	S2	1B.2
Lathyrus palustris	marsh pea	Mar-Aug	None	None	G5	S2	2B.2
Leptosiphon latisectus	broad-lobed leptosiphon	Apr-Jun	None	None	G4	S4	4.3
Lilium maritimum	coast lily	May-Aug	None	None	G2	S2	1B.1
Lilium rubescens	redwood lily	Apr-Aug(Sep)	None	None	G3	S3	4.2
Lycopodium clavatum	running-pine	Jun-Aug(Sep)	None	None	G5	S3	4.1
Microseris borealis	northern microseris	Jun-Sep	None	None	G5	S1	2B.1
Mitellastra caulescens	leafy-stemmed mitrewort	(Mar)Apr-Oct	None	None	G5	S4	4.2
Packera bolanderi var. bolanderi	seacoast ragwort	(Jan-Apr)May-Jul(Aug)	None	None	G4T4	S2S3	2B.2
Phacelia insularis var. continentis	North Coast phacelia	Mar-May	None	None	G2T2	S2	1B.2
Pinus contorta ssp. bolanderi	Bolander's beach pine		None	None	G5T2	S2	1B.2
Piperia candida	white-flowered rein orchid	(Mar)May-Sep	None	None	G3	S3	1B.2
Pityopus californicus	California pinefoot	(Mar-Apr)May-Aug	None	None	G4G5	S4	4.2
Pleuropogon refractus	nodding semaphore grass	(Mar)Apr-Aug	None	None	G4	S4	4.2
Puccinellia pumila	dwarf alkali grass	Jul	None	None	G4?	SH	2B.2
Ramalina thrausta	angel's hair lichen		None	None	G5?	S2S3	2B.1
Rhynchospora alba	white beaked-rush	Jun-Aug	None	None	G5	S2	2B.2
Sanguisorba officinalis	great burnet	Jul-Oct	None	None	G5?	S2	2B.2
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	Apr-Sep	None	None	G5T2	S2	1B.2
Sidalcea malachroides	maple-leaved checkerbloom	(Mar)Apr-Aug	None	None	G3	S3	4.2

Scientific Name	Common Name	Blooming Period	Fed List	State List	Global Rank	State Rank	CA Rare Plant Rank
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	(Mar)May-Aug	None	None	G5T2	S2	1B.2
Sidalcea malviflora ssp. *purpurea*	purple-stemmed checkerbloom	May-Jun	None	None	G5T1	S1	1B.2
Tiarella trifoliata var. *trifoliata*	trifoliate laceflower	(May)Jun-Aug	None	None	G5T5	S2S3	3.2
Trifolium buckwestiorum	Santa Cruz clover	Apr-Oct	None	None	G2	S2	1B.1
Trifolium trichocalyx	Monterey clover	Apr-Jun	FE	CE	G1	S1	1B.1
Triquetrella californica	coastal triquetrella		None	None	G2	S2	1B.2
Usnea longissima	Methuselah's beard lichen		None	None	G4	S4	4.2
Veratrum fimbriatum	fringed false-hellebore	Jul-Sep	None	None	G3	S3	4.3
Viola palustris	alpine marsh violet	Mar-Aug	None	None	G5	S1S2	2B.2

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Appendix A – Scoping Tables
Table 2. CNDDB Search Mendocino Quad

Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database

Query Criteria: Quad IS (Mendocino (3912337))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
angel's hair lichen *Ramalina thrausta*	NLLEC3S340	None	None	G5?	S2S3	2B.1
ashy storm-petrel *Hydrobates homochroa*	ABNDC04030	None	None	G2	S2	SSC
Baker's goldfields *Lasthenia californica ssp. bakeri*	PDAST5L0C4	None	None	G3T1	S1	1B.2
Behren's silverspot butterfly *Speyeria zerene behrensii*	IILEPJ6088	Endangered	None	G5T1	S1	
Blasdale's bent grass *Agrostis blasdalei*	PMPOA04060	None	None	G2	S2	1B.2
bluff wallflower *Erysimum concinnum*	PDBRA160E3	None	None	G3	S2	1B.2
Bolander's beach pine *Pinus contorta ssp. bolanderi*	PGPIN04081	None	None	G5T2	S2	1B.2
bunchberry *Cornus canadensis*	PDCOR01040	None	None	G5	S2	2B.2
California sedge *Carex californica*	PMCYP032D0	None	None	G5	S2	2B.2
coast lily *Lilium maritimum*	PMLIL1A0C0	None	None	G2	S2	1B.1
coastal bluff morning-glory *Calystegia purpurata ssp. saxicola*	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
Coastal Brackish Marsh *Coastal Brackish Marsh*	CTT52200CA	None	None	G2	S2.1	
dark-eyed gilia *Gilia millefoliata*	PDPLM04130	None	None	G2	S2	1B.2
deceiving sedge *Carex saliniformis*	PMCYP03BY0	None	None	G2	S2	1B.2
foothill yellow-legged frog *Rana boylii*	AAABH01050	None	Endangered	G3	S3	SSC
Grand Fir Forest *Grand Fir Forest*	CTT82120CA	None	None	G1	S1.1	
great burnet *Sanguisorba officinalis*	PDROS1L060	None	None	G5?	S2	2B.2
hair-leaved rush *Juncus supiniformis*	PMJUN012R0	None	None	G5	S1	2B.2
Howell's spineflower *Chorizanthe howellii*	PDPGN040C0	Endangered	Threatened	G1	S1	1B.2
Humboldt Bay owl's-clover *Castilleja ambigua var. humboldtiensis*	PDSCR0D402	None	None	G4T2	S2	1B.2

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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
leafy-stemmed mitrewort *Mitellastra caulescens*	PDSAX0N020	None	None	G5	S4	4.2
livid sedge *Carex livida*	PMCYP037L0	None	None	G5	SH	2A
lotis blue butterfly *Plebejus idas lotis*	IILEPG5013	Endangered	None	G5TH	SH	
Lyngbye's sedge *Carex lyngbyei*	PMCYP037Y0	None	None	G5	S3	2B.2
maple-leaved checkerbloom *Sidalcea malachroides*	PDMAL110E0	None	None	G3	S3	4.2
marbled murrelet *Brachyramphus marmoratus*	ABNNN06010	Threatened	Endangered	G3	S2	
marsh pea *Lathyrus palustris*	PDFAB250P0	None	None	G5	S2	2B.2
Mendocino Coast paintbrush *Castilleja mendocinensis*	PDSCR0D3N0	None	None	G2	S2	1B.2
Mendocino dodder *Cuscuta pacifica var. papillata*	PDCUS011A2	None	None	G5T1	S1	1B.2
Mendocino leptonetid spider *Calileptoneta wapiti*	ILARAU6040	None	None	G1	S1	
Mendocino Pygmy Cypress Forest *Mendocino Pygmy Cypress Forest*	CTT83161CA	None	None	G2	S2.1	
North Coast phacelia *Phacelia insularis var. continentis*	PDHYD0C2B1	None	None	G2T2	S2	1B.2
Northern Coastal Salt Marsh *Northern Coastal Salt Marsh*	CTT52110CA	None	None	G3	S3.2	
northern microseris *Microseris borealis*	PDAST6E030	None	None	G5	S1	2B.1
northern red-legged frog *Rana aurora*	AAABH01021	None	None	G4	S3	SSC
obscure bumble bee *Bombus caliginosus*	IIHYM24380	None	None	G4?	S1S2	
Oregon coast paintbrush *Castilleja litoralis*	PDSCR0D012	None	None	G3	S3	2B.2
Oregon goldthread *Coptis laciniata*	PDRAN0A020	None	None	G4?	S3?	4.2
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
Pacific gilia *Gilia capitata ssp. pacifica*	PDPLM040B6	None	None	G5T3	S2	1B.2
Pacific tailed frog *Ascaphus truei*	AAABA01010	None	None	G4	S3S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
perennial goldfields *Lasthenia californica ssp. macrantha*	PDAST5L0C5	None	None	G3T2	S2	1B.2
pink sand-verbena *Abronia umbellata var. breviflora*	PDNYC010N4	None	None	G4G5T2	S2	1B.1
purple martin *Progne subis*	ABPAU01010	None	None	G5	S3	SSC
pygmy cypress *Hesperocyparis pygmaea*	PGCUP04032	None	None	G1	S1	1B.2
pygmy manzanita *Arctostaphylos nummularia ssp. mendocinoensis*	PDERI04280	None	None	G3?T1	S1	1B.2
red-bellied newt *Taricha rivularis*	AAAAF02020	None	None	G2	S2	SSC
seacoast ragwort *Packera bolanderi var. bolanderi*	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
short-leaved evax *Hesperevax sparsiflora var. brevifolia*	PDASTE5011	None	None	G4T3	S3	1B.2
Sonoma tree vole *Arborimus pomo*	AMAFF23030	None	None	G3	S3	SSC
southern torrent salamander *Rhyacotriton variegatus*	AAAAJ01020	None	None	G3G4	S2S3	SSC
Sphagnum Bog *Sphagnum Bog*	CTT51110CA	None	None	G3	S1.2	
supple daisy *Erigeron supplex*	PDAST3M3Z0	None	None	G2	S2	1B.2
swamp harebell *Campanula californica*	PDCAM02060	None	None	G3	S3	1B.2
Thurber's reed grass *Calamagrostis crassiglumis*	PMPOA17070	None	None	G3Q	S2	2B.1
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G4	S2	SSC
tufted puffin *Fratercula cirrhata*	ABNNN12010	None	None	G5	S1S2	SSC
western bumble bee *Bombus occidentalis*	IIHYM24250	None	None	G2G3	S1	

Record Count: 58

Appendix A. – Scoping Tables

Table 3. California Sensitive Natural Communities A partial list of vegetation alliances occurring in coastal Mendocino County, is derived from the California Department of Fish and Wildlife's "California Natural Community List (2021) (https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities).

Scientific Name	Common Name	Global & State Rank
Woodland and Forest Alliances and Stands		
Abies grandis Alliance	Grand fir forest	G4 S2
Abies grandis – Picea sitchensis / Gaultheria shallon / Polystichum munitum Association	Grand fir forest	G1 S1
Abies grandis – Tsuga heterophylla / Polystichum munitum Association	Grand fir forest	G2 S1
Acer macrophyllum Alliance	Bigleaf maple forest	G4 S3
Alnus rubra Alliance	Red alder forest	G5 S4
Arbutus menziesii Alliance	Madrone forest	G4 S3
Eucalyptus spp – Ailanthus altissima – Robinia pseudoacacia Association	Eucalyptus – tree of heaven – black locust groves semi natural	GNA SNA
Hesperocyparis macrocarpa – Pinus radiata Alliance	Monterey cypress -Monterey Pine Stands	GNA SNA
Hesperocyparis pigmaea Alliance	Mendocino pygmy cypress woodland	G1 S1
Notholithocarpus densiflorus Alliance	Tanoak forest	G4 S3
Picea sitchensis Alliance	Sitka spruce forest	G5 S2
Pinus attenuata Alliance	Knobcone pine forest	G4 S4
Pinus contorta ssp. *contorta* Alliance	Beach pine forest	G5 S3
Pinus muricata Alliance	Bishop pine – Monterey pine forest	G3 S3
Pinus muricata – (Arbutus menziesii) / Vaccinium ovatum Association	Bishop pine – Monterey pine forest	G2 S2
Pinus muricata – Chrysolepis chrysophylla / Arctostaphylos nummularia Association	Bishop pine – Monterey pine forest	G2 S2
Pinus muricata – Notholithocarpus densiflorus Association	Bishop pine – Monterey pine forest	G3 S3
Pinus muricata - Pinus radiata	Bishop pine – Monterey pine forest	G3 S3
Pseudotsuga menziesii Alliance	Douglas fir forest	G5 S4
Pseudotsuga menziesii – Chrysolepis chrysophylla – Notholithocarpus densiflorus Association	Douglas fir forest	G3 S3
Pseudotsuga menziesii / Baccharis pilularis Association	Douglas fir forest	G4 S4?
Pseudotsuga menziesii - Notholithocarpus densiflorus Association	Douglas fir - tanoak forest	G3 S3
Pseudotsuga menziesii – Notholithocarpus densiflorus / Rhododendron macrophyllum Association	Douglas fir - tanoak forest	G2 S2
Salix laevigata Alliance	Red willow thickets	G4 S3
Salix lucida Alliance	Shining willow groves	G4 S3
Sequoia sempervirens Alliance	Redwood forest	G3 S3
Sequoia sempervirens – Chrysolepis chrysophylla / Arctostaphylos glandulosa	Redwood forest	G2 S2?
Sequoia sempervirens – Hesperocyparis pigmaea	Redwood forest	G1 S1
Tsuga heterophylla Alliance	Western hemlock forest	G5 S2
Umbellularia californica Alliance	California bay forest	G4 S3
Shrubland Alliances and Stands		
Arctostaphylos (canescens, glandulosa, Adenostoma fasciculatum) Alliance	Hoary, Eastwood manzanita and chamise chaparral	G3 S3
Arctostaphylos nummularia Alliance	Glossy leaf manzanita chaparral	G2 S2
Arctostaphylos sensitiva Alliance	Glossy leaf manzanita chaparral	G2 S2
Arctostaphylos manzanita Alliance	Common manzanita chaparral	G3 S3
Baccharis pilularis Alliance	Coyote brush scrub	G5 S5
Baccharis pilularis – Ceanothus thyrsiflorus	Coyote brush scrub	G3 S3?
Baccharis pilularis – Frangula californica – Rubus spp.	Coyote brush scrub	G5 S5
Baccharis pilularis / Carex obnupta – Juncus patens	Coyote brush scrub	G3 S3?

Scientific Name	Common Name	Global & State Rank
Baccharis pilularis / Danthonia californica	Coyote brush scrub	G2 S2
Baccharis pilularis / Deschampsia cespitosa	Coyote brush scrub	G2 S1
Scientific Name	**Common Name**	**Global & State Rank**
Baccharis pilularis / Eriophyllum staechadifolium	Coyote brush scrub	G3 S3
Broom (Cytisus scoparius and Others)	Broom patches	GNA SNA
Ceanothus cuneatus Alliance	Wedge leaf ceanothus chaparral; Buck brush chaparral	G4 S4
Ceanothus thyrsiflorus Alliance	Blue blossom chaparral	G4 S4
Ceanothus thyrsiflorus – Rubus ursinus	Blue blossom chaparral	G3 S3?
Ceanothus thyrsiflorus – Vaccinium ovatum – Rubus parviflorus	Blue blossom chaparral	G3 S3?
Chrysolepis chrysophylla	Golden chinquapin thickets	G2 S2
Corylus cornuta var. *californica* Alliance	Hazelnut scrub	G3 S2?
Frangula californica - Rhododendron occidentale - Salix breweri Alliance	California coffee berry – western azalea scrub – Brewer's willow	G3 S3
Diplacas aurantiacus Alliance	Bush monkeyflower scrub	G3 S3?
Lupinus arboreus scrub	Yellow bush lupine scrub	G4 S4
Rhododendron columbianum Alliance	Western Labrador-tea thickets	G4 S2?
Rosa californica Alliance	California rose briar patches	G3 S3
Rubus spectabilis – Morella californica Alliance	Salmonberry – Wax Myrtle Scrub	G3 S3
Rubus armeniacus	Himalayan blackberry – rattlebox – edible fig riparian scrub	GNR SNR
Rubus armeniacus-Rubus ursinus	Himalayan blackberry – rattlebox – edible fig riparian scrub	GNR SNR
Salix hookeriana Alliance	Coastal dune willow thickets	G4 S3
Salix lasiolepis Alliance	Arroyo willow thickets	G4 S4
Salix lasiolepis – Rubus ursinus	Arroyo willow thickets	G4 S4
Salix lasiolepis – Salix lucida	Arroyo willow thickets	G3 S3?
Salix sitchensis Alliance	Sitka willow thickets	G4 S3?
Toxicodendron diversilobum Alliance	Poison oak scrub	G4 S4
Toxicodendron diversilobum – Baccharis pilularis –	Poison oak scrub	G4 S4
Toxicodendron diversilobum – Diplacus aurantiacus	Poison oak scrub	G3 S3?
Herbaceous Alliances and Stands		
Abronia latifolia – Erigeron glaucus Alliance	Dune mat	G3 S3
Ammophila Arenaria Alliance	European beach grass swards	GNA SNA
Argentina egedii	Pacific silverweed marshes	G4 S1
Avena spp – Bromus spp	Wild oats and annual brome grasslands	GNA SNA
Calamagrostis nutkaensis Alliance	Pacific reed grass meadows	G4 S2
Calamagrostis nutkaensis – Carex (obnupta) – Juncus (patens)	Pacific reed grass meadows	G2 S2.1
Calamagrostis nutkaensis / Baccharis pilularis	Pacific reed grass meadows	G2 S1.2
Carex obnupta Alliance	Slough sedge swards	G4 S3
Carex obnupta – Juncus patens Alliance	Slough sedge swards	G3 S3?
Carex pansa Alliance	Sand dune sedge swaths	G4? S3?
Conium maculatum - Foeniculum vulgare Alliance	Poison hemlock or fennel patches	GNA SNA
Cortaderia (jubata, selloana) Alliance	Pampas grass patches	GNA SNA
Cynosurus echinatus – Bromus hordeaceus – Avena fatua Alliance	Annual dogtail grasslands	GNA SNA
Danthonia californica Alliance	California oat grass prairie	G4 S3
Darlingtonia californica	California pitcher plant fens	G4 S3?
Deschampsia caespitosa - Hordeum brachyantherum – Danthonia cali Alliance	Tufted hair grass-Meadow barley-California oatgrass meadows	GNR S3
Deschampsia cespitosa – Anthoxanthum odoratum	Tufted hair grass meadows	G5 S4?
Deschampsia cespitosa – Danthonia californica	Tufted hair grass meadows	G2 S2

Deschampsia cespitosa – Horkelia marinensis	Tufted hair grass meadows	G3 S1
Distichlis spicata	Salt grass flats	GNR S4
Eleocharis macrostachya Alliance	Pale spike rush marshes	G4 S4
Elymus glaucus Alliance	Blue wild rye meadows	G3? S3?
Festuca idahoensis Alliance	Idaho fescue grassland	GNR S3?
Grindelia (stricta) Provisional Alliance	Gum plant patches	G2G3 S2S3
Heterotheca (sessiflora) Alliance	Goldenaster patches	G3 S3
Scientific Name	**Common Name**	**Global & State Rank**
Holcus lanatus – Anthoxanthum odoratum Alliance	Common velvet grass – sweet vernal grass meadows	GNA- SNA
Juncus articus (var. *balticus, mexicanus*)	Baltic and Mexican rush marshes	G5 S4
Juncus effusus Alliance	Soft rush marshes	G4 S4?
Lasthenia californica – Plantage erecta – Vulpia microstachys Alliance	California goldfields – dwarf plantain – small fescue flower fields	G4 S4
Leymus mollis Alliance	Sea lyme grass patches	G4 S2
Mimulus (guttatus) Alliance	Common monkey flower seeps	G4? S3?
Nassella pulchra Alliance	Purple needle grass grassland	G3 S3?
Poa secunda Alliance	Curley bluegrass grassland	G4 S3?
Scirpus microcarpus Alliance	Small-fruited bulrush marsh	G4 S2

Appendix B. References

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Appendix C. List of Plants Found on Site

Group	Family	Binomial	Common Name	Native
FERNS AND ALLIES				
	Dennstaedtiaceae			
		Pteridium aquilinum var. pubescens	bracken; western bracken; hairy bracken fern	Y
	Dryopteridaceae			
		Athyrium filix-femina var. cyclosorum	subarctic lady-fern; lady fern	Y
		Polystichum munitum	western sword fern	Y
	Equisetaceae			
		Equisetum sp.	horsetail	
GYMNOSPERMS				
		Hesperocyparis macrocarpa	Monterey cypress	Y
		Pinus contorta ssp. contorta	shore pine; beach pine	Y
DICOTS				
	Apiaceae			
		Daucus carota	wild carrot, Queen Anne's lace	N
		Oenanthe sarmentosa	Pacific oenanthe, water parsely	Y
	Asteraceae			
		Bellis perennis	English daisy	N
		Cirsium vulgare	bull thistle	N
		Hypochaeris radicata	rough cat's ear, hairy cat's ear	N
		Matricaria discoidea	pineapple weed	N
		Pseudognaphalium luteoalbum	Jersey cudweed	
		Senecio glomeratus	cut-leafed erechtites, New Zealand fireweed	N
	Betulaceae			
		Alnus rubra	red alder, Oregon alder	Y
	Brassicaceae			
		Raphanus sativus	wild radish	N
	Fabaceae			
		Lotus corniculatus	bird's-foot trefoil, Birdfoot deervetch	N
		Trifolium dubium	shamrock, Shamrock clover, Suckling clover	N
		Trifolium pratense	red clover	N
		Trifolium repens	white clover	N
		Ulex europaeus	common gorse	N
	Geraniaceae			
		Geranium molle	dove's-foot geranium, crane's bill	N

Group	Family	Binomial	Common Name	Native
	Lamiaceae			
		Prunella vulgaris	self-heal	
		Stachys chamissonis	coast hedge-nettle	Y
	Linaceae			
		Linum bienne	pale flax	N
	Myricaceae			
		Morella californica	wax-myrtle	Y
	Myrtaceae			
		Eucalyptus globulus	blue gum	N
	Papaveraceae			
		Eschscholzia californica	California poppy	Y
	Phrymaceae			
		Erythranthe guttata	common yellow monkeyflower, seep monkey flower	Y
	Plantaginaceae			
		Digitalis purpurea	purple foxglove	N
		Plantago lanceolata	English plantain, ribwort, narrow leaved plantain, ribgrass	N
	Polygonaceae			
		Rumex acetosella	common sheep sorrel	N
	Portulacaceae			
		Claytonia perfoliata	miner's lettuce	Y
	Primulaceae			
		Lysimachia arvensis	scarlet pimpernel, poor man's weathervane	N
	Ranunculaceae			
		Ranunculus californicus	California buttercup	Y
	Rosaceae			
		Rubus armeniacus	Himalaya-berry, Himalayan blackberry	N
		Rubus ursinus	California blackberry	Y
	Salicaceae			
		Salix lucida	shining willow	Y
		Salix lasiolepis	arroyo willow	Y
MONOCOTS				
	Cyperaceae			
		Scirpus microcarpus	mountain bog bulrush	Y
		Juncus effusus	common bog rush	Y
	Poaceae			
		Agrostis capillaris	colonial bentgrass	N
		Avena barbata	slender wild oat	N

Group	Family	Binomial	Common Name	Native
		Briza maxima	big quaking grass; rattlesnake grass	N
		Briza minor	little quaking grass; quaking grass	N
		Bromus diandrus	ripgut brome; ripgut	N
		Bromus hordeaceus	soft chess	N
		Festuca perennis	perrenial ryegrass, English ryegrass	N
		Festuca rubra	red fescue	Y
		Holcus lanatus	common velvetgrass	N

Appendix D. Soil Report

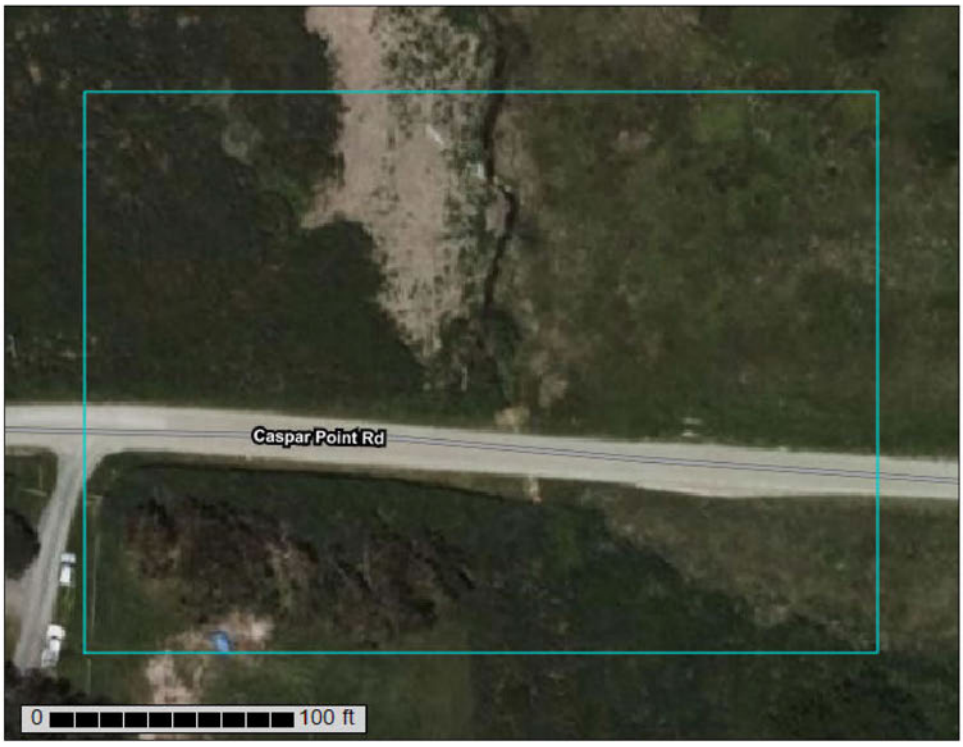
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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



November 14, 2021

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 (https://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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Contents

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 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.

Custom Soil Resource Report
Soil Map (Caspar Point Road Culvert)
214
Caspar Point Rd
Soil Map may not be valid at this scale.
Map Scale: 1:592 if printed on A landscape (11" x 8.5") sheet.
Meters
Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84
N
9

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:
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 16, Sep 6, 2021

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

Date(s) aerial images were photographed: May 5, 2019—Jun 3, 2019

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.

MAP LEGEND

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
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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.

Map Unit Legend (Caspar Point Road Culvert)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
214	Tropaquepts, 0 to 15 percent slopes	1.7	100.0%
Totals for Area of Interest		**1.7**	**100.0%**

Map Unit Descriptions (Caspar Point Road Culvert)

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 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.

Mendocino County, Western Part, California

214—Tropaquepts, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: hmpn
Elevation: 0 to 1,120 feet
Mean annual precipitation: 39 to 47 inches
Mean annual air temperature: 54 degrees F
Frost-free period: 310 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Tropaquepts and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tropaquepts

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Blacklock

Percent of map unit: 5 percent
Landform: Marine terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Shinglemill

Percent of map unit: 5 percent
Landform: Marine terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Tregoning

Percent of map unit: 5 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Aborigine

Percent of map unit: 5 percent
Landform: Marine terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

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Appendix E. ANALYSIS OF PERMITTED DEVELOPMENT IN ESHA PER MCCZC 20.496.02(A)(4)

The Mendocino County Coastal Zoning Code outlines developments that are allowable in specific Environmentally Sensitive Habitat Areas, including within streams and riparian areas. Replacement of culverts is not specifically indicated as an allowable use, however there is an assumption that this is a necessary use associated with existing and proposed development, and it is a use that is commonly permitted in the Coastal Zone, particularly in association with Caltrans and other road maintenance projects, and with new residential development. Section 20.496.020 of the Mendocino Coastal Zoning Code describes the terms in which reducing a buffer to an Environmentally Sensitive Habitat Area are to be considered, and also the considerations that should be applied to allowing development in Environmentally Sensitive Habitat Areas. In this case, the applicant is not requesting that a buffer to a sensitive area be reduced for any new development, but is requesting that development occur within the stream and associated riparian area. For this reason, Section 20.496.020(A)(4) of the Mendocino County Coastal Zoning Code applies to the project.

According to the Mendocino County Coastal Zoning Code, Environmentally Sensitive Habitat Areas are defined as:

(G) "Environmentally Sensitive Habitat Area" means 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 easily be disturbed or degraded by human activities or developments. In Mendocino County, environmentally sensitive habitat areas include, but are not limited to: anadromous fish streams, sand dunes, rookeries and marine mammal haul-out areas, wetlands, riparian areas, areas of pygmy vegetation that contain species of rare or endangered plants, and habitats of rare and endangered plants and animals.

The Environmentally Sensitive Habitat Areas at the site include wetlands (the stream is not considered an anadromous fish stream but does qualify as wetlands), riparian areas, and potential habitat for special status wildlife species, as the stream may be breeding habitat for special status frogs, and special status birds and bats may feed over and drink from the stream.

Other special status wildlife species that have a lower likelihood for presence in the project area, and a lower likelihood for impacts resulting from the project, include special status bumblebees, and special status birds that may nest in the project area. As such a presence is possible for nearly all built and natural environments, those habitats other than the stream and riparian area in the project area due to the common nature are not considered environmentally sensitive, but avoidance measures are still appropriate.

For the stream (wetland), and associated riparian area, an analysis of permitted development in the ESHA is included. Whether completed by the project biologist or by Planning Staff, or both, this analysis should be included in the staff report in order to support the proposed development.

Mendocino County Coastal Zoning Code Section 20.496.020(A)

(4) Permitted Development.

Development permitted within the buffer area shall comply at a minimum with the following standards:

(a) 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.
The proposed culvert replacement and drainage improvements are expected to result in a continued fully functional capacity of the stream with any impacts to riparian vegetation to be temporary in nature.

(b) Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel.
Development must by necessity occur in the stream corridor.

(c) 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 drainage, 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.
The proposed replacement culvert location is the least impacting location for stream crossing as this crossing already exists. Moving the roadway would result in greater impacts as the crossing will still be necessitated. The drainage improvements are designed to correct existing flooding of the roadway and nearby areas, and in this way will improve hydrology.

(d) 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.
The development is expected to be the minimum necessary to achieve the goals of upgrading the culvert to a functional one that meets the minimum sizing requirements, and to promote better and engineered downstream flows in order to correct flooding of the roadway.

(e) 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.
The culvert by necessity must be within the stream and ESHA buffer area as that is the

only functional location. All riparian vegetation that is temporarily disturbed will be replaced at a ratio of at least 1:1 within the existing project area.

(f) 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.
The development is expected to be limited to the minimum necessary to achieve the goals of replacement of the culvert and correction of flooding.

(g) 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.
Riparian vegetation will be temporarily impacted, and will be replaced at a ratio of at least 1:1.

(h) Aboveground structures shall allow peak surface water flows from a one hundred (100) year flood to pass with no significant impediment.
The proposed culvert will be larger than the one that is currently in place, and has been engineered appropriately to prevent impediment of the stream.

(i) Hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic, shall be protected.
Standard measures will be included in the required California Department of Fish and Wildlife Lake and Streambed Alteration Agreement for the project to protect biological diversity and hydrological and/or biological processes.

(j) Priority for drainage conveyance from a development site shall be through the natural stream environment zones, if any exist, in the development area. In the drainage 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 drainage 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.
The project is expected to improve drainage conveyance.

(k) 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 drainage improvements, may be required as mitigation measures for developments adjacent to environmentally sensitive habitats.
Culvert replacements are common maintenance developments that are not expected to result in significant adverse impacts when the California Department of Fish and Wildlife Lake and Streambed Alteration Agreement requirements are met. The additional hydrological improvements to correct flooding will similarly be covered by the California Department of Fish and Wildlife Lake and Streambed Alteration Agreement. With the

avoidance measures included in both this study and the CDFW LSA, the project is not expected to result in significant adverse impacts to ESHA.