# BIOLOGICAL SCOPING SURVEY REPORT, BOTANICAL SURVEY AND WETLAND DELINEATION

FOR

Avalon Inn (APN 069-241-27 & -04) 1201 & 1211 North Main Street Fort Bragg, CA Mendocino County



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# 1.0 Summary

A survey on parcels 069-241-27 (~2.5 acres) and 069-241-04 (~1.2 acres) was conducted to locate special-status plants and plant communities, wetland and riparian areas, and special-status animal habitat to determine if they would be directly or potentially impacted by the proposed development, which would consist of a new visitor serving facility. Wetlands, special status plant communities, and potential habitat for special status wildlife species, including northern red-legged frog and special status birds, were observed. A reduced buffer analysis is included, with mitigation measures proposed to accommodate development while protecting on-site natural resources.

# 2.0 Background/Project Description

Surveys were conducted to identify a potential building envelope for a visitor serving facility on a previously developed ~3.7 acre property consisting of two parcels, zoned Highway Visitor Commercial (CH) and Open Space (OS), located in the City of Fort Bragg in the Coastal Zone. On February 28, March 2, April 11, May 20, August 7, and November 10, 2013, and February 11, March 1, 10, 11, 16, 17, 24, April 1, 2, 4, 8, 10, 14, 15, 24, June 4, 5, August 12 and 19, 2014, and February 10 and 17, 2015, biological scoping, wildlife, botanical, and wetland surveys were conducted on the properties located at 1201 and 1211 North Main Street (APN 069-241-27 and 069-241-04), ~3.7 acres) Fort Bragg, California ("Project Site"). The purpose of the studies was to describe the existing vegetation communities, survey the parcel for special-status (rare) plants and plant communities and animal habitats, wetlands, streams and riparian areas, and recommend appropriate mitigation measures if needed that help to avoid or reduce potential or direct impacts to areas that can be considered Environmentally Sensitive Habitat Areas (ESHA's) under the City of Fort Bragg Local Coastal Program.

The ESHA survey has been conducted to facilitate the issuance of a permit to build within the Coastal Zone in the City of Fort Bragg.

# 3.0 Project Site Description

# 3.1 General Site Description

The 3.7 acre Project Site consists of two adjacent parcels, 069-241-27 (~2.5 acres) and 069-241-04 (~1.2 acres). The properties are located in the City of Fort Bragg, within the Coastal Zone at 1201 and 1211 North Main Street, west of the highway (Main Street) and about 300 feet east of the ocean. The Haul Road borders the properties to the west side. The property is relatively flat, gently sloping westward towards the ocean. The elevation is approximately 30 to 50 feet above sea level. Soils are mapped as Tropaquepts, 0 to 15% slopes.

# 3.2 Vegetation

The property is comprised mainly of non-native, ornamental, and invasive plant species, with wetland communities along the northwest and southwest property boundaries. Within and near wetlands, several special status plant communities are present, including Coastal Blackberry Brambles (*Rubus ursinus* Shrubland Alliance G4 S3), Wax Myrtle Scrub (*Morella californica* Shrubland Alliance G3 S3), Small-Fruited Bulrush Marsh (*Scirpus microcarpus* Herbaceous Alliance G4 S2), Slough Sedge Swards (*Carex obnupta* Herbaceous Alliance G4 S3), and Water Parsley Marsh (*Oenanthe sarmentosa* Herbaceous Alliance G4 S2).



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Figure 1. Plant communities map.

#### 3.3 Wetlands

Two wetlands were identified on the property by the surveyor. Per sampled data points and personal observations, portions of each wetland may be considered three parameter Army Corps wetlands, and portions may be considered two to one-parameter Coastal Commission wetlands. Additionally, these wetlands may be considered Waters of the US. Wetland boundaries and the Waters of the US determination must be confirmed by the Army Corps of Engineers and California Coastal Commission. The boundaries of the wetlands, per the surveyor's professional opinion, are shown in Figure 2. As mapped, the northern wetland is approximately 19,000 square feet in size, for a total area of approximately 0.9 acre of wetlands on the subject properties.

As discussed in greater detail later in the report, facultative invasive and lawn grass species dominate a large portion of the property, which present a risk for misclassification of upland areas as one-parameter wetlands. Groundwater monitoring wells were installed and monitored in order to gain a better understanding of the hydrology of the site, and to inform the surveyor's determination of wetland boundaries.

#### **3.4 Existing Development**

The property was previously developed and contains an asphalt driveway and parking lot, a garage, and a storage container. Areas of red fescue (*Festuca rubra*) are remnants of past planted lawns.

#### 4.0 Methods

#### 4.1 Scoping Survey

Scoping surveys were based on the scoping lists in Tables 1-3 in Appendix A, and were conducted within the entire boundaries of the property and 100ft beyond. The investigator, Asa B. Spade, has a Bachelor's Degree in environmental science with an emphasis in landscape ecosystems as well as a minor in botany.

#### 4.2 Botanical Survey

#### 4.2.1 Blooming Period

Site visits and plant surveys were conducted on February 28, March 2, April 11, May 20, August 7, and November 10, 2013, and February 11, March 1, 10, 11, 16, 17, 24, April 1, 2, 4, 8, 10, 14, 15, 24, June 4, 5, and August 12 and 19, 2014, when all rare, threatened, or endangered species would have been both evident and identifiable for the species with the highest likelihood of occurring within the Study Area.

Reference populations of Blasdale's bent grass (*Agrostis blasdelei*), sea-watch (*Angelica lucida*), Point Reyes blennosperma (*Blennosperma nanum* var. *robustum*), Bolander's reed grass (*Calamagrostis bolanderi*), swamp harebell (*Campanula californica*), lyngbye's sedge (*Carex lyngbyei*), Oregon coast paintbrush (*Castilleja affinis* ssp. *litoralis*), Point Reyes ceanothus (*Ceanothus gloriosus* var. *gloriosus*), Whitney's farewell-to-spring (*Clarkia amoena* ssp. *whitneyi*), supple daisy (*Erigeron supplex*), Pacific gilia (*Gilia capitata* ssp. *pacifica*), dark eyed gilia (*Gilia millefoliata*), short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), Point Reyes horkelia (*Horkelia marinensis*), perennial goldfields (*Lasthenia californica* ssp. *macrantha*), coast lily (*Lilium maritimum*), coastal lotus (*Hosackia gracilis*), north coast phacelia (*Phacelia insularis* var. *continentis*), corn lily (*Veratrum fimbriatum*), and dog violet (*Viola adunca*) were visited prior to project site visits to ensure that visits were made at a time when these plants were evident and identifiable.

#### 4.3 Wetland Delineation

Wetlands are defined in part based on the environmental criteria indicating areas are wetlands. Areas are then identified as being wetlands or not based on field indicators of the requisite conditions of wetland criteria, and if the areas are wetlands, the field indicators are used to determine the spatial limits of the wetland boundary on the ground. Various federal, state, and local governing agencies use differing criteria to define wetlands, which leads to the determination of wetlands within a range of physical boundaries.



Figure 2. Wetland boundaries per the surveyor's professional opinion.



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The purpose of this delineation is to identify and describe the presence and extent of jurisdictional waters of the U.S. and waters of the State of California within the Study Area under the Clean Water Act and California state regulatory authority.

Surveys were conducted to identify the presence, extent, and quality of waters, including wetlands that may be considered jurisdictional by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. The Study Area Site for wetland delineation purposes is the entirety of the two subject properties, APNs 069-241-27 (~2.5 acres) and 069-241-04 (~1.2 acres).

This report summarizes the results of the wetland investigation and provides technical documentation for all delineated wetlands. Included in this report are the wetland delineation data necessary for a jurisdictional determination by the Corps, Regional Water Quality Control Board, (RWQCB, or Water Board), California Department of Fish and Wildlife (CDFW), and the California Coastal Commission (CCC). The wetland methodology used in this report is consistent with methods described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE, 2008) and the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987). This wetland delineation summarizes the professional opinion of the wetland delineator, and is subject to review and approval by the RWQCB, USACE, CDFW, CCC, and City of Fort Bragg. The maps included in this report were generated from field measurements, aerial photography, Global Positioning System (GPS) data, and existing geospatial datasets.

#### 4.3.1 Literature Review

Climate Data - Saturation at or near the surface, or inundation, for approximately 14 consecutive days or more during an area's growing season typically creates the necessary conditions in the soil to form and maintain wetlands. Precipitation data is useful to determine the amount of rainfall the Study Area has received before the time of the field investigation. For the purposes of this delineation, the growing season is considered to be 365 days a year.

Climate data from the Fort Bragg newspaper, Fort Bragg Advocate News (2014), and Desert Research Institute's Western Regional Climate Center were collected to determine the total rainfall in 2014 and daily rainfall between January 1 and April 15, 2014.

USGS Topographic Quadrangles - The U.S. Geological Survey (USGS) maps illustrate basic geological formations of the landscape with topographic contour lines showing elevation and shape of the terrain that reveal major surface features such as lakes, rivers, streams, canals, buildings, and other geomorphic and man-made features. Most streams are shown as "blue line" streams, but given the scale of most detailed topographic maps (7.5' = 1:24,000), many small streams that fall under state or federal jurisdiction are not depicted. These maps provide an excellent overview of general hydrological features within the Study Area but field surveys are needed to augment the extent of these features at a larger scale.

The Study Area occurs on the Fort Bragg USGS topo. The most recent map available was from 2012. No watercourses are shown in the project area on the USGS topo map.

Imagery - Aerial photographs or satellite imagery can be particularly useful for the identification of saturated soils where plant cover is sparse and ponding or where drainage patterns become evident. Particularly, a comparison of the same site over time and at different times during the year can show areas of inundation or saturation or patterns of vegetation reflecting hydric conditions. Numerous sources of imagery are available such as National Agriculture Imagery Program (NAIP), Land Satellite (LANDSAT), Digital Orthophoto Quadrangles (DOQ), and Google Earth. These types of images are also useful in the identification of riparian vegetation and prominent wetland features that are not accessible or that occur adjacent to but offsite the Study Area.

GoogleEarth imagery from 2013 was georeferenced to 2010 NAIP imagery to give the most recent and clear (unpixelated) aerial image of the Project Site (Figure 1 and 2, under other layers).

Saturation visible on aerial imagery is considered by the Corps as a secondary indicator for the presence of hydrology in a Study Area. These signatures of wetland hydrology can be examined in the office and then confirmed during a field site visit. Prior to site visits aerial imagery from NAIP and GoogleEarth Maps were used to determine any visible saturation in the Study Area.

National Wetland Inventory Maps - The USFWS produces wetland maps and geospatial wetland data for the United States and makes these data available to the public (USFWS 2013). Wetlands are primarily mapped by identifying them from aerial imagery and then classified using the Cowardin system (FGDC 2009). These maps are a supplemental tool for onsite wetland investigations and should be used with caution as all wetlands have not been mapped and the maps can be limited by scale.

A USFWS NWI map was created by using the web application (Appendix B) to show its relation to the Study Area. One NWI freshwater wetland feature is mapped within the Study Area.

Soil Survey - NRCS maintains published soil surveys for counties across the United States that provide information on the origin of soils, their composition and texture, and their use for agriculture. Additionally, NRCS maintains the "Hydric Soils List of California," which lists soils from county soil surveys that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season.

The most current list of hydric soils (NRCS 2014) was reviewed prior to the spring field visit and a soil map and report of the Study Area were produced using NRCS's online Web Soil Survey (NRCS 2014). These reports are useful in determining the composition of the soil map units, which are rarely comprised of entirely the same soil.

A custom soil report for the Study Area was created using NRCS's online Web Soil Survey (Appendix G). The Study Area is comprised of Tropoquepts, 0-15 percent slopes (map unit 214), (hydric).

Tropoquepts soil types are included in the most current list of hydric soils (NRCS 2014).



**Figure 4. USGS Topographic Map with Project Location Expanded** Avalon Inn APN 069-241-27 & 069-241-04

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#### 4.3.2 Field Methods

Potential Section 404 Jurisdictional Wetlands - This delineation study has been conducted in accordance with the U.S. Army Corps of Engineers Wetlands Delineation Manual (Corps Manual) (Environmental Laboratory 1987) and the Western Mountains, Valleys, and Coast Region (Version 2.0) Regional Supplement (USACE 2010). This study evaluated the presence or absence of indicators of three wetlands parameters described in the Corps Manual. The three parameters used to determine the presence of wetlands are (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. According to the Corps Manual (1987): "...[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

Sample points in the study area were established to collect data on vegetation, hydrology, and soils and reported on standard Corps data forms included in Appendix E. A description of these three indicators is summarized below. The location of these sample points and the extent of the wetland boundary were recorded using a WAAS corrected GPS receiver and the area of the delineated wetland was calculated using GIS software.

Hydrophytic Vegetation - The indicator status assigned to a species designates the probability of that species occurring in a wetland. A species with an indicator of OBL, FACW, or FAC is considered to be typically adapted for life in a wetland (hydrophytic vegetation). A species indicator of, FACU and UPL determines an upland species. The wetland occurrence probability and abbreviations utilized in the lists are presented below.

	- 1
Wetland Indicator Status	Definition
Obligate Wetland (OBL)	Almost always occur in wetlands
Facultative Wetland (FACW)	Usually occur in wetlands, but may occur in non-wetlands
Facultative (FAC)	Occur in wetlands or non-wetlands
Facultative Upland (FACU)	Usually occur in non-wetlands, but may occur in wetlands
Obligate Upland (UPL)	Almost never occur in wetlands

#### **Table 1. Wetland Indicator Status Groups**

The dominant vegetation at each sampling point was noted and evaluated for prevalence of hydrophytes using the most recent list of hydrophytic plants (Lichvar 2014).

Hydric Soils - The Natural Resource Conservation Service defines a hydric soil as: "A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." (Federal Register July 13, 1994, US Department of Agriculture, Natural Resource Conservation Service.) Soils formed over long periods of time under wetland (anaerobic) conditions sometimes possess characteristics that indicate that they meet the definition of hydric soils. At each sampling point a soil pit was dug to a minimum 20-inch depth. In each pit distinct soil layer depths were noted and their matrix and mottle colors (if present) were compared to the Munsell soil color chart (GretagMacbeth 2000) for color appearance (hue), intensity (value), and shade (chroma). Redoximorphic features and soil texture were noted. In some instances, a determination for the presence or absence of hydric soils could be made at shallower depths and soil pits were dug less than 20 in.

Wetland Hydrology - Wetland hydrology is a term which encompasses hydrologic characteristics of areas that are periodically inundated or saturated within 6-12 inches of the surface at some time during the growing season. Recorded data can be used when available to determine wetland hydrology. Recorded data showing inundation or saturation within 6-12 inches of the surface for a minimum of five percent of the growing season (approximately 14 days) is considered evidence of wetland hydrology. When studies are conducted at a time of year when surface water, ground water, or saturated soils cannot be observed, evidence of wetland hydrology is based on observation of the hydrologic indicators described in the 1987 Corps Manual. Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels and algal mats. If indirect or secondary indicators are used, at least two secondary indicators must be present to conclude that an

area has wetland hydrology. The wet areas in the study area were examined for these hydrologic indicators. The presence of any primary or secondary wetland hydrologic indicators was noted at each sampling point.



**Figure 5. Schematic** 

diagram of shallow

groundwater monitoring well.

Shallow Groundwater Monitoring Wells – Shallow groundwater monitoring wells were utilized on the site in order to obtain quantitative information about shallow ground water regimes in and near potential wetlands. The groundwater monitoring wells were designed and installed according to guidance provided by the Wetlands Regulatory Assistance Program's guidance document, Installing Monitoring Wells/Piezometers in Wetlands, July 2000. Figure 5 illustrates the schematic diagram of the shallow monitoring wells installed on the site. Twelve shallow groundwater monitoring wells were installed. Groundwater level data was collected starting on February 11, 2014 and collected approximately every week through April 25.

Potential Section 404 Jurisdictional "Other Waters" - Non-wetland non-tidal waters are those bodies of water that convey water such as perennial, intermittent and ephemeral streams, or bodies of water such as lakes and ponds that are deep enough to exclude the growth of hydrophytic vegetation. Typically, these are hydrological features with a defined stream channel, bed, and bank.

All of these types of features were documented within the Study Area and mapped in the field with a GPS or also with the aid of georeferenced aerial photography in GIS.

Potential Section 401 Jurisdictional Waters - Some water bodies, such as isolated wetlands that the Corps would not regulate, fall under the jurisdiction of the SWRCB if there is discharge involved. However, if the Corps determines that a water body is not subject to regulation under Section 404, then no 401 certification is required by the State *if* there is no discharge into waters of the State. Because "waters of the State" is a much more encompassing term than "waters of the United States," it can be used to regulate isolated wetlands and wetlands not otherwise under federal jurisdiction.

Wetlands and other waters were delineated using the same methods for determining presence of wetland indicators: hydrophytic vegetation, hydric soils, and hydrology.

Potential Section 1602 Jurisdictional Waters- Riparian vegetation often includes vegetation beyond that growing in the active channel or floodplain. The measurement of riparian vegetation can extend to a point where vegetation provides shade for plants and wildlife as well as to a point where vegetation contributes large woody debris (LWD) or fine litter to the watercourse. This can be above the floodplain and even above the terrace on to the hillslope. Generally, CDFW's jurisdiction over lakes and streams is measured from channel to the top of the bank or edge of the riparian as determined by the upland side of the drip line, whichever is greater.

Potential California Coastal Act Jurisdictional Wetlands and Waters- All wetlands and waters that can be considered 404 and 401 jurisdictionally regulated, including one and two parameter wetlands and riparian vegetation and watercourses regulated under 1602 can be considered for regulation by the California Coastal Commission (CCC). Essentially, the CCC can regulate any and all wetlands and waters regulated or not regulated by ACOE, RWQCB, and CDFW. Therefore all methods for identifying federal and state waters and wetlands and riparian vegetation are used for identifying the same features regulated by the CCC.

#### 5.0 Survey Results

# **5.1 Potential Occurrences**

#### **Special Status Plants**

Rare plant surveys occurred during times of the year when all special status plants would have been evident and identifiable. No rare plants were observed on the property during surveys. No additional surveys are warranted.

#### Invertebrates

Western bumble bee – No bumblebees displaying field characteristics of the western bumble bee were observed during surveys. No further surveys are warranted.

#### Amphibians

Frogs – Northern red-legged frog –No amphibians were documented except a California newt and Pacific chorus frog, however potential habitat may be present ¼ mile south in the Ocean Lake mobile home park pond or ½ mile southeast in Pudding Creek. The likelihood of special status frogs using the building envelope as upland habitat is low. Most upland movement is between bodies of water, and woody vegetation or other debris are usually used as temporary habitat during movement.



Figure 6. California newt observed at site.

#### Birds

Raptors –Northern harrier, merlin, American peregrine falcon – No nests were documented from the Project Site during the surveys.

Other birds – snowy egret, burrowing owl, Rufous hummingbird, Allen's hummingbird, olive-sided flycatcher, purple martin, grasshopper sparrow, Bryant's savannah sparrow – No nests were documented during site investigations. No ground squirrel holes or other burrows sufficient for the use of the burrowing owl were found.

The project has a low likelihood for impacts to nesting birds. Nesting bird surveys are recommended prior to vegetation removal if it occurs during the nesting season. The bird breeding season typically extends from February to August.

#### Bats

Pallid bat, Yuma myotis, Long-eared myotis and hoary bat – These species roost in crevices in rocks and in bark, and/or in the foliage of trees and have the potential to occur wherever trees are present. Few trees are present on the project site. Because these species are nocturnal they may be present during the non-survey timing of the Project Site. None were documented during daytime surveys.

#### **5.2 Documented occurrences**

#### 5.2.1 Non-Native Grassland (Holcus lanatus-Anthoxanthum odoratum Semi-Natural Herbaceous Stand)

The main plant community present on the property is non-native grassland. Dominant species within the nonnative grassland include common velvet grass (*Holcus lanatus*), creeping bentgrass (*Agrostis stolonifera*), tall fescue (*Festuca arundinacea*), sweet vernal grass (*Anthoxanthum odoratum*) and wild radish (*Raphanus sativus*).

Some patches were dominated by red fescue (*Festuca rubra*), a native grass, as shown in Figure 1. This species occurs in much of California, and includes three subspecies and widely planted introduced cultivars (Sawyer 2009). The shape and location of the patches on the property, as well an interview with the property owner, indication that the patches of red fescue (*Festuca rubra*) on the property are likely comprised of an introduced cultivar, and that these areas were previously lawns associated with the prior use of the property. A review of historical images at Californiacoastline.org confirms that the area in question did in fact consist of a lawn in 2002 (Figure 7).



Figure 7. Image 11414, California Coastal Records Project, shows the lawn on the subject property in 2002.

#### 5.2.2 Non-Native Ruderal, Invasive Plants and Ornamentals

Non-native ruderal areas, invasive plants and ornamentals cover a significant portion of the property not covered by non-native grassland. Dominant plant species in areas mapped as non-native ruderal include English plantain (*Plantago lanceolata*), bur-clover (*Medicago polymorpha*), buckhorn plantain (*Plantago coronopus*), wild radish (*Raphanus sativa*), vetch (*Vicia sativa*), and cape ivy (*Delairea odorata*).

Areas dominated by specific invasive plants were mapped as such in Figure 1 and include Himalaya-berry (*Rubus armeniacus*), iceplant (*Carpobrotus edulis*), Monterey cypress (*Hesperocyparis macrocarpa*), and Monterey pine (*Pinus radiata*). Avalon Inn APN 069-241-27 & 069-241-04

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An area located to the northwest corner of the southerly parcel (APN 069-241-27) is dominated by invasive cape ivy (*Delairea odorata*) and native California blackberry (*Rubus ursinus*), and also includes native giant horsetail (*Equisetum telmateia ssp. braunii*)

Ornamentals are left as a remnant of prior development and include calla lilies (*Zantedeschia aethiopica*), belladonna (*Amaryllis belladonna*), red-hot poker (*Kniphofia uvaria*), Japanese honeysuckle (*Lonicera japonica*), Aaron's beard (*Hypericum calycinum*), rosemary (*Rosmarinus officinalis*), escallonia (*Escallonia* sp.), monbretia (*Crocosmia Xcrocosmiiflora*), bulbil bugle lily (*Watsonia meriana*), echium (*Echium pininana*), and giant periwinkle (*Vinca major*).



Figure 8. Non-native and invasive plant species including Aaron's beard, echium, and iceplant.

#### 5.2.3 Coastal Blackberry Brambles (Rubus ursinus Shrubland Alliance G4 S3)

Roughly 2,000 square feet of area is dominated by native blackberry (Rubus ursinus), present along the west property boundaries, just outside of wetlands, adjacent to the Haul Road.

#### 5.2.4 Wax Myrtle Scrub (Morella californica Shrubland Alliance G3 S3)

Roughly 2,300 square feet of area within the northerly wetland is dominated by wax myrtle (Morella californica).

# 5.2.5 Slough Sedge Swards (Carex obnupta Herbaceous Alliance G4 S3)

Within the northerly wetland, roughly 3750 square feet of area is dominated by slough sedge (*Carex obnupta*).

#### 5.2.6 Small-Fruited Bulrush Marsh (Scirpus microcarpus Herbacous Alliance G4 S2)

An area approximately 1,600 square feet in size, located within the northerly wetland, is dominated by small-fruited bulrush (*Scirpus microcarpus*). Also present in this area is common bog rush (*Juncus effusus*).

#### 5.2.7 Water Parsley Marsh (Oenanthe sarmentosa Herbaceous Alliance G4 S2)

A ~700 square foot area dominated by water parsley (*Oenanthe sarmentosa*) is present in the southerly wetland, and a ~300 square foot area dominated by water parsley (*Oenanthe sarmentosa*) is located in the center of the northerly wetland.

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Figure 9. Water parsley marsh.

# 5.2.8 Nootka Rose Briar Patch (Rosa nutkana Shrubland Alliance)

Roughly 2000 square feet of area in the south wetland contains a patch of native Nootka rose (Rosa nutkana).



Figure 10. Nootka rose briar.

## 5.2.9 Cattail Marsh (Typha latifolia Shrubland Alliance)

Roughly 2,500 square feet of area dominated by native cattails (*Typha latifolia*) is present in the north wetland.



Figure 11. Cattail marsh swath in center of photo.

#### 5.2.10 Wetlands

In the surveyor's professional opinion, two wetlands are present on the property. Portions of these wetlands contain all three wetland parameters, and portions contain one to two parameters. They are considered Coastal Commission wetlands, however portions of these wetlands may be considered Army Corps wetlands, and could potentially be considered Waters of the US. Such determinations would need to be agreed upon by the Army Corps of Engineers and California Coastal Commission.

Facultative invasive and lawn grass species dominate a large portion of the property, and present a risk for misclassification of upland areas as one-parameter wetlands. Groundwater monitoring wells were installed and monitored in order to gain a better understanding of the hydrology of the site, and to inform the surveyor's determination of wetland boundaries.

As discussed in Dr. John Dixon's October 5, 2011 briefing on wetland to the California Coastal Commission, "A predominance of wetland vegetation indicator species is the only field indicator of the wetland vegetation parameter and although the use of this indicator is generally straightforward there are situations where it tends not to be reliable." Dr. Dixon states:

The most common problem is when the vegetation is dominated by one or a few FAC species such as perennial ryegrass which is a poor wetland indicator. In such cases a great deal more evaluation has to be done considering all the factors that area present in the field (Dixon 2011).

On the subject property, purple velvet grass (*Holcus lanatus*) and red fescue (*Festuca rubra*), dominate the nonnative grassland. These species are facultative and are considered poor wetland indicators. For this reason, a comprehensive hydrological analysis was conducted in order to determine hydrological trends over several months during the rainy season. Areas where FAC grass species were the only wetland indicator, and where the comprehensive groundwater monitoring survey data illustrated a lack of hydrology as defined by the Army Corps manual, were therefore considered within upland areas by the surveyor.

#### Dr. Dixon also indicates:

Another problem situation may occur where there are patches of vegetation where there are only one or two species present; for example, where wetland indicator species including those listed as FACW or OBL grow as isolated clonal patches. Plants that spread by rhizome may form relatively large essentially mono-specific patches which pass the predominance test if sample plots ore small relative to the size of the plot. In such cases the species may not be representative of the vegetation community. When this patterning exists, I suggest that other pertinent data be considered and if there are no apparent topographical or hydrological differences between the patch and the surrounding vegetation I suggest the sample plot be enlarged to include the surrounding vegetation. The Corps manual includes provisions for adjusting the size of the sample plot based on site conditions and professional judgment (Dixon 2011).

Sample point SP5 was sampled because the vegetation in this location differed from surrounding vegetation. Only two species were observed in the sample area: salt rush (*Juncus lescurii* FACW), a clonal species, and purple velvet grass (*Holcus lanatus* FAC). The sample area dominated by salt rush (Juncus lescurii) was an isolated patch, with an approximately 9 foot radius, with no topographical or hydrological differences from surrounding vegetation, and did not show indications of wetland soils or hydrology. A shallow groundwater well was installed in this area and a shallow water table was not observed; rainwater drains quickly away from this area.

Figure 12 shows the delineated wetland and soil sample points. Figure 13 illustrates surface and subsurface site hydrology and includes locations of drainage ditches on and adjacent to the subject parcels. As per Appendix 8. California Coastal Commission Statewide Interpretive Guidelines: Appendix D. Technical Criteria for Identifying and Mapping Wetlands and Other Wet Environmental Sensitive Habitat, drainage ditches through constructed through otherwise upland areas were not considered to be wetlands for the purpose of this report, however, they may be considered Waters of the US.

#### 5.2.10.1 Wetland Sample Points

Sample Point SP1: This sample point is located in an area dominated by non-native purple velvet grass (*Holcus lanatus*, FAC) and native blackberry (*Rubus ursinus*, FACU). Other plant species noted at the sample point include red fescue (*Festuca rubra*), sweet vernal grass (*Anthoxanthum odoratum*), colonial bentgrass (*Agrostis capillaris*), and Pacific potentilla (*Potentilla anserina*). Hydric soil was observed as depleted below dark surface, and the water table was observed at 22 inches below the soil surface. One wetland parameter was observed at this location, consisting of the soils parameter.

Sample Point SP2: Facultative grasses dominate vegetation in the vicinity of SP2, resulting in a positive indication of hydrophytic vegetation. Red fescue (*Festuca rubra*, FAC), purple velvet grass (*Holcus lanatus*, FAC) and Himalayaberry (*Rubus armeniacus*, FACU) were the dominant plants observed. Other species noted include Pacific potentilla (*Potentilla anserina*), sheep sorrel (*Rumex acetosella*), dandelion (*Taraxacum officinale*), and white clover (*Trifolium repens*). No wetland soil indicators were observed and the water table was observed at 27 inches below the soil surface. One wetland parameter was observed at this location, with wetland vegetation, comprised of FAC grasses, the observed wetland parameter.

Sample Point SP3: This sample point is located in a swale, dominated by obligate wetland vegetation. Water parsley (*Oenanthe sarmentosa*, OBL), purple velvet grass (*Holcus lanatus*, FAC) and Himilaya-berry (*Rubus arminiacus*, FACU) are dominant plant species, with curly dock (*Rumex crispus*), wild radish (*Raphanus sativus*), Pacific potentilla (*Potentilla anserina*), coast hedge-nettle (*Stachys chamissonis*), nootka rose (*Rosa nutkana*), and fireweed (*Chamerion angustifolium*) also observed. Two percent prominent redox concentrations, occurring as pore linings within a dark surface, were observed as a hydric soil indicator. The water table was present within seven inches below the surface. All three wetland parameters were observed at SP3.



Figure 12. Wetland boundaries as delineated by the surveyor, and wetland sample points.



Figure 13. Site hydrology, culverts and drainage ditches

Sample Point SP4: Initially SP4 was dug within what appeared to be septic system infrastructure. The sample point was then moved over. Data listed on wetland sheet SP4B was therefore used for this sample point, and is summarized as follows: The vegetation at this sample point is dominated by FAC invasive and lawn grasses, resulting in a positive indicator of hydrophytic vegetation per the dominance test. The prevalence index and FAC-neutral tests do not indicate wetland vegetation. No wetland soils or hydrology were observed. Dominant vegetation species include purple velvet grass (*Holcus lanatus* FAC), red fescue (*Festuca rubra* FAC) and wild radish (*Raphinus sativus* FACU). Additional analysis in the form of ground water well monitoring was done to determine hydrological regimes. Based on ground water monitoring results, in the professional opinion of the surveyor, the sample point is not located in a wetland.

Sample Point SP5: This sample point was selected because the vegetation differs from surrounding vegetation: this sample point is located in a 9 foot radius patch of salt rush (*Juncus lescurii* FACW). Salt rush (*Juncus lescurii*) is the only dominant plant species observed in the sample area, and is an indicator of wetland vegetation. No soil or wetland hydrology indicators were observed in the project area. Sandy soil is present in the sample area, and the water table was not observed in the top 26 inches of the soil. Additional analysis in the form of ground water well monitoring was done to determine hydrological regimes. Based on ground water monitoring results, in the professional opinion of the surveyor, the sample point is not located in a wetland.

Sample Point SP6: This sample point is dominated by lawn grasses. Red fescue (*Festuca rubra*, FAC) and purple velvet grass (*Holcus lanatus*, FAC), dominate, with Himilaya-berry (*Rubus armeniacus*) also observed in the sample area. Wetland vegetation indicators were observed as FAC lawn and invasive grasses per the dominance test. The prevalence index and FAC-neutral tests do not indicate wetland vegetation. No wetland soils or hydrology indicators were observed. Additional analysis in the form of ground water well monitoring was done to determine hydrological regimes. Based on ground water monitoring results, in the professional opinion of the surveyor, the sample point is not located in a wetland.

Sample Point SP7: This sample point is dominated by clonal invasive non-native FAC grasses. Creeping bentgrass (*Agrostis stolonifera*, FAC) dominates, with red fescue (*Festuca rubra*), narrow-leaved plantain (*Plantago lanceolata*), hairy cat's ear (*Hypocharis radicata*), white clover (*Trifolium repens*), tall fescue (Festuca arundinacea), Himilaya-berry (*Rubus armeniacus*), beach strawberry (*Fragaria chiloensis*), Douglas iris (*Iris douglasiana*), sheep sorrel (*Rumex acetosella*), and purple velvet grass (*Holcus lanatus*) also observed in the sample area. Wetland vegetation indicators were observed as FAC clonal invasive non-native grasses per the dominance test. The prevalence index and FAC-neutral tests do not indicate wetland vegetation. No wetland soils or hydrology indicators were observed. Additional analysis in the form of ground water well monitoring was done to determine hydrological regimes. Based on ground water monitoring results, in the professional opinion of the surveyor, the sample point is not located in a wetland.

Sample Point SP8: This sample point is dominated by invasive non-native FAC grasses. Purple velvet grass (*Holcus lanatus*, FAC) dominates, with tall fescue (*Festuca arundinacea*), red fescue (*Festuca rubra*), bird's-foot trefoil (*Lotus corniculatus*), common bog rush (*Juncus effusus*), hairy cat's ear (*Hypocharis radicata*), and Pacific potentilla (*Potentilla anserina*) also observed in the sample area. Wetland vegetation indicators were observed as FAC invasive grasses per the dominance test. The prevalence index and FAC-neutral tests do not indicate wetland vegetation. No wetland soils or hydrology indicators were observed. Additional analysis in the form of ground water well monitoring was done to determine hydrological regimes. Based on ground water monitoring results, in the professional opinion of the surveyor, the sample point is not located in a wetland.

Sample Point SP9: This sample point was dominated by purple velvet grass (*Holcus lanatus*, FAC). Also present was Pacific potentilla (*Potentilla anserina*), giant horsetail (*Equisetum telmateia*), Douglas iris (*Iris douglasiana*), self-heal (*Prunella vulgaris*), and narrow-leaved plantain (*Plantago lanceolata*). Some depletions were observed within the dark soil matrix however not enough to meet any wetland soil indicator. Wetland hydrology was observed as

the water table was within the top one inch of the soil. The professional opinion of the surveyor is that the sample point is located within a two-parameter Coastal Commission wetland.

Sample Point SP10: This sample point was dominated by purple velvet grass (*Holcus lanatus* FAC), narrow-leaved plantain (*Plantago lanceolata* FACU), Himalaya-berry (*Rubus armeniacus* FACU) and (*Rubus ursinus* FACU). Since dominant vegetation consists predominantly of FACU species, the wetland vegetation parameter was not observed. No wetland soil or hydrology indications were observed. It is the opinion of the surveyor that this sample point is not located in a wetland.

Sample Point SP11: This sample point was dominated by purple velvet grass (*Holcus lanatus* FAC), rigid hedge nettle (*Stachys rigida*), Himalaya-berry (*Rubus armeniacus* FACU) and (*Rubus ursinus* FACU). Based on dominant vegetation, the wetland vegetation parameter was not observed. No wetland soil or hydrology indications were observed. It is the opinion of the surveyor that this sample point is not located in a wetland.

Sample Point SP12: This sample point is located on a raised berm adjacent to the Haul Road. The sample point was selected because it is adjacent to the southerly swale and appears green on aerial photos due to the presence of Himalaya-berry (*Rubus armeniacus*). The sample point is dominated by purple velvet grass (*Holcus lanatus*, FAC), and Himalaya-berry (*Rubus armeniacus*, FACU). Based on dominant vegetation, the wetland vegetation parameter was not observed. This berm was likely created when the area was leveled to build the haul road, a soil pit was not dug because soil was presumed to be disturbed and the locally raised topography is unlikely to support wetland. It is the opinion of the surveyor that this sample point is not located in a wetland.

Sample Point SP13: This sample point is dominated by FAC invasive grasses. Purple velvet grass (*Holcus lanatus* FAC) dominates, with coastal gumweed (*Grindelia stricta*), salt rush (*Juncus lescurii*), purple-awned wallaby grass (*Rytidosperma penicillatum*), beach strawberry (*Fragaria chiloensis*) and narrow-leaved plantain (*Plantago lanceolata*) also observed. The wetland vegetation indicator was observed as FAC invasive grass per the dominance test. No wetland soils or hydrology indicators were observed. Based on ground water monitoring results, in the professional opinion of the surveyor, the sample point is not located in a wetland.

Sample Point SP14: This sample point was observed to be dominated by cut-leaf plantain (*Plantago coronopus* FACW) and California burclover (*Medicago polymorpha* FACU), with red-stemmed filaree (*Erodium cicutarium*), cut-leaved geranium (*Geranium dissectum*) and California blackberry (*Rubus ursinus*) also present. Based on dominant vegetation, the wetland vegetation parameter was not observed. No wetland soil or hydrology indications were observed. It is the opinion of the surveyor that this sample point is not located in a wetland.

**5.2.10.2 Shallow Groundwater Monitoring Wells** Shallow groundwater monitoring wells were utilized on the site in order to obtain quantitative information about shallow ground water regimes in and near potential wetlands. The groundwater monitoring wells were designed and installed according to guidance provided by the Wetlands Regulatory Assistance Program's guidance document, Installing Monitoring Wells/Piezometers in Wetlands, July 2000. Figure 5 illustrates the schematic diagram of the shallow monitoring wells installed on the site. Twelve shallow groundwater monitoring wells were installed. Groundwater level data was collected starting on February 11, 2014 and collected approximately every week through April 25. Figure 14 shows the location of each shallow groundwater monitoring well and the results are summarized as follows:

GWW 1: On February 28, 2014 the shallow ground water level was observed at 2 inches below the soil surface at this location, however by March 13, shallow ground water had receded to 12.5 inches below the soil surface. On April 1, 2014, the shallow ground water level was observed at four inches below the soil surface at this location, however by April 8, shallow ground water had receded to 13.5 inches below the soil surface. Evidence of wetland hydrology was not observed at GWW1 during the observation period.

GWW 2: On February 28, 2014, shallow ground water was observed at eight inches below the surface at this location, but had receded to 16.5 inches by March 10. On April 1, 2014 shallow ground water was observed at seven inches below the surface, however shallow ground water was observed at 15 inches by April 4. Again, Avalon Inn APN 069-241-27 & 069-241-04

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saturation or inundation of soil did not occur within the upper 12 inches for 14 or more consecutive days. GWW 2 did not show observations which would confirm wetland hydrology.

GWW 3: At no time during the groundwater monitoring period was shallow ground water observed within the top 12 inches of the soil at this location. GWW 3 did not evidence wetland hydrology during the observation period.

GWW4: Shallow ground water was observed for at least 14 consecutive days between February 28 (at 7.5 inches below surface) and March 13, 2014 (at 8 inches below the surface). Evidence of wetland hydrology was observed at GWW4.

GWW5: Shallow ground water was observed for at least 14 consecutive days between February 28 (at 6 inches below surface) and March 16, 2014 (at 6 inches below surface). Evidence of wetland hydrology was observed at GWW5.

GWW6: Shallow ground water was observed for at least 14 consecutive days between February 28 (at 4 inches below surface) and March 16, 2014 (at 9 inches below surface). Evidence of wetland hydrology was observed at GWW6.

GWW7: On February 28, 2014 shallow ground water was observed at 5.5 inches below the soil surface at this location, however by March 13, shallow ground water had receded to 14 inches below the soil surface. Evidence of wetland hydrology was not observed at GWW7 during the observation period.

GWW8: On February 28, 2014 shallow ground water was observed at the surface at this location, however by March 13, shallow ground water had receded to 13 inches below the soil surface. Evidence of wetland hydrology was not observed at GWW8 during the observation period.

GWW9: Shallow ground water within the top 12 inches of the soil surface was observed every data collection time during the observation period. Observed shallow ground water levels ranged from 1.5 to 7.25 inches below the surface during the data collection period. Evidence of wetland hydrology was observed at GWW9.

GWW10: On February 28, 2014 shallow ground water was observed at eight inches below the soil surface at this location, however by March 13, shallow ground water had receded to 14.5 inches below the soil surface. Evidence of wetland hydrology was not observed at GWW10 during the observation period.

GWW11: On February 28, 2014 shallow ground water was observed at six inches below the soil the surface at this location, however by March 13, the shallow ground water level had receded to 14 inches below the soil surface. Evidence of wetland hydrology was not observed at GWW12 during the observation period.

GWW12: Shallow ground water levels within the top 12 inches of the soil surface were observed every data collection time during the observation period. Observed shallow ground water levels ranged from at surface inundation to nine inches below the surface during the data collection period. Evidence of wetland hydrology was observed at GWW12.



Figure 134. Shallow ground water well locations.

## 6.0 Discussion

Two wetlands were identified on the property by the surveyor. Per sampled data points and personal observations, portions of each wetland may be considered three parameter Army Corps wetlands, and portions may be considered two to one-parameter Coastal Commission wetlands. Additionally, these wetlands may be considered Waters of the US. Wetland boundaries and the Waters of the US determination must be confirmed by the Army Corps of Engineers and California Coastal Commission. The boundaries of the wetlands, per the surveyor's professional opinion, are shown in Figure 2. As mapped, the northern wetland is approximately 19,000 square feet in size, for a total area of approximately 0.9 acre of wetlands on the subject properties.

The property is comprised mainly of non-native, ornamental, and invasive plant species, with wetland communities along the northwest and southwest property boundaries. Within and near wetlands, several special status plant communities are present, including Coastal Blackberry Brambles (*Rubus ursinus* Shrubland Alliance G4 S3), Wax Myrtle Scrub (*Morella californica* Shrubland Alliance G3 S3), Small-Fruited Bulrush Marsh (*Scirpus microcarpus* Herbaceous Alliance G4 S2), Slough Sedge Swards (*Carex obnupta* Herbaceous Alliance G4 S3), and Water Parsley Marsh (*Oenanthe sarmentosa* Herbaceous Alliance G4 S2).

Outside of wetlands and special status plant communities, vegetation is dominated by non-native and invasive grasses, ruderal plants, and ornamental species. To the extent feasible, development should be limited to the disturbed portions of the property dominated by these non-native plants, and a sufficient buffer area should be maintained, providing protection from development to the wetlands and special status plant communities. Figure 15 shows the recommended buffer area to the special status plant communities and wetlands. This recommended buffer distance will need to be approved by the California Department of Fish and Wildlife and City of Fort Bragg.

An analysis of the proposed development utilizing the ESHA development criteria in the City of Fort Bragg Coastal Element, Policy 1-9, is included as Appendix D, in consideration of the reduced buffer to less than 100 feet from wetlands and special status plant communities. Recommended avoidance and mitigation measures are outlined in Section 6.2 of this report.

#### **6.1 Potential Impacts**

The project has the potential for temporary and long-term impacts to wetlands and special status plant communities. Temporary impacts during construction may include direct damage resulting from encroaching heavy equipment or materials storage, sedimentation from runoff during construction, or introduction of invasive species from contaminated equipment or weedy erosion control structures. Permanent detrimental impacts may include invasive plant proliferation, stormwater runoff pollution, and/or human encroachment impacts.

#### 6.2 Mitigations

**Buffer Area** - A suitable buffer should be established from the wetlands and special status plant communities including Coastal Blackberry Brambles (*Rubus ursinus* Shrubland Alliance G4 S3), Wax Myrtle Scrub (*Morella californica* Shrubland Alliance G3 S3), Small-Fruited Bulrush Marsh (*Scirpus microcarpus* Herbaceous Alliance G4 S2), Slough Sedge Swards (*Carex obnupta* Herbaceous Alliance G4 S3), and Water Parsley Marsh (*Oenanthe sarmentosa* Herbaceous Alliance G4 S2). A buffer distance of 30 feet is recommended from the southern wetland and Coastal Blackberry Brambles, and a buffer distance of 50 feet is recommended from the northerly wetland and its associated special status wetland plant communities. These buffer distances will need to be agreed upon by the Department of Fish and Wildlife and City of Fort Bragg.

**Invasive Plants** – Many invasive plants are present on the property. After construction and prior to installation of landscaping, any plants listed as moderate to highly invasive by California Invasive Plant Council (Cal-IPC) should be removed. Invasive plants as listed by Cal-IPC should not be used as landscaping species, and landscaping should

ideally consist of native plants compatible with the on-site plant communities. All heavy equipment should be washed at an off-site location prior to use on site in order to remove any caked mud or other debris that could harbor invasive plant seed. All erosion control should be weed free.

**Erosion Control** – 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.

**Special Status Birds** - 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.

#### Special Status Frogs –

Within two weeks prior to construction, project contractors will be trained by a qualified biologist in the identification of the northern red-legged frog. Construction crews will begin each day with a visual search around all stacked or stored materials, as well as along any silt fences to detect the presence of frogs. If a northern red-legged frog is detected, construction crews will contact the Service or a qualified biologist prior to re-initiating work.

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

#### Wetlands Impacts -

**Potential Construction-Related Impacts:** Orange construction fencing paired with silt fencing shall be installed along the boundaries of the wetland buffer areas, separating the wetlands and their buffer zones from the construction related impact area. No materials storage, heavy equipment use or other impacts shall occur within the fenced off wetlands area. Silt fencing shall be properly trenched in and all fencing shall be maintained in a functional manner through the duration of construction and until all disturbed soil is stabilized. Fencing shall be checked and appropriate maintenance shall occur on a weekly basis and after every rain event. The name and contact information for the person responsible for fencing maintenance shall be provided to the City of Fort Bragg prior to the commencement of construction.

**Potential Long-Term Wetland Impacts:** Prior to commencement of construction, a landscaping plan shall be submitted to and approved by the City of Fort Bragg. The landscaping plan shall include a plan for removal of invasive plant species within the wetlands and wetland buffer areas. Such removal shall occur with hand tools only. The landscaping plan shall also include a buffer area landscaping plant list which is to be composed entirely of site and community appropriate native plant species to be used in the wetland buffer area. The landscaping plan shall include installation prep, soil amendments, and timing, number and size of plants to be used, a plan for protective measures needed to prevent deer browsing, watering method and schedule while plants adjust, and replacement plan for dead and dying plants.

A permeable pedestrian pathway should be installed within the buffer area to prevent pedestrian trampling and other harm within wetland areas and to provide a pedestrian connection to the Haul Road.

Storm water runoff shall be directed to a storm drain system which provides filtration of runoff prior to entry to the wetlands.



Figure 145. Recommended buffer distances to special status plant communities and wetlands.

Table 1. Special-Status Plants of Potential Occurrence on the Projespecies, including plants of regional significance. Explanation of column IFED: federal status includes federally rare (FR), threatened (FT), or endangered (FE)STATE: California state status includes rare (CR), threatened (CT), or endangered (CE)	<b>.ct Site.</b> This table is derived from federal, state, and CNPS–listed plant neadings:
<b>CNPS</b> : California Native Plant Society ranked inventory of native California plants thought to 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.	<ul> <li>be at risk,</li> <li>A Threat Code extension has been added following the CNPS List (e.g. 1B.1, 2.2 etc.)</li> <li>Threat Code extensions and their meanings:</li> <li>1 - Seriously endangered in California</li> <li>2 - Fairly endangered in California</li> <li>3 - Not very endangered in California</li> </ul>
<b>G-RANK</b> : 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.	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
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.	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 Fos or 3,000-10,000 individuals OR 10,000-50,000 acres
SUBSPECIES LEVEL Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. For example: <i>Chorizanthe robusta</i> var. <i>hartwegii</i> . This plant is ranked G2TI. The G-rank refers to the whole species range i.e., <i>Chorizanthe robusta</i> . The T-rank refers only to the global condition of var. hartwegii.	<ul> <li>S3.1 = very threatened</li> <li>S3.2 = threatened</li> <li>S3.2 = threatened</li> <li>S3.3 = not very threatened OR no current threats known</li> <li>S3.3 = not very threatened OR no current threats known</li> <li>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.</li> <li>S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK.</li> </ul>
Notes: 1. Other considerations used when ranking a species or natural community include the patte and historical extent as compared to its modern range. It is important to take a bird's eye 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 be By adding a ? to the rank: e.g., S2? This represents more certainty than S2S3, but less th 3. Other symbols	ern of distribution of the element on the landscape, fragmentation of the population/stands, or aerial view when ranking sensitive elements rather than simply counting Eos. stween S2 and S3.
<ul> <li>GH et alymptots</li> <li>GH et all sites are historical; the element has not been seen for at least 20 years, but suita GX - All sites are extirpated; this element is extinct in the wild (SX = All California sites are GX - All sites are GXC - Extinct in the wild; exists in cultivation.</li> <li>G1Q - The element is very rare, but there are taxonomic questions associated with it.</li> <li>T - Rank applies to a subspecies or variety.</li> </ul>	ble habitat still exists (SH = All California sites are historical). e extirpated).
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Appendix A. Scoping Tables

Scientific Name	Common Name	CRPR	Federal	State	Ģ	Ϋ́	Life Form	Elevation	Detailed	Blooming	Habitat Suitability
					Rank	Rank				Period	within Project Site
bronia umbellata var. revifiora	pink sand- verbena	18.1	z	z	G4G5T.	S2.1	perennial herb	0-12 m.	Coastal dunes and coastal strand with sparse cover. Often the plant growing closest to the ocean.	June - October	No
grostis blasdalei	Blasdale's bent grass	18.2	z	z	62	S2.2	perennial rhizomatous herb	5-150 m.	Coastal dunes, coastal bluff scrub, coastal prairie. Sandy or gravelly soil close to rocks, often in nutrient-poor soil with sparse vegetation.	May - July	Yes
ngelica lucida	sea-watch	4.2	z	z	G5	S2S3	perennial herb	0-150 m.	Coastal bluff scrub, coastal scrub, coastal marshes and swamps, and coastal dunes. Bluff faces and rocky areas near the ocean. Fields and thickets along the coast.	May - September	Yes
rctostaphylos nummularia ssp. mendocinoensis	pygmy manzanita	1B.2	z	z	G3?T1	S1	perennial evergreen shrub	90-200 m.	Closed-cone coniferous forest. Acidic sandy-clay soils in dwarfed coniferous forest. Only known location 2 miles east of Mendocino.	January	No
istragalus agnicidus	Humboldt milk- vetch	18.1	z	SE	62	\$2.1	perennial herb	575-750 m.	Broadleafed upland forests, North Coast coniferous forests, redwood forests. Disturbed openings in partially timbered forest lands; also along ridgelines; south aspects.	April - September	No
lstragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	18.2	z	z	G2T2	S2.2	perennial herb	0-30 m.	Coastal scrub, coastal salt marshes and swamps, mesic sites in coastal dunes, and along streams.	April - October	No
klennosperma nanum var. robustum	Point Reyes blenn osperma	18.2	z	SR	G4T1	S1.2	annual herb	10-145 m.	Coastal prairie, coastal scrub. On open hills in sandy soil. From Pt. Reyes and Glass Beach, Fort Bragg.	February - April	Marginal
alamagrostis bolanderi	Bolander's reed grass	4.2	z	z	63	S3.2	perennial rhizomatous herb	0-455 m.	Often mesic sites. Bogs and fens, broadleafed upland forest, closed-cone coniferous forest, coastal scrub, wet meadows and seeps, marshes and swamps (freshwater), North Coast coniferous forest.	May - August	Yes
alamagrostis crassiglumis	Thurber's reed grass	2.1	z	z	G3Q	S1.2	perennial rhizomatous herb	10-45 m.	Coastal scrub (mesic), freshwater marshes and swamps. Usually in marshy swales surrounded by grassland or coastal scrub. Sporadic in marshes from Crescent City to Marin.	May - July	Yes
alamagrostis foliosa	leafy reed grass	4.2	z	SR	63	S3.2	perennial herb	0-1220 m.	Coastal bluff scrub, rocky cliffs and ocean-facing bluffs, clumps in rock crevices of bluff bank of river. North Coast coniferous forests, often on steep wooded cliffs. Many occurrences located in the King Range, HUM Co.	May - September	No
alystegia purpurata ssp. saxicola	coastal bluff morning-glory	18.2	z	z	G4T2	S2.2	perennial herb	15-105 m.	Coastal scrub, road edges and ruderal sites, coastal dunes, North Coast coniferous forest (openings and edges in forests near the coast). Intermediate with subsp. <i>purpurata</i> . Occurs in central Mendocino County and southward.	May - September	No
campanula californica	swamp harebell	18.2	z	z	63	23	perennial rhizomatous herb	1-405 m.	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes and swamps, and North Coast coniferous forests. Many occurrences have few plants; uncommon where it occurs.	June - October	Yes
Carex californica	California sedge	2.3	z	z	G5	S2?	perennial rhizomatous herb	90-250 m.	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes and swamps (often on margins or drier areas).	May - August	No
Carex lenticularis var. Iimnophila	lagoon sedge	2.2	z	z	G5T5	S1S2.2	perennial herb	0-6 m.	Lakeshores, beaches (often gravelly), bogs and fens, marshes and swamps, North Coast coniferous forest. Known from north road to Glen Blair.	June - August	Yes
arex livida	livid sedge	1A	z	z	65	SH	perennial rhizomatous herb		Sphagnum bogs in California. Possibly extirpated from the state.	June	No
arex lyngbyei	Lyngbye's sedge	2.2	z	z	G5	\$2.2	perennial rhizomatous herb		Brackish or freshwater marshes and swamps, in water in mucky soil, soughs. May be growing near <i>Scirpus pungen</i> s and <i>Triglochin maritima</i> . From Marin to Del Norte Cos.	May - August	Yes
Carex saliniformis	deceiving sedge	18.2	z	z	62	S2.2	perennial rhizomatous herb	3-230 m.	Mesic sites of coastal prairie, coastal scrub, and meadows; seeps, marshes and swamps (coastal salt); boggy ground. Often growing with <i>Panicum acuminatum</i> in Mendocino County. Known to grown with Arenaria paludicola.	June - July	Yes
arex viridula var. viridula	green yellow sedge	2.3	z	z	G5T5	S1.3	perennial herb	0-1600 m.	Freshwater marshes and swamps; bogs and fens; mesic sites of North Coast coniferous forest. Known from Inglenook Fen.	June - November	Marginal

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# Spade Natural Resources Consulting

Scientific Name	Common Name	CRPR	Federal	State	G- Rank	S- Rank	Life Form	Elevation	Detailed	Blooming Period	Habitat Suitability within Project Site
Castilleja affinis ssp. litoralis	Oregon coast paintbrush	2.2	z	z	G4G5T4	\$2.2	perennial herb (hemiparasitic)	15-100 m.	Sandy sites in coastal bluff scrub and coastal scrub; coastal dunes. Grassy coastal bluffs. Cliffs above shore. In understory of mixed conifer forest with <i>Maianthemum</i> sp. Known from the bank of the Ten Mile River.	June	Marginal
Castilleja ambigua ssp. humboldtiensis	Humboldt Bay owl's-clover	1B.2	z	z	G4T2	S2.2	annual herb (hemiparasitic)	0-3 m.	Coastal salt marsh, sometimes with <i>Spartina, Distichlis, Salicornia,</i> Jaumea. Clay- peat soil with above species.	April - August	No
Castilleja mendocinensis	Mendocino Coast paintbrush	18.2	z	z	G2	\$2.2	perennial herb (hemiparasitic)		Coastal bluff scrub, coastal scrub, closed-cone coniferous forest, coastal dunes, coastal prairie.	April - August	No
Ceanothus gloriosus var. exaltatus	glory brush	4.3	z	N	G3G4T3	S3.3	perennial evergreen shrub	30-610 m.	Chaparral	March - June	No
Ceanothus gloriosus var. gloriosus	Point Reyes cean othus	4.3	z	z	G3G4T3	S3.3	perennial evergreen shrub	5-520 m.	Sandy, coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub.	March - May	Yes
Chorizanthe howellii	Howell's spineflower	1B.2	FE	ST	G1	S1.2	annual herb	0-35 m.	Sandy, often disturbed, areas of coastal prairie and coastal scrub. Coastal dunes, sandy slopes.	May - July	No
Clarkia amoena ssp. whitneyi	Whitney's farewell-to- spring	18.1	z	z	G5T2	\$2.1	annual herb		Coastal bluff scrub, coastal scrub. Coastal bluffs; often in rocky clay soll; in sun on slopes of road cuts. Known from the vicinity of the Ten Mile River mouth.	June - August	Yes
Collinsia corymbosa	roun d-headed Chinese- houses	1B.2	Z	z	G1	S1.2	annual herb		Coastal dunes, coastal prairie.	April - June	No
Coptis laciniata	Oregon goldthread	2.2	z	N	G4G5	53.2	perennial rhizomatous herb	0-100 m.	Meadows and seeps, North Coast coniferous forest moist streambanks and other mesic sites. Banks and floodplains of rivers in North Coast coniferous forests. Cutbanks of old skid roads.	March - April	Yes
Cornus canadensis	bunchberry	2B.2	z	z	G5	<b>S</b> 5	perennial herb	60-1920 m.	Bogs and fens, meadows and seeps, North Coast coniferous forest. Several populations at the southern end of its distribution in CA are extirpated. Many collections old; need field surveys.	May – July	No
Cordylanthus tenuis ssp. brunneus	serpentine bird's beak	4.3	z	z	G4G5T3	<b>S3.3</b>	annual herb (hemiparasitic)	475-915 m.	Usually serpentinite. Closed-cone coniferous forest, chaparral, cismontane woodland, along edge of a dirt road, non-serpentine, rocky (serpentine) summit Locally common annual herb to 75 cm in open areas on serpentine w/ <i>Madia</i> <i>elegans, Bromus carinatus, Lotus purshinaus &amp; Elymus glaucus.</i> Flowers cream white with yellow	July - August	No
Cuscuta pacifica var. papillata	Mendocino dodder	18.2	Z	z	G5T1	S1	annual vine (parasitic)	0-50 m.	Coastal dunes (interdune depressions). Rediscovered at Point Arena in 2011. Many historical occurrences may be extirpated; need field surveys. Known to occur on <i>Gnaphalium, Silene,</i> and <i>Lupinus</i> spp. in Mendocino Co.; and on <i>Polycarpon</i> <i>tetraphyllum</i> and <i>Calystegia purpurata</i> ssp. soxicola with Sanicula arctopoides nearby in Sonoma Co.	July - October	No
Erigeron supplex	supple daisy	1B.2	z	z	G1	S1.1	perennial herb	5-50 m.	Coastal bluff scrub, coastal prairie. Usually in open rocky areas in grassy sites with short grasses.	May - July	Yes
Erysimum concinnum	headland wallflower	18.2	z	N	63	S3	perennial herb	0-185 m.	Coastal bluff scrub, coastal dunes, coastal prairie. Largest occurrence known from Pt. Reyes NS; possibly of hybrid origin. Some occurrences from Del Norte and Mendocino Counties are also of possible hybrid origin; further study is ongoing.	March – May	No
Erysimum menziesii	Menzies' wallflower	1B.1	FE	SE	G1	S1	perennial herb	0-35 m.	Localized on coastal dunes and coastal strand. In remnant, open, partially stabilized dune habitat. Plants treated as ssp.; not validly published.	March - June	No
Erythronium revolutum	coast fawn lily	2.2	z	z	G4	52 <i>5</i> 3	perennial bulbiferous herb	0-1065 m.	Bogs and fens; broadleafed upland forests; North Coast coniferous forest. On timbered and brushy hillside; wet soil under redwoods. Shady and mesic glens. Sometimes associated with <i>Arbutus menziesil, Lithocarpus densifiorus, Quercus</i> <i>chrysolepis, Pseudotsuga menziesil.</i> On rock outcrops and slopes in forests.	March - August	NO

Spade Natural Resources Consulting

Scientific Name	Common Mama	CDDD	Endaral	Ctata	ċ	J	l ifa Eorm	Elevation	Datailad	Blooming	Hahitat Suitahility
				זומוב	Rank	Rank		LIEVALIUI		Period	within Project Site
Fritillaria roderickii	Roderick's fritillary	18.1	z	SE	G1Q	S1.1	perennial bulbiferous herb	15-610 m.	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Grassy slopes, mesas.	March - May	No
Gilia capitata ssp. chamissonis	blue coast gilia	18.1	z	z	G5T2	S2.1	annual herb	2-200 m.	Coastal dunes; coastal scrub. On disturbed Franciscan sage scrub on loose sandy soils. Growing with <i>Ericameria ericoides, Lupinus chamissonis, Erysimum</i> <i>franciscanum, Croton californicus, Camissonia cheiranthifolia, Phacelia distans.</i>	April - July	No
Gilia capitata ssp. pacifica	Pacific gilia	1B.2	z	z	G5T3T4	S2.2?	annual herb	5-300 m.	Coastal bluff scrub, openings in chaparral, coastal prairie, valley and foothill grassland. Steep cliffs, fields, and dry banks.	April - August	Yes
Gilia capitata ssp. tomentosa	woolly-headed gilia	18.1	z	z	G5T1	S1.1	annual herb	15-155 m.	Coastal bluff scrub, valley and foothill grassland, rocky outcrops on the coast. Locally abundant on serpentine outcrop and serpentine-derived loam on west- facing slopes in grassland/pastureland. Grows with <i>Linum perenne, Lupinus</i> spp. and <i>Avena barbata</i> .	May - July	No
Gilia millefoliata	dark-eyed gilia	18.2	z	z	G2	S2.2	annual herb	2-20 m.	Coastal dunes. Sandy, stabilized dune habitat. Sandy grassland between <i>Lupinus</i> <i>orboreus</i> shrubs dominated by nonnative grasses.	April - July	Yes
Glyceria grandis	American manna grass	2.3	z	z	G5	S1.3?	perennial rhizomatous herb	15-1980 m.	Bogs and fens, wet meadows and seeps, marshes and swamps (streambanks and lake margins). Ditches streams and ponds in valleys and lower elevations in the mountains. Sometimes standing in water, margins of rivers.	June - August	No
Hemizonia congesta ssp. congesta	seaside tarplant	18.2	z	z	G5T2T3	S2S3	annual herb	25-200 m.	Coastal scrub; valley and foothill grasslands, grassy valleys and hills, sometimes on grassy slopes with thin clayish soils; often in fallow fields. Sometimes on roadsides. Known from Glen Blair, Comptche, and Pudding Creek.	April - November	No
Hesperevax sparsifiora var. brevifolia	short-leaved evax	18.2	z	z	G4T2T3	52S3	annual herb	0-200 m.	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.	March - June	Yes
Hesperocyparis pygmaea	pygmy cypress	18.2	z	z	G2	S2	perennial evergreen tree	35-305 m.	Closed-cone conferous forests, usually podzol-like soils or Blacklock soils in Mendocino cypress pygmy forests.	-	No
Horkelia marinensis	Point Reyes horkelia	18.2	z	z	G2	S2.2	perennial herb	5-30 m.	Sandy sites in coastal dunes, coastal prairie, and coastal scrub.	May - September	Yes
Horkelia tenuiloba	thin-lobed horkelia	18.2	z	z	62	S2.2	perennial herb	45-500 m.	Mesic openings or sandy sites in broadleafed upland forests, chaparral, and valley and foothill grassland. Wet meadows and marshy areas surrounded by <i>Pseudotsuga menziesii, Rhamnus californico, Baccharis pilularis</i> . Growing on sandy Ioam in coastal scrub. On sandstone in "pine barrens."	May - July	No
Juncus supiniformis	hair-leaved rush	2.2	z	z	<u>G5</u>	S2.2?	perennial rhizomatous herb	20-100 m.	Bogs and fens; freshwater marshes and swamps near the coast. Around pools, in ruts and ditches in podzol soils.	April - June	No
Kopsiopsis hookeri	small groundcone	2.3	z	z	G5	S1S2	perennial rhizomatous herb (parasitic)		North Coast coniferous forest. Open woods, shrubby places. Pygmy forest intergrading with redwood and Douglas-fir forests with sandy soils and flat aspect. Generally on <i>Gaultheria shallon</i> . Plants concentrated around the base and/or drip line of <i>Arctostaphylos columbiana</i> , but also in close proximity with other ericaceous species. May be parasitic on <i>Arctostaphylos</i> .	April - August	No
Lasthenia californica ssp. bakeri	Baker's goldfields	18.2	z	z	G3TH	SH	perennial herb	60-520 m.	Openings in closed-cone coniferous forest; coastal scrub; meadows and seeps; marshes and swamps. On windswept grassy hills; grazed areas. Early in the life of a plant the leaves may be wide and the plant prostrate; later the leaves become narrow and the plants' flowering stems turn upright.	April - October	No
Lasthenia californica ssp. macrantha	perennial goldfields	18.2	z	z	G3T2	S2.2	perennial herb	5-520 m.	Coastal bluff scrub, coastal dunes, and coastal scrub. In clay soil on wind-swept ocean bluffs and coastal terraces, and in grassy patches and dried vernal pool beds. On sea bluffs and grassy plateaus back from the ocean. Coastal bluffs in heavy adobe; sandy soil of ocean headlands.	January - November	Yes

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NO	June - September	Marshes and swamps (assorted shallow freshwater)	369 – 2172 m.	perennial herb (rhizomatous)	S2.2?	G5	z	z	2B.2	ribbonleaf pondweed	Potamogeton epihydrus
07	April - June	Open and mesic areas of North Coast coniferous and broadleafed upland forests (oak/madrone); grassy flats in the shade of redwoods. Meadows and seeps. Wet grassy, usually shady areas, sometimes in freshwater marshes and often associated with forest environments. In stagnant water of highway ditches.	10-1150 m	perennial rhizomatous herb	S1.1	61	ST	z	18.1	North Coast semaphore grass	Pleuropogon hooverianus
VO		Closed-cone coniferous forests with podzol-like soils. Associated with Mendocino cypress and bishop pine, and Mendocino pygmy cypress forests.	35-250 m.	perennial evergreen tree	S2	G5T2	z	z	18.2	Bolander's beach pine	Pinus contorta ssp. bolanderi
res	March - May	Sandy, sometimes rocky, sites in coastal bluff scrub; open maritime bluffs; coastal dunes. Rocky, thin soil with native and non-native grasses and forbs. Sandy pastureland and grazed coastal prairie.	10-160 m.	annual herb	S1.2	G2T1	z	z	1B.2	North Coast phacelia	Phacelia insularis var. continentis
Q	February - I July	Coastal scrub, North Coast coniferous forests. In loose, rocky, poorly consolidated siltstone and mudstone. Associated with old growth redwood, Douglas-fir, tanoak, maple, dogwood, wild ginger, salal. Steep slopes in dry, sunny woods. Sandy stream banks, roadsides, rocky banks, old quarries.	30-650 m.	perennial rhizomatous herb	S1.2	G4T4	z	z	2.2	seacoast ragwort	Packera bolanderi var. bolanderi
fes	May - October	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 diffs above the ocean.	3-800 m.	perennial herb	S1.1	61	z	z	18.1	Wolf's evening- primrose	Oenothera wolfii
res	April - October	Mesic sites in broadleafed upland forests, lower montane coniferous forests, meadows and seeps, North Coast coniferous forests. Moist alluvial soil under alder; mesic streamside and streambank habitat. Sides of roads in floodplains.	6-1710 m.	perennial rhizomatous herb	S4.2	G5	z	z	4.2	leafy-stemmed mitrewort	Mitellastra caulescens
Vo	April - July	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.	5-300 m.	perennial herb	S2.2	62	z	z	18.2	marsh microseris; marsh silverpuffs	Microseris paludosa
Vo	June - September	Bogs and fens, lower montane coniferous forest, meadows and seeps/mesic.	915-1830 m.	perennial herb	S1.1	G4?	z	z	2.1	northern microseris	Microseris borealis
Vo	June - August	Marshes & swamps, North Coast coniferous forests (mesic)	45-1640 m.	perennial rhizomatous herb	S4.1	G5	z	z	4.1	running-pine	Lycopodium clavatum
fes	March - July	Wetlands, roadsides, broadleafed 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.	0-150 m.	perennial rhizomatous herb	S3.2	G4	z	z	4.2	coast lotus	Hosackia gracilis
res	May - August	Broadleafed upland forests, closed-cone coniferous forests, coastal prairies, coastal scrub, freshwater marshes and swamps. Historically in sandy soil, often on raised hummocks or bogs, today mostly on roadsides or roadside ditches. Sometimes growing with Veratrum fimbriatum, Lithocarpus, Pinus muricata, Vaccinium, Gaultheria shallon, Pteridium, and Morella.	1	perennial bulbiferous herb	52	62	z	z	18.1	coast lily	Lilium maritimum
0	March - August	Bogs and fens; mesic sites of coastal prairies, coastal scrub, lower montane coniferous forests, and North Coast coniferous forests, seasonal seeps surrounded by redwood/Douglas-fir/fanoak forests; marshes and swamps, including swamps adjacent to tidewater. Sometimes at the edge of wet <i>Carex</i> marshes in transition to scrub and spruce forests. Only one Mendocino occurrence.	1-100 m.	perennial herb	S2S3	65	z	z	2.2	marsh pea	Lathyrus palustris
O	March - June	Mesic sites in cismontane woodlands; alkaline playas; valley and foothill grasslands; vernal pools, swales, and low depressions. Extirpated from most of its range. Only one coastal location in Point Arena.	1-445 m.	annual herb	S1.1	61	z	E	1B.1	Contra Costa goldfields	Lasthenia conjugens
Habitat Suitability within Project Site	Blooming Period	Detailed	Elevation	Life Form	S- Rank	G- Rank	State	Federal	CRPR	Common Name	Scientific Name

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Scientific Name	Common Name	CRPR	Federal	State	G- Rank	S- Rank	Life Form	Elevation	Detailed	Blooming	Habitat Suitability
Puccinellia pumila	dwarf alkali grass	2.2	z	z	G4?	S1.1?	perennial herb	1-10 m.	Coastal salt marshes and swamps; meadows and seeps, mineral spring meadows. Two known occurrences in Mendocino County.	λInr	No
Rhynchospora alba	white beaked- rush	2.2	z	z	G5	S2	perennial rhizomatous herb	60-2000 m.	Sphagnum bogs and fens (sometimes in Mendocino pygmy forests); meadows and seeps; marshes and swamps (freshwater). Sometimes in low, wet swales immediately surrounding grasslands. Known from Inglenook Fen and bog east of Fort Bragg.	July - August	No
Sanguisorba officinalis	great burnet	2.2	z	z	G5?	S2.2	perennial rhizomatous herb	60-1400 m.	Bogs and fens; broadleafed upland forests; meadows and seeps; marshes and swamps (marshy streams); North Coast coniferous forests; riparian forests. Serpentine seepage areas and along stream borders.	July - October	No
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	18.2	z	z	G5T2	S2.2	perennial rhizomatous herb	5-75 (245) m.	Freshwater marshes and swamps near the coast. Moist slopes from seeps and ephemeral streams, most areas quite marshy.	April - September	No
Sidalcea malachroides	maple-leaved checkerbloom	4.2	z	z	G3G4	S3S4.2	perennial herb	1	Broadleafed upland forests; coastal prairie, coastal scrub, North Coast coniferous forest, riparian woodland. Woodlands and clearings near the coast, often in disturbed areas. Sometimes along floodplains.	March - August	Marginal
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	18.2	z	z	G5T2	<b>S2</b>	perennial rhizomatous herb	15-65 m.	Coastal bluff scrub; coastal prairie; broadleafed upland forests, open areas of North Coast coniferous forest. Pastures, grassy landings, and roadsides. Only 1 Mendocino occurrence.	May - August	No
Sidalcea malviflora ssp. purpurea	purple- stemmed checkerbloom	18.2	z	z	G5T2	S2.2	perennial rhizomatous herb	15-65 m.	Broadleafed upland forests; coastal prairie; grassy hills.	May - June	No
Trifolium buckwestiorum	Santa Cruz clover	18.1	z	z	G1	51.1	annual herb	60-545 m.	Broadleafed upland forests, cismontane woodlands, coastal prairie. Moist grasslands. Disturbed sites on roadbed in redwood forest; Sparsely vegetated, gravelly, hardpacked, somewhat barren flats or gentle inclines, roadbeds or former roadbeds. Flat open areas with sun exposure, seasonal moisture, and gravelly, poor soils. Shallow depressions that collect water in rain. Common associates include <i>Juncus bufonius, Soliva sessils, Danthonia colifornicc</i> , and <i>Bromus hordeaceus</i> . In Mendocino Co, most collections from ~5 miles up Garcia River.	April - October	ON
Trifolium trichocalyx	Monterey clover	18.1	FE	CE	G1	S1	annual herb	30-240 m.	Closed-cone coniferous forest (sandy, openings, burned areas). Discovered in Big River Forest in 2011. Previously known from only two occurrences from the central portion of the Monterey Peninsula.	April - June	No
Triquetrella californica	coastal triquetrella	18.2	z	z	G1	S1	moss	10-100 m.	Coastal bluff scrub, coastal scrub, valley and foothill grasslands. In open gravels or on thin soil over rocky outcrops. On roadsides, hillsides, rocky slopes, and fields. On beach sands with <i>Alnus</i> and <i>Gaultheria</i> . Only one Mendocino occurrence.		Yes
Usnea longissima	long-beard lichen	not ranked	z	z	G4	S4.2	lichen		In old-growth and late-successional conifer stands, hardwood stands, and riparian areas, particularly in coastal climates or on fog-swept mountains where humidity is high.		No
Veratrum fimbriatum	corn-lily	4.3	z	z	G3	S3.3	perennial herb	3-183 m.	Wet areas in coastal scrub and North Coast coniferous forests, meadows and seeps, bogs and fens. Restricted to coastal Sonoma and Mendocino Counties.	July - September	Yes
Viola adunca	Western dog violet	N ot ranked	z	z	د.	<i>د</i> .	perennial herb	15-2200 m.	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.	April- August	Yes
Viola palustris	marsh violet	2.2	z	z	5	S1S2	perennial rhizomatous herb	0-15 m.	Coastal bogs and fens; mesic coastal scrub. Swampy, shrubby places in coastal scrub or coastal bogs. Carpeting the ground in shady wet places but flowering rarely. Sometimes growing among Carex, or among brush at edges of swamps. Freshwater marsh on deep peat substrate (4-5 <sup>1</sup> ).	March - August	Yes

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**Table 2. Plant Communities Occurring in Coastal Mendocino County.** A partial list of vegetation alliances occurring in coastal Mendocino County is derived from the California Department of Fish and Wildlife's "List of Vegetation Alliances and Associations," (2010) (<u>http://www.dfg.ca.gov/biogeodata/vegcamp/natural\_communities.asp</u>). See Table 1 for an explanation of the Global and State Ranking.

Scientific Name	Common Name	Global &
		State Rank
Woodland and Forest Alliances and Stands		
Abies grandis Alliance	Grand fir forest	G4 S2
Acer macrophyllum Alliance	Bigleaf maple forest	G4 S3
Alnus rubra Alliance	Red alder forest	G5 S4
Arbutus menziesii Alliance	Madrone forest	G4 S3
Callitropsis pigmaea Alliance	Mendocino pygmy cypress woodland	G2 S2
Chrysolepis chrysophylla Alliance	Golden chinquapin thickets	G2 S2
Lithocarpus densiflorus Alliance	Tanoak forest	G4 S3
Picea sitchensis Alliance	Sitka spruce forest	G5 S2
Pinus contorta ssp. contorta Alliance	Beach pine forest	G5 S3
Pinus muricata Alliance	Bishop pine forest	G3 S3
Pseudotsuga menziesii Alliance	Douglas fir forest	G5 S4
Pseudotsuga menziesii - Lithocarpus densiflorus Alliance	Douglas fir - tanoak forest	G4 S4
Sequoia sempervirens Alliance	Redwood forest	G3 S3
Tsuga heterophylla Alliance	Western hemlock forest	G5 S2
Umbellularia californica Alliance	California bay forest	G4 S3
Shrubland Alliances and Stands		
Arctostaphylos glandulosa Alliance	Eastwood manzanita chaparral	G4 S4
Arctostaphylos (nummularia, sensitiva) Alliance	Glossy leaf manzanita chaparral	G2 S2
Baccharis pilularis Alliance	Coyote brushscrub	G5 S5
Ceanothus thyrsiflorus Alliance	Blue blossom chaparral	G4 S4
Corylus cornuta var. californica Alliance	Hazelnut scrub	G3 S2?
Frangula californica Alliance	California coffee berry scrub	G4 S4
Garrya elliptica Provisional Alliance	Coastal silk tassel scrub	G3? S3?
Diplacas aurantiacus Alliance	Bush monkeyflower scrub	G3 S3?
Holodiscus discolor Alliance	Ocean spray brush	G4 S3
Morella californica Alliance	Wax myrtle scrub	G3 S3
Rhododendron neoglandulosum Alliance	Western Labrador-tea thickets	G4 S2?
Rhododendron occidentale Provisional Alliance	Western azalea patches	G3 S2?
Rosa californica Alliance	California rose briar patches	G3 S3
Rubus (parviflorus, spectabilis, ursinus) Alliance	Coastal brambles	G4 S3
Salix hookeriana Alliance	Coastal dune willow thickets	G4 S3
Sphagnum Bog	Sphagnum bog	G3 S1.2
Salix sitchensis Provisional Alliance	Sitka willow thickets	G4 S3?
Salix lasiolepis Alliance	Arroyo willow thickets	G4 S4
Toxicodendron diversilobum Alliance	Poison oak scrub	G4 S4
Herbaceous Alliances and Stands		
Abronia latifolia–Ambrosia chamissonis Alliance	Dune mat	G3 S3
Argentina egedii Alliance	Pacific silverweed marshes	G4 S2
Bulboschoenus maritimus Alliance	Salt marsh bulrush marshes	G4 S3
Calamagrostis nutkaensis Alliance	Pacific reed grass meadows	G4 S2
Camassia quamash Alliance	Small camas meadows	G4? S3?
Carex obnupta Alliance	Slough sedge swards	G4 S3
Carex pansa Alliance	Sand dune sedge swaths	G4? S3?
Danthonia californica Alliance	California oat grass prairie	G4 S3
Deschampsia caespitosa Alliance	Tufted hair grass meadows	G5 S4?
Distichlis spicata Alliance	Salt grass flats	G5 S4
Eleocharis macrostachya Alliance	Pale spike rush marshes	G4 S4
Elymus glaucus Alliance	Blue wild rye meadows	G3? S3?
Festuca rubra Alliance	Red fescue grassland	G4 S3?

Idaho fescue grassland	G4 S3?
Northwest manna grass marshes	G3? S3?
Gum plant patches	G3? S3?
Semi-natural herbaceous stands	None
Meadow barley patches	G4 S3?
Baltic and Mexican rush marshes	G5 S4
Soft rush marshes	G4 S4?
Iris-leaf rush seeps	G2? S2?
Salt rush swales	G3 S2?
Western rush marshes	G4? S4?
Sea lyme grass patches	G4 S2
Creeping rye grass turfs	G4 S3
Common monkey flower seeps	G4? S3?
Curley bluegrass grassland	G4 S3?
Hardstem bulrush marsh	G5 S4
California bulrush marsh	G5 S4?
Small-fruited bulrush marsh	G4 S2
Canada goldenrod patches	G4? S4?
Woodwardia thicket	G3 S3.2
Mosquito fern mats	G4 S4
Mats of floating pennywort	G4 S3?
Duckweed blooms	G5 S4?
Yellow pond-lily mats	G5 S3?
Water-parsley marsh	G4 S2?
Pickleweed mats	G4 S3
Mats of bur-reed leaves	G4 S3?
Cattail marshes	G5 S5
	Idaho fescue grasslandNorthwest manna grass marshesGum plant patchesSemi-natural herbaceous standsMeadow barley patchesBaltic and Mexican rush marshesSoft rush marshesIris-leaf rush seepsSalt rush swalesWestern rush marshesSea lyme grass patchesCurley bluegrass grasslandHardstem bulrush marshCalifornia bulrush marshSmall-fruited bulrush marshCanada goldenrod patchesWoodwardia thicketMats of floating pennywortDuckweed bloomsYellow pond-lily matsWater-parsley marshPickleweed matsMats of bur-reed leavesCattail marshes

Spade Natural Resources Consulting
**Table 3. Special-Status Animal with Potential for Occurrence in Coastal Mendocino County.** Species gleaned from the California Department of Fish and Wildlife's list, "Special Animals," (CDFW 2011). See Table 1 for an explanation of global and state rankings. An explanation of the field "Organization: Code" is at the end of the table.

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<i>Scientific name</i> Common name	Federal Status	State Status	G Rank	S Rank	Organization: Code	Habitat	Potential for Occurrence on Project Site
INVERTEBRATES							
Snails, Slugs, and Abalone (GASTRC	PODA)						
Helminthoglypta arrosa pomoensis Pomo bronze shoulderband	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.	No habitat.
<b>Noyo interessa</b> Ten Mile shoulderband	None	None	62	S2	None	Known from a few locations in Mendocino County with limited habitat information. Known from Ten Mile Dunes.	No. No dune habitat.
Beetles (INSECTA, Coleoptera)							
<i>Coelus globosus</i> Globose dune beetle	None	None	61	S1	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.	None. No coastal dunes.
Butterflies & Moths (INSECTA, Hyn.	nenoptera)						
Lycaeides argyrognomon lotis 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>Hosockig gracilis</i> .	No host plants found.
<b>Speyeria zerene behrensii</b> Behren's silverspot butterfly	Endangered	None	G5T1	S1	XERCES:CI	Historically from near 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 Salt Point area. Inhabits coastal terrace prairie with caterpillar host plants: violet ( <i>Viola adunca</i> ) and adult nectar sources: thistles, asters, etc.	No host plants found.
Ants, Bees, & Wasps (INSECTA, Hym.	renoptera)						
<i>Bombus occidentalis</i> Western bumble bee	None	None	GU	S1	XERCES: IM	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 <u>http://www.xerces.org/bumblebees/</u>	Potential habitat based on limited information.
FISH							
Lampreys (PETROMYZONTIDAE)							
<b>Entosphenus tridentatus</b> Pacific lamprey	None	None	G5	S4	AFS:VU	Anadromous lamprey found in freshwater rivers around the Pacific Rim, 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.	No habitat.
<b>Lampetra ayresii</b> river lamprey	None	None	G4	S4	AFS:VU DFG: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.	No habitat.
Trout & Salmon (SALMONIDAE)							
<b>Oncortyvnchus gorbuscha</b> pink salmon	None	None	G5	S1	DFG:SSC	Most spawn in intertidal or lower reaches of streams and rivers in Sept and Oct. and move further upstream in Sacramento River. Optimal temp = 5.6 to 14.4° C. Embryos and alevins require fast-flowing well oxygenated water for development and survival.	No habitat.
<b>Oncorhynchus kisutch</b> Coho salmon - central California coast ESU	Endangered	Endangered	G4	52?	AFS:EN	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	No habitat.
Oncorhynchus kisutch Coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	G4T2Q	52?	AFS:TH DFG:SSC	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	No habitat.
Oncorhynchus mykiss irideus summer-run steelhead trout	None	None	G5T4Q	S2	DFG:SSC	Cool, swift, shallow water and clean loose gravel for spawning, and suitably large pools in which to spend the summer.	No habitat.
Oncorhynchus mykiss irideus steelhead - central California coast DPS	Threatened	None	G5T2Q	S2	AFS:TH	Adult steelhead require high flows with water at least 18 cm deep for passage. They may leap up to $^{\sim}3$ m. For spawning, sufficient streamflow over clean gravel, cool water temperature. denth, and cover for escape (usually a deep nool with cover).	No habitat.
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Avalon Inn APN 069-241-27 & 069-241-04 Scoping, Botanical, Wildlife Surveys & Wetland Delineation

Scientific name	Federal	State	IJ	S	Organization:		Potential for Occurrence on Project
Common name	Status	Status	Rank	Rank	Code	Habitat	Site
Oncorhynchus mykiss irideus steelhead-northern California DPS	Threatened	None	G5T2Q	S2	AFS:TH DFG:SSC	Cool, swift, shallow water and clean loose gravel for spawning.	No habitat.
<b>Oncorhynchus tshawytscha</b> chinook salmon – California coastal ESU	Threatened	None	65	S2	AFS:TH	Adults depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27° C lethal to adults.	No habitat
Minnows & Carp (CYPRINIDAE)							
Lavinia symmetricus navarroensis	None	None	G5T1T2	S1S2	DFG: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	Not in range
Navarro roach						streams, round in the power, warned reacted of streams in the reason and reacted of River drainages.	
Lavinia symmetricus parvipinnis	None	None	G5T1T2	S1S2	DFG:SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated	No habitat.
Gobies (GOB/IDAE)						streams.	
Eucyclogobius newberryi	Endangered	None	63	S2S3	AFS:EN	Brackish water habitats along the California coast from Agua Hedionda lagoon, San Disco Colling the mouth of the Casith Brisse Found is challened in challened and Device charge	No habitat.
rigewarer goby						urego co. to the mouth of the Smith Kiver. Found in Shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	
AMPHIBIANS & REPTILES							
Olympic salamanders (RHYACOTRITC	ONIDAE)						
Rhyacotriton variegatus	None	None	G3G4	S2S3	DFG:SSC	Found in Coastal redwood, Douglas fir, mixed conifer, montane riparian, and montane	No habitat.
southern torrent (=seep)					IUCN:LC	hardwood-conifer forests from northern California south to Point Arena. Aquatic	
salamander					USFS:S	habitat includes permanent cold creeks, steams and seepages with low water flow; accoriated with merce covered rocks within trickling water and the colach zone of	
						essociated with most covered rocks within the million water and the spasn zone of water falls; old-growth conferous forests with closed canopy; <50% cobble in creeks,	
						remainder mixture of pebble, gravel and sand.	
Tailed frogs (ASCAPHIDAE)							
<b>Ascaphus truei</b> Pacific tailed frog	None	None	G4	S2S3	DFG: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,	No habitat.
						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.	
Frogs (RANIDAE)						-	
Rana aurora aurora	None	None	G4T4	52?	DFG:SSC	Found in humid forests, woodlands, grasslands, and streamsides in northwestern	Potential upland habitat.
normern realeged irog					C:CICD	callorna. 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 concise is how woon Manchester and Elu	
Rana aurora dravtonii	Threatened	None	G4T2T3	\$253	DFG:SSC	Lowlands and foothills in or near permanent sources of deep water with dense.	Not in range.
California red-legged frog						communication of the manual mean permanent available of accept water with defines, the manual definition regertation Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	
Rana boylii	None	None	63	S2S3	BLM:S	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of	No habitat.
foothill yellow-legged frog					DFG:SSC IUCN:NT USFS:S	habitats. Need at least some cobble-sized substrate for egg-laying.	
Box & Water Turtles (EMYDIDAE)							
Emys marmorata marmorata western pond turtle	None	None	G3G4	S3	BLM:S DFG:SSC IUCN:VU IISFS·S	Former scientific name: <i>Clemmys 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.	No habitat.
					0.000		

BIRDS							
Pelicans (PELECANIDAE)							
Pelecanus occidentalis californicus California brown pelican (nesting colony & communal roosts)	Delisted	Delisted	G4T3	S1S2	DFG:FP	Nest colonies are on offshore islands free of mammalian predators and human disturbance, are of sufficient elevation to prevent flooding of nests, and are associated with an adequate and consistent food supply. Brown pelicans roost communally, generally in areas that are near adequate food supplies, have some type of physical barrier to predation and disturbance, and provide some protection from	No marine island habitat.
Cormorants (PH4) ACROCORACIDAE						environmental stresses such as wind and high surf.	
Phalacrocorax auritus	None	None	65	53	DFG:WL	Bookerv site: colonial nester on coastal cliffs. offshore islands. and along lake margins	No coastal cliffs or islands.
double-crested cormorant (nesting colony)			}	}	IUCN:LC	in the interior of the state. Nexts along coast of sequestered islets, usually on ground with sloong surface. Or italit tees along lake markins.	
Herons, Egrets, and Bitterns (ARDE/I	AE)						
Ardea alba great egret (nesting colony)	None	None	65	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. Breeding territory is limited to the immediate vicinity of nest, and is used for courtship and copulation as well as nesting. A monogamous, colonial nester.	No habitat in project area.
Ardea herodias	None	None	<u>65</u>	S4	CDF:S	Rookery: colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	No rookery habitat in project area.
great blue heron (nesting colony)					IUCN:LC	Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	
Egretta thula	None	None	G5	S4	CDF:S	Rookery: colonial nester, with nest sites situated in protected beds of dense tules.	Potential habitat in wetlands.
snowy egret (nesting colony)					IUCN:LC	Rookery situes situated close to foraging areas: marshes, tidal-flats, streams, wet meadows. and borders of lakes.	
Hawks. Kites. Harriers. & Eagles (AC	CIPITRIDAE)						
Accipiter cooperii	None	None	<u>6</u> 5	S3	DFG:WL	Nesting: woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in	No habitat.
Cooper's hawk (nesting)					IUCN:LC	riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	
Acciniter gentilis	None	None	G5	53	BLM:S	Nesting: within and in vicinity of coniferous forest. Uses old nests, and maintains	No hahitat.
northern goshawk (nesting)			}	}	CDF:S	alternate sites. Usually nests on north slopes, near water. Red fir, lodge pole pine,	
					DFG:SSC	Jeffrey pine, and aspens are typical nest trees. Northern goshawks typically nest in	
					USFS:S	coniter 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.	
Accipiter striatus	None	None	G5	S3	DFG:WL	Nesting: ponderosa pine, black oak, riparian deciduous, mixed conifer and Jeffrey pine	No habitat.
sharp-shinned hawk (nesting)						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, for are cool, moist, well shaded, with little ground-cover, near water. Fordaing: Uses dense stands in close proximity to open areas.	
Aquila chrysaetos golden eagle (nesting &	None	None	G5	S3	CDF:S DFG:FP	Nesting and wintering: rolling foothills mountain areas, sage-juniper flats, desert. In Cliff-walled canvons provide nesting habitat in most parts of range: also, large trees in	No nesting habitat.
wintering)					DFG:WL	open areas.	
					USFWS:BCC	Nests on clifts of all heights and in large trees in open areas. Alternative nest sites are maintained, and old nests are reused. Builds large platform nest, often 10 ft. across and 3 ft. high, of sticks, twigs, and greenery. Rugged, open habitats with canyons and correstorments in cond anot factorized by correction.	
Ruteo readis	AnoN	Anne	64	7352	DEG-WI	escer princing used most in equencity for mesting. Histially east of the coastal helt incrommon migrant in coastal Mendocino for inty seen A	No hahitat
ferruginous hawk (wintering)			5	4000	USFWS:BCC	osuary east of the coastal pert, uncommon migrant in coastal internocurity seen in in open areas such as Bald Hill and Manchester. Feeding habitat in open, treeless areas. Does not breed in California.	NO HADILAL.

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<b>Circus cyaneus</b> Northern harrier (nesting)	None	None	GS	ß	DFG:SSC IUCN:LC	Northern harriers prefer sloughs, wet meadows, marshlands, swamps, prairies, plains, Pot 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., cattalls) in undisturbed areas. They usually nest near hunting grounds. Foraging: They usually nest near hunting grounds. hunting.	otential habitat.
<i>Elanus leucurus</i> white-tailed kite (nesting)	None	None	G5	ĸ	DFG:FP IUCN:LC	Nesting: rolling foothills/valley margins with scattered oaks and river bottomlands or No 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 thrown from a TIPP in Albion "2006; nest was at the edge of confire forest with no pasture immediately adjacent.	lo habitat.
Haliaeetus leucocephalus bald eagle (nesting & wintering)	Delisted	Endangered	G5	S2	CDF:S DFG: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 coa live tree with open branches, especially ponderosa pine. Roosts communally in winter. Known from winter in Lake Geone, MacKerricher State Park and Little River.	reeding sites not known from oastal Mendocino.
<b>Pandion haliaetus</b> Osprey (nesting)	None	None	G5	23	CDF:S DFG: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.	lo habitat.
Falcons (FALCONIDAE)				]			
Falco columbarius Merlin (wintering)	None	None	G5	S	DFG:WL IUCN:LC	General wintering habitat: Uncommon winter migrants on the coast. Habitat Son 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 cutivated fields, marshes, estuaries, and seacoasts. Frequents open habitats at low elevation near water and tree stands.	ome potential for wintering habitat.
Falco peregrinus anatum American peregrine falcon (nesting) Plovers & Relatives (CHARADRIIDAF)	Delisted	Delisted	G4T3	S2	CDF:S DFG:FP USFWS:BCC	Nesting: near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; Pot also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	otential habitat.
Charadrius alexandrinus nivosus western snowy plover (nesting)	Threatened	None	G4T3	52	ABC:WLBCC DFG:SSC USFWS:BCC	Nesting: federal listing applies only to the pacific coastal population. Sandy beaches, No salt pond levees and shores of large alkali lakes. Needs sandy, gravely or friable soils ope for nesting. Sand spits, dune-backed beaches, unvegetated beach strands, open areas around estuaries, and beaches at river mouths are the preferred coastal datiest for nesting. Less common nesting habitat includes salt pans, coastal dredged spoil disposal sites, dry salt ponds, and salt pond levees and site pands.	lo coastal strand, open dune, or pen river gravel bar habitat.
Oystercatchers (HAEMATOPODIDAE)							
Haematopus bachmani Black oystercatcher (nesting)	None	None	G5	S2	IUCN:LC USFWS:BCC	From the Aleutian Islands to Baja California, the forage on intertidal No macroinvertebrates along gravel or rocky shores and in the southern part of their for range nest primarily on rocky headlands and offshore rocks.	lo rocky headlands or offshore rocks or nesting habitat.
Gulls & Terns (LARIDAE)							
Larus californicus California gull (nesting)	None	None	G5	S2	DFG:WL IUCN:LC	Colony nesters and usually occurring on an island or vegetated offshore rock.	lo coastal island habitat.

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Auklets, Puffins, & Relatives (ALCID <sup>#</sup>	AE)						
Brachyramphus marmoratus marbled murrelet (nesting)	Threatened	Endangered	G3G4	S1	ABC:WLBCC CDF:S IUCN:EN	Nesting: feeds near-shore; nests inland along coast, from Eureka to Oregon border N and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir. Fasence 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 conferous fersts with platforms; and 4) include large residual trees in low densities sometimes less than one tree per acre.	o large trees for nesting.
Fratercula cirrhata tufted puffin (nesting colony)	None	None	G5	52	DFG:SSC IUCN:LC	Nesting colony: open-ocean bird; nests along the coast on islands, islets, or (rarely) N mainland cliffs free of human disturbance and mammalian predators. Nests in burrows or rock crevices when sod or earth in unavailable for burrowing. Occurs year-road offshore near breeding colonies in northern California, but more common in winter. Breeding records from Goat Rock, Mendocino Headlands State Park.	o coastal island habitat.
Owls (STRIGIDAE)							
Athene cunicularia burrowing owl (burrow sites and some winter sites)	None	None	G4	S2	BLM:S DFG:SSC IUCN:LC USFWS:BCC	Burrow sites: open, dry annual or perennial grasslands, deserts and scrublands, and Lt dunes characterized by low-growing vegetation. Subterranean nester, dependent bu upon burrowing mammals, most notably, the California ground squirrel.	ow potential. No ground squirrel urrows.
Strix occidentalis caurina northern spotted owl	Threatened	None	G3T3	S2S3	ABC:WLBCC CDF:S DFG:SSC IUCN:NT	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in N 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 canopy.	o forested nesting habitat.
Swifts (APODIDAE)							
<b>Chaetura vauxi</b> Vaux's swift (nesting)	None	None	65	S	DFG:SSC IUCN:LC	Nesting: redwood, Douglas fir, and other coniferous forests. Nests in large hollow N 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.	o forest habitat.
Hummingbirds (TROCHILIDAE)							
<b>Selasphorus rufus</b> rufous hummingbird (nesting)	None	None	65	S1S2	IUCN:LC USFWS:BCC	Breeds in open or shrubby areas, forest openings, yards and parks, and sometimes in St 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.	ome potential appropriate habitat.
Selasphorus sasin Allen's hummingbird (nesting)	None	None			ABC:WLBCC IUCN:LC USFWS:BCC	Breeds only along a narrow strip of coastal California and southern Oregon. Nests in 50 densely vegetated areas and forests. An early migrant compared with most North fo 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.	ome potential appropriate habitat or nesting in scrub.
Woodpeckers (PICIDAE)							
<i>Picoides nuttallii</i> Nuttall's woodpecker (nesting)	None	None	65	SNR	ABC:WLBCC IUCN:LC	Ranging from west of the Cascade mountains and in the Sierra Nevada from southern N Oregon to Northern Baja California. Nests are excavated in dead branches or snags of as various trees, usually in close association with oak woodlands and riparian zone, in habitat vulnerable to development. At least one Mendocino Coast record from 2011 Audubon Christmas Bird Count.	o nesting habitat, which is ssociated with oak woodlands Iland from coast.
<b>Sphyrapicus ruber</b> red-breasted sapsucker	None	None	65	SNR	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.	o large deciduous trees.
Tyrant Flycatchers (TYRANNIDAE)							
Contopus cooperi olive-sided flycatcher (nesting)	None	None	64	S4	ABC:WLBCC DFG:SSC IUCN:NT USFWS:BCC	Breeds in montane and northern coniferous forests, at forest edges and openings, Preuch 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.	otential nesting site.

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Swallows (HIRUNDINIDAE)						
<i>Progne subis</i> purple martin	Zone	zone Z	ß	ĸ	DFG:SSC IUCN:LC	Nesting: inhabits woodlands, low elevation coniferous forest of Douglas fir, Ponderosa Potential habitat. 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.
Wood-warblers (PARULIDAE)						
Dendroica occidentalis hermit warbler (nesting)	None	e e e	G4G5	235 S	ABC:WLBCC IUCN:LC	Breeding range is relatively limited to the Pacific Coast and the Cascade and Sierra No habitat. 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 conferous forests with a high canopy volume, generally preferring mature stands of pine and Douglas fir. Avoids areas with a high deciduous volume, absent from riparian areas and clearcuts. Birds of coniferous forests; they prefer cool, wet fir forests at elevation, and moist forests of Douglas-fir, hemlock, and western red cedar closer to sea level. Major threat to this species appears to be the degradation of breeding "Vot known as frequently nesting on the coast, perhaps more common inland.
Sparrows, Buntings, Warblers, & Rel	atives (EMBE	RIZIDAE)				
Ammodramus savannarum grasshopper sparrow (nesting)	None	None	G5	S2	DFG:SSC IUCN:LC	Nesting: dense grasslands on rolling hills, Jowland plains, in valleys and on hillsides on Potential habitat. Iower 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.
Passerculus sandwichensis alaudinus Bryant's savannah sparrow (nesting)	None	None	G5T2T3	5253	DFG:SSC	California endemic from near Humboldt Bay, Humboldt Co. to Morro Bay, San Luis Potential habitat. Obispo Co. Breeds in low tidally influenced habitats in higher parts of pickleweed/saltgrass marshes, adjacent ruderal areas, moist grasslands within and just above the fog belt, bottomlands and dairy pastures in the taller grasses and rushes along roads and fences, and infrequently, drier grasslands. In moist upland grasslands, it occurs where herbaceous vegetation is relatively short, with no n little woody plant cover. Open areas, whether provided by tidal mudflats or upland interstitial areas abitat.
Blackbirds (ICTERIDAE)						
Agelaius tricolor tricolored blackbird (nesting colony)	None	None	6263	S2	ABC:WLBCC BLM:S DFG:SSC IUCN:EN USFWS:BCC	Nesting colony: highly colonial species, most numerous in central valley and vicinity. No nesting habitat. 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.
Mammals						
Evening Bats (VESPERTILIONIDAE)						
Antrozous pallidus pallid bat	None	None	G5	23	BLM:S DFG:SSC IUCN:LC USFS:S WBWG:H	A wide variety of habitats deserts, grasslands, shrublands, woodlands and forests from Marginal roosting habitat. sea level up through mixed confer 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.

Corynorhinus townsendi	None	None	G4	S2S3	BLM:S	Generally found in the dry uplands throughout the West, but also occur in mesic	No caves-analogs for roosting.
Townsend's big-eared bat					DFG:SSC	coniferous and deciduous forest habitats along the Pacific coast. Unequivocally associated with areas containing caves and cave-analogs for coosting habitat. Requires	
					USFS:S	spacious cavern-like structures for roosting during all stages of its life cycle. Typically,	
					WBWG:H	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.	
Lasionycteris noctivagans silver-haired bat	None	None	G5	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	Not good potential habitat.
						associated with north temperate zone conifer and mixed conifer/hardwood for ests.	
						Prefets foresteu (irrequentity connierous) areas aujacent to lakes, pontus, 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 the roosting needs of this species (e.g., clusters of large snags).	
Lasiurus blossevillii	None	None	59	S3?	DFG:SSC	Locally common in some areas of California from Shasta County south to the Mexican	Not good potential habitat.
western red bat					INCN: FC	border. California Central Valley is the species' primary breeding region.	
						Species appears to be strongly associated with riparian habitats for roosting and forgating martinularly mature stands (Jarge Alameter of cottonwood (screenore Roosts	
		_			_	roraging, particularly mature stantas/range diameter of cottomwood/sycamore. Noosts in woodhood hordore rivore particultural aroas and urban aroas with matura troos in	
		_			_	in woodiand borders, rivers, agricultural areas, and urban areas with mature trees in the folices of lower sharks and trees recollected also at the reduction of	
		_		_	_	the foliage of large shrups and trees, usually sheltering on the underside of	
		_		_	_	overhanging leaves. It often hangs from one foot on the leaf petiole and may resemble	
•	:	;	;	0.0		a fruit or dead leaf. Rarely observed roosting in mines.	
Lasiurus cinereus	None	None	65	24.5 24.5	IUCN:LC	Most widespread North American bat. Solitary species that winters along the coast	Potential winter roosting sites.
hoary bat					WBWG:M	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.	
Myotis evotis	None	None	G5	S4?	BLM:S	Widespread in California, but generally is believed to be uncommon in most of its	Low potential habitat.
long-eared myotis		_			IUCN:LC	range. It avoids the arid Central Valley and hot deserts, occurring along the entire	
					WBWG:M	coast and interior mountains. Found in nearly all brush, woodland, and forest habitats,	
		_			_	from sea level to at least 9,000 ft., but coniferous woodlands and forests seem to be	
						preferred.	
		_		_	_	Roosts in loose bark in tall, open-canopied snags; stumps in south-facing clear-cuts	
						with minimal vegetation overgrowth in younger forests, and conifer snags in older	
	_	_	_		_	forests, rocks, caves, bridges and abandoned mines.	
Myotis yumanensis	None	None	65	S4?	BLM:S	Optimal habitats are open forests and woodlands with sources of water over which to	Low potential.
Yuma myotis		_			INCN:LC	feed. Distribution is closely tied to bodies of water. Maternity colonies in caves,	
	_	_	_	_	WBWG:LM	mines, buildings or crevices.	
Mountain Beavers (PLODONTIDAE)							
Aplodontia rufa nigra	Endangered	None	G5T1	S1	DFG:SSC	Generally known from 2 miles north of Bridgeport Landing to 5 miles south of the	Not within range.
Point Arena mountain beaver		_		_	INCN:LC	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.	
Mice, Rats, & Voles (MURIDAE)							
Arborimus pomo	None	None	G3	S3	DFG:SSC	Species split into red tree vole and Sonoma tree vole; approximate boundary between	No habitat.
Sonoma tree vole					IUCN:NT	two species is Klamath River. Inhabits north coast fog belt from Oregon border to	
					_	Somona 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 grand fir, hemlock or spruce.	

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Weasels & Relatives (MUSTELIDAE)							
Martes americana	None	None	G5T2T3	S2S3	DFG:SSC	Endemic to the coastal forests of northwestern California with a historical range	No contiguous dense forest.
humboldtensis					USFS:S	described as "the narrow northwest humid coast strip, chiefly within the redwood	
Humboldt marten						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.	
Martes pennanti (pacifica) DPS	Candidate	None	G5	S2S3	BLM:S	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas	No contiguous dense forest.
Pacific fisher					DFG:SSC	with high percent canopy closure. Use cavities, snags, logs and rocky areas for cover	
					USFS:S	and denning. Need large areas of mature, dense forest. Very rare on the Mendocino	
						coast.	
Sea Lions & Fur Seals (OTARIIDAE)							
Arctocephalus townsendi	Threatened	Threatened	G1	S1	DFG: FP	Solitary, non-social "eared" seals breed in the tropical waters off southern	None.
Guadalupe fur-seal					IUCN:NT	California/Mexico region but have been seen on rare occasion off Mendocino.	
Callorhinus ursinus	None	None	G3	S1	IUCN:VU	Mostly pelagic seal ranging throughout the Pacific Rim, from Japan to the Channel	None.
northern fur-seal						Islands. Pacific rookeries in the Channel and Farallon Islands. Infrequent visitor to the	
						Mendocino Coast. One was stranded on Albion flat in 2013 and rescued by the Marine	
						Mammal Center.	
Eumetopias jubatus	Threatened	None	G3	S2	IUCN: EN	Range throughout the North Pacific Rim from Japan to central California. Unlike	None.
Steller (=northern) sea-lion					MMC:SSC	California sea lions, Stellers tend to remain off shore or haul out in unpopulated areas.	
						Breeding rookery on Ano Nuevo Island.	

Explanation of "Organization: Code" taken from CDFW 2011.

- greatest need of immediate conservation attention to survive a convergence of environmental challenges, including habitat loss, invasive species, and global warming. The list builds on the species assessments conducted for many years by Partners in Flight ABC: American Bird Conservancy – The United States WatchList is a joint project between the American Bird Conservancy and the (PIF) for land birds. It uses those same PIF standards but it is expanded to cover all bird species, not just land birds. The list is National Audubon Society. It reflects a comprehensive analysis of all the bird species in the United States. It reveals those in based on the latest available research and assessments from the bird conservation community, along with data from the Christmas Bird Count and Breeding Bird Survey. More information is available at: WLBCC - United States WatchList of Birds of Conservation Concern
- Walsh, N.M. Burkhead, S.Contreras-Balderas, E. Díaz-Pardo, D.A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, eries/fisheries 3308.pdf Designations for marine and estuarine species were taken from 4FS: American Fisheries Society – Designations for freshwater and diadromous species were taken from the paper: Jelks, H.L., S.J. S.P. Platania, B.A. Porter, C.B. Renaud, J. J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. Fisheries 33(8):372-407. Available at: the paper: Musick, J.T. et al. 2000. "Marine, Estuarine, and Diadromous Fish Stocks at Risk of Extinction in North America http://www.fis
  - (Exclusive of Pacific Salmonids). Fisheries 25(11):6-30. Available at:
    - .ufl.edu/fish/sharks/sawfish/Reprint1390.pdf http://www.flmn EN - Endangered
- T Threatened
- vu Vulnerable
- review by the FWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing may become necessary, or (3) with administered lands, and (2) the potential must exist for improvement of the species' condition through BLM management. The habitats." Existing California-BLM policy concerning the designation of sensitive species identifies two conditions that must be "sensitive Species" designation is not meant to include federally listed species, proposed species, candidate species or State-3LM: Bureau of Land Management – BLM Manual §6840 defines sensitive species as"...those species that are (1) under status listed species. It is BLM policy to provide sensitive species with the same level of protection that is given federal candidate typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique met before a species may be considered as BLM sensitive: (1) a significant population of the species must occur on BLMspecies. The list is available at: http://www.blm.gov/ca/pdfs/pa\_pdfs/biology\_pdfs/SensitiveAnimals.pdf S - Sensitive
- designated certain vertebrate species as "species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to long term viability. Not all "Species of Special Concern" have declined equally; some species may be just starting to decline, while CDFW: California Department of Fish and Wildlife – The name California Department of Fish and Game (CDFG, or DFG) was changed halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their to the California Department of Fish and Wildlife in 2013 and the changes are reflected here. It is the goal and responsibility of others may have already reached the point where they meet the criteria for listing as a "Threatened" or "Endangered" species the Department of Fish and Game to maintain viable populations of all native species. To this end, the Department has
  - )=3778 The 1995 report for fish, the 1994 report for amphibians and under the State and/or Federal Endangered Species Acts. More information is available at: http://www.nrm.dfg.ca.gov/fileHandler.ashx?DocumentID=3778 The 19: reptiles and the 1986 & 1998 reports for mammals are available on-line.

SSC: Species of Special Concern

- cions/docs/fish ssc.pdf Fish: |
- docs/herp ssc.pd Amphibians & Reptiles: <u>http://www.dfg.ca.gov/wildlife/nongame/pu</u>
- ations/bm research/docs/86 27.pdf /www.dtg.ca.gov/wildlite/nongame/pub Mammals: http:/
- http://www.dfg.ca.gov/wildlife/nongame/ssc/1998mssc.html Updates of all three reports are in preparation. Information on the Amphibian and Reptile Species of Special Concern report is
  - available at: htt
    - Information on the mammal report is available at: http://www.dfg.ca.gov/wildlife/nongame/ssc/mammals.html and http:
      - A new California Bird Species of Special Concern report was completed in 2008. More information is available at:
- A new category of "Taxa to Watch" was created in the new California Bird Species of Special Concern report. The birds on this CESA; 2) were previously state or federally listed and now are on neither list; or 3) are on the list of "Fully Protected" species. Watch List are 1) not on the current Special Concern list but were on previous lists and they have not been state listed under More information and brief accounts for each species is available in the report.
- protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds DFG (CDFW): Fully Protected: The classification of Fully Protected was the State's initial effort to identify and provide additional species acts; white-tailed kite, golden eagle, trumpeter swan, northern elephant seal and ring-tailed cat are the exceptions. The and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered

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white-tailed kite and the golden eagle are tracked in the CNDDB; the trumpeter swan, northern elephant seal and ring-tailed cat are not. The Fish and Game Code sections dealing with Fully Protected species state that these species "....may not be taken or possessed information on Fully Protected fish can be found in the California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter recovery activities for state-listed species. More information on Fully Protected species and the take provisions can be found in 2, Article 4, §5.93. The category of Protected Amphibians and Reptiles in Title 14 has been repealed. The Fish and Game Code is at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to the Fish and Game Code, (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515). Additional makes the "Fully Protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003 the take any fully protected" species, although take may be authorized for necessary scientific research. This language arguably code sections dealing with fully protected species were amended to allow the Department to authorize take resulting from California Code of Regulations is available at: http://ccr.oal.ca.gov/linkedslice/default.asp?SP=CCR-1000&Action=Welcome available online at: http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=fgc&codebody=&hits=20. Title 14 of the FP - Fully Protected

- SSC Species of Special Concern
  - WL Watch List
- CDF: California Department of Forestry & Fire Protection The Board of Forestry classifies as "sensitive species" those species that warrant special protection during timber operations. The list of "sensitive species" is given in §895.1 (Definitions) of the California Forest Practice Rules. The 2010 Forest Practice Rules are available at:
  - wo-TechRule No1.pdf /2010 FP Rule Sensitive
- UCN: International Union for Conservation of Nature provides objective, scientifically-based information on the current status of globally threatened biodiversity. More information at http://www.iucnredlist.org/technical-docu detailed information on the IUCN and the Red List is available at: http://www.redlist.org
  - **CD** Conservation Dependent
    - **CR** Critically Endangered

    - DD Data Deficient

- EN Endangered LC Least Concern NT Near Threatened VU - Vulnerable
- listed as endangered or threatened under the Endangered Species Act or as depleted under the Marine Mammal Protection Act. marine mammals. To meet this charge, the Commission devotes special attention to particular species and populations that are MMC: Marine Mammal Commission – Section 202 of the Marine Mammal Protection Act directs the Marine Mammal Commission, vulnerable to various types of human-related activities, impacts, and contaminants. Such species may include marine mammals whenever special conservation challenges arise that may affect them. More information on the Marine Mammal Protection Act Department of the Interior, and other federal agencies on research and management actions needed to conserve species of In addition, the Commission often directs special attention to other species or populations of marine mammals not so listed in consultation with its Committee of Scientific Advisors, to make recommendations to the Department of Commerce, the and the Species of Special Concern list is available at: http://www.mmc.gov/species
- which insufficient information is available to indicate a need to list the species under the Endangered Species Act (ESA). Proactive partners. The category Species of Concern was established by the (NMFS) effective 15 April 2004. Species of Concern are those species about which NOAA's National Marine Fisheries Service (NMFS) has some concerns regarding status and threats, but for NMFS), under the U.S. Department of Commerce, with responsibility for protecting marine mammals and endangered marine life. NOAA's Office of Protected Resources works to conserve, protect, and recover species under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) in conjunction with our Regional offices, Science Centers, and various NMFs: National Marine Fisheries Service – National Oceanic and Atmospheric Administration (NOAA): The Office of Protected Resources (OPR) is a headquarters program office of NOAA's National Marine Fisheries Service (NOAA Fisheries Service, or attention and conservation action is drawn to these species. "Species of concern" status does not carry any procedural or substantive protections under the ESA. More information is available at: <u>http://www.nmfs.noaa.gov/pr/species/conc</u> SC: Species of Concern
- significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution. Regional Foresters shall identify sensitive species occurring within the region. California is the Pacific Southwest Region (Region 5). The list of sensitive animals for Region 5 is undergoing revision. The anticipated completion date was spring 2009, however it still has not USFS: United States Forest Service - USDA Forest Service defines sensitive species as those plant and animal species identified by a viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or regional forester that are not listed or proposed for listing under the federal Endangered Species Act for which population

been updated in spring 2010. The sensitive designation on this list is based on the previous list. More information is available at: http://www.fs.fed.us/r5/projects/sensitive-species/

- USFWS: United States Fish and Wildlife Service The goal of the Birds of Conservation Concern 2008 report is to accurately identify represent our highest conservation priorities and draw attention to species in need of conservation action. We hope that by cousing attention on threse highest priority species, this report will promote greater study and protection of the habitas and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. This report is available at: <u>http://library.fws.gov/Bird\_Publications/BCC2008.pdf</u> the migratory and nonmigratory bird species (beyond those already designated as Federally threatened or endangered) that BCC - Birds of Conservation Concern
- WBWG: Western Bat Working Group comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. Species designated as "High Priority" are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats. More information is available at: <u>intro//www.mbwg.org</u> H High Priority LM Low-Medium M Medium-High Priority MH Medium-High Priority
- XERCES: The Xerces Society is an international non-profit organization dedicated to protecting biological diversity through invertebrate conservation. Their core programs focus on endangered species, native pollinators, and watershed health. More information on the Red list is available at: <u>http://www.xerces.org/</u> CI - Critically Imperiled DD - Data Deficient IM - Imperiled VU - Vulnerable



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### Appendix D. List of All Plant Species Documented in the Study Area.

GROUP	FAMILY		COMMON NAME	NATIVE STATUS
FERNS AN	D ALLIES			
	Dryopteridaceae			
		Polystichum munitum	western sword fern	Y
	Equisetaceae			
		Equisetum telmateia ssp. braunii	giant horsetail	Y
GYMNOSP	ERMS			
	Cupressaceae			
		Hesperocyparis macrocarpa	Monterey cypress	Y
	Pinaceae			
		Pinus contorta ssp. contorta	shore pine; beach pine	Y
		Pinus radiata	Monterey pine	Y
DICOTS	I			
	Aizoaceae			_
		Carpobrotus edulis	sea fig, hottentot fig, iceplant	N
	Apiaceae			
		Conium maculatum	poison hemlock	N
		Oenanthe sarmentosa	Pacific oenanthe, water parsely	Y
	Apocynaceae			
		Vinca major	greater periwinkle, periwinkle	N
	Asteraceae			_
		Achillea millefolium	yarrow	Y
		Baccharis pilularis	coyote brush	Y
		Bellis perennis	English daisy	N
		Cirsium vulgare	bull thistle	N
		Delairea odorata	German ivy, cape ivy	N
		Euchiton japonicus	father and child plant, Japanese cudweed	N
		Grindelia stricta	coastal gumweed	Y
		Hypochaeris radicata	rough cat's ear, hairy cat's ear	N
		Sanacio alomaratus	cut-leafed erechtites, New Zealand fireweed,	N
		Sonohus asper sep asper	prickly conv thirtle	N
		Tarayacum officinala	dandelion	N
	Boraginaceae			11
	Doraginaceae	Echium piningng	achium Dr. Sauss trag	N
	Brassicaceae			1
	Diassicaceae	Paphanus satinus	wild redich	N
	Caprifoliacono	Kaphanus sativus		IN
	Capinonaceae	Lonicera ignonica	Jananesa honavguckla	N
	Carvonhullaceaa			
	Caryophynaceae	Corastium alomoratum	mouse ear chickweed	N
		Stellaria media	common chickweed	N
	Convolvulaceae			11
		Convolvulus avensis	field hindweed hindweed field morning alory	N
	Dingagagaga			1N
	Dipsacaceae	Dinsacus fullonum	wild teasel	N
	Escalloniaceae	στροάτας ματοπαπί		1N
	Escanomaceae	Escallonia sp	Escallonia landscaning shub	N
L	I	Locationia op.	Locationia randocaping sinuo	1 11

GROUP	FAMILY		COMMON NAME	NATIVE STATUS
	Fabaceae			
		Lotus corniculatus	bird's-foot trefoil	N
		Medicago polymorpha	California burclover	N
		Trifolium pratense	red clover	N
		Trifolium repens	white clover	N
		Vicia sativa	common vetch	N
	Geraniaceae			
		Erodium cicutarium	red-stemmed filaree	N
		Geranium dissectum	cut-leaved geranium	N
	Hypericaceae			
		Hypericum calycinum	Aaron's beard	N
	Lamiaceae			
		Mentha pulegium	pennyroyal	N
		Prunella vulgaris	selfheal	
		Rosmarinus officinalis	rosemary	N
		Stachys rigida	rigid hedge-nettle	Y
		Stachys chamissonis	coast hedge-nettle	Y
	Malvaceae			
		Alcea rosea	hollyhock	N
	Myricaceae			
		Morella californica	wax myrtle	Y
	Onagraceae			
		Chamerion angustifolium	fireweed	N
	Phrymaceae			
		Mimulus guttatus	common yellow monkeyflower, seep monkey flower	Y
	Plantaginaceae	Ť		
		Plantago coronopus	cut leaf plantain	N
			English plantain, ribwort, narrow leaved plantain,	
		Plantago lanceolata	ribgrass	N
	Polygonaceae			
		Rumex acetosella	common sheep sorrel	N
		Rumex crispus	curly dock	N
		Rumex salicifolius	willow dock	Y
	Primulaceae			
		Anagallis arvensis	scarlet pimpernel, poor man's weathervane	N
	Rhamnaceae			
		Ceanothus thyrsiflorus	blueblossom	Y
	Rosaceae			
		Cotoneaster franchetii	Francheti cotoneaster	N
		Fragaria chiloensis	beach strawberry	Y
		Potentilla anserina ssp. pacifica	Pacific potentilla	Y
		Rosa sp.	cultivated rose	N
		Rosa nutkana var. nutkana	Nootka rose	Y
		Rubus armeniacus	Himalaya-berry	N
		Rubus ursinus	California blackberry	Y
	Tropaeolaceae			
		Tropaeolum majus	nasturtium, garden nasturtium	N

GROUP	FAMILY			NATIVE STATUS
MONOCOT	TS			
	Araceae			
		Zantedeschia aethiopica	calla lily, Calla-lily	N
	Cyperaceae			
		Carex abrupta		Y
		Carex obnupta	slough sedge	Y
		Cyperus eragrostis	tall flatsedge	Y
		Isolepis cernua	low lateral bulrush	Y
		Scirpus microcarpus	mountain bog bulrush	Y
	Iridaceae			
		Crocosmia Xcrocosmiiflora	monbretia	Ν
		Iris douglasiana	Douglas' iris	Y
		Sisyrinchium bellum	blue-eyed grass	Y
		Watsonia meriana	bulbil bugle lily	Ν
	Juncaceae			
		Juncus breweri	Brewer's rush	Ν
		Juncus effusus	common bog rush	Y
		Juncus lescurii	dune rush; salt rush	Y
	Liliaceae			
		Amaryllis belladonna	Naked Ladies	N
		Kniphofia uvaria	red hot poker	N
	Poaceae			
		Agrostis capillaris	colonial bentgrass	Ν
		Agrostis stolonifera	creeping bentgrass	Ν
		Anthoxanthum odoratum	sweet vernal grass	Ν
		Briza minor	little quaking grass; quaking grass	Ν
		Bromus carinatus	California brome	Y
		Bromus diandrus	ripgut brome; ripgut	Ν
		Bromus hordeaceus	soft chess	N
		Cynosurus echinatus	hedgehog dogtail-grass; annual dogtail-grass	N
		Dactylis glomerata	orchard-grass	Ν
		Danthonia californica	California oatgrass, wild oatgrass	Y
		Deschampsia cespitosa ssp. holciformis	coastal tufted hair-grass	Y
		Festuca arundinacea	tall fescue, meadow fescue	Ν
		Festuca myuros	rattail six week grass	Ν
		Festuca perennis	ryegrass	Ν
		Festuca rubra	red fescue	Y
		Holcus lanatus	common velvetgrass	Ν
		Hordeum murinum ssp. glaucum	farmer's foxtail	Ν
		Poa annua	annual blue grass	N
		Poa pratensis ssp. pratensis	Kentucky bluegrass	Ν
		Rytidosperma penicillatum	Purple-awned wallaby grass	Ν
	Typhaceae			
		Typha latifolia	broadleaf cattail; common cat-tail; broad-leaved cat- tail	Y

Appendix E. Reduced Buffer Analysis.
Policy OS- 1-9 Utilize the following criteria to establish buffer areas:
<ul> <li><i>a. Biological Significance of Adjacent Lands.</i></li> <li><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 areas. Functional, prequirements of the species in the habitat areas (e.g., nesting, freding, breading, or resting).</i></li> <li><i>Where a significant functional relationship exist, the land supporting this relationships shall also be considered to be part of the ESHA, and the buffer zone shall be measured from the edge of the ESHA that is adjacent to the proposed development.</i></li> </ul>
No functional relationships are noted. Lands adjacent to the wetlands are disturbed ruderal areas and non-native grasslands.
<ul> <li><b>b. Sensitivity of Species to Disturbance.</b> 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: <ul> <li>(1b-i) Nesting, feeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;</li> <li>(1b-i) An assessment of the short-term and long-term adaptability of various species to human disturbance;</li> <li>(1b-ii) An assessment of the impact and activity levels of the proposed development on the resource.</li> </ul> </li> </ul>
No sensitive plant or wildlife species were observed. Surveys for nesting birds and avoidance measures for special status frogs are recommended prior to development, as outlined in proposed mitigation measures, in order to avoid any impacts.
c. Erosion susceptibility. The width of the buffer zone shall be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, erosion potential, and vegetative cover of the parcel proposed for development and adjacent lands. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.
The building envelope is relatively flat with low potential for detrimental impacts to sensitive areas from construction related erosion. Silt fencing is recommended as outlined in the proposed mitigation measures.
<b>d. Use natural topography.</b> Where feasible, use hills and bluffs adjacent to Environmentally Sensitive Habitat Areas, to buffer these habitat areas. Where otherwise permitted, locate development on the sides of hills away from Environmentally Sensitive Habitat Areas. Include bluff faces in the buffer area.
There are no topographical features that would apply as a buffer to the wetlands/special status plant communities.
e. Use existing man-made features. Where feasible, use man-made features such as roads and dikes to buffer environmentally sensitive habitat areas.
There are no existing cultural features to utilize in the proposed improvement area.
Avalon Inn APN 069-241-27 & 069-241-04 Scoping, Botanical, Wildlife Surveys & Wetland Delineation 53 53

Policy OS- 1-9 Utilize the following criteria to establish buffer areas:
f. Lot Configuration and Location of Existing Development. 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.
Buildings to the south are directly adjacent to the south wetland, and the lot to the north is developed with gravel storage/driveway areas to the edge of the northern wetland. The proposed buffers would ensure on-site structures would be located a greater distance from the wetlands then surrounding development to the north and south. Additionally, planting of native vegetation in the buffer is recommended to ensure additional protection.
g.Type and Scale of Development Proposed. 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.
<ul> <li>Required buffer areas shall be measured from the following points as applicable:</li> <li>The outer edge of the canopy of riparian vegetation for riparian ESHA, or from the top of stream bank where no riparian vegetation exists.</li> <li>The upland edge of the plants that comprise the rare plant community for rare plant community ESHA.</li> </ul>
Proposed development is to consist of a 50,689 square foot, 66-room visitor serving facility with a conference center and 86 parking spaces. The adjacent property to the south is developed with a visitor serving facility and the property to the north is developed with an industrial gravel storage and processing plant. Taking into consideration the proposed and adjacent developments and recommended protective measures, a 30 foot buffer area is recommended to protect the south wetland and Coastal Blackberry Brambles, and a 50 foot buffer is recommended to protect the north wetland and Coastal Blackberry measured from the outer edge of the wetlands and special status plant communities.

Appendix F. Wetland Data Sheets

### Appendix F. Wetland Data Sheets

WETLAND DETERN	MINATION DATA FOR	M – Western Mou	Intains, Valleys, and Coast Region
roject/Site: Avalon Inn		City/County: Fort	Bragg Mindocinosampling Date: OIMAR
pplicant/Owner: Bob Aunt	·····		State: CA Sampling Point:
vestigator(s): Asa B Spa	ide	Section, Township, Ra	ange: 53/ T19 N R 7W
andform (hillslope, terrace, etc.);	eld	Local relief (concave.	convex. none): None. Slope (%): O
ubregion (LRR): A	Lat N	39 27.849'	Long: W 123 48.372' Datum: NAD8.
Nil Man Unit Name: TFODOguer	to Otalson	ercrat Slop	PES NW classification:
e climatic / hydrologic conditions on the	site hunical for this time of ve	ar2 Ves No	(If no evplain in Remarks )
	delegy carlot this time of ye	dicturbed? Are	"Normal Circumstances" present? Ves No
e Vegetation, Soil, of Hy		usubed? Ale	acided explain any answers in Remarks )
e vegetation, son, or Hy	drology naturally pro		
UMMARY OF FINDINGS – Atta	ach site map showing	sampling point	locations, transects, important features, etc
Hydrophytic Vegetation Present?	Yes No	1- 41 - O	4.4
Hydric Soil Present?	Yes X No	within a Wetla	Ind? Yes CCC No ACE
Netland Hydrology Present?	Yes No		
kemarks:			
EGETATION - Use scientific n	amore of plante	and the second se	
	Absolute	Dominant Indicator	Dominance Test worksheet:
ree Stratum (Plot size: <u>30'r</u>	_) <u>% Cover</u>	Species? Status	Number of Dominant Species
None			That Are OBL, FACW, or FAC: (A)
	· · · · · · · · · · · · · · · · · · ·		Total Number of Dominant
l			Species Across All Strata: (B)
4			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 2	$\theta'r$ , $-\theta$	_ = Total Cover	That Are OBL, FACW, or FAC: (A/B)
. None	<u> </u>		Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3			OBL species $3 \times 1 = 3$
4			FACW species $70 \times 3 = 210$
5			FACU species $5 \times 4 = 20$
	, 0	_ = Total Cover	UPL species $Q \times 5 = 0$
Halco analys	50	Ves FAC	Column Totals: 80 (A) 235 (B)
Fustura rubra	15	NO FAC	Branchara Inday - P/A - 335
Anthoxanthum odova	atum 5	NO FACU	Hydrophytic Vegetation Indicators:
Agrostis Capillan	55	NO FAC	1 - Rapid Test for Hydrophytic Vegetation
Potentilla anseria	a5	No OBL	2 - Dominance Test is >50%
l			3 - Prevalence Index is ≤3.0 <sup>1</sup>
·			4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3			5 Motland Non Vascular Plants <sup>1</sup>
			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
IU	201%	=16	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
••	RO BO	= Total Cover	be present, unless disturbed or problematic.
Noody Vine Stratum (Plot size: 10	<u> </u>		
Rubus ursinus		KOS TACU	Hydrophytic
2			Vegetation Present? Yes No X
V. Para Cround in Harb Stratum		= Total Cover	100 NO
Remarks:			
PRILE RINNER	1 UND DUT . dtr . 1	Pare	
	•		

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

### 0.011

Campling	Doint:	
Sampling	FUIL.	

			Sampling Point:
Profile Description: (Describe to the depth needed to document the indica	tor or confirm	the absence	of indicators.)
Depth Matrix Redox Features		_	
(inches) Color (moist) % Color (moist) % Typ	be' Loc <sup>2</sup>		Remarks
U-LL INKCLI 100 NONE		Sandy LOAM	
22-30 104R21 100 None		LOAM	•
30-34 10YRZ/1 99 10YR5/6 C	M	Clayloam	
34-36 10YR4/1 70 10YR5/8 30 °C	M	San Au Clau	Depleated Mothrx
36-401 5/106 70 10×R 5/8 30	AA	Seal lat	Gleved Mahnix
<u> </u>		Strajory	Dieget
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or C	oated Sand Gr	ains. <sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicato	rs for Problematic Hydric Soils <sup>*</sup> :
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) (exe	cept MLRA 1)	Very	Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)		Othe	r (Explain in Rémarks)
Depleted Below Dark Surface (A11) Depleted Matrix (F3)     Thick Dark Surface (A12) Depleted Matrix (F3)		3Indiant-	re of hydrophytic vocatation and
Thick Dark Surface (A12) Redox Dark Surface (F6)		Indicato	ad hydrology must be present
Sandy Mucky Mineral (S1) Depieted Dark Surface (F7)		wella	disturbed or problematic
Sandy Gleyed Matrix (54)			suscibed of problematic.
Tuno:		1	
Dapth (inches):		Hydric Soil	Procent? Yes X No
Depth (inches):		Hyunc Son	
Remarks:			
× ×			
Primary Indicators (minimum of one required: check all that apply)			
Primary indicators (minimum of one required, check all that apply)		Sacon	dans Indicators (2 or more required)
		Secon	dary Indicators (2 or more required)
Surrace Water (A1) Water-Stained Leaves (BS	9) (except	<u>Secon</u> W	dary Indicators (2 or more required) fater-Stained Leaves (B9) (MLRA 1, 2,
	9) (except B)	<u>Secor</u> W	dary Indicators (2 or more required) fater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
	9) (except B)	<u>Secon</u> W D	dary Indicators (2 or more required) fater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10)
	9) ( <b>except</b> <b>B)</b> 3)	<u>Secon</u> W D D	dary Indicators (2 or more required) fater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2)
	9) ( <b>except</b> <b>B)</b> 3) :1)	<u>Secon</u> W D S	dary Indicators (2 or more required) fater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
	9) (except B) 3) :1) ong Living Roc	<u>Secor</u> W D D S its (C3) G	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2)
	9) (except B) 3) :1) ong Living Roc n (C4)	<u>Secon</u> W D S ts (C3) G S	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3)
	9) (except B) 3) 1) ong Living Roo n (C4) Tilled Soils (C6	<u>Secon</u> W D D S its (C3) G S	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3) AC-Neutral Test (D5)
	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 ss (D1) (LRR A	<u>Secon</u> W D S ats (C3) G S () F, ) R	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 s (D1) (LRR A s)	<u>Secon</u> W D S ats (C3) G S () F () R F	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 s (D1) (LRR A s)	<u>Secon</u> W D S S S S S S F F	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 is (D1) (LRR A s)	<u>Secon</u> W D S S S S S F F	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Surrace Water (A1)     Water-Stained Leaves (BS     MLRA 1, 2, 4A, and 4I     Saturation (A3)     Saturation (B3)     Oxidized Rhizospheres ale     Algal Mat or Crust (B4)     Presence of Reduced Iron     Iron Deposits (B5)     Stunted or Stressed Plant     Inundation Visible on Aerial Imagery (B7)     Other (Explain in Remarked     Sparsely Vegetated Concave Surface (B8)     Field Observations:     Surface Water Present?     Yes	9) (except B) 3) ong Living Roc n (C4) Tilled Soils (C6 is (D1) (LRR A s)	<u>Secor</u> W D S ints (C3) G S ;) F, ) R F,	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
Surrace Water (A1)     Water-Stained Leaves (BS     MLRA 1, 2, 4A, and 4I     Saturation (A3)     Satt Crust (B11)     Water Marks (B1)     Sediment Deposits (B2)     Drift Deposits (B3)     Oxidized Rhizospheres ald     Algal Mat or Crust (B4)     Presence of Reduced Iron     Iron Deposits (B5)     Recent Iron Reduction in     Surface Soil Cracks (B6)     Stunted or Stressed Plant     Inundation Visible on Aerial Imagery (B7)     Sparsely Vegetated Concave Surface (B8)     Field Observations:     Surface Water Present?     Yes No X Depth (inches):     27	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 is (D1) (LRR A s)	<u>Secor</u> W D S ints (C3) G S ;) F, ) R F,	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 is (D1) (LRR A s)	<u>Secor</u> W D S ints (C3) G S ;) F, ) R F,	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) tost-Heave Hummocks (D7)
Surface Vvater (A1)   High Water Table (A2) MLRA 1, 2, 4A, and 4I   Saturation (A3) Salt Crust (B11)   Water Marks (B1) Aquatic Invertebrates (B13)   Sediment Deposits (B2) Hydrogen Sulfide Odor (C   Drift Deposits (B3) Oxidized Rhizospheres ald   Algal Mat or Crust (B4) Presence of Reduced Iron   Iron Deposits (B5) Recent Iron Reduction in   Surface Soil Cracks (B6) Stunted or Stressed Plant   Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)   Surface Water Present? Yes   Water Table Present? Yes   Yes No   Depth (inches): 2.1	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 is (D1) (LRR A s) Weth	Secon W D S S S S S F F F F	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 is (D1) (LRR A s) Wett s inspections)	Secor W D S S S S F F F Fi fi fi	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
	9) (except B) 3) ong Living Room n (C4) Tilled Soils (C6 is (D1) (LRR A s) WetL s inspections),	Secon W D D S S S S S F F F F F F f S _	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) y Present? Yes No
	9) (except B) 3) ong Living Roo n (C4) Tilled Soils (C6 is (D1) (LRR A s) Wett s inspections),	Secon W D D S S S S S F F F F F f f f f f f f	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) y Present? Yes No
	9) (except B) 3) 1) ong Living Roc n (C4) Tilled Soils (C6 is (D1) (LRR A s) Wett s inspections), Ut a bac	Secon W D D S S S S S F F F F f	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7) Present? Yes No $\underline{X}$
	B) (except B) (1) ong Living Roc n (C4) Tilled Soils (C6 is (D1) (LRR A s) Wettles s inspections), Hgd roc	and Hydrology if available: P = P = P = P = P = P = P = P = P = P =	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) Present? Yes No X
	B) (except B) 3) (1) ong Living Roc n (C4) Tilled Soils (C6 (C4) Tilled Soils (C6 (C4) (LRR A s) Wettles s inspections), Hgd roc	<u>Secor</u> W D D S S S F F F F F F F S F S 	$\frac{\text{dary Indicators (2 or more required)}{\text{later-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)} \\ \text{rainage Patterns (B10)} \\ \text{ny-Season Water Table (C2)} \\ \text{aturation Visible on Aerial Imagery (C9)} \\ \text{eomorphic Position (D2)} \\ \text{aturation Visible on Aerial Imagery (C9)} \\ \text{eomorphic Position (D2)} \\ \text{nallow Aquitard (D3)} \\ \text{AC-Neutral Test (D5)} \\ \text{aised Ant Mounds (D6) (LRR A)} \\ \text{ost-Heave Hummocks (D7)} \\ \text{Present? Yes No} \\ \text{Yere Sent? Yes No} \\ \text{Yes } \text{ of } \text{AC - 12 }        \text$
	B) (except B) 3) 1) ong Living Roc n (C4) Tilled Soils (C6 is (D1) (LRR A s) Wett s inspections), Hydrog	and Hydrology if available: P = 0 P = 0	dary Indicators (2 or more required) (ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ny-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) Present? Yes No $\underline{X}$
	B) (except B) (a) (1) ong Living Room (C4) Tilled Soils (C6 (C4) (LRR A (D1) (LRR A (D1) (LRR A (C4) (C4) (D1) (LRR A (C4)	and Hydrology if available: P = 0 P = 0	$\frac{\text{dary Indicators (2 or more required)}{ater-Stained Leaves (B9) (MLRA 1, 2,4A, and 4B)rainage Patterns (B10)ry-Season Water Table (C2)aturation Visible on Aerial Imagery (C9)eomorphic Position (D2)nallow Aquitard (D3)AC-Neutral Test (D5)aised Ant Mounds (D6) (LRR A)rost-Heave Hummocks (D7)$

US Army Corps of Engineers

Avalon Inn APN 069-241-27 & 069-241-04 Scoping, Botanical, Wildlife Surveys & Wetland Delineation

Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DA	TA FORM – Western Mo	ountains, Valleys, and Coast Region
Project/Site: Avalon Inn	City/County Fort	Bragg Mendo someting pate O/MARI3
Applicant/Owner: Bob Aunt		State: (A Sampling Point: 2
Investigator(s): ASZ B Space	Section Township F	Range 531 TI9N RITW
Landform (hillslope terrace etc.): Flat	Local relief (concave	a convex none): None since (%): 2%
Subregion (LRR): A	Lat: 39° 27.846	Long W12 3° 48. 369' Datum: NAD 83
Soil Map Unit Name: Tropaquents, 0 to	15 percent sloves	NIAA classification: NOAP.
Are climatic / bydrologic conditions on the site typical for this	time of year? Yes X No	
Are Vegetation NO Soil No or Hydrology No s	simile of year res No	
Are Vegetation $V_{c}$ Soil $\lambda(t)$ or Hydrology $\lambda(t)$ or	aturally problematic?	peeded explain any answers in Remarks )
		needeu, explain any answers in Kenlarks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling point	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	0 le the Sample	ad Area
Hydric Soil Present? Yes No	within a Wetl	and? Yes CCC No ACE
Remarks:	<u> </u>	
Dig Jean		ж.
VEGETATION - Use scientific names of plan	ts.	
an'r	Absolute Dominant Indicator	Dominance Test worksheet:
<u>Iree Stratum</u> (Plot size: <u>2)</u>	<u>% Cover Species? Status</u>	Number of Dominant Species 2
2		_ That Are OBL, FACW, or FAC: (A)
3.		Total Number of Dominant 3 (B)
4	· ·	Species Across All Strata.
2014	= Total Cover	That Are OBL FACW or FAC:
Sapling/Shrub Stratum (Plot size: 20 )		Prevalence Index worksheet:
1. <u>10000</u>		Total % Cover of: Multiply by:
2		OBL species x1 =
۵ ۸		FACW species x 2 =
5.		FAC species $47 \times 3 = 141$
	= Total Cover	FACU species $6 \times 4 = 29$
Herb Stratum (Plot size: 10 )	15 1 500	UPL species x5 =
1 FOSTUCO FUDRA	15 1es HAC	$- \begin{bmatrix} \text{Column Totals:} & J & (A) & (B) \\ \hline & & (C) \\ \hline \hline & (C) \\ \hline \hline & (C) \\ \hline \hline \\ \hline & (C) \\ \hline \hline & (C) \\ \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline \hline \hline \hline \hline \hline \hline \hline $
2. NORCO 19/9 HUS	<u>50 7-5 FAC</u>	Prevalence Index = $B/A = 2.93$
A Prime V arstrally	NO UPL	- Hydrophytic Vegetation Indicators:
5 Tarayarum officinale	No FACU	1 - Rapid Test for Hydrophytic Vegetation
6. THEFOILUM FEDERS	I NO FAC	2 - Dominance Test is >50%
7		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8		data in Remarks or on a separate sheet)
9		5 - Wetland Non-Vascular Plants <sup>1</sup>
10		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11	<u> </u>	Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:	う」= Total Cover	
1. RUDUS Armeniacus	5 Yrs FACU	Hudrophytic
2		Vegetation
2519 411	5 = Total Cover	Present? Yes <u>No</u> No
8 Bare Ground in Herb Stratum -30/1 1 Match		
Nemains. Veg dominated by FAC gr	asses not q.	strong hydrophikiz requindicator
		JVIJ

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Western Mountains, Valleys, and Coast - Version 2.0

Avalon Inn APN 069-241-27 & 069-241-04 Scoping, Botanical, Wildlife Surveys & Wetland Delineation

SOIL

Sampling Point: \_\_\_2

· · · · · · · · · · · · · · · · · · ·		th needed to docum	ent the m	uicator o	or continu	the absence of in	aloutorij				
Depth Matrix	x	Redox	Features								
(inches) Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks				
0-24 104RZ	1 100	None				Sent 1'09M					
24-34 10YR21	1 100	Nava		· · · · ·		LOOM					
34-38 10YRZ	1 99	104R5/6	1	C	M	Clayloam					
38-40+ 10YR/3	1 96	10 YR5/8	4	C	M	Sand					
		in									
	Depletion DM		Covered	or Coate	d Sand Cr	raine <sup>2</sup> l ocation	PI =Pore Lining M=Matrix				
Hydric Soil Indicators: (Apr	olicable to all	LRRs, unless other	vise note	d.)	u Sanu Gi	Indicators fo	r Problematic Hydric Soils <sup>3</sup> :				
Histosol (A1)	Silvable to an	Sandy Redox (S	5)	,		2 cm Mu	ck (A10)				
Histic Epipedon (A2)	1	Stripped Matrix	(S6)			Red Pare	nt Material (TF2)				
Black Histic (A3)		Loamy Mucky M	ineral (F1)	) (except	MLRA 1)	Very Sha	llow Dark Surface (TF12)				
Hydrogen Sulfide (A4)		Loamy Gleyed N	Matrix (F2)			Other (E)	plain in Remarks)				
Depleted Below Dark Sur	tace (A11)	Depleted Matrix	(F3) face /E6)			<sup>3</sup> Indicators of	hydrophytic vegetation and				
Sandy Mucky Mineral (S1	, 1)	Depleted Dark Su	urface (F0)	7)		wetland hy	drology must be present,				
Sandy Gleyed Matrix (S4	)	Redox Depressi	ons (F8)	.,		unless dis	urbed or problematic.				
Restrictive Layer (if present	t):										
Туре:							2				
Depth (inches):						Hydric Soil Pres	sent? Yes No				
Remarks: 5000 6	30-	Ho! did	Nat	lamo	- 7	O' cand	particles				
Juno C	- J0	107 414	101	VICIVI	e r	V/0 3410	P <sup>4</sup>				
Magred											
HYDROLOGY											
Wetland Hydrology Indicato	ors:										
Primary Indicators (minimum	of one require	d; check all that apply	0			Secondary	Indicators (2 or more required)				
Surface Water (A1)		Water-Stai	ned Leave	es (B9) (e	xcept	Water	Stained Leaves (B9) (MLRA 1, 2,				
High Water Table (A2)		MLRA 1	l, 2, 4A, a	nd 4B)		4A	and 4B)				
Saturation (A3)		Salt Crust	(B11)			Draina	ge Patterns (B10)				
Water Marks (B1)		Aquatic Inv	ertebrates	s (B13)	Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2)						
Sediment Deposits (B2)	Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9)										
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)							tion Visible on Aerial Imagery (C9)				
Drift Deposits (B3)		Oxidized R	hizospher	es along	Living Roo	Satura ots (C3) Geom	tion Visible on Aerial Imagery (C9) orphic Position (D2)				
Algal Mat or Crust (B4)		Oxidized R Presence of Recent Iron	hizospher of Reduced	es along d Iron (C4	Living Roo 1) 1 Soils (Cf	Satura ots (C3) Geom Shallo	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3)				
Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)		Oxidized R Presence o Recent Iron Stunted or	hizospher of Reduced n Reduction Stressed	es along d Iron (C4 on in Tille Plants (D	Living Roo 4) d Soils (C0 1) (LRR A	Satura ots (C3) Geom Shallo 6) FAC-N N Raise	ition Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> )				
Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)     Inundation Visible on Aei	ial Imagery (E	Oxidized R     Presence o     Recent Iron     Stunted or     Other (Exp	hizospher of Reduced n Reductio Stressed fain in Rei	es along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (C6 1) ( <b>LRR A</b>	Satura ots (C3) Geom Shallo 6) FAC-N N Raise Frost-	ition Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7)				
Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)     Inundation Visible on Aei     Sparsely Vegetated Com	rial Imagery (E cave Surface	Oxidized R     Presence o     Recent Iron     Stunted or     Other (Exp (B8)	hizospher of Reduced n Reductio Stressed lain in Rei	es along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (Cf 1) ( <b>LRR A</b>	Satura ots (C3) Geom Shallo 6) FAC-N N) Raise Frost-	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7)				
Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)     Inundation Visible on Aet     Sparsely Vegetated Com     Field Observations:	rial Imagery (E cave Surface	Oxidized R     Presence o     Recent Iron     Stunted or     Other (Exp (B8)	hizospher of Reduced n Reductio Stressed lain in Rei	es along d Iron (C4 on in Tille Plants (D marks)	Living Roo 4) d Soils (Cf 1) (LRR A	Satura ots (C3) Geom Shallo 6) FAC-N N Raise Frost-	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7)				
Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)     Inundation Visible on Aei     Sparsely Vegetated Com     Field Observations:     Surface Water Present?	rial Imagery (E cave Surface Yes	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp (B8)     No X Depth (inc	hizospher of Reduced n Reductio Stressed lain in Rei ches):	es along d Iron (C4 on in Tiller Plants (D marks)	Living Roo 4) d Soils (CC 1) (LRR A	Satura ots (C3) Geom Shallo 6) FAC-N N) Raise Frost-	ition Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7)				
Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)     Inundation Visible on Aei     Sparsely Vegetated Con     Field Observations:     Surface Water Present?     Water Table Present?	rial Imagery (E cave Surface Yes Yes	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp (B8)     No Depth (inc	hizospher of Reduced n Reductio Stressed lain in Red ches): ches):	es along d Iron (C4 on in Tiller Plants (D marks)	Living Roo 4) d Soils (Cf 1) (LRR A	Satura ots (C3) Geom Shallo 6) FAC-N N) Raise Frost-	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7)				
Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)     Inundation Visible on Aei     Sparsely Vegetated Con     Field Observations:     Surface Water Present?     Water Table Present?     Saturation Present?	rial Imagery (E cave Surface Yes Yes Yes	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp (B8)     Other (Exp     No Depth (inc     No Depth (inc     No Depth (inc	hizospher of Reduced n Reductio Stressed lain in Rei ches): ches): ches):	of (C1) es along d Iron (C4 on in Tille Plants (D marks)	Living Rod 4) d Soils (Cf 1) (LRR A	Satura ots (C3) Geom Shallo 6) FAC-N (A) Raise Frost-	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7)				
Algal Mat or Crust (B4)     Algal Mat or Crust (B4)     Iron Deposits (B5)     Surface Soil Cracks (B6)     Inundation Visible on Aei     Sparsely Vegetated Com     Field Observations:     Surface Water Present?     Water Table Present?     Saturation Present?     Gaturation Present?     Inundation Present?	rial Imagery (E cave Surface Yes Yes Yes Yes	Oxidized R     Presence o     Recent Irou     Stunted or     37) Other (Exp (B8)      No Depth (inc     no	hizospher of Reduced n Reductio Stressed lain in Ref ches): ches): ches):	d Iron (C4) es along d Iron (C4 on in Tiller Plants (D marks) <b>7</b>	Living Rod b) d Soils (Cf 1) (LRR A (LRR A wet) pections)	Satura ots (C3) Geom Shallo 6) FAC-N N) Raise Frost-  Iand Hydrology Pro	esent? Yes No				
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Surface Soil Cracks (B6) Inundation Visible on Aet Sparsely Vegetated Com Field Observations: Surface Water Present? Water Table Present? Vater Table Present? (includes capillary fringe) Describe Recorded Data (street)	rial Imagery (E cave Surface Yes Yes Yes aam gauge, m	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Stunted or     Other (Exp (B8)     Other (Exp     Depth (inc     No Depth (inc     No Depth (inc     no Depth (inc     onitoring well, aerial p	hizospher of Reduced n Reductio Stressed lain in Rei ches): ches): whotos, pre	d Iron (C4) es along d Iron (C4 n in Tiller Plants (D marks) 	Living Roo 4) d Soils (Co 1) (LRR A — — — — — — — — — — — — —	Satura ots (C3) Geom Shallo 6) FAC-N N) Raiser Frost- land Hydrology Pro- if available:	esent? Yes No				
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Surface Soil Cracks (B6) Inundation Visible on Aet Sparsely Vegetated Com Field Observations: Surface Water Present? Water Table Present? Water Table Present? Saturation Present? Describe Recorded Data (stree	rial Imagery (E cave Surface Yes Yes eam gauge, m	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp (B8)      No Depth (inc     No Depth (inc     no Depth (inc     onitoring well, aerial p	hizospher of Reducer n Reductio Stressed lain in Red shes): shes): hotos, pre	es along d Iron (C4 on in Tille Plants (D marks) <b>7</b> <sup>1</sup> evious ins	Living Roo 4) d Soils (Cf 1) (LRR A (LRR A weth pections),	Satura ots (C3) Geom Shallo 6) FAC-N N) Raise Frost- land Hydrology Pro	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) ( <b>LRR A</b> ) Heave Hummocks (D7)				
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aer Sparsely Vegetated Com Field Observations: Surface Water Present? Water Table Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (strue Remarks: Next daw	rial Imagery (E cave Surface Yes Yes Yes eam gauge, m	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp (B8)     Other (Exp     Depth (inc     No Depth (inc     No Depth (inc     onitoring well, aerial p	hizospher of Reducer of Reduction Stressed lain in Red ches): ches): ches): ohotos, pre	of (C1) es along d Iron (C4 on in Tille Plants (D marks) <b>7</b> <sup>1</sup> evious ins	Living Rod 4) d Soils (Cd 1) (LRR A 	Satura ots (C3) Geom Shallo 6) FAC-P () Raise Frost- land Hydrology Pro	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7)				
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aer Sparsely Vegetated Con Field Observations: Surface Water Present? Water Table Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (strophysic) Remarks: Next day dya Dit be two	rial Imagery (E cave Surface Yes Yes Yes eam gauge, m	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp     Mo Depth (inc     No	hizospher of Reducer of Reduction Stressed lain in Red ches): ches): ches): chotos, pre chotos, pre chotos, pre	n (C1) es along d Iron (C4 on in Tille Plants (D marks) 7' evious ins	Living Rod a Soils (Cd 1) (LRR A 	Satura Geom Shallo 6) FAC-P () Raise Frost-  tand Hydrology Pro- if available: (DD-eY 40 <sup>(1)</sup>	Alson Water Hable (GZ) tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) leutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) esent? Yes No X				
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aet Sparsely Vegetated Com Field Observations: Surface Water Present? Water Table Present? Water Table Present? Saturation Present? Cincludes capillary fringe) Describe Recorded Data (strue Remarks: Next day dua pit betwee Act day in i	rial Imagery (E cave Surface Yes Yes Yes eam gauge, m	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp (B8)      No Depth (inc     No Depth (inc     No Depth (inc     nonitoring well, aerial p      Lble af      Z_ No, dept	hizospher of Reducer n Reductio Stressed lain in Red ches): ches): ches): ohotos, pre       	es along d Iron (C4 on in Tiller Plants (D marks)	Living Rod b) d Soils (Cf 1) (LRR A 	Satura ots (C3) Geom Shallo 6) FAC-N N) Raise Frost- land Hydrology Pro . if available:	tion Visible on Aerial Imagery (C9) orphic Position (D2) w Aquitard (D3) Heutral Test (D5) d Ant Mounds (D6) (LRR A) Heave Hummocks (D7) esent? Yes No X				
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aet Sparsely Vegetated Com Field Observations: Surface Water Present? Water Table Present? Water Table Present? Water Table Present? Saturation Present? Describe Recorded Data (strophysic) Describe Recorded Data (strophysic) Remarks: Next day dug pit betwee Act day in i	rial Imagery (E cave Surface Yes Yes Yes eam gauge, m	Oxidized R     Presence o     Recent Iron     Stunted or     Stunted or     Other (Exp (B8)      No Depth (inc     No Depth (inc     No Depth (inc     nonitoring well, aerial p      tble af      Z_ NO, dept	hizospher of Reducer n Reductio Stressed lain in Red ches): ches): hotos, pre 2,7 ( c_2,7	es along d Iron (C4 on in Tiller Plants (D marks) -7'	Living Rod b) d Soils (Cf 1) (LRR A 	Satura ots (C3) Geom Shallo 6) FAC-N ) Raise Frost- land Hydrology Pro if available:	Heave Hummocks (D7)				

US Army Corps of Engineers

### Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DATA FORM – W	estern Mountains, Valleys, and Coast Region
Project/Site: Avalon Inn City/Co	unty: Fort Bragg Mendo Sampling Date: OZMARI3
Applicant/Owner: Bob Hunt	State: CA Sampling Point: 3
Investigator(s): A32 B Spade Section	, Township, Range: 531 T19N R17W
Landform (hillslope, terrace, etc.): 564 e Local r	elief (concave, convex, none): <u>COACAVE</u> Slope (%): <u>C</u>
Subregion (LRR): A Lat: <u>3902</u>	7.808 Long: 123 °4 8-393 Datum: NAD83
soil Map Unit Name: Tropaquept3, O to 15 percent sl	NWI classification: NOAC
Are climatic / hydrologic conditions on the site typical for this time of year? Ye	s X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed	ed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problemat	c? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sam	ling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland?	ACE res <u>CCC</u> No
Remarks: Sample point in	a swale dominated	by OBL wetlan	d veg

\_\_\_\_\_

### VEGETATION - Use scientific names of plants.

20/2	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species? Status	Number of Dominant Species 7
1			That Are OBL, FACW, or FAC: (A)
2.			T-to 1 Mumbers of Demission
3			Species Across All Strata: 3 (B)
1			
+,,			Percent of Dominant Species
Sanling/Shrub Stratum (Plot size: 20'r)		= Total Cover	That Are OBL, FACW, or FAC: (A/B)
	e		Prevalence Index worksheet:
			Total % Cover of: Multiply by:
2			OBL species x 1 =
3			FACW species x 2 =
4			FAC species x3=
5			
101-		= Total Cover	
Herb Stratum (Plot size: 10 )		146 601	UPL species x 5 =
1. Geantle Sar, Mento 5a	50	YES OBL	Column Totals: (A) (B)
2. NO EUS ANA TUS	30	Yes FAC	Prevalence Index = B/A =
3 Paphanis Savivus	2	NO NI(UPL)	Hydrophytic Vegetation Indicators:
4 RUNES CHISDES	2	no FAC	× 1 Banid Test for Hydrophytic Vegetation
5 POLEANIA 2058112		no ORL	
a Gradient Cham) conife		TACL	
0. <u>27 CVIG 11550/15</u>		NO TACW	3 - Prevalence Index is ≤3.0
7. Foren normand		no H	4 - Morphological Adaptations' (Provide supporting
8. Chametion angustitatium	r	NO NI	data in Remarks or on a separate sheet)
9			5 - Wetland Non-Vascular Plants
10			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	89	= Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)			
1. Evous at maigeus	5	tes freu	Hydrophytic
2			Vegetation
E	5	- Total Cover	Present? Yes No
% Bare Ground in Herb Stratum		_ iotal cover	
Remarks:		· · ·	

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Western Mountains, Valleys, and Coast - Version 2.0

rofile Descri						the sheers	e of indicators \			
Depth _	iption: (Describe 1	to the dep	in needed to docum	ent the indicato	r or contirm	the apsenc	e or mulcators.)			
III CHEST	Color (moist)	%	Color (moist)	K Type <sup>1</sup>	Loc <sup>2</sup>	Texture	F	Remarks		_
()-6	7.5YR 2.5/1	100				LOUM	Undecomp	osed	fibers	ore
<u></u>	NKR2/1	98	CY12 5/2	2 C	01	Loam	Many	Fine	coots	
0-21	AVIZ 6/2	001	10 20 510			CAND	- <u> </u>			_
21+ 10	01- 012	00/	IU IKSI	_20		MND				-
<del>-</del>				<u> </u>						-
										-
1										_
							_			_
	5									_
Type: C=Cor	ncentration D=Dep	letion RM	=Reduced Matrix, CS	=Covered or Coa	ated Sand Gr	ains. <sup>2</sup> L	ocation: PL=Pore	Lining, N	=Matrix.	
lydric Soil In	ndicators: (Applic	able to all	LRRs, unless other	wise noted.)		Indica	tors for Problem	atic Hydr	ic Soils <sup>3</sup> :	
Histosol (/	(A1)		Sandy Redox (S	5)		20	cm Muck (A10)			
Histic Epi	ipedon (A2)		Stripped Matrix	(S6)		Re	ed Parent Materia	I (TF2)	540)	
Black Hist	tic (A3)		Loamy Mucky N	lineral (F1) (exce	ept MLRA 1)	Ve	bor (Explain in R	Surrace ( r emarks)	F12)	
Hydrogen	n Sulfide (A4)	ο (Δ11)	Loamy Gleyed I	viatrix (F2) (F3)		0		cinaria)		
Depleted Thick Dar	rk Surface (A12)	e (ATT)	X Redox Dark Su	face (F6)		<sup>3</sup> Indica	tors of hydrophyt	ic vegetati	on and	
Sandy Mu	ucky Mineral (S1)		Depleted Dark	Surface (F7)		wet	and hydrology m	ust be pre	sent,	
Sandy Gl	leyed Matrix (S4)		Redox Depress	ions (F8)		uni	ess disturbed or p	oroblematio	C	
Restrictive La	ayer (if present):									
Туре:								$\boldsymbol{X}$		
Depth (incl	hes):					Hydric So	oil Present? Yo	es	NO	
YDROLOG	GY Irology Indicators:			×						
Primary Indica	ators (minimum of c	one require	ed; check all that appl	Y)		Sec	condary Indicators	s (2 or mor	re required)	
Surface V	Water (A1)		Water-Sta	ined Leaves (B9)	(except		Water-Stained L	eaves (B9	) (MLRA 1,	2,
🗹 High Wat	ter Table (A2)		MLRA	1, 2, 4A, and 4B	)		4A, and 4B)			
✓ Saturation	on (A3)		Salt Crust	(B11)			Drainage Pattern	ns (B10)	<b>~</b> ~	
141.1	arks (B1)		Aquatic In	vertebrates (B13)	)	_	Dry-Season Wat	ter lable (	C2)	20)
vvater Ma	t Deposits (B2)	,	Hydrogen	Sulfide Odor (C1	)	_	Saturation VISID	e on Aeria	u imagery (	59)
Sediment							Geomorphic Pos	suon (DZ)		
Sediment Drift Dep	oosits (B3)		Oxidized F	Rhizospheres alo	ng Living Roo	ots (C3)	Challow Aquitar	(D3)		
Vvater Ma Sediment Drift Dep Algal Mat	oosits (B3) It or Crust (B4)		Oxidized F Presence	Rhizospheres alo of Reduced Iron	ng Living Roo (C4) illed Soils (Cf	ots (C3)	Shallow Aquitare	d (D3) st (D5)		
Vvater Ma Sedimen Drift Dep Algal Mat Iron Dep	posits (B3) it or Crust (B4) posits (B5)		Oxidized F Presence Recent Iro	Rhizospheres alo of Reduced Iron on Reduction in T	ng Living Roo (C4) illed Soils (C6 (D1) ( <b>I BR A</b>	ots (C3) 6)	Shallow Aquitare FAC-Neutral Tes Raised Ant Mou	d (D3) st (D5) nds (D6) (	LRR A)	
Vater Ma Sedimen Drift Dep Algal Mat Iron Depo Surface S	oosits (B3) ht or Crust (B4) oosits (B5) Soil Cracks (B6)	Imageny (	Oxidized F Presence Recent Iro Stunted of B7)Other (Ex	Rhizospheres alo of Reduced Iron in Reduction in T Stressed Plants plain in Remarks	ng Living Rod (C4) illed Soils (C6 (D1) ( <b>LRR A</b> )	ots (C3) 6) N)	Shallow Aquitaro FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	<b>LRR A</b> ) D7)	
Vater Ma Sedimen Drift Dep Algal Mat Iron Dep Surface S	oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial	Imagery (	Oxidized F     Presence     Recent Irc     Stunted o  B7) Other (Exp (B8)	Rhizospheres alo of Reduced Iron In Reduction in T Stressed Plants In Remarks)	ng Living Roo (C4) illed Soils (C6 (D1) ( <b>LRR A</b> )	ots (C3) 6) N)	Shallow Aquitare FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	<b>LRR A</b> ) D7)	
Vvater Ma Sedimen Drift Dep Algal Mat Iron Dep Surface S Inundatio Sparsely	posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations:	Imagery ( le Surface	Oxidized F     Presence     Recent Irc     Stunted o  B7) Other (Ex (B8)	Rhizospheres alo of Reduced Iron in Reduction in T r Stressed Plants plain in Remarks)	ng Living Roo (C4) illed Soils (C( (D1) ( <b>LRR A</b> )	ots (C3) 6) N)	Shallow Aquitaro FAC-Neutral Ter Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	LRR A) D7)	
Vater Ma Sedimen Drift Dep Algal Mat Iron Depa Surface S Inundatio Sparsely Field Observ Surface Wate	posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present?	Imagery ( e Surface Yes	Oxidized F     Presence     Recent Irc     Stunted o     Stunted o     Other (Ex     (B8)     Other (in	Rhizospheres alo of Reduced Iron In Reduction in T Stressed Plants plain in Remarks) ches):	ng Living Roo (C4) illed Soils (C( (D1) ( <b>LRR A</b> )	ots (C3) 6) N)	Shallow Aquitaro FAC-Neutral Tex Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	LRR A) D7)	
Vater Ma Sedimen Drift Dep Algal Mat Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water	posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present?	Imagery (  re Surface Yes Yes	Oxidized F     Presence     Recent Irc     Stunted o B7)Other (Ex) (B8) NoDepth (in NoDepth (in	Rhizospheres alo of Reduced Iron In Reduction in T <sup>r</sup> Stressed Plants plain in Remarks) ches):	ng Living Rod (C4) illed Soils (C6 (D1) (LRR A )	6) (I) (I)	Shallow Aquitaro FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	LRR A) D7)	
Vater Ma Sedimen Drift Dep Algal Mat Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Vater Table I Saturation Pr	posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present? Present?	Imagery (  re Surface Yes Yes Yes	Oxidized F     Presence     Recent Irc     Stunted o B7)Other (Ex) (B8)  No Depth (in No Depth (in No Depth (in	Rhizospheres alo of Reduced Iron in Reduction in T ' Stressed Plants blain in Remarks) ches):; ches):	ng Living Rod (C4) illed Soils (C0 (D1) (LRR A )	land Hydrol	Shallow Aquitard FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (1	LRR A) D7)	
Vater Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Vater Table I Saturation Pr (includes cap	posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present? Present? pillary fringe)	Imagery (  re Surface Yes Yes Yes	Cividized F Presence Recent Irc Stunted of B7) Other (Ex) (B8) Depth (in No Depth (in No Depth (in	Rhizospheres alo of Reduced Iron In Reduction in T ' Stressed Plants olain in Remarks) ches): ches):	ng Living Rod (C4) illed Soils (C0 (D1) (LRR A ) 	(C3) 6) N) land Hydrole	Shallow Aquitard FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	LRR A) D7) No	
Vater Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Vater Table I Saturation Pr (includes.cap Describe Rec	bosits (B3) at or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present? Present? Dillary fringe) corded Data (stream	Imagery () re Surface res res res n gauge, r	Cxidized F Presence Recent Irc Stunted of B7)Other (Ex) (B8) No Depth (in No Depth (in No Depth (in nonitoring well, aerial	Rhizospheres alo of Reduced Iron In Reduction in T Stressed Plants olain in Remarks) ches): ches): photos, previous	ng Living Rod (C4) illed Soils (C0 (D1) (LRR A ) Wet	land Hydrold	Shallow Aquitard FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	LRR A) D7) No	
Vater Ma Sedimen Drift Dep Algal Mai Iron Depa Surface S Inundatio Sparsely Field Observ Surface Water Water Table I Saturation Pr (includes.cap Describe Rec	posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present? Present? present? pillary fringe) corded Data (strean	Imagery () re Surface Yes Yes Yes n gauge, n	Oxidized F     Oxidized F     Presence     Recent Irc     Stunted of B7) Other (Ex) (B8)      No / Depth (in     No Depth (in     No Depth (in     nonitoring well, aerial	Rhizospheres alo of Reduced Iron In Reduction in T Stressed Plants plain in Remarks) ches): ches): photos, previous	ng Living Rod (C4) illed Soils (C0 (D1) (LRR A ) 	land Hydrol	Shallow Aquitaro FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (I	LRR A) D7) No	
Vater Ma Sedimen Drift Dep Algal Mai Iron Depa Surface S Inundatio Sparsely Field Observ Surface Water Water Table I Saturation Pr Gincludes cap Describe Reco	bosits (B3) ti or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present? Present? Present? billary fringe) corded Data (stream Wobler foble	Imagery ( re Surface Yes <u>Y</u> Yes <u>Y</u> n gauge, n	Oxidized F     Presence     Recent Irc     Stunted o B7) Other (Ex) (B8)      No Depth (in     No Depth (in     nonitoring well, aerial     7 / Ackes	Rhizospheres alo of Reduced Iron In Reduction in T Stressed Plants balain in Remarks) ches): ches): photos, previous	Ing Living Rod (C4) (D1) (LRR A) (D1) (LRR A) (D1) (LRR A) (D1) (LRR A) (D1) (LRR A) (D1) (LRR A)	land Hydrol , if available:	Shallow Aquitaro FAC-Neutral Tex Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (l	LRR A) D7) No	
Vater Ma Sedimen Drift Dep Algal Mar Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Saturation Pr (includes.cap Describe Rec Remarks:	bosits (B3) ti or Crust (B4) bosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present? Present? Present? billary fringe) corded Data (stream Mod Fer Fable	Imagery (I re Surface Yes <u>V</u> Yes <u>V</u> n gauge, n	Oxidized FPresenceRecent IrcStunted oi B7)Other (Exi (B8)NoDepth (inNoDepth (inNoDepth (inNoDepth (inNoDepth (inNoDepth (inNoDepth (inNoDepth (inNoNoNoNO	Rhizospheres alo of Reduced Iron In Reduction in T Stressed Plants blain in Remarks) ches): ches): photos, previous	Ing Living Rod (C4) (D1) (LRR A ) (D1) (LRR A ) (D1) (LRR A ) (D1) (LRR A ) (D1) (LRR A ) (D1) (LRR A )	land Hydrold	Shallow Aquitaro FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (f	LRR A) D7) No	
Water Ma Sedimen Drift Dep Algal Mar Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Saturation Pr Includes.cap Describe Rec	posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations: er Present? Present? present? pillary fringe) corded Data (stream MB fer fabl	Imagery (I re Surface Yes <u>V</u> Yes <u>V</u> n gauge, n	Cxidized F Presence Recent Irc Stunted of B7)Other (Ex) (B8) No Depth (in No Depth (in No Depth (in nonitoring well, aerial 7 / Ache5	Rhizospheres alo of Reduced Iron In Reduction in T Stressed Plants blain in Remarks) ches): ches): photos, previous be (0),	Ing Living Rod (C4) (D1) (LRR A ) Wet inspections),	land Hydrold	Shallow Aquitaro FAC-Neutral Tes Raised Ant Mou Frost-Heave Hu	d (D3) st (D5) nds (D6) ( mmocks (I	LRR A) D7) No	

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

Avalon Inn APN 069-241-27 & 069-241-04 Scoping, Botanical, Wildlife Surveys & Wetland Delineation

WETLAND DETERMINATION DATA FORM – Western Moun	tains, Valleys, and Coast Region	SOIL		Sampling Point:
Bring 1880: AVALON IND CITY COUNTY FORT Br	995 Mendaci Msampling Date: OZMAR 13	Profile Description: (Describe to the depth needed to d	socument the indicator or confirm the	e absence of indicators.)
And the Rep Aluat	State: CA Sampling Point: 4 yeub	Depth Matrix	Redox Features	Taxtura
Applicantowner Dolb HVH	531 T/9N RI7W	(inches) Color (moist) % Color (moist)		name Side (-Co \$5 (mats)
Investigator(s). <u>F138 D JP 30 Section</u> Section, rownamp, runn	nover none): NOAP Slope (%): 0.5	C-2 10 KB311 95 10XD 6/		11110 01 177207 1
Landrorm (nillislope, terrace, etc.).	Long: 123° 48.389 Datum: NAD83	0-0 10 11 5/1 15 10YR 6/	<u>5</u> <u>5</u> <u>6</u> <u>7</u>	
Subregion (LKK): The may cots 0-15% 5/0005	NVM classification: NOAP	8-12 10115 ELL 60 10116/		
Soil Map Unit Name:	//f po_explain in Remarks )			
Are climatic / hydrologic conditions on the site typical for this time of year? Tes NO	lormal Circumstances" present? Yes X No	12- 1041C 013 50 1041C SI		Martin Shot
Are Vegetation, Soil, or Hydrology significantly disturbed? Are in	volma circumstances presenter rece <u>r</u>			S 23 incher
Are Vegetation, Soil, or Hydrology naturally problematic? (If nee	eded, explain any answera in remaine.			3-4 inch diameter
SUMMARY OF FINDINGS – Attach site map showing sampling point lo	cations, transects, important features, etc.	IT	riv CS-Covered or Costed Sand Grain	$^{2}$ ocation: Pl=Pore Lining, M=Matrix, $\Delta PPT \sigma \times$
Hydrophytic Vegetation Present? Yes No X	A	Hydric Soil Indicators: (Applicable to all LRRs, unless	otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> : 1 in Ch
Hydric Soil Present? Yes No Yes Within a Wetland	d? Yes No X	Histosol (A1) Sandy Re	:dox (S5)	_ 2 cm Muck (A10) Grave,
Wetland Hydrology Present? Yes No		Histic Epipedon (A2) Stripped N	Matrix (S6)	Red Parent Material (TF2) Orto p Pipe
Remarks. Drytear Dark grey plastic pipe tound E	2 Z3 deep =/ Moved	Black Histic (A3) Loamy ML	JCKy Mineral (F1) (except MLRA 1) leved Matrix (F2)	Other (Explain in Remarks)
pit over =7 see pit 4B	,	Depleted Below Dark Surface (A11) Depleted I	Matrix (F3)	
VEGETATION – Use scientific names of plants.		Thick Dark Surface (A12) Redox Da	Irk Surface (F6)	°Indicators of hydrophytic vegetation and
Absolute Dominant Indicator	Dominance Test worksheet:	Sandy Mucky Mineral (S1) Depleted   Sandy Gleved Matrix (S4) Redox De	park surface (F7)	unless disturbed or problematic.
Tree Stratum (Plot size: <u>50 Y</u> ) <u>% Cover</u> Species? Status	Number of Dominant Species	Restrictive Layer (if present):	· · · · · · · · · · · · · · · · · · ·	
1. <u>None</u>	That are OBL, FACW, of FAC.	Туре:		
2	Total Number of Dominant 3 (B)	Depth (inches):		Hydric Soil Present? Yes No
3		Remarks:	mixture of black/	light brownishing og / yellowsin
= Total Cover	That Are OBL, FACW, or FAC: 336 (A/B)	brown poliches @ 73" Leep	a dark gray plastic 1	pipe 13-4" didnitter was
Sapling/Shrub Stratum (Plot size: 2.0 r)	Prevalence Index worksheet:	found moved soil of a	ver and dua again	SP4B
1. NOR	Total % Cover of: Multiply by:		<u> </u>	
2	OBL species x 1 =	HYDROLOGY		
3	FACW species x 2 =	Wetland Hydrology Indicators:	at anniv)	Secondary Indicators (2 or more required)
5.	FAC species X 3 =	Surface Water (A1) Wate	er-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
= Total Cover	LIPI species X 5 =	High Water Table (A2)	ILRA 1, 2, 4A, and 4B)	4A, and 4B)
Herb Stratum (Plot size: 10 T)	Cólumn Totals: (A) (B)	Saturation (A3) Satt	Crust (B11)	Drainage Patterns (B10)
1. HOCUS Ignatus	Developed Index in B(A =	Water Marks (B1) Aqua	atic Invertebrates (B13)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
2 Francia Pirubra 10 No FAC	Hydrophytic Vegetation Indicators:	Sediment Deposits (B2) Hydr	rogen Suilide Odor (C1) dized Rhizospheres along Living Roots	(C3) Geomorphic Position (D2).
4 RUMEX ace 3   FAC	1 - Rapid Test for Hydrophytic Vegetation	Algal Mat or Crust (B4) Pres	sence of Reduced Iron (C4)	Shallow Aquitard (D3)
5 Plantago lance 5 FRU	2 - Dominance Test is >50%	iron Deposits (B5) Rece	ent Iron Reduction in Tilled Soils (C6)	FAC-Neutral Test (D5)
6 Circium vulgare 2 V FACU	3 - Prevalence Index is ≤3.0 <sup>1</sup>	Surface Soil Cracks (B6) Stun	ited or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
7	4 - Morphological Adaptations <sup>1</sup> (Provide supporting	Inundation Visible on Aerial Imagery (B7) Other	er (Explain in Remarks)	Frost-Heave Hummocks (D7)
8	5 - Wettand Non-Vascular Plants <sup>1</sup>	Field Observations:		
9	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	Surface Water Present? Yes No Dep	pth (inches):	
11	<sup>1</sup> Indicators of hydric soil and wetland hydrology must	Water Table Present? Yes No Dep	pth (inches):	
80 = Total Cover	be present, unless disturbed or problematic.	Saturation Present? Yes No Dep	pth (inches): Wetland	d Hydrology Present? Yes No
Woody Vine Stratum (Plot size: 10)		Describe Recorded Data (stream gauge, monitoring well, a	aerial photos, previous inspections), if a	available:
1. KUDUG BEAMMAIGOUS 23 100 TACU	Hydrophytic Vegetation			
2	Present? Yes No A	Remarks:		
% Bare Ground in Herb Stratum				
Remarks: dominiant plants chierging through thatch		3		
t				
US Army Corps of Engineers	Western Mountains, Valleys, and Coast - Version 2.0	US Army Corps of Engineers	v	Vestern Mountains, Valleys, and Coast – Version 2.0
Avalon Inn APN 069-241-27 & 069-241-04				
Scoping Rotanical Wildlife Surveys & Watland Delination		61		Snade Natural Resources Consulting
scoping, Botanical, whunte Surveys & wenand Defineation		01		Space Matural Resources Consulting

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

Project/site: Avalon Inn	City/County: Fort Bracy, Mrn docing sampling Date: 02MAR13
Applicant/Owner: HUNT	State:Sampling Point: 48
Investigator(s): AS2 B Spade	Section, Township, Range: <u>S31 117N K11W</u>
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Nonc Slope (%): 0.4
Subregion (LRR): ALat:	39 2.7.80 Long: 123 48.38 Datum: NAU 23
Soil Map Unit Name: Tropaquepts 0-15% slop	NWi classification: None
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes <u>X</u> 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 $\underline{N}_{\partial}$ , Soil $\underline{N}_{\partial}$ , or Hydrology $\underline{N}_{O}$ naturally pr	oblematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing	g sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>weak</u> No Yes No _ <u>×</u> Yes No _ <u>×</u>	Is the Sampled Area within a Wetland?	Yes CCC No ACE
Remarks: Paired with p	or FAC grass N	alc. Veg Met	but is a weak
Indicator based		Lot Funchioning as	a wetland

VEGETATION – Use scientific names of plants.

0.1	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 1	% Cover Species? Status	Number of Dominant Species
1 None		That Are OBL, FACW, or FAC: (A)
2		The latent of Deminant 2
2.		Species Across All Strata: (B)
3		Species Across All Strata.
4		Percent of Dominant Species [[9]
2017	= Total Cover	That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:)		Prevalence Index worksheet:
1. None	· · · · · · · · · · · · · · · · · · ·	Total % Cover of: Multiply by:
2		$\frac{1}{2}$
3 .		OBL species
J		FACW species $U = x^2 = U$
4		FAC species $64 \times 3 = 192$
5		FACU species $33 \times 4 = 132$
101	= Total Cover	LIPL species x 5 =
Herb Stratum (Plot size:)	an i Fic	01 E Specielo 97 (A) 324 (B)
1. Holeus gratus	30 Yes FAL	
2 Festuca Lubra	30 Yes FAC	Prevalence index = $B/A = 3.34$
2 Pasizania Salturas	20 Yes FACU	Hydrophytic Vegetation Indicators:
A A A A A A A A A A A A A A A A A A A	In NO FACU	1 - Rapid Test for Hydrophytic Vegetation
4. NAME CAPTOR OUT	H I FAC	
5 KUMER ULCTODELIA		2 - Dominance Test is -50 %
6 tragiania Childensis		3 - Prevalence Index is ≤3.0
7. Hyrochaerisridicara	FACU	4 - Morphological Adaptations' (Provide supporting
8		data in Remarks or on a separate sheet)
0		5 - Wetland Non-Vascular Plants
9		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11		be present, unless disturbed or problematic.
In'r	= Total Cover	
Woody Vine Stratum (Plot size: 10 )		
1. None		Hydrophytic
2		Vegetation
£	) = Total Cover	Present? Yes No
% Bare Ground in Herb Stratum		
Remarks: 1 1 1 1		
Veg dom Mated by INV	asive and lawn	grass species with FAC
Static = TATO + q . In.	'Adres for	
. Juins nour is Flore	signed to	

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Avalon Inn APN 069-241-27 & 069-241-04 Scoping, Botanical, Wildlife Surveys & Wetland Delineation

DIL					Sampling Point:	48
ofile Description: (Describe to th	e depth needed to docum	ent the indicator	or confirm	n the absence of	indicators.)	
Depth Matrix	Redox	Features		-	Demortro	
inches) Color (moist)	<u>6 Color (moist)</u>	<u>% Type</u>	Loc-		Remarks	
0-8 104K31 10	7			LOAM	, , , ,	tate!
3-14 IOYRA/1	15 10YR4/3	<u>25 C</u>	M	Loamy sind	Colors o'ma	a 10 Torsi
14-20 10 VR54 9	5 10YR3/1	5 C	M	Lozpy Joro		
21-77+ 10VR5/6 10				Sandela		
CT 221 JO F 10 10					ing a star at the second star at the second star	
	RM=Reduced Matrix CS	=Covered or Coate	d Sand G	rains. <sup>2</sup> Locat	ion: PL=Pore Lining, N	I=Matrix.
hydric Soil Indicators: (Applicable	to all LRRs, unless other	wise noted.)		Indicators	for Problematic Hydr	ic Soils <sup>3</sup> :
Histosol (A1)	Sandy Redox (S	(5)	-	2 cm M	Auck (A10)	
Histic Epipedon (A2)	Stripped Matrix (	(S6)	•	Red P	arent Material (TF2)	
Black Histic (A3)	Loamy Mucky M	lineral (F1) (excep	t MLRA 1)	Very S	hallow Dark Surface (7	F12)
Hydrogen Sulfide (A4)	Loamy Gleyed M	Aatrix (F2)		Other	(Explain in Remarks)	
Depleted Below Dark Surface (A1	1) Depleted Matrix	(F3)		-		
Thick Dark Surface (A12)	Redox Dark Sur	face (F6)		<sup>3</sup> Indicators	of hydrophytic vegetat	ion and
Sandy Mucky Mineral (S1)	Depleted Dark S	Surface (F7)		wetland	hydrology must be pre	sent,
Sandy Gleyed Matrix (S4)	Redox Depressi	ions (F8)		unless	disturbed or problemati	с
Restrictive Layer (if present):						
Type: Sonth clay						
Depth (inches):			Con	Hydric Soil P	resent? Yes	No
wetland Hydrology Indicators:	anuizad: abaak all that and	.0		Second	ary Indicators (2 or mo	re required)
Primary indicators (minimum of one n	squired, crieck an mat apply	nod Loguco (BO) (r	vcent	10000110	ter-Stained Leaves (RC	) (MLRA 1. 2.
Surface Water (A1)	vvater-Stal	neu Leaves (B9) (6	evcehr		4A and AR)	,
High Water Table (A2)	MLKA	1, 2, 4A, and 4B)		Dra	inage Patterns (B10)	
Saturation (A3)	Sait Crust	(B11)		Dra	Season Water Table (	C(2)
Water Marks (B1)	Aquatic Inv	Sulfido Odor (01)		Diy	uration Visible on Aeris	l Imagery (C9)
Sediment Deposits (B2)	Hydrogen	Sunde Odor (C1)	Livina Do	Oat	amorphic Position (D2)	
Unit Deposits (B3)	Uxidized R	mzospheres along		CLA (CO) Ge	allow Aquitard (D3)	
Algai Mat or Crust (B4)	Presence o	n Reduction in Till	d Soile (C	(6) FA	C-Neutral Test (D5)	
Iron Deposits (B5)	Recent Irol	Chroned Blants (		A)Rai	sed Ant Mounds (D6) (	
Surface Soil Cracks (B6)	Stunted or	Stressed Plants (L		Α)	st Heave Hummocks (	
Inundation Visible on Aerial Imag	(Exp	bain in Remarks)			St-fleave flammoono (	5.)
Sparsely vegetated Concave Su	nace (88)					
Field Observations:	No X Death for	+>>>27				
Surface Water Present? Yes_		ches): 722				
Water Table Present? Yes_	No <u>^</u> Depth (inc	cnes): 722		u	Descent? Ve-	No X
Saturation Present? Yes_	No X Depth (ind	ches):	Wet	liand Hydrology	Present? Yes	NO
(Includes capillary fringe) Describe Recorded Data (stream gai	uge, monitoring well, aerial r	photos, previous in	spections)	, if available:		
Describe reported bata (erodin gat				-		
Remarks:	1 1 1	[	1	1		· · · · · · · · · · · ·
NO WETLAND	nydrology India	cators o	bsen	red		
		-				

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### WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Avalon Inn	Children Fart	Brass /Mendo sometime party 17MAR13
Andient Comment Hugh		sampling Date: 17144.00
Applicant/Owner: 1907		State: $CA$ Sampling Point: $JT J$
Investigator(s): 1452 D 52306	Section, Township, Ra	nge: <u>501 1 1 10 1517 VU</u>
Landform (hillslope, terrace, etc.):	Local relief (concave,	convex, none): Slight (UAC BVE Slope (%): 0.0
Subregion (LRR):	Lat: 39° 27.837	Long: 123° 40:36 Datum: NAD 83
Soil Map Unit Name: Tropaquepts 0-15%	Slopes	NWI classification:
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes $\underline{\times}$ No _	(If no, explain in Remarks.)
Are Vegetation No_, Soil No_, or Hydrology No_s	significantly disturbed? Are '	'Normal Circumstances" present? Yes 🔀 No
Are Vegetation No , Soil No , or Hydrology No n	naturally problematic? (If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing sampling point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes N	o	-
Hydric Soil Present? Yes N	o Is the Sampled	Area
Wetland Hydrology Present? Yes N	o within a Wetlan	hd? Yes $\underline{\alpha}$ No $\underline{\alpha}$
Remarks: Point taken in a patch	of salt rush =	=7 differs from the surrounding
Veg		7
VEGETATION – Use scientific names of plan	ts.	
20/-	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20 (	% Cover Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3		Species Across All Strata: (B)
4	0 = Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
Sapling/Shrub Stratum (Plot size: 20 F)		Prevalence Index worksheet:
1. None		Total % Cover of: Multiply by:
2		OBL species x 1 =
3	<u>.</u>	FACW species x 2 =
4		FAC species x 3 =
5		FACU species x 4 =
Herb Stratum (Plot size	= Total Cover	UPL species x 5 =
1. Juncus lescurii	95 Yes FACW	Column Totals: (A) (B)
2. Holcus langtus	5 NO FAC	Prevalence Index = B/A =
3		Hydrophytic Vegetation Indicators:
4		1 - Rapid Test for Hydrophytic Vegetation
5		$\times$ 2 - Dominance Test is >50%
6		3 - Prevalence Index is ≤3.0 <sup>1</sup>
7		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8		5 - Wetland Non-Vascular Plants <sup>1</sup>
10.		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	= Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 10 1		
1. None		Hydrophytic
2		Present? Yes No
% Bare Ground in Herb Stratum	U = Total Cover	
Remarks:		L
STITIUSHIS 2 CLONAL	specres	

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### SOIL

Depth	Matrix		Redo	x Feature	s					
inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
2-6"	104R-3/1	100					Sanda loan	١		
6 - 1	101R-4/3	90	7.5YR5/8	10	C	M	loamy san	9		
N. 14	751 6/4	100					Logina Con	1		
11-17	251 017		LOVESTO				incrut sure	<u> </u>	1 lant	
7-267	25969	65	BK-4401				Sandyclay	di tince	boundan	ら
ype: C=Co	ncentration, D=Dep	etion, RM	=Reduced Matrix, C	S=Covered	d or Coate	d Sand G	irains. <sup>2</sup> Lo	cation: PL	=Pore Lining, I	M=Matrix.
ydric Soll li	ndicators: (Applic	able to all	LKKS, UNIESS OTHE	rwise not	ea.)		noicate			
_ Histosol (	(A1) inadan (A2)		Sandy Redox (	S5)			2 CI	1 MUCK (A	aterial (TF2)	
_ HISUC EP	tic (A3)		Loamy Mucky	Mineral (F	1) (except	MLRA 1	) Ver	v Shallow	Dark Surface (	TF12)
Hydroger	n Sulfide (A4)		Loamy Gleved	Matrix (F2	) (except	The training of the	Oth	er (Explain	in Remarks)	
Depleted	Below Dark Surfac	æ (A11)	Depleted Matri	x (F3)					,	
_ Thick Da	rk Surface (A12)		Redox Dark Su	urface (F6)			<sup>3</sup> Indicate	ors of hydr	ophytic vegeta	tion and
_ Sandy M	ucky Mineral (S1)		Depleted Dark	Surface (F	7)		wetla	and hydrole	gy must be pr	esent,
_ Sandy G	leyed Matrix (S4)		Redox Depres	sions (F8)			unles	ss disturbe	d or problemat	IC.
Restrictive L	ayer (if present):	lat.								
Type: <u>Hr</u>	grer clay (ch	I TEM			•				Nr	
Depth (inc	hes):14_''						Hydric Soi	Present?	Yes	NO
1	no nyanic	501	IN ALLA VOL	1 50	Adv S	011 /	199 00	V TOS	IN TAV	0
Sal Ori	trush pa ginal con	tch struc	z perhaps Fion?	2 9 9	epres	5101	Fitted	itte	time	,÷
Sal Ohi YDROLOG	trush pa ginal con gy	tch struc	z perhaps Filon?	5 24	epres	5101	Fitted	tte	time	5 <del>1</del>
Sa ( Ohi YDROLOG	+ rvsk pa ginal con GY trology Indicators	tch struc	z perhape Filon?	2 3 9	epres	5101	Fitted	tte	time	5 <del>1</del>
Sa ( Ohi YDROLOG Vetland Hyd Primary Indic	Frvsk pa ginal con GY trology Indicators: ators (minimum of c	tzh - struc : one require	7 perhapé Fidn? d: check all that app	w 2 2 4	epres	5101	Fitted a	htte	ators (2 or mo	re required)
Sa ( Ohi YDROLOO Vetland Hyd Yrimary Indic	Frv5h Pa ginal con GY Grology Indicators: ators (minimum of o Water (A1)	tch - strvc : : :	7 perhape Fidn? d; check all that app Water-Sta	5 2 d	epres (B9) (e	xcept	Fitted a	ndary India	ators (2 or mo	<u>re required)</u> )) (MLRA 1, 2,
Sa ( Ohr YDROLOO Primary Indic Surface V High Wa	Frv5h Pa ginal con GY Irology Indicators: ators (minimum of o Water (A1) ter Table (A2)	tzh - 	d; check all that app Water-Sta MLRA	IV)	epres (B9) (e and <b>4</b> B)	xcept	Seco 	ndary Indi Vater-Stair 4A, and	ators (2 or mo ned Leaves (BS 4B)	re required) (MLRA 1, 2,
Sa ( Ohr YDROLOO Vetland Hyd Yrimary Indic Surface N High Wa Saturatio	Frv5k Pa gina Con GY Irology Indicators: ators (minimum of o Water (A1) ter Table (A2) on (A3)	tzh - strvc : : : :	d; check all that app 	1y) 1y) 1, 2, 4A, i t (B11)	epres es (B9) (e and 4B)	xcept	Seco 	ndary Indi Nater-Stair 4A, and Drainage P	attors (2 or mo ned Leaves (B 4B) atterns (B10)	<u>re required)</u> )) (MLRA 1, 2,
Sa ( Ohi YDROLOO Vetland Hyo Virimary Indic Surface V High Wa Saturatio Water Mi	Frv5k Pa GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1)	tzh - struc : :	d; check all that app d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir	IV) inted Leav 1, 2, 4A, 4 t (B11) invertebrate	epres es (B9) (e and <b>4B)</b> es (B13)	xcept	<u>Seco</u> 	ndary Indi Nater-Stair 4A, and Drainage P Dry-Season	attors (2 or mo ned Leaves (B 4B) atterns (B10) n Water Table	<u>re required)</u> )) (MLRA 1, 2, (C2)
Sa ( Oht YDROLOO Vetland Hyd Trimary Indic Surface V High Wa Saturatio Water Ma Saturatio Sedimen	Frv5k Pa GY GY trology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2)	tzh - Struc : one require	d; check all that app d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger	IV) ined Leav 1, 2, 4A, 6 (B11) ivertebrate Sulfide O	es (B9) (e and 4B) es (B13) dor (C1)	xcept	<u>Seco</u>	ndary Indi Nater-Stain 4A, and Drainage P Dry-Season Saturation	attors (2 or mo ned Leaves (Bs 4B) atterns (B10) n Water Table Visible on Aeria	<u>re required)</u> ) (MLRA 1, 2, (C2) al Imagery (C9)
Sa ( Ohi YDROLOO Vetland Hyd Primary Indic Surface V High Wa Saturatio Water Ma Sedimen Sedimen Drift Dep	Frv5k Pa GY drology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3)	tzh - 3 truc : one require	d; check all that app d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized	IV) ained Leav 1, 2, 4A, a t (B11) nvertebrate a Sulfide O Rhizosphe	es (B9) (e and 4B) es (B13) dor (C1) pres along	xcept		ndary Indi Nater-Stain 4A, and Drainage P Dry-Season Saturation Geomorphi	attors (2 or mo ned Leaves (BS 4B) atterns (B10) n Water Table Visible on Aeria c Position (D2)	re required) ) (MLRA 1, 2, (C2) al Imagery (C9)
Sa ( Ohi YDROLOO Vetland Hyd Surface V High Wa' Saturatio Water Ma Saturatio Sedimen Drift Dep Algal Ma	Frv5k Pa GY GY trology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B2) posits (B3) t or Crust (B4)	tzh - 3 truc : one require	d; check all that app d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence	IV) ained Leav 1, 2, 4A, i t (B11) nvertebrate a Sulfide O Rhizosphe of Reduce	es (B9) (e and 4B) es (B13) dor (C1) ores along ed Iron (C4	xcept		ndary Indi Mater-Stain 4A, and Drainage P Dry-Season Saturation Seomorphi Shallow Ag	Atterns (2 or mo ned Leaves (BS 4B) atterns (B10) n Water Table Visible on Aeria c Position (D2) uitard (D3)	re required) (MLRA 1, 2, (C2) al Imagery (C9)
Sa ( Ohi YDROLOO Vetland Hyd High Wa' Saturatio Water Mi Saturatio Water Mi Sedimen Drift Dep Algal Ma Iron Dep	GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) to Crust (B2) posits (B3) at or Crust (B4) posits (B5)	tzh - struc :	d; check all that app d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	IV) ained Leav 1, 2, 4A, i t (B11) nvertebrate a Sulfide O Rhizosphe of Reduce on Reduce	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille	xcept Living Ro 4) d Soils (C	Second Second	ndary Indi Mater-Stain 4A, and Drainage P Dry-Season Saturation Seaturation Shallow Aq FAC-Neutr	Atterns (2 or moned Leaves (84 4B) atterns (810) n Water Table Visible on Aeria c Position (D2) uitard (D3) al Test (D5)	re required) (MLRA 1, 2, (C2) al Imagery (C9)
Sa ( Ohi <b>/DROLOO</b> /etland Hyo rimary Indic Surface V High Wa Saturatio Water Ma Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface	Frv5k Pa GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6)	tzh - struc	d; check all that app d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted c	IV) ained Leav 1, 2, 4A, i t (B11) nvertebrate of Reduce of Reduce on Reduction r Stressed	es (B9) (e and 4B) es (B13) dor (C1) ores along ed Iron (C4 ion in Tille I Plants (D	xcept Living Ro 4) d Soils (C 1) (LRR /	Second Second	Indary India Mater-Stain 4A, and Drainage P Dry-Season Saturation Seconorphi Shallow Aq FAC-Neutr Raised Ant	Atterns (2 or moned Leaves (84 4B) atterns (810) n Water Table Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6)	re required) ) (MLRA 1, 2, (C2) al Imagery (C9 (LRR A)
Sa ( Ohi YDROLOO Vetland Hyd Irimary Indic Surface V High Wa Saturatio Water Ma Saturatio Water Ma Saturatio Nater Ma Saturatio Saturatio Inundatic Sparsely	Frv5k Pa Sing Con GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) th Deposits (B2) posits (B3) th or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav	Imagery (E	d; check all that app d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co 17) Other (Ex (B8)	IV) ained Leav 1, 2, 4A, i t (B11) nvertebrate of Reduce of Reduce on Reduction r Stressed plain in Re	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	xcept Living Ro 4) d Soils (C 1) (LRR /	Second Second	Indary India Mater-Stain 4A, and Drainage P Dry-Season Saturation Seconorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	Atterns (2 or mo ned Leaves (85 4B) atterns (810) n Water Table Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks (	re required) (MLRA 1, 2, (C2) (C2) (LRR A) D7)
Sa ( Ohi International Surface V High War Saturatio Water Ma Saturatio Water Ma Saturatio Algal Ma Iron Dep Surface S Inundatio Sparsely ield Observ	Frv5k Pa GY GY frology Indicators: ators (minimum of e Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concav vations:	Imagery (E re Surface (	d; check all that app Water-Sta Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted (E) (B8)	IV) ained Leav 1, 2, 4A, i t (B11) nvertebrate of Reduce of Reduce on Reduction r Stressed plain in Re	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	xcept Living Ro 4) d Soils (C 1) (LRR /	Seco Seco	Indary India Mater-Stair 4A, and Drainage P Dry-Season Saturation Seomorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	attors (2 or mo ned Leaves (BS 4B) atterns (B10) n Water Table ( Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks (	(C2) (ILRR A) (C7)
Sal Ohi YDROLOO Vetland Hyd Ymary Indic Surface V High Wa' Saturatio Water Mi Sedimen Drift Dep Algal Ma Iron Dep Surface Surface Surface Water Surface Water	Frv5k Pa GY frology Indicators: ators (minimum of a Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations: er Present?	Imagery (E res	PCF MPE         Child ?         d; check all that app	IV) ained Leav 1, 2, 4A, i t (B11) nvertebrate of Reduce on Reduction r Stressed uplain in Re	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks)	Living Ro 4) d Soils (C 1) (LRR /		ndary India Mater-Stair 4A, and Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	attors (2 or mo ned Leaves (B 4B) atterns (B10) n Water Table ( Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks (	(C2) (LRR A) (C7)
Sa ( Ohi YDROLOO Vetland Hyd Primary Indic Surface V High Wa Saturatio Water Mi Sedimen Orift Dep Algal Ma Iron Dep Surface Surface Surface Water Surface Water Vater Table	Frv5k Pa GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present?	Imagery (E res	PCF MPE         Child ?         d; check all that app	IV) ained Leav 1, 2, 4A, i t (B11) nvertebrate of Reduce on Reduction r Stressed uplain in Reduction r Stressed	es (B9) (e and 4B) es (B13) dor (C1) eres along ed Iron (C4 ion in Tille I Plants (D emarks) 72.6	Living Ro 4) d Soils (C 1) (LRR /		ndary India Mater-Stair 4A, and Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	attors (2 or mo ned Leaves (B 4B) atterns (B10) n Water Table ( Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks (	<u>re required)</u> (MLRA 1, 2, (C2) (LRR A) D7)
Sa ( Primary Indic Primary Indic Primary Indic Surface V High Wa Saturatio Drift Dep Algal Ma Iron Dep Surface V Surface Vate Nater Table Saturation Pri Saturation Pri Saturation Pri	GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations: er Present? Present? illary fringe)	Imagery (E re Surface of Yes Yes	P       P       No       No       No       No       Depth (ii         No       X       Depth (ii	IV) ained Leav 1, 2, 4A, i t (B11) avertebrate of Reduce of Reduce on Reduction r Stressed plain in Re- mches): nches):	es (B9) (e and 4B) es (B13) dor (C1) ores along ed Iron (C4) ion in Tille I Plants (D emarks) $22.6^{''}$	Living Ro 4) d Soils (C 1) (LRR /		Indary Indi Mater-Stain 4A, and Drainage P Dry-Season Saturation Seomorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	cators (2 or mo ned Leaves (B3 4B) atterns (B10) n Water Table Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks ( ? Yes	<u>re required)</u> (MLRA 1, 2, (C2) (C2) (LRR A) D7) No
Sa ( Primary Indic Primary Indic Primary Indic Primary Indic Primary Indic Primary Indic Primary Indic Primary Indic Surface Vater Algal Ma Iron Dep Algal Ma Iron Dep Surface Vater Surface Vater Surface Vater Vater Table Saturation Pri Includes cap Describe Rec	GY frology Indicators: ators (minimum of ( Water (A1) ter Table (A2) on (A3) arks (B1) th Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial Vegetated Concav vations: er Present? Present? Present? pillary fringe) corded Data (stream	Imagery (E sone require re Surface of Yes Yes n gauge, m	Per Mape         Childh ?         d; check all that app	Arrow and a second seco	es (B9) (e and 4B) es (B13) dor (C1) ores along ed Iron (C4) ion in Tille I Plants (D emarks) $26^{\prime\prime}$ $226^{\prime\prime}$ revious ins	Living Ro A) d Soils (C 1) (LRR / wet spections)		Indary Indi Mater-Stain 4A, and Drainage P Dry-Season Saturation Seconorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	Atterns (2 or moned Leaves (BS 4B) atterns (B10) n Water Table Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks ( 	re required) (MLRA 1, 2, (C2) al Imagery (C9 (LRR A) D7) No
Sa ( Ohr YDROLOO Vetland Hyd Primary Indic Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface V Surface Vater Satrace Vater Surface Water Table Saturation Princludes cap Describe Records	GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations: er Present? Present? Present? pillary fringe) corded Data (stream	Imagery (E sone require ione require ve Surface ( Yes Yes res n gauge, m	Per Mape         Childh?         d; check all that app	Arrowski standard and a standard leave Arrowski standard leave Arrows	es (B9) (e and 4B) es (B13) dor (C1) ores along ed Iron (C4) ion in Tille I Plants (D emarks) $26^{\prime\prime}$ revious ins	Living Ro 4) d Soils (C 1) (LRR /		andary Indii Mater-Stain 4A, and Drainage P Dry-Season Saturation Seomorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	Atterns (2 or moned Leaves (BS 4B) atterns (B10) n Water Table visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks ( ? Yes	<u>re required)</u> ) (MLRA 1, 2, (C2) al Imagery (C9 (LRR A) D7) No
Sa ( Ohi YDROLOO Netland Hyd Primary Indic Surface V High Wa Saturatio Water Mi Sedimen Orift Dep Algal Ma Iron Dep Surface V Surface S Sparsely Field Observ Surface Water Nater Table Saturation Pr includes cap Describe Red Remarks:	Frv5k Pa GY GY frology Indicators: ators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav wations: er Present? Present? Present? Present? Soil Crack (State) Present? Soil Crack (State) Soil Crack (St	Imagery (E sone require ione require re Surface Yes Yes n gauge, m	$\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \\ \end{array} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} $	IV) ained Leav 1, 2, 4A, a t (B11) nvertebrate of Reduction of Reduction r Stressed plain in Reduction r Stressed plain in Reduction r Stressed plain in Reduction photos, plain photos, plain photos, plain	es (B9) (e and 4B) es (B13) dor (C1) ores along ed Iron (C4 ion in Tille I Plants (D emarks) $26^{\prime\prime}$ revious ins	Living Ro 4) d Soils (C 1) (LRR /	Seco	a Here indary India Water-Stair 4A, and Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	attors (2 or mo ned Leaves (B 4B) atterns (B10) n Water Table Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks (	<u>re required)</u> (MLRA 1, 2, (C2) (LRR A) D7) NoX
Sa ( Ohi YDROLOO Netland Hyd Primary Indic Surface V High Wa Saturatio Vater Ma Sedimen Sedimen Orift Dep Algal Ma Iron Dep Surface Vater Saurface Water Saurface Water Table Saturation Pr includes cap Describe Red	Frv5k Pa GY Frology Indicators: ators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations: er Present? Present? Present? No We Ho	Imagery (E sone require ione require re Surface ( Yes Yes res n gauge, m	$\overrightarrow{r} \qquad per hap find appropriate the second second$	Arrow and a series of Reduced on	es (B9) (e and 4B) es (B13) dor (C1) ores along ed Iron (C4 ion in Tille I Plants (D emarks) $22.6^{\prime\prime}$ revious ins	Living Ro A) d Soils (C 1) (LRR / spections)	Seco	Indary Indi Mater-Stain 4A, and Drainage P Dry-Season Saturation Seconorphi Shallow Aq FAC-Neutr Raised Ant Frost-Heav	Atterns (2 or moned Leaves (B1) atterns (B10) n Water Table Visible on Aeria c Position (D2) uitard (D3) al Test (D5) Mounds (D6) e Hummocks (	re required) (MLRA 1, 2, (C2) al Imagery (C9 (LRR A) D7) No

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DA	TA FORM - West	ern Mountains, Valleys, and Coast Region
Project/Site: AV3/01/101	City/County:	Fort Brags / Mendo Sampling Date: 17MAR2013
Applicant/Owner: HUN+	=,	State: CA Sampling Point: SP6
Investigator(s): And B Space	Section, Tov	Minship, Range: 531 TI9N RITW
Landform (hillslope, terrace, etc.): Field	Local relief	(concave, convex, none): Slight CONCAVE Slope (%): Or 5
Subregion (LRR):	Lat: 390 27,82	26 Long: 123° 48.369 Datum: NAD83
Soil Map Unit Name: Trop09vep75 0-15	%/0 Slope 5	NWI classification: None
Are climatic / hydrologic conditions on the site typical for this	time of year? Yes _>	No (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No si	gnificantly disturbed?	Are "Normal Circumstances" present? Yes K. No
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> n	aturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling	noint locations transects important features etc.
Hydronhytic Vegetation Present? Ves X		
Hydric Soil Present? Yes No	ls the	ə Sampled Area
Wetland Hydrology Present? Yes No	withi	n a Wetland? Yes No
Remarks:		
	·· ·· <u>·· ··</u> ·· ·· ·	······································
VEGETATION - Use scientific names of plant	S.	
Tree Stratum (Plot size: 30'r)	<u>% Cover</u> Species?	Indicator Dominance lest worksheet: Status Number of Dominant Species
1. None		That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3	······································	Species Across All Strata: (B)
4	<u> </u>	Percent of Dominant Species 100 %
Sapling/Shrub Stratum (Plot size: 20'r)	= Total Cov	That Are OBL, FACW, or FAC: (A/B)
1. None		Prevalence Index worksheet:
2		Total % Cover of: Multiply by:
3		EACW/species
4		$\frac{1}{1} = \frac{1}{1} = \frac{1}$
5		FACU species $2 \times 4 = 8$
Herb Stratum (Plot size: 10'F)	= Total Cov	UPL species x 5 =
1. Festuca rubra	70 405	FAC Column Totals: 100 (A) 302 (B)
2. Holcus lanatus	28 Yes	FAC Prevalence Index = B/A = 3.02
3. KUDUS ar Mentacus	_ <u>2</u> No	FACU Hydrophytic Vegetation Indicators:
4		1 - Rapid Test for Hydrophytic Vegetation
5	·	2 - Dominance Test is >50%
7		3 - Prevalence Index is ≤3.0 <sup>1</sup>
8		4 - Morphological Adaptations' (Provide supporting           data in Remarks or on a separate sheet)
9.	······································	5 - Wetland Non-Vascular Plants <sup>1</sup>
10		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
March Mine Stratum (Dist circu	Total Cove	er be present, unless disturbed or problematic.
1 Prove of Mentalian (Plot size:	27	
		Hydrophytic Vegetation
	= Total Cove	Present? Yes X No
% Bare Ground in Herb StratumO	Total Cove	
Remarks: Veg deminated by FAr a	tashed in a	law area -7 Dort Vea Malakr

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

Avalon Inn APN 069-241-27 & 069-241-04 Scoping, Botanical, Wildlife Surveys & Wetland Delineation

Sampling Point: 5P6

SOIL								Sampling Point: 5P6
Profile Desc	cription: (Describe	to the dep	th needed to docum	ent the in	dicator o	r confirm	n the absence o	of indicators.)
Depth	Matrix		Redox	Features			-	Demode
(inches)	Color (moist)	%	Color (moist)	_%	Type'	Loc		Remarks
0-4	10YR 2/2	100			<u> </u>		meor	
4-6	1072212	80	107R5/3	17	<u></u>	M	Cig loam	
-			7.57R.58	3	C	M	2	
1-7	107R2/2	80	10YE 5/3	18	D	14	Clulosm	
<u> </u>			7. 57R 5/8	- 2	<u> </u>	PI	- <del>]</del>	
7.10	Loup 2/1		1. 1. 510			<u> </u>		······································
1-12	101K 3/1	100	1-1-1-	10		• •	5.11	
12-16	107K3/1	08	104K 4/2	10	<u> </u>	101	Sandy log m.	
-			7.518518	<u> </u>	<u> </u>	14/	·	<u></u>
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM	Reduced Matrix, CS	=Covered	or Coated	d Sand G	irains. <sup>2</sup> Loca	ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless other	wise note	d.)		Indicator	s for Problematic Hydric Soils":
Histosol	I (A1)		Sandy Redox (S	5)			2 cm	Muck (A10)
Histic E	pipedon (A2)		Stripped Matrix (	(S6)			Red	Parent Material (TF2)
Black H	listic (A3)		Loamy Mucky M	lineral (F1	) (except	MLRA 1)	) Very	Shallow Dark Surface (1F12)
Hydroge	en Sulfide (A4)	~ (411)	Loamy Gleyed N	/atrix (F2)				(Explain in Remarks)
Deplete	ed Below Dark Sunac	2e (A11)	Depleted Matrix	(F3) face (E6)			<sup>3</sup> Indicator	rs of hydrophytic vegetation and
Sandy I	Mucky Mineral (S1)		Depleted Dark S	Surface (F)	7)		wetlan	nd hydrology must be present,
Sandy (	Gleved Matrix (S4)		Redox Depressi	ons (F8)	,		unless	s disturbed or problematic.
Restrictive	Layer (if present):							
Type:								$\checkmark$
Depth (in	nches):						Hydric Soil	Present? Yes No
Remarks:	11-20 104	O ENU	any INYR 3	17				
	16-20 101		10/0 101	EA EZ		Λε	1.1	
D.	20-247 104	esiy ;	20% 7.5YR	28 20		1 Jan	ay clay	C.117
Poes	not meet	anyl	nydric soil	in dic	ator	5 +	op 7 incl	hes historic Hill!
L			<u> </u>	······			1	
HYDROLO	DGY							· · · · · · · · · · · · · · · · · · ·
Wetland Hy	drology Indicators						0	teres indicators (2 or more required)
Primary Ind	icators (minimum of	one require	d; check all that apply	()			Secon	dary indicators (2 or more required)
Surface	e Water (A1)		Water-Stai	ned Leave	es (B9) (e:	xcept		Ater-Stained Leaves (D9) (MILKA 1, 2,
High W	later Table (A2)		MLRA	1, 2, 4A, a	nd 4B)		-	4A, and 4B)
Saturat	tion (A3)		Salt Crust	(B11)			D	rainage Patterns (B10)
Water I	Marks (B1)		Aquatic Inv	vertebrate	s (B13)		D	ry-Season Water Table (C2)
Sedime	ent Deposits (B2)		Hydrogen	Sulfide Oc	for (C1)			aturation Visible on Aerial Imagery (C9)
Drift De	eposits (B3)		Oxidized F	Rhizospher	res along	Living Ro	bots (C3) $\_$ G	eomorphic Position (D2)
Algai M	fat or Crust (B4)		Presence	of Reduce	d Iron (C4	4) 10.11.40	5	AC Neutral Tast (D5)
Iron De	eposits (B5)		Recent Iro	n Reductio	on in Tille	d Soils (C	(6) F/	AC-Neutral Test (D5)
Surface	e Soil Cracks (B6)		Stunted or	Stressed	Plants (D	1) (LRR )	A)K	alsed All Moulds (DO) (ERRA)
Inunda	tion Visible on Aerial	Imagery (E	37) Other (Exp	blain in Re	marks)		<sup>[1</sup>	Tost-Heave Hummocks (D7)
Sparse	ly Vegetated Concar	ve Surface	(B8)					
Field Obse	ervations:			7	24			
Surface Wa	ater Present?	Yes	No Depth (in	cnes):	24			
Water Tabl	e Present?	Yes	No Depth (in	cnes):	>24	-	مامسط لباريطيمار	
Saturation	Present?	Yes	No Depth (in	ches):	14	We	uano nyorolog	ALIASAULI LAS HO
Describe R	ecorded Data (streat	m gauge, m	nonitoring well, aerial	photos, pr	evious ins	spections	), if available:	
			-					
Remarks:	Nr. JI		. 1	1	1			
	NO wella	na nyd	rology indi	cator	stor	Z.4 -		
1		J.	5			•		

### US Army Corps of Engineers

### Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DATA FOR	M – Western Mountains, Valleys, and Coast Region
Project/Site: Avalon Inn	city/county: Fort Bragg / Mrs do sampling Date: 2/13/15
Applicant/Owner:	State: Sampling Point: <u></u>
Investigator(s): AS3 B Space	Section, Township, Range: <u>531 TI9N RI7W</u>
Landform (hillslope, terrace, etc.): <u>Flat</u>	Local relief (concave, convex, none): Nonc Slope (%):
Subregion (LRR): Lat:	9 27.92 Long: 123 0.38 Datum: NAD83
Soil Map Unit Name: Tropaquepts 0-15% Slope	NWI classification: Nonc
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes X No (If no, explain in Remarks.)
Are Vegetation <u>NO</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantly	disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation <u>NO</u> , Soil <u>NO</u> , or Hydrology <u>NO</u> naturally pro-	oblematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>Utak</u> No Yes No _ <u>×</u> Yes No _X	Is the Sampled Area within a Wetland?	Yes <u>CCC</u> NO ACE
Remarks: belatively wet	year aller 3 dry yea	いう	

### VEGETATION – Use scientific names of plants.

2018	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30</u> )	% Cover Species? Status	Number of Dominant Species
1. None		That Are OBL, FACW, or FAC: (A)
2		
2	······································	Total Number of Dominant
3		Species Across All Strata: (B)
4		Percent of Dominant Species
Dala	🔵 = Total Cover	That Are OBL FACW or FAC: 00/0 (A/B)
Sapling/Shrub Stratum (Plot size: 20 r )		Brendense le den meder herte
1. None		Prevalence index worksneet.
2		Total % Cover of: Multiply by:
2		OBL species x1 =O
3	<u> </u>	FACW species O x2= O
4		FAC amoing 95 x3- 285
5		RC species X3
		FACU species $0 \times 4 = 5L$
Herb Stratum, (Plot size:		UPL species $2 \times 5 = 10$
1 Agrostis Stolonitera	90 Yes FAC	Column Totals: 105 (A) 327 (B)
2 Fristuca rubra .	2 NO FAC	Developed Index = D/A = 3,11
3 Plantaen lancealata	3 No FACU	Prevalence index = B/A =
A Name Charles trailer to	I No FACU	Hydrophytic vegetation indicators:
T. Huling Lagrent		1 - Rapid Test for Hydrophytic Vegetation
5. THIOLIUM FEIRND	- I NO FAC	🔀 2 - Dominance Test is >50%
6 Festuca arundinacea	NO NYUP	3 - Prevalence Index is ≤3.0 <sup>1</sup>
7. KUDUS Armeniacus	NO FAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8. Fragtatia Chiolensis	I NO FACU	data in Remarks or on a separate sheet)
9. 1+13 douglasianz	I NO NI/UPI	5 - Wetland Non-Vascular Plants <sup>1</sup>
10. Rumer Jacetoschip	I NO FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11. Holcus Ignatus	NO FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	103 - Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: )		
1 5%		
1. <u>2210</u>		Hydrophytic
2	· · · · · · · · · · · · · · · · · · ·	Present? Ves No
A	= Total Cover	
% Bare Ground in Herb Stratum		
Remarks: Dominated by a last line	11- And a line has	e with the ladgestar elates
Ant Domination by Cronal Inva	isine vion-vative Jeas	) WITH LAC MOLOIDI SHOUL
1 101 9 good indicator of wetlan	nd veg	
	2	

### US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

SOIL

## Sampling Point: <u>SP7</u>

Profile Dese	cription: (Describe	to the dep	oth needed to docum	nent the in	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)						
Depth	Matrix		Redox	Features				-			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type'	_Loc <sup>2</sup>	Texture	Remarks			
0-1	107K212	<u>100</u>					Synd logw	PMany fine 100 5 Some group			
7-10	101R4/3	76	104K512	_2	D	_ <u>M</u> _	Imy Band	(avanue 10-30cm)			
			1012Z/2	2			J				
10-14	107R4/3	90	10YR5/8	10	C	M	SAdyclay				
14-17	107R3/1	60	10:1R 6/3	15			SAL Jazon	Darksoil is southloand			
		<u> </u>	7 5-105/2	25	~		2 AL	The star computer dresard			
+	1-1011-	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1. JIT JIO		<u> </u>	101	ano	Wale Bret Co portistion O			
17-20	10-1-613		7.51 - 70	30	<u> </u>	_M_	Save				
20-29	+1071×612	60	10,7K613	20			Sal d V				
<sup>1</sup> Type: C=C	concentration, D=Dep	letion, RM	=Reduced Matrix, CS	=Covered	or Coate	d Sand G	rains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators: (Applic	able to all	I LRRs, unless other	wise note	d.)		Indicato	ors for Problematic Hydric Soils":			
Histosol	I (A1)		Sandy Redox (S	S5)			2 cr	n Muck (A10)			
Histic E	pipedon (A2)		Stripped Matrix	(S6) lineral (E1)	Verent	MIDA 4	Rec	Parent Material (1F2)			
Hydroge	en Sulfide (A4)		Loamy Gleved M	Matrix (F2)	(except	WILKA I)	Ver	er (Explain in Remarks)			
Deplete	d Below Dark Surfac	e (A11)	Depleted Matrix	(F3)							
Thick D	ark Surface (A12)	. ,	Redox Dark Sur	face (F6)			<sup>3</sup> Indicate	ors of hydrophytic vegetation and			
Sandy M	Mucky Mineral (S1)		Depleted Dark S	Surface (F7	7)		wetla	nd hydrology must be present,			
Sandy (	Gleyed Matrix (S4)		Redox Depress	ions (F8)			unles	s disturbed or problematic.			
Restrictive	Layer (if present):										
Type:											
Depth (in	iches):						Hydric Soil	Present? Yes NO			
Remarks:	1. (		7.51 k5/8:	20 C,	M						
Soil de	oes not meet	any	hydric soil :	153.04	otj.	BULLER	1 loam N	ray indicator histopic			
distury	save	5	4								
			-					J			
L								J			
HYDROLO	DGY							J			
HYDROLO Wetland Hy	)GY /drology Indicators:				•			J			
HYDROLO Wetland Hy Primary Indi	DGY vdrology Indicators: icators (minimum of c	one require	ed; check all that apply	<i>(</i> )			Seco	ndary Indicators (2 or more required)			
HYDROLO Wetland Hy Primary Indi Surface	OGY rdrology Indicators: icators (minimum of c Water (A1)	one require	ed; check all that apply	/) ned Leave	s (B9) (e	xcept	<u>Seco</u> V	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2,			
HYDROLO Wetland Hy Primary Indi Surface High Wa	DGY rdrology Indicators: icators (minimum of c Water (A1) ater Table (A2)	one require	ed; check all that apply Water-Stai MLRA	/) ned Leave 1, 2, 4A, ar	rs (B9) (e nd 4B)	xcept	<u>Seco</u> V	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)			
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturati	DGY Indicators: icators (minimum of c Water (A1) ater Table (A2) ion (A3)	one require	ed: check all that apply Water-Stai MLRA Salt Crust	/) ned Leave 1, 2, 4A, an (B11)	es (B9) (e. nd 4B)	xcept	<u>Seco</u> V C	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)			
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water M	DGY vdrology Indicators: icators (minimum of c Water (A1) iater Table (A2) ion (A3) vlarks (B1)	one require	ed: check all that appin Water-Stai Sait Crust Sait Crust	/) ned Leave 1, 2, 4A, an (B11) /ertebrates	es (B9) (e. nd 4B) s (B13)	xcept	<u>Seco</u> V C	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)			
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime	DGY vdrology Indicators: icators (minimum of c Water (A1) later Table (A2) ion (A3) vlarks (B1) ent Deposits (B2)	one require	ed: check all that apply Water-Stai Salt Crust Aquatic Inv Hydrogen 3	/) ned Leave <b>1, 2, 4A, a</b> i (B11) vertebrates Sulfide Od	s (B9) (e: nd 4B) s (B13) or (C1)	xcept	<u>Seco</u> V C C S	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)			
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime	DGY vdrology Indicators: icators (minimum of c Water (A1) ater Table (A2) ion (A3) vlarks (B1) what (B1) on Deposits (B2) eposits (B3)	one require	ed; check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R	/) ned Leave <b>1, 2, 4A, a</b> (B11) /ertebrates Sulfide Od thizosphere	s (B9) (e. nd 4B) s (B13) or (C1) es along	xcept	<u>Seco</u> V C C S ots (C3) C	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) iaturation Visible on Aerial Imagery (C9) Secomorphic Position (D2)			
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M	PGY vdrology Indicators: icators (minimum of c water (A1) later Table (A2) ion (A3) varks (B1) warks (B1) warks (B1) sposits (B2) posits (B3) lat or Crust (B4) posits (B5)	one require	ed; check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence 0 Bosent Inv	/) ned Leave <b>1, 2, 4A, a</b> (B11) /ertebrates Sulfide Od :hizosphere of Reduced	is (B9) (e. nd 4B) s (B13) or (C1) es along d Iron (C4	xcept	<u>Seco</u> V C C S ots (C3) C	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) isaturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC. Neutral Test (D5)			
HYDROLCO Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal M Iron De	PGY vorology Indicators: icators (minimum of c water (A1) ater Table (A2) ion (A3) varks (B1) warks (B1) warks (B1) int Deposits (B2) posits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6)	one require	ed: check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen 1 Oxidized R Presence 0 Recent Irou Stunted or	() ned Leave <b>1, 2, 4A, a</b> (B11) vertebrates Sulfide Od thizosphere of Reduced n Reductio Stressed	is (B9) (e: nd 4B) s (B13) or (C1) es along d Iron (C4 n in Tilleo Plante (D	Living Rod ) d Soils (Cf	<u>Seco</u> V C C S ots (C3) C S 5) F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Paised Ant Mounds (D6) (LRR A)			
HYDROLCO Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal M Iron De; Surface Inundat	PGY vdrology Indicators: icators (minimum of c Water (A1) ater Table (A2) ion (A3) vlarks (B1) int Deposits (B2) posits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial	one require	ed: check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Aquatic Inv Hydrogen Oxidized R Presence o Recent Iron Stunted or Other (Evo	() ned Leave 1, 2, 4A, at (B11) vertebrates Sulfide Od thizospherio of Reduced n Reductio Stressed I Jain in Rer	s (B9) (e: nd 4B) s (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D narks)	xcept Living Rod I) d Soils (Ct 1) (LRR A	<u>Seco</u> V C C S ots (C3) C S 5) F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5) taised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7)			
HYDROLC Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Soarsel	Arrology Indicators: icators (minimum of c water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial by Vegetated Conceve	one require	ed: check all that apply 	() ned Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od thizosphere of Reduced n Reductio Stressed I blain in Rer	s (B9) (e: nd 4B) (B13) or (C1) es along d Iron (C4 n in Tillec Plants (D narks)	Living Rod ) d Soils (Cf 1) (LRR A	<u>Seco</u> V C C S ots (C3) C S 5) F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7)			
HYDROLO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obsei	DGY vdrology Indicators: icators (minimum of c Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial by Vegetated Concave rvations:	one require Imagery (E e Surface (	ed: check all that apply 	() ned Leave 1, 2, 4A, au (B11) vertebrates Sulfide Od thizosphere of Reduced n Reductio Stressed I blain in Rer	s (B9) (e: nd 4B) or (C1) es along d Iron (C4 Plants (D marks)	Living Rod l) d Soils (C0 1) (LRR A	<u>Seco</u> V C C S ots (C3) C S 5) F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) iaturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7)			
HYDROLC Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Water	PGY vdrology Indicators: icators (minimum of c Water (A1) ater Table (A2) ion (A3) vlarks (B1) ont Deposits (B2) posits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aerial by Vegetated Concave rvations: ter Present?	Imagery (E e Surface (	ed: check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence 0 Recent Iron Stunted or 37) Other (Exp (B8)	() ned Leave 1, 2, 4A, ar (B11) vertebrates Sulfide Od thizosphere of Reduced n Reductio Stressed I plain in Rer	s (B9) (e: nd 4B) or (C1) es along d Iron (C4 Plants (D narks) 2 4 <sup>11</sup>	Living Rod ) d Soils (Cf 1) (LRR A	<u>Seco</u> V C C S obts (C3) C S 5) F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) iaturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7)			
HYDROLO Wetland Hy Primary Indi Surface High Wi Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Water Table	PGY vdrology Indicators: icators (minimum of c water (A1) ater Table (A2) ion (A3) varks (B1) wint Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial ly Vegetated Concave rvations: ter Present? Y	Imagery (E e Surface ( 'es	ed: check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence of Recent Iron Stunted or 37) Other (Exp (B8) No × Depth (inc No × Depth (inc	() ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizosphere- of Reduced n Reduction Stressed I plain in Rer ches): ches):	is (B9) (e. nd 4B) or (C1) es along d Iron (C4 plants (D marks) 2 4 <sup>11</sup> 2 4	Living Rod l) d Soils (Cf 1) (LRR A	Seco V C C C S ots (C3) C S 5) F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Seconorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7)			
HYDROLCO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Inundat Sparsel Field Obser Surface Water Table Saturation F	PGY vdrology Indicators: icators (minimum of c water (A1) later Table (A2) ion (A3) warks (B1) warks (B1) warks (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial ly Vegetated Concave rvations: ter Present? Present? Y	Imagery (E e Surface ( 'es 'es	ed: check all that apply	() ned Leave 1, 2, 4A, ar (B11) vertebrates Sulfide Od thizosphere of Reduced n Reduction Stressed I chain in Rer ches): ches): ches):	s (B9) (e. nd 4B) s (B13) or (C1) es along d Iron (C4 plants (D marks) 2 4 <sup>11</sup> 2 4 <sup>11</sup>	Living Rod ) d Soils (CC 1) (LRR A	Secon V C C C S ots (C3) C S 5) F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) isaturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7) y Present? Yes No			
HYDROLCO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De; Surface Inundat Sparsel Field Obser Surface Wai Water Table Saturation P (includes ca	Arrology Indicators: icators (minimum of c water (A1) ater Table (A2) ion (A3) Marks (B1) mt Deposits (B2) posits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial by Vegetated Concave rvations: ter Present? Present? Present? Y	Imagery (E e Surface ( 'es 'es	ed; check all that apply 	() ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizosphen of Reduced n Reduction Stressed I chain in Rer ches): ches):	s (B9) (e. nd 4B) s (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D narks) 2 4 <sup>11</sup> 2 4 <sup>11</sup>	Living Rod ) d Soils (C0 1) (LRR A  Wett	Secon V C C C S ots (C3) S 5) F 5) F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) iaturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) ishallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7) y Present? Yes No			
HYDROLCO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obsel Saturation F (includes ca Describe Re	Arrology Indicators: icators (minimum of co Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) lat or Crust (B4) posits (B5) lat or Crust (B4) lat or Crus	Imagery (E e Surface ( 'es 'es 'a gauge, m	ed: check all that apply	() ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizosphere of Reducedo n Reduction Stressed I plain in Rer ches):	is (B9) (e. <b>nd 4B)</b> (B13) or (C1) es along d Iron (C4 n in Tiller Plants (D narks) $2 \frac{4}{2}$ $2 \frac{4}{2}$ vious ins	Living Rod l) d Soils (Ct 1) (LRR A  	Secon V C C S obts (C3) C S 5) F F F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7) y Present? Yes No			
HYDROLCO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obseet Saturation F (includes ca Describe Re	PGY vdrology Indicators: icators (minimum of c Water (A1) ater Table (A2) ion (A3) vlarks (B1) int Deposits (B2) posits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aerial by Vegetated Concave rvations: ter Present? Present? Present? Present? Y Present? Y	Imagery (E e Surface 'es 'es a gauge, m	ed: check all that apply	() ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizosphere of Reducedo n Reduction Stressed I plain in Rer ches): ches): ches): photos, pre	s (B9) (e: nd 4B) (B13) or (C1) es along d Iron (C4 n in Tiller Plants (D narks) 2 4 <sup>11</sup> 2 4 <sup>11</sup>	Living Rod Living Rod J d Soils (Cf 1) (LRR A — — — — — — — — — — — — —	Secon V C C S ots (C3) C S 5) F F F and Hydrolog if available:	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3) (AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) frost-Heave Hummocks (D7) y Present? Yes No			
HYDROLCO Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Surface Vater Table Saturation P (includes ca Describe Re Remarks:	PGY vdrology Indicators: icators (minimum of c Water (A1) later Table (A2) ion (A3) vdarks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial ly Vegetated Concave rvations: ter Present? Present? Present? Y pillary fringe) ecorded Data (stream	Imagery (E e Surface 'es 'gauge, m	ed: check all that apply Water-Stai MLRA Salt Crust A Aquatic Inv Aquatic Inv	() ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizosphere of Reduced n Reductio Stressed I plain in Rer ches): ches): photos, pre	s (B9) (e: nd 4B) s (B13) or (C1) es along d Iron (C4 on in Tilled Plants (D marks) 2 4 <sup>11</sup> 2 4 <sup>12</sup> 2 4 <sup>12</sup> 2 4 <sup>12</sup> 2 4 <sup>12</sup> 2 4 <sup>12</sup>	Living Rod ) d Soils (Cf 1) (LRR A    Wetl pections),	Secon V C C S ots (C3) C S S S S F F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7) y Present? Yes No			
HYDROLC Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re Remarks:	PGY vdrology Indicators: icators (minimum of c Water (A1) ater Table (A2) ion (A3) vdarks (B1) ent Deposits (B2) posits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial ly Vegetated Concave rvations: ter Present? Present? Present? Present? Mo wet land	Imagery (E e Surface ( 'es i gauge, m	ed: check all that apply Water-Stai MLRA Salt Crust I Aquatic Inv Hydrogen I Oxidized R Presence O Recent Iron Stunted or Stunted or Stunted or B7) Other (Exp (B8) No × Depth (inc No × Depth (inc No × Depth (inc No × Depth (inc No × Depth (inc	() ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizosphere of Reduced n Reductio Stressed I chas): ches): _	s (B9) (e: nd 4B) s (B13) or (C1) es along d Iron (C4 n in Tillee Plants (D marks) 2 4 <sup>11</sup> 2 4 <sup>11</sup> 2 4 <sup>11</sup> 2 4 <sup>11</sup> 2 4 <sup>11</sup>	Living Rod ) d Soils (Cf 1) (LRR A  Wetil pections),	Secon V C C C S ots (C3) C S 5) F .) F .) F and Hydrolog if available:	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) iaturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7)			
HYDROLC Wetland Hy Primary Indi Surface High Wa Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Wal Water Table Saturation P (includes ca Describe Re	PGY vorology Indicators: icators (minimum of c warks (A1) ater Table (A2) ion (A3) warks (B1) warks (B1) warks (B1) warks (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aerial ly Vegetated Concave rvations: ter Present? Present? Present? Y posita (Stream No wetland	Imagery (E e Surface ( res res n gauge, m	ed: check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence of Recent Iron Stunted or Stunted or 37) Other (Exp (B8) No $\times$ Depth (inc No $\times$ Depth (inc No $\times$ Depth (inc No $\times$ Depth (inc No $\times$ Depth (inc	() ned Leave 1, 2, 4A, ar (B11) vertebrates Sulfide Od thizosphere of Reduced n Reductio Stressed I plain in Rer ches):	s (B9) (e: nd 4B) s (B13) or (C1) es along d Iron (C4 n in Tilled Plants (D narks) 2 4 <sup>11</sup> 2 4 <sup>11</sup> 2 4 <sup>11</sup> 2 4 <sup>11</sup> vious ins	Living Rod b) d Soils (CC 1) (LRR A — — — — — — — — — — — — —	Secon V C C S ots (C3) G 5) F F F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) iaturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7) y Present? Yes No			
HYDROLO Wetland Hy Primary Indi Surface High Wi Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Water Surface Water Surface Water Remarks:	PGY vorology Indicators: icators (minimum of c water (A1) ater Table (A2) ion (A3) warks (B1) with Deposits (B2) oposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aerial by Vegetated Concave rvations: ter Present? Present? Present? Y	Imagery (E e Surface ( 'es 'es gauge, m	ed: check all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence of Recent Iron Stunted or Stunted or 37) Other (Exp (B8) No × Depth (inc No × Depth (inc nonitoring well, aerial p	() ned Leave 1, 2, 4A, ar (B11) rertebrates Sulfide Od thizosphere- of Reduced n Reduction Stressed I ches):	s (B9) (e. nd 4B) s (B13) or (C1) es along d Iron (C4 n in Tilleo Plants (D narks) 2 Ц <sup>11</sup> 2 Ц <sup>11</sup>	Living Rod Living Rod J Soils (Cd 1) (LRR A — — — — — — — — — — — — —	Secon V C C C S obts (C3) C S 5) F F F	ndary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) isaturation Visible on Aerial Imagery (C9) Seomorphic Position (D2) ishallow Aquitard (D3) AC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) irost-Heave Hummocks (D7) y Present? Yes No			

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Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DATA	FORM – Western Mou	ntains, Valleys, and Coast Region
Project/Site: ALZOA LAA	city/county.Fort BI	rang / Mendo Sampling Date: 02/13/15
Applicant/Owner: 4404	ONJ: 000111	State: CA Sampling Point: SP8
Investigator(s): AGA B Sold of	Section Township Ra	nge: 531 T19N RITW
Landform (hillsione terrace etc.): Elat	Local relief (concave	convex none): NoAC Slope (%): ()
Subracion /I PR): A	at 39027,800	Long: 123-48-384 Datum NAD83
Sall Man Hail Mana Trangavent 6 0-15%	Sloves	
Are elimetic (hydrologic conditions on the site trained for this firm	s as years year X No	(If no evolution in Remarke )
Are climatic / hydrologic conditions on the site typical for this un	feer the disturbed O	
Are vegetation <u>No</u> , soil <u>so</u> , or Hydrology <u>so</u> signi	nicantiy disturbed? Are	
	rally problematic? (If he	eded, explain any answers in remarks.)
SUMMARY OF FINDINGS – Attach site map sho	owing sampling point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	×     Is the Sampled       ×     within a Wetlar	Area nd? Yes <u>CCC</u> No <u>ACE</u>
Remarks: Kriatively wet your atter 3	3 dry tears	
VEGETATION - Use scientific names of plants.	*****	
Tree Stratum (Plot size: 30'r)	bsolute Dominant Indicator	Dominance Test worksheet:
1. None	openes: openes:	Number of Dominant Species           That Are OBL, FACW, or FAC:
2		Total Number of Dominant
3		Species Across All Strata: (B)
4	· · · · · · · · · · · · · · · · · · ·	Percent of Dominant Species
201 -	= Total Cover	That Are OBL, FACW, or FAC:(A/B)
Sapling/Shrub Stratum (Plot size:)		Prevalence index worksheet:
1		Total % Cover of: Multiply by:
3	······································	OBL species x 1 =
4		FACW species x 2 =
5.		FAC species x 3 =
	0 = Total Cover	FACU species x 4 =
Herb Stratum (Plot size: 10 °	75 V. FAR	Column Totale: (A) (B)
1. Molcus Ignatus	10 10 100	
2. FESTULA AVUNDINOLPA	10 NO FAC	Prevalence index = B/A =
3. FESTICA TUBEL	7 FACL	Hydrophytic Vegetation Indicators:
E JUACUS PHUSUS	$\frac{2}{7}$ FACIAL	
6 Ny proclastis tadicata	TACU	$\frac{1}{2}$ - Dominance rest is >00%
7 Doten (112 ANSULINA	OBL	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8.	·····	data in Remarks or on a separate sheet)
9		5 - Wetland Non-Vascular Plants <sup>1</sup>
10		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	0 = Total Cover	be present, unless disturbed of problematic.
Vvoody Vine Stratum (Plot size: () r)		
1. <u></u>		Hydrophytic Vegetation
۲ —		Present? Yes No
% Bare Ground in Herb Stratum		
Remarks: Dominated by Invasive non-na.	live glasses not	a good hydric vig indicator
	~	

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Western Mountains, Valleys, and Coast - Version 2.0

SOIL

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SOIL Sampling Point:									
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redox Features						
(inches)	Color (moist)	%	Color (moist)	%	_Type'	Loc <sup>2</sup>		Remarks	······
0 - 10	1044211	100					Sndy loam	tine roots	
10-14	107F2/1	99	7.5YR5/8	1	C	M	0= Mysan (	<u></u>	
14-18	104R3/2	97	10YR 6/3	3	D	M	LOAMY SAN	6	
18-24+	ICINE 3/2	Toc!					Sand		
10 24	10/10/2						Jane		
·									<u> </u>
	£	_							
Type: C=C	ncentration D=D	enletion RM:	Reduced Matrix CS	=Covered	d or Coate	d Sand G	arains <sup>2</sup> 1 o	cation PI =Pore Lining, M	A=Matrix.
Hydric Soil	indicators: (Appl	icable to all	LRRs, unless other	vise not	ed.)	<u>a curra c</u>	Indicate	ors for Problematic Hydr	ic Soils <sup>3</sup> :
Histosol	(A1)	Sandy Redox (S	5)			2 0	m Muck (A10)		
Histic Epipedon (A2)			Stripped Matrix (S6)				Red Parent Material (TF2)		
Black Hi	stic (A3)	Loamy Mucky M	ineral (F1	) (except	MLRA 1	Very Shallow Dark Surface (TF12)			
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks)									
Depleted	Below Dark Surfa	ace (A11)	Depleted Matrix	(F3)			31	ana of hud-anta-di	ion and
Thick Da	irk Surface (A12)	Redox Dark Surl	ace (F6)			"Indicators of hydrophytic vegetation and			
Sandy N	lucky Mineral (S1)	Depleted Dark Surface (F7)				wetta	wettand hydrology must be present,		
Restrictive	aver (if present)			5115 (1 0)				ss disturbed of problemati	
Type	Lufer (in present).								
Benth (in	hes).						Hydric Soi	i Present? Yes	No X
remains. First hole had plastic at I then group -7 trench drain or leach field									
Moved over 3' and dug again									
Does not meet any hydicsoil in dica fors									
HYDROLOGY									
Wetland Hydrology Indicators:									
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)									
Surface	Water (A1)	Water-Stair	ed Leav	es (B9) (e	xcept	Water-Stained Leaves (B9) (MLRA 1, 2,			
High Wa	ter Table (A2)	MLRA 1	, 2, 4A, a	and 4B)		4A, and 4B)			
Saturatio	on (A3)	Salt Crust (	B11)			Drainage Patterns (B10)			
Water M	arks (B1)	Aquatic Inve	ertebrate	s (B13)		Dry-Season Water Table (C2)			
Sedimer	Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)							Saturation Visible on Aeria	I Imagery (C9)
Drift Dep	oosits (B3)		Oxidized RI	nizosphe	res along	Living Ro	ots (C3) (	Geomorphic Position (D2)	
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitare								Shallow Aquitard (D3)	
Iron Dep	Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (Cf							FAC-Neutral Test (D5)	
Surface	Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR #							Raised Ant Mounds (D6) (I	LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)							F	Frost-Heave Hummocks (E	07)
Sparsely	Vegetated Conca	ve Surface (I	B8)						
Field Obser	vations:		V						
Surface Wat	er Present?	Yes	No <u>X</u> Depth (inc	hes):	1	-			
Water Table Present? Yes X No Depth (inches):									$\checkmark$
Saturation Present? Yes <u>No</u> Depth (inches): <u></u>							Wetland Hydrology Present? Yes No		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									
No wetlandby trology in cataty near wetland boundary as									
I indicated by presence at mater table at 15" Due to recently any									
Fail									
( -,	N .								

### US Army Corps of Engineers

### Western Mountains, Valleys, and Coast - Version 2.0
### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Auplas		Ertp	Mardo anni ILMAR 14
Project/Site: //Vd/U//////	City/C	County: 10 1 12	Sampling Date: <u>SP9</u>
Applicant/Owner: NV/1			Sal TI9AL R17A
Investigator(s): AGa D Space	Secti	on, Township, Rar	
Landform (hillslope, terrace, etc.): Field		I relief (concave, c	$\frac{12200}{1000} \frac{11000}{1000} \frac{10000}{1000} \frac{10000}{1000} \frac{10000}{10000} $
Subregion (LRR):	Lat: 4	21,840	Long: 123 79, 300 Datum: NAUD
Soil Map Unit Name: 1 1002942075 0-15	1/0 Slopes		NWI classification: <u>PE-MID</u>
Are climatic / hydrologic conditions on the site typical for the	nis time of year? )	res <u>X</u> No	(If no, explain in Remarks.)
Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u>	significantly distu	rbed? Are "l	Normal Circumstances" present? Yes <u>No</u> No
Are Vegetation $\underline{N_0}$ , Soil $\underline{N_0}$ , or Hydrology $\underline{N_0}$	naturally problem	atic? (If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing san	npling point lo	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No		<b>A</b>
Hydric Soil Present? Yes	No	is the Sampled within a Wetlan	d? Yes X No
Wetland Hydrology Present? Yes	No		
Remarks: Within NWI Mapped weth	and		
			×
VEGETATION – Use scientific names of pla	nts.		
	Absolute Do	minant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30'F</u> )	% Cover Spe	cies? Status	Number of Dominant Species
1. None			That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3	<u></u>		Species Across All Strata: (B)
4	= To	otal Cover	Percent of Dominant Species $100^{\circ}_{0}$ (A/B)
Sapling/Shrub Stratum (Plot size:)			Prevalence Index worksheet:
1			Total % Cover of: Multiply by:
2	<u> </u>		OBL species $\frac{15}{5}$ x1 = $\frac{15}{10}$
۵ ۸			FACW species $3 \times 2 = 10$
5.			FAC species $\frac{73}{7}$ $x_3 = \frac{203}{28}$
10/-	<u> </u>	otal Cover	FACU species $1 \times 4 = 20$
Herb Stratum (Plot size: 10 T)	95	N ELC	$\frac{\text{OPL species}}{\text{Column Totals}} = \frac{2}{\sqrt{27}} \text{ (A) } = \frac{363}{363} \text{ (B) }$
1. Holcus lanatus	15	I FAC	
2. Fotentilla angerina (Atraenting)	<u></u>	N ENU	Prevalence Index = B/A =
3. Equiserum televatia		N NICUPLY	Hydrophytic Vegetation Indicators:
5 Dailella Vallagina		N FACU	X 2 Dominance Test is >50%
a Plantage lanceolata		N FACU	$X_{3}$ = Prevalence Index is $\leq 3.0^{1}$
			4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8.			data in Remarks or on a separate sheet)
9			5 - Wetland Non-Vascular Plants <sup>1</sup>
10			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
10'r	<u>127</u> = To	tal Cover	be present, unless diadabed of problemate.
Woody Vine Stratum (Plot size: 10 )	2010 =	2 2 27	
2			Vegetation
L	() = To	otal Cover	Present? Yes <u>K</u> No
% Bare Ground in Herb StratumO			
Remarks: Veg dominated by MUZGIVE	FAC 940	55 NOT 9	Stiong indreador However
OBL Veg also predent =7 =	stronger e	vidence	J
	J		

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SOIL

Depth	Matrix		Redox	x Features	S				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-20	10YR2/1	100					loam	tine rato	down to 6"
20-74	10722/1	80	10YRH/1	18	D	M	chylazm	diffuse	boundaries
			INTO S/a	2	~		-J		
24-21	10403/1	100	101-010	- 4	<u> </u>		(0.1		
07-46	101-01	100					Sand		
· · · · · · · · · · · · · · · · · · ·									
Type: C=Co	ncentration, D=Dep	letion, RM=	Reduced Matrix, CS	=Covered	or Coate	d Sand G	rains. <sup>2</sup> Lo	cation: PL=Pc	ore Lining, M=Matrix.
tydric Soil li	ndicators: (Applic	able to all L	RRs, unless other	wise note	ed.)		Indicate	ors for Proble	matic Hydric Soils <sup>3</sup> :
Histosol (	A1)	-	Sandy Redox (S	S5)			2 c	m Muck (A10)	
Histic Epi	pedon (A2)	-	Stripped Matrix	(S6)			Re	d Parent Mater	tal (TF2)
Black His		-	Loamy Mucky N	Ineral (F1	) (except	MLRA 1)	Ver	y Shallow Dar	k Surface (TF12)
Hydroger	Below Dark Surface	- (A11)	Loamy Gleyed M	viatrix (F2)	)		Oth	er (Explain in	Remarks)
Thick Day	k Surface (A12)	. ()	Redox Dark Sur	face (F6)			<sup>3</sup> Indicat	ors of hydroph	vtic vegetation and
Sandy M	ucky Mineral (S1)	-	Depleted Dark Su	Surface (FU)	7)		wette	and hydrology	must be present
Sandy GI	eyed Matrix (S4)	-	Redox Depressi	ions (F8)	.,		unle	ss disturbed or	problematic.
Restrictive L	ayer (if present):						1		
Type:									
Depth (inc	hes):						Hydric Soi	Present?	Yes No X
Domarko: -	1	1 1							
YDROLOG	SY .	5		y Nu	Janc	SOIL	W 41 CA	tor	
YDROLOC	GY rology Indicators:	<u> </u>		γ η.	ydric	5011	W 9169.	tor	
YDROLOO Vetland Hyd	<b>SY</b> rology Indicators: ators (minimum of o	one required	; check all that apply	y Ni	Janc	Soll	IN dIC2	tor	rs (2 or more required
YDROLOO Vetland Hyd Primary Indica Surface V	<b>Frology Indicators:</b> ators (minimum of o Vater (A1)	one required	; check all that apply	Y N(	уdнic es (B9) (e)	Soi I	<u> </u>	ndary Indicato	r <u>s (2 or more required</u> Leaves (B9) ( <b>MLRA 1</b>
YDROLOO Vetland Hyd Primary Indica Surface V Yigh Wat	<b>Frology Indicators:</b> ators (minimum of o Vater (A1) er Table (A2)	ine required	; check all that apply Water-Stair MLRA	γ Λ( () ned Leave 1, 2, 4A, a	yd NC es (B9) (e) and 4B)	Soi I	<u>Seco</u>	ndary Indicato Nater-Stained 4A, and 4B	r <u>s (2 or more required</u> Leaves (B9) ( <b>MLRA 1</b> )
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio	<b>GY</b> rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3)	ne required	<u>; check all that apply</u> Water-Stair Kater-Stair Sait Crust (	y (( ) ned Leave 1, 2, 4A, a (B11)	ydhic es (B9) (es und 4B)			ndary Indicato Nater-Stained 4A, and 4B Drainage Patte	<u>rs (2 or more required</u> Leaves (B9) ( <b>MLRA 1</b> ) rns (B10)
YDROLOO Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma	GY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) urks (B1)	une required	<u>; check all that apply</u> Water-Stail Salt Crust ( Aquatic Inv	() ned Leave 1, 2, 4A, a (B11) vertebrates	ydhic es (B9) (ex ind <b>4B)</b> s (B13)	Sol 1	<u>Seco</u>	ndary Indicato Nater-Stained 4A, and 4B Drainage Patte Dry-Season Wa	<u>rs (2 or more required</u> Leaves (B9) ( <b>MLRA 1</b> ) rns (B10) ater Table (C2)
YDROLOO Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment	GY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) urks (B1) : Deposits (B2)	une required	<u>; check all that apply</u> Water-Stain Salt Crust ( Aquatic Inv Hydrogen S	Y (1) ned Leave 1, 2, 4A, a (B11) rertebrates Sulfide Oct	y d NC es (B9) (e) and 4B) s (B13) tor (C1)	Soil	<u>Seco</u>	ndary Indicato Nater-Stained 4A, and 4B Drainage Patte Dry-Season Wa Saturation Visil	rs (2 or more required Leaves (B9) ( <b>MLRA 1</b> ) rns (B10) ater Table (C2) ble on Aerial Imagery (
YDROLOO Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep	GY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) trks (B1) c Deposits (B2) posits (B3)	ne required	<u>; check all that apply</u> Water-Stain Salt Crust Salt Crust Aquatic Inv Hydrogen S Oxidized R	() ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc hizospher	y d NC es (B9) (ex and 4B) s (B13) for (C1) res along I	Sol 1	( \ d \ C \ d 	ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po	rs (2 or more required Leaves (B9) ( <b>MLRA 1</b> ) rns (B10) ater Table (C2) ble on Aerial Imagery ( psition (D2)
YDROLOO Vetland Hyd Primary Indica Surface V ∠ High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat	GY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) urks (B1) t Deposits (B2) posits (B3) or Crust (B4)	ine required	<u>; check all that apply</u> <u> </u>	() ned Leave 1, 2, 4A, a (B11) vertebrate: Sulfide Oc thizospher of Reduce	es (B9) (e) and 4B) s (B13) dor (C1) res along l d Iron (C4	≤o( \ ccept		ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita	rs (2 or more required Leaves (B9) ( <b>MLRA 1</b> ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3)
YDROLOO Vetland Hyd Primary Indica Surface V ✓ High Wat Saturatio Water Ma Sediment Drift Depi Algal Mal Iron Depi	SY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) irks (B1) is Deposits (B2) posits (B3) is or Crust (B4) posits (B5)	ine required	<u>; check all that apply</u> <u>Water-Stain</u> <u>MLRA</u> <u>Salt Crust</u> <u>Aquatic Inv</u> <u>Hydrogen S</u> <u>Cxidized R</u> <u>Presence c</u> <u>Recent Iror</u>	() ned Leave 1, 2, 4A, a (B11) rertebrate: Sulfide Oc thizospher of Reduce n Reducetio	es (B9) (e) and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled	Living Roc ) Soils (C6		ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Pe Shallow Aquita FAC-Neutral Te	rs (2 or more required Leaves (B9) ( <b>MLRA 1</b> ) rns (B10) ater Table (C2) ble on Aeriał Imagery ( psition (D2) rd (D3) est (D5)
YDROLOO Vetland Hyd Primary Indica Surface V ✓ High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo Surface S	SY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) irks (B1) : Deposits (B2) posits (B3) : or Crust (B4) posits (B5) Soil Cracks (B6)	ine required	<u>check all that apply</u> <u>Water-Stail</u> <u>MLRA</u> <u>Salt Crust</u> <u>Aquatic Inv</u> <u>Hydrogen S</u> <u>Cxidized R</u> <u>Presence c</u> <u>Recent Iron</u> <u>Stunted or</u>	() ned Leave 1, 2, 4A, a (B11) rertebrates Sulfide Oc thizospher of Reduce n Reducetic Stressed	y d h7 es (B9) (e) ind 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1	Living Roc ) Soils (Cf ) (LRR A		ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Pe Shallow Aquita FAC-Neutral Te Raised Ant Mo	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( position (D2) rd (D3) est (D5) unds (D6) (LRR A)
YDROLOO Vetiand Hyd Primary Indica Surface V ✓ High Wat Saturatio Water Ma Sedimeni Drift Dep Algal Mat Iron Depo Surface S Inundatio	GY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) trks (B1) : Deposits (B2) posits (B3) or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I	me required	<u>; check all that apply</u> <u> </u>	y () ned Leave 1, 2, 4A, a (B11) rertebrates Sulfide Oc thizospher of Reduce n Reductio Stressed Jain in Re	y d NC es (B9) (ex and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Living Roc ) Soils (Cf ) (LRR A		ndary Indicato Nater-Stained 4A, and 4B Orainage Patte Ory-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7)
YDROLOO Vetiand Hyd Primary Indica Surface W ✓ High Wat Saturatio Water Ma Sedimeni Drift Dep Algal Mat Iron Depo Surface S Inundatio Sparsely	GY rology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) trks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave	magery (B7	<u>; check all that apply</u> <u> </u>	y () ned Leave 1, 2, 4A, a (B11) rertebrates Sulfide Oc thizospher of Reduce n Reductio Stressed Jain in Rei	y d NC es (B9) (ex and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Living Roc ) ) Soils (Cf ) (LRR A	( \ d \ C \ d       	ndary Indicato Nater-Stained 4A, and 4B Orainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7)
YDROLOO Vetiand Hyd Primary Indica Surface W ✓ High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo Surface S Inundatio Sparsely Vield Observ	Trology Indicators: ators (minimum of or Vater (A1) er Table (A2) n (A3) urks (B1) Deposits (B2) posits (B3) or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave ations:	magery (B7	check all that apply Water-Stair MLRA Salt Crust ( Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iron Stunted or Other (Exp. 18)	y () ned Leave 1, 2, 4A, a (B11) rertebrates Sulfide Oc thizospher of Reduce n Reductio Stressed Jain in Rei	y d NC es (B9) (ex and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Living Roc I Soils (Cf I Soils (Cf	( \ d \ C \ d       	ndary Indicato Nater-Stained 4A, and 4B Orainage Patte Ory-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7)
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YDROLOC Vetland Hyd Primary Indica Surface V ✓ High Wat Saturatio Water Ma Sediment Drift Depi Algal Mat Iron Depi Surface S Inundatio Surface Vater Surface Water Vater Table F Saturation Princludes cap	Context and the second	magery (B7 e Surface (B es N es N	check all that apply	y //(( ) ned Leave 1, 2, 4A, a (B11) rertebrated Sulfide Oct thizosphere of Reduce n Reduction Stressed lain in Rel ches): thes): thes):	y d h7 es (B9) (e) and 4B) s (B13) for (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Soils (Cf	( \( \( \( \( \( \) \) \) \) \\     ( \( \( \) \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \) \\     ( \( \) \\     ( \\ \) \\     ( \\ \) \\     ( \( \) \\     ( \\ \) \\     ( \\ \) \\     ( \( \) \\     ( \\ \) \\     ( \\ \) \\     ( \( \) \\     ( \\ \) \\     ( \\ \) \\    ( \\ \) \\    ( \\ \) \\    ( \( \) \\    ( \\ \) \\	ndary Indicato Nater-Stained 4A, and 4B Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave Hi Staised Ant Mo	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes No
YDROLOC Vetland Hyd Primary Indica Surface W ✓ High Wat Saturatio Water Ma Sediment Drift Depi Algal Mat Iron Depo Surface S Inundatio Sparsely Field Observ Surface Water Nater Table F Saturation Pri includes capi Describe Rec	Context and the second	magery (B7 es N es N gauge, mot	<u> check all that apply</u> <u> Vater-Stain</u> <u> MLRA </u> <u> Salt Crust ( Aquatic Inv </u> <u> Hydrogen S </u> <u> Cxidized R </u> <u> Cxidized R </u> <u> Recent Iron </u> <u> Stunted or </u> Cther (Exp B) <u> Cxidized R </u> <u> Cyresence C </u> <u> Cyr</u>	() ned Leave 1, 2, 4A, a (B11) rertebrater Sulfide Oc thizospherio of Reducetor Reduction Stressed lain in Rei- ches): ches): thes): thotos, pre-	y d h7 es (B9) (e) and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	≤o(   ccept iving Roc ) I Soils (CC ) (LRR A    WetI   Dections),	A d f C a	ndary Indicato Nater-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral Te Raised Ant Mo Frost-Heave He Dry Present?	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( bsition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes No
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo Surface S Inundatio Sparsely Field Observ Surface Water Nater Table R Saturation Prr includes capi Describe Rec	<b>SY</b> <b>rology Indicators:</b> <u>ators (minimum of o</u> Vater (A1) er Table (A2) n (A3) urks (B1) t Deposits (B2) posits (B3) t or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave <b>ations:</b> r Present? Y Present? Y esent? Y esent? Y	magery (B7 es N es N gauge, more	; check all that apply 	() ned Leave 1, 2, 4A, a (B11) rertebrater Sulfide Oc hizospher of Reduce n Reductio Stressed lain in Rei ches): ches): ches): ches):	y d h7 es (B9) (e) and 4B) s (B13) for (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Living Roc )   Soils (CC  ) (LRR A 	( \( \( \( \( \) \( \) \)     ( \( \)	ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He Py Present?	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes No
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo Surface S Inundatio Sparsely Field Observ Saturation Praincludes capi Describe Rec	Trology Indicators: ators (minimum of or Vater (A1) er Table (A2) n (A3) urks (B1) to Deposits (B2) posits (B3) to r Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave ations: r Present? Y Present? Y Present? Y Present? Y Present? Y Present? Y Present? Y Present? Y Present? Y Present? Y Present? Y	magery (B7 es N es N gauge, mor	<u> check all that apply</u> <u> Water-Stain</u> <u> MLRA 4 </u> <u> Salt Crust 6 </u> <u> Aquatic Inv</u> <u> Hydrogen 3 </u> <u> Cxidized R </u> <u> Presence c </u> <u> Recent Iron </u> <u> Stunted or </u> <u> Other (Exp 8) <u> Lo Depth (incl to Depth (incl to</u></u>	y () ned Leave 1, 2, 4A, a (B11) rertebrate: Sulfide Oc thizospher of Reduce n Reductio Stressed lain in Rei ches): thes): thes): thes):	y d h7 es (B9) (ex and 4B) s (B13) dor (C1) res along I d Iron (C4 plants (D1 marks)	Living Roc ) I Soils (CC ) (LRR A   wetl pections),	A ( C C C C C C C C C C C C C C C C	ndary Indicato Water-Stained 4A, and 4B Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He Dry Present?	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes No
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo Surface S Inundatio Sparsely Field Observ Surface Wate Water Table F Saturation Pri includes capi Describe Rec	Trology Indicators: ators (minimum of or Vater (A1) er Table (A2) n (A3) urks (B1) a Deposits (B2) posits (B3) a or Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave ations: r Present? Y	magery (B7 e Surface (B es N es N gauge, mod	<u>check all that apply</u> <u>Water-Stain</u> <u>MLRA</u> <u>Salt Crust</u> <u>Aquatic Inv</u> <u>Hydrogen S</u> <u>Cyclized R</u> <u>Presence co</u> <u>Recent Iron</u> <u>Stunted or</u> <u>Stunted or</u> <u>Other (Exp</u> <del>18)</del> <u>Cyclized R</u> <u>Depth (inc</u> <u>100</u> <u>Depth (inc</u> <u>100</u> <u>Cyclized R</u> <u>Cyclized R} <u>Cyclized R</u> <u>Cyclized R} <u>Cyclized R</u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized R} <u>Cyclized R} <u>Cyclized R} </u> <u>Cyclized </u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u>	y (( ) ned Leave 1, 2, 4A, a (B11) rertebrate: Sulfide Oc thizospher of Reduce n Reductio Stressed lain in Rei ches): thes): thes): thes): thotos, prei	y d h7 es (B9) (ex and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Living Roc ) I Soils (Cf ) (LRR A   wetl pections),	$\frac{Seco}{-}$	ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He Dry Present?	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( position (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes X No
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depa Surface S Inundatio Sparsely Surface Water Saturation Pri Saturation Pri Saturation Pri Saturation Pri Saturation Pri Saturation Pri Remarks:	Trology Indicators: ators (minimum of or Vater (A1) er Table (A2) n (A3) urks (B1) to Deposits (B2) posits (B3) to r Crust (B4) posits (B5) Soil Cracks (B6) n Visible on Aerial I Vegetated Concave ations: r Present? Y	magery (B7 es Surface (B es <u>N</u> gauge, mod	<u>check all that apply</u> <u>Water-Stail</u> <u>MLRA</u> <u>Salt Crust</u> <u>Aquatic Inv</u> <u>Hydrogen S</u> <u>Childed R</u> <u>Childed R} <u>Childed R</u> <u>Childed R} <u>Childed R</u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} </u> <u>Childed R} <u>Childed R} <u>Childed R} <u>Childed R} <u>Childe</u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u>	y () ned Leave 1, 2, 4A, a (B11) rertebrate: Sulfide Oc thizosphere of Reduce n Reduction Stressed Iain in Rei ches): thes): thes): thes): thotos, pre- [ e + c	y d h7 es (B9) (e) and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Living Roc ) I Soils (Cf ) (LRR A   Wetl pections),	$\frac{Seco}{-}$	ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He Dry Present?	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( osition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes No
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depa Surface S Inundatio Sparsely Surface Water Nater Table F Saturation Pri Saturation Pri Saturation Pri Remarks:	The second state of the se	magery (B7 es Surface (B es <u>N</u> gauge, mod	<u>check all that apply</u> <u>Water-Stail</u> <u>MLRA</u> <u>Salt Crust</u> <u>Aquatic Inv</u> <u>Hydrogen S</u> <u>Crust and Crust</u> <u>Crust and Crust and Crust</u> <u>Crust and Crust and </u>	y () ned Leave 1, 2, 4A, a (B11) rertebrate: Sulfide Oc thizosphere of Reduce n Reduction Stressed lain in Rei ches): thes): thes): thes): thotos, pre- l e	y d h7 es (B9) (e) and 4B) s (B13) dor (C1) res along I d Iron (C4 plants (D1 marks)	Living Roc ) I Soils (Cf ) (LRR A   Wetl pections),	$\frac{Seco}{-}$	ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Po Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He Dry Present?	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( obsition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes X No
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depa Surface S Inundatio Sparsely Field Observ Surface Water Nater Table R Saturation Princludes capi Describe Rec	The second state of the se	magery (B7 s Surface (B es N gauge, mod t a b l c	<u>check all that apply</u> <u>Water-Stail</u> <u>MLRA</u> <u>Salt Crust</u> <u>Aquatic Inv</u> <u>Hydrogen S</u> <u>Chick all that apply</u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that apply} <u>Chick all that apply} </u> <u>Chick all that ap</u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u>	Y (( ) ned Leave 1, 2, 4A, a (B11) rertebrates Sulfide Oc thizosphere of Reduce n Reductio Stressed klain in Rei ches): thes): thes): thotos, prei	y d h7 es (B9) (e) and 4B) s (B13) dor (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	Living Roc ) I Soils (CC ) (LRR A   Wetl pections),	$\frac{Seco}{-}$	ndary Indicato Water-Stained <b>4A, and 4B</b> Drainage Patte Dry-Season Wa Saturation Visil Seomorphic Pe Shallow Aquita FAC-Neutral To Raised Ant Mo Frost-Heave He Py Present?	rs (2 or more required Leaves (B9) (MLRA 1 ) rns (B10) ater Table (C2) ble on Aerial Imagery ( obsition (D2) rd (D3) est (D5) unds (D6) (LRR A) ummocks (D7) Yes X No

WETLAND DETERMINATION DATA FORM	Western Mountains, Valleys, and Coast Region
Project/Site: Avalon Inn City/C	County: Fort Bragg/Mendo sampling Date: 11 MAR14
Applicant/Owner: Hun +	State: CASampling Point:SP_10
Investigator(s): ASS B Spade Secti	on, Township, Range: <u>531 T19N R17W</u>
Landform (hillslope, terrace, etc.): Fre ( Loca	l relief (concave, convex, none): <u>Nonc</u> Slope (%):
Subregion (LRR): A Lat: 390	27.836 Long: 123° 48.390 Datum: NAD83
Soil Map Unit Name: Tropaque PTS 0-15% Slop-	NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year?	/es <u>X</u> No (If no, explain in Remarks.)
Are Vegetation No., Soil No., or Hydrology No. significantly distur	bed? Are "Normal Circumstances" present? Yes <u>X</u> No
Are Vegetation No., Soil No., or Hydrology No naturally problem	atic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing san	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present?       Yes No         Hydric Soil Present?       Yes No         Wetland Hydrology Present?       Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks: Uphill and to the South of SP9	
VEGETATION Use scientific names of plants.	
Tree Stratum (Platicize: 3017) Absolute Dor	ninant Indicator Dominance Test worksheet:
1. Nove	Status         Number of Dominant Species            That Are OBL, FACW, or FAC:        (A)

1	% Cover Species? Status	Number of Dominant Species Arrow (A)
2		Total Number of Dominant Species Across All Strata: (B)
4 Sanling/Shruh Stratum (Blat size: $20^{1}$ )	= Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)
1 Ame		Prevalence Index worksheet:
2		Total % Cover of: Multiply by:
2		OBL species x 1 =
3		FACW species x 2 =
£	·	FAC species x 3 =
o	() - T-t-1 0	FACU species x 4 =
Herb Stratum (Plot size; 10' K)		UPL species x 5 =
1. Holous landtus.	7.5 Y FAC	Column Totals: (A) (B)
2. Plantago lanceòlata,	25 Y FACU	Prevalence index = B/A =
3. 113 doug lassana	<u> </u>	Hydrophytic Vegetation Indicators:
4. Deschamperia Caespr tosa	3 HACW	1 - Rapid Test for Hydrophytic Vegetation
5. Fragawa Chiolensis		2 - Dominance Test is >50%
6. Hypochaens radicata	2	3 - Prevalence Index is <3.0 <sup>1</sup>
7. Punex actoselly	V FAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9	·	5 - Wetland Non-Vascular Plants <sup>1</sup>
10		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	117 = Total Cover 59: 24	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)		
1. <u>Rubus armentacus</u>	20 Yes HACU	Hydrophytic
2. Rubus Ursinus	10 Yes FRU	Vegetation X
% Bare Ground in Herb Stratum	30 = Total Cover	
Remarks:	10/10	

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0	Delate	SPID
Sampling	Point:	

SOIL Sampling Point: 5P 10									
Profile Desc	ription: (Describe (	to the dep	th needed to docum	ent the inc	dicator o	r confirm	n the absence	of indicators.)	
Depth	Matrix		Redox	Features				-	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-18	101R2/1	100					Sandyloam		_
18-21	10123/1	70					Sandy loam		_
	10423/2	28	10 YR 4/6	Z	C	Μ	0	-	
21-24+	104R5/3	60	10 YRJ/A	30	C	M		osandy clay soft masses with	in
			10 YR 4/1	10	0	M		a sand matnix	_
		·		<u> </u>		<u> </u>			-
		·							-
	<u> </u>	·							
			······				<u> </u>		_
<sup>1</sup> Type: C=Co	oncentration, D=Depl	letion, RM	Reduced Matrix, CS=	Covered	or Coated	Sand G	rains. <sup>2</sup> Loo	cation: PL=Pore Lining, M=Matrix.	
Hydric Soil I	indicators: (Applica	able to all	LRRs, unless otherv	vise notec	i.)		Indicato	ors for Problematic Hydric Solls":	
Histosol	(A1)		Sandy Redox (S	5)			2 cr	n Muck (A10)	
Histic Ep	olpedon (A2)		Stripped Matrix (	S6) inoral (E1)	(avcont		Rec	y Shallow Dark Surface (TE12)	
Hvdrode	n Sulfide (A4)		Loamy Gleved M	latrix (F2)	(except		Oth	er (Explain in Remarks)	
Depleted	Below Dark Surface	e (A11)	Depleted Matrix	(F3)				ст (_лр.ш., ш. т.с.,, _,	1
Thick Da	rk Surface (A12)		Redox Dark Surf	ace (F6)			<sup>3</sup> Indicate	ors of hydrophytic vegetation and	
Sandy M	lucky Mineral (S1)		Depleted Dark S	urface (F7)	)		wetla	nd hydrology must be present,	
Sandy G	ileyed Matrix (S4)		Redox Depression	ons (F8)			unles	ss disturbed or problematic.	
Restrictive L	_ayer (if present):								
Type:									-
Depth (inc	ches):						Hydric Soil	Present? Yes <u>No </u>	_
Remarks: C	concentration	sand	depletions for	n dr.	po tr	n	et anu	hudore soil indeal	ors
					1	, ,	-  -  -  -  -  -  -  -  -  -  -  -  -	J	"
HYDROLO	GY								
Wetland Hyd	drology Indicators:								
Primary Indic	ators (minimum of o	ne require	d; check all that apply	)			Seco	ndary Indicators (2 or more required)	1
Surface	Water (A1)		Water-Stain	ed Leaves	s (B9) (ex	cept	v	Vater-Stained Leaves (B9) (MLRA 1,	2,
High Wa	ter Table (A2)		MLRA 1	, 2, 4A, an	d 4B)			4A, and 4B)	
Saturatio	on (A3)		Salt Crust (	B11)	•		0	Drainage Patterns (B10)	
Water M	larks (B1)		Aquatic Inve	ertebrates	(B13)		0	Dry-Season Water Table (C2)	
Sedimer	nt Deposits (B2)		Hydrogen S	Sulfide Odd	or (C1)		\$	Saturation Visible on Aerial Imagery (C	(9)
Drift Dep	oosits (B3)		Oxidized R	hizosphere	s along L	iving Ro	ots (C3) C	Seomorphic Position (D2)	
Algal Ma	at or Crust (B4)		Presence o	f Reduced	Iron (C4)	) .	\$	Shallow Aquitard (D3)	
Iron Dep	osits (B5)		Recent Iron	Reduction	n in Tilled	Soils (C	6)F	AC-Neutral Test (D5)	
Surface	Soil Cracks (B6)		Stunted or :	Stressed P	lants (D1	) (LRR A	N) F	Raised Ant Mounds (D6) (LRR A)	
Inundatio	on Visible on Aerial I	magery (B	7) Other (Expl	ain in Rem	narks)		F	Frost-Heave Hummocks (D7)	
Sparsely	Vegetated Concave	e Surface (	88)					· · · · · · · · · · · · · · · · · · ·	
Field Obser	vations:			h ).					
Surface vvat	er Present? Y	es	No Depth (inc	nes):	11	-			
vvater lable	Present? Y	es_v_	No Depth (inc	hes):	15	-			<
(includes car	resent? Y	es <u>v</u>	No Depth (inc	nes):	2	- Wet	land Hydrolog	ly Present? Tes No	<u> </u>
Describe Re	corded Data (stream	gauge, m	onitoring well, aerial p	hotos, prev	vious insp	ections),	if available:		
1									
Remarks: 1	to conjural	100.0	Shi la i		10 (1	· ·	. 1	· · · · ·	
	TENTEC ON	ion w	ithin the U	pper	12	· P	aired u	N/ point spg	
which	I had wa	ter to	ble at 1"	-oday		•			
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Teleforence	and second to second	· · · · · · ·							

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#### Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DA	TA FORM	I - West	tern Mou	ntains, Valleys, and Coast Region
Project/Site: AV3 00 100	c	City/County	Forth	Brage / Mrado Sampling Date: 11MR14
Applicant/Owner: HUA+	`	July County		State: ( A Sampling Point: SP //
Investigator(s): ASA B SPARE		Section To	weepin Da	S31 TI9N RI7W
Landform (hillslope tarrage ato): Field	```````````````````````````````````````			$\frac{\partial \partial P}{\partial A} = \frac{\partial P}{\partial A}$
Submain (I BB):	1 at 30	70 2.7	937	Lang 123° 48 391 Datum NAD83
Sublegion (LRR)	_ Lal	1-005	00.1.	
Soli Map Unit Name: 1000900005 0	576 5	an-	X	NVVI classification: 1907.E
Are climatic / hydrologic conditions on the site typical for thi	s time of yea	ar? Yes	<u> NO </u>	(if no, explain in Remarks.)
Are vegetation (00, Soil 100, or Hydrology <u>NO</u>	significantly o	disturbed?	Are	Normal Circumstances present? Yes No
SUMMARY OF FINDINGS - Attach site map	showing	samplin	a point l	ecee, explain any answers in Remarks.)
Hydrophytic Vegetation Present? Yes N	• ×			
Hydric Soil Present? Yes N	• <u>×</u>	is th	e Sampleo	l Area
Wetland Hydrology Present? Yes N	<u>∘_X_</u>	with	in a Wetla	nd? Yes No
Remarks: Uphilland cast of Spg				
VEGETATION – Use scientific names of plan	ts.			
Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. None				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3			<u> </u>	Species Across All Strata: (B)
4				Percent of Dominant Species
Sanling/Shruh Stratum (Plot size) 20 <sup>1</sup>	0	= Total Co	ver	That Are OBL, FACW, or FAC:(A/B)
1 None				Prevalence Index worksheet:
2.			·	Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species $x_3 = $
Horth Streeture (Distaine) 10 <sup>1</sup> K	0	= Total Co	ver	UPL species x 5 =
1 Holdus gratus	65	¥	FAC	Column Totals: (A) (B)
2 Stachus Figida	50	<del>'</del> Y	FAC	
3. Festuca rubra	3	N	FAC	Prevalence Index = B/A =
4. Potentilla an serina (Agenting		N	OBL	1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9	-	·		5 - Welland Non-Vascular Plants Problematic Hydrophytic Vegetation <sup>1</sup> (Evplain)
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
1	119	= Total Co		be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 10' ٢)	`			
1. RUDUS UTSINUS	_10_	<u> </u>	FACU	Hydrophytic
2. Lubus armaniacus	5_	¥_	TACU	Vegetation Yes No
% Bare Ground in Herb Stratum		= Total Cov	ver	
Remarks:				L
		· · · · · · · ·		
US Army Corps of Engineers				Western Mountains, Valleys, and Coast - Version 2.0

SOIL

Sampling Point: SP /]

Profile Description: (Describe	to the depth r	needed to docum	nent the i	ndicator o	or confirm	the absence of i	ndicators.)	
Depth Matrix		Redox	x Features					
(inches) Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
021+ 10YR3/1	100					Sandy loam		
								-
			· ·					
			. <u></u>					
······································			. <u> </u>					
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		· · · · · · · · · · · · · · · · · · ·						
					<u> </u>			
<sup>1</sup> Type: C=Concentration, D=De	pletion, RM=Re	duced Matrix, CS	S=Covered	or Coate	d Sand Gr	ains. <sup>2</sup> Locatio	n: PL=Pore Lining, M	=Matrix.
Hydric Son indicators. (Appli		res, unless other		nu.)		Indicators in	of r robicinatio rigan	
Histosol (A1)		Sandy Redox (S	55)			2 cm MU	JCK (A1U)	
Histic Epipedon (A2)		Stripped Matrix	(S6)			Red Par	ent Material (1F2)	540
Black Histic (A3)		Loamy Mucky N	fineral (F1	) (except	MLRA 1)	Very Sh	allow Dark Surface (1	F12)
Hydrogen Sulfide (A4)		Loamy Gleyed	Matrix (F2)	)		Other (E	xpiain in Remarks)	
Depleted Below Dark Surfa	ce (A11)	Depleted Matrix	(F3)			3	6 hard and a dia and a di	an and
Thick Dark Surface (A12)		Redox Dark Su	mace (F6)	-		Indicators o	r nyaropnytic vegetatio	
Sandy Mucky Mineral (S1)		Depleted Dark S	Surface (F	7)		wetland h	iyarology must be pre-	sent,
Sandy Gleyed Matrix (S4)		Redox Depress	ions (F8)			unless di	sturbed or problematic	<u>.</u>
Restrictive Layer (if present):								
Туре:		_						~
Depth (inches):		_				Hydric Soil Pre	sent? Yes	No <u>×</u>
Remarks:								
No hydric	Soil Ind	ICAMES	Valu	o ton	high	IA UNDER	lamers to A	produtat
Lepper Di A			Value	- 100	"U"	11-1		
deels bidi								
HYDROLOGY								
Wetland Hydrology Indicators	8:	. )						
Primary Indicators (minimum of	one required; c	heck all that apply	<b>v</b> )			Secondar	y Indicators (2 or more	e required)
Surface Water (A1)		Water-Sta	ined Leave	es (B9) (e	xcept	Wate	r-Stained Leaves (B9)	(MLRA 1, 2,
High Water Table (A2)		MIRA	1 2 44 =	and AR)		- 44	and 4B)	
		Soft Count	(D11)	110 40)		Drain	ane Patterns (B10)	
Saturation (AS)		Salt Crust	(011)	(040)		Drain	age ratients (DTU)	ומי
Water Marks (B1)		Aquatic In	vertebrate	S (B13)		Dry-3	eason water Table (C	(00)
Sediment Deposits (B2)		Hydrogen	Sulfide Oc	for (C1)	10 N	Satur	ation Visible on Aerial	imagery (C9)
Drift Deposits (B3)		Oxidized F	Rhizosphe	res along	Living Roo	ots (C3) Geon	norphic Position (D2)	
Algal Mat or Crust (B4)		Presence	of Reduce	d Iron (C4	4)	Shall	ow Aquitard (D3)	
Iron Deposits (B5)		Recent Iro	n Reducti	on in Tille	d Soils (Ce	6) FAC-	Neutral Test (D5)	
Surface Soil Cracks (B6)		Stunted or	Stressed	Plants (D	1) (LRR A	) Raise	ed Ant Mounds (D6) (L	.RR A)
Inundation Visible on Aerial	I Imagery (B7)	Other (Exc	olain in Re	marks)		Frost	-Heave Hummocks (D	07)
Sparsely Vegetated Concar	ve Surface (B8)			,				
Field Observations'								
		Y DUNG			1			
Surrace vvater Present?	res No	Depth (in	cnes):	01	-			
Water Table Present?	Yes X No	Depth (in	ches):	4				×
Saturation Present?	Yes X No	Depth (in	ches):	21	Weti	and Hydrology Pr	resent? Yes	No
(includes capillary fringe)						10 11 1.1		
Describe Recorded Data (stream	m gauge, monit	oring well, aerial	photos, pr	evious ins	spections),	it available:		
- <u>-</u>							·····	
Remarks: Water tall	· >+2	Inchas	d0 4	same	de	SP9 had	water at	F  "
		i inches		שייות	499	21 1 VI40		
=/ too deep	to meet	-high wate	er tab	k	5			
•		U						

#### US Army Corps of Engineers

#### Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DA	TA FORM – Western Mou	ntains, Valleys, and Coast Region
Project/Site: AV2 ON INN	City/County: Fort P	Prage / Mendo Sampling Date: S/11/2014
Applicant/Owner: HUAT		State: CA Sampling Point: 5P12
Investigator(s): A32, B Space	Section, Township, Ra	nge: 531 TI9N RI7W
Landform (hillstone terrace etc.): 5M2 (1 hill	Local relief (concave	convex none): $CONVEX$ Slope (%): $O$
Subregion (LBB): A	Lat: 39° 27,917	Long: 173' 48.398 Datum: NAD83
Sublegion (LAR)	5% (10025	Long. 1 L.)
Soli Map Unit Name: Tropa quept 5 0	5/0 5(0pt /	
Are climatic / hydrologic conditions on the site typical for the	s time of year? Yes <u> </u>	(If no, explain in Remarks.)
Are Vegetation <u>IND</u> , Soil <u>FCS</u> , or Hydrology <u>IV 0</u>	significantly disturbed? Are '	"Normal Circumstances" present? Yes No
Are Vegetation <u>1°0</u> , Soil <u>100</u> , or Hydrology <u>IV 0</u>	naturally problematic? (If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling point I	ocations, transects, important features, etc
Hydrophytic Vegetation Present? Yes N	lo	1 Area
Hydric Soil Present? Yes N	within a Wetlan	nd? Yes No
Wetland Hydrology Present? Yes N		
Investigated due to adjacency to On aetial photo; gneen is di	swale to the south	and because area appeared gheer
VEGETATION – Use scientific names of plan	its.	-
	Absolute Dominant Indicator	Dominance Test worksheet:
Nino 2	% Cover Species? Status	Number of Dominant Species
2		
3	** ************************************	Total Number of Dominant 2 (B)
4.		
	0 = Total Cover	Percent of Dominant Species $50\%$ (A/B)
Sapling/Shrub Stratum (Plot size:)		Prevalence Index worksheet:
1. Nove	_ <u></u>	Total % Cover of: Multiply by:
2		OBL species x 1 =
3		FACW species x 2 =
4	- <u> </u>	FAC species x 3 =
5		FACU species x 4 =
Herb Stratum (Plot size:)		UPL species x 5 =
1. Holcus lang tus	TO Yes FAC	Column Totals: (A) (B)
2. Polystichum Munifum	NO NI(UPL)	Prevalence Index = B/A =
3. Plantago lanceolata	5 / Freu	Hydrophytic Vegetation Indicators:
4. Fragafia chi loensis	<u>5</u> <u>FACU</u>	1 - Rapid Test for Hydrophytic Vegetation
5. Happchaeris Fadicata	-2 FACU	2 - Dominance Test is >50%
6. FESTUCZ arundinacea	<u> </u>	3 - Prevalence Index is ≤3.0 <sup>1</sup>
7		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8		5 Motiand Non Vascular Plante <sup>1</sup>
9	,	Problematic Hydronhytic Vegetation <sup>1</sup> (Evaluar)
10		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
11- <u></u>	84 = Total Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)		
1. Rubus grMeniacus	40% tes	Hydrophytic
2		Vegetation
$\sim$	-46 = Total Cover	
% Bare Ground in Herb Stratum		ļ
Remarks: Did not include plants	on compacted that ea	It (3'wide) not trall

#### US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

SOIL

Sampling Point: SP 12

Profile Description: (Description: (Description: Construction to find field of continue)         Opph         (Inclust)         Cotor (moist)       %         Partice (A12)       Stepped Matrix (C3-         Partice (A12)       Stepped Matrix (C3-         Partice (A13)       Loany Modey Matrix (C3)         Depieted Below Dark Statee (A1)       Depieted Matrix (C3)         Depieted Below Dark Statee (A1)       Depieted Matrix (C3) <t< th=""><th>SOIL</th><th></th><th>Sampling Point:</th></t<>	SOIL		Sampling Point:					
Depth       Matrix       Redox Features       Texture       Remarks         (Inclese)       Color (moist)       %       Color (moist)       %       Texture       Remarks         (Inclese)       Color (moist)       %       Color (moist)       %       Type       Remarks         (Inclese)       (Inclese)       (Inclese)       (Inclese)       (Inclese)       (Inclese)         Type:       (Inclese)       (Inclese)       (Inclese)       (Inclese)       (Inclese)       (Inclese)         Type:       (Inclese)       (Inclese) </th <th>Profile Description: (Describe to the</th> <th>depth needed to document the indicator or confirm</th> <th>n the absence of indicators.)</th>	Profile Description: (Describe to the	depth needed to document the indicator or confirm	n the absence of indicators.)					
dischesit       Setor (moist)       %       Color (moist)       %       Type       Loc <sup>2</sup> Texture       Remarks	Depth Matrix	Redox Features						
Type: CrConcentration. D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains       ************************************	(inches) Color (moist) %	Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture Remarks					
Type: C=Concentration_D=Depetion, Ru=Reduced Matrix, CS=Covered or Coated Sand Grains       ************************************	······································							
Type: CrConcentration, DrDepletion, RM-Reduced Matrix, CS-Covered or Coated Sand Grains       * Location: PL=Pore Lining, M=Matrix, SD-Pore Lining, M=Matrix, SD								
Type:       C-Concentration, D-Depeteton, RM-Reduced Matrix, CS-Covered or Costed Sand Grains <sup>2</sup> Location: PL=Pore Lining, M=Matrix, Medicators for Problematic Hydric Solts?         Histos (A1)       Sandy Redox (S5)								
Type:       C=Concentration, D=Depetion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains       ************************************								
Type:       C-Concentration, D-Depetition, RM=Reduced Matrix, CS=Covered or Costed Sand Graina       *Location: PL=Pore Lining, M=Matrix         Hydric Soli Indicators:       Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solis':         Histos (IA1)       Sinpped Matrix (S6)       2 on Muck (A10)         Histos (IA1)       Depetide Matrix (S7)       -2 on Muck (A10)         Hydric Soli Indicators:       Comy Gleyed Matrix (S7)       -2 on Muck (A10)         Tribus Dark Surface (A11)       Depeted Matrix (S3)       -0 on Muck (A10)         Depeted Below Dark Surface (A11)       Depeted Matrix (S3)       -0 other (Explain in Remarks)         Sandy Mucky Mineri (S1)       Depeted Dark Surface (F7)       wetland Hydrology must be present.         Type:	<u> </u>							
Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix, Matrix CS=Covered or Coated Sand Grains.         Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix, Matrix Soli S         Hidd: Explorable Core: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soli S:         Hidd: Explorable CAS:       Stripped Matrix (SS)       2 cm Muck (M10)         Hidd: Surface (A1)       Depleted Bark Surface (FF)       Principped Matrix (F2)       Other (Explain in Remarks)         Depleted Bark Surface (A1)       Depleted Dark Surface (F6) <sup>1</sup> Indicators of hydrophylic segetation and surface (TF)         Sandy Macky Mineral (S1)       Depleted Dark Surface (F7)       veliand hydrology must be present.         Bark Muck (S4)       Reciox Depressions (F8)       unless disturbed or problematic.         Restrictive Layer (If present):       Type:       hydric Soli Present? Yes       No         Depth Indicators infimum of one required .theck all that apply)       Secondary Indicators (2 or more resulted)       Secondary Indicators (2 or more resulted)         High Water Table (A2)       MLRA 1, 2, 4A, and 4B)       Dariange Patterne (B10)       Dariange Patterne (B10)         Surface Water (A1)       Water Marks (B1)       Dariange Patterne (B10)       Dariasea Patterne (B10)       Dariange								
Type:       C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Costed Sand Grains       ?Location: PL=Pore Lining, M=Matrix, PL=Pore Lining, M=Matrix, Hydric Soli Indicators: (Applicable to all LRRs, unless otherwise noted.)         Histocol (A1)								
Type: C=Concentration, D=Depletion, RM-Reduced Matrix, CS=Covered or Coaled Sand Grains.       ?Location: PL=Pore Lining, M=Matrix, Medicators: (Applicable to all LRRs, unless otherwise noted.)         Hidde Carbon, All (A)       Sandy Redox (S5)			·····					
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coaled Sand Grains. <sup>2</sup> Loation: PL=Pore Lining, M=Matrix, Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Photbenatic Hydric Solls': Histocol (A1)								
Type:       Concentration. D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils*:         Histosio (A)       Sandy Redox (SS)       2 cm Muck (A10)         Histosio (A)       Learny Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A3)       Learny Mucky Mineral (F2)       Other (Explain in Remarks)         Depleted Bolow Dark Surface (A12)       Redox Dark Surface (F3)       *Indicators fully dyrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Type:       Processore & disful berd, bulk A1 of trail (construction)       Wetland Hydrology must be present, unless disturbed or problematic.         Remarks:       Precessore & disful berd, bulk A1 of trail (construction)       Secondary Indicators (2 or more required)         Briter A11       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Saturation (A3)       Saturation (C11)       Darliage Patterns (E10)       Drainage Patterns (E10)         Saturation (A3)       Saturation (C11)       Darliage Patterns (E10)       Dreseason Water Table (								
Type: C-Concentration. D-Depletion, RM-Reduced Matrix, CS-Covered or Coaled Sand Grains.       * Location: PL-Pore Lining, M-Matrix, Hydric Soils*:         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Soils*:         Histic Epideon (A2)       Sandy Redox (S5)		· · · · · · · · · · · · · · · · · · ·						
Type:         Constraint         Despiteion, RN-Reduced Matrix, CS=Covered of Coaled Sand Grains.         Classion:         Despiteion           Hydric Soil Indicators:         (Applicable to all LRRs, unless otherwise noted.)         Indicators for Problematic Nydric Soils*           Histosio (A1)         Sandy Redox (S5)         Corn Muck (A10)           Histosio (A1)         Sandy Redox (S5)         Red Parent Material (TF2)           Hydrigen Sulfide (A3)         Learny Gleyed Matrix (F3)         Other (Explain In Remarks)           Depleted Bolow Dark Surface (A12)         Redox Dark Surface (F7)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.           Sandy Mucky Mineral (S1)         Depleted Matrix (F3)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.           Type:         Depleted Matrix (F3)         No         No           Sandy Gleyed Matrix (F4)         Redox Dark Surface (F7)         wetland hydrology must be present, unless disturbed or problematic.           Type:         Depleted Matrix (F3)         No         Secondary Indicators (12 or more reaulired)           Mydric Soil Present?         Yes         No         No           Depleted Matrix (F3)         Redox Dark Surface (F8)         No         Secondary Indicators (12 or more reaulired)           Mydrology Indic								
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators (Applicable to all LRRs, unless otherwise noted.)       Indicators (Applicable to all LRRs, unless otherwise noted.)         Histos (A1)	<sup>1</sup> Type: C=Concentration, D=Depletion,	RM=Reduced Matrix, CS=Covered or Coated Sand G	rains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.					
Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histosol (A2)       Stripped Matrix (S5)       Red Parent Material (TF2)         Black Histosol (A2)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (TF12)         Thick Dark Surface (A11)       Depleted Matrix (F2)       Cher (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       veliand hydrogony must be present, unless disturbed or problematic.         Restrictive Layer (If present):       Type:	Hydric Soil Indicators: (Applicable to	all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :					
	Histopol (A1)	Sandy Beday (S5)	2 cm Muck (A10)					
	Listic Esizedan (82)	Salidy Redox (SS)	2 cill Midck (A70) Red Percent Material (TE2)					
	Histic Epipedon (A2)	Stripped Matrix (Sb)	Red Parent Material (TF2)					
Hydrogen Sulfide (A4)	Black Histic (A3)	Loamy Mucky Mineral (+1) (except MLRA 1)	Very Shallow Dark Surface (1F12)					
	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)	Indicators of hydrophytic vegetation and					
	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,					
Restrictive Layer (if present):         Type:	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.					
Type:	Restrictive Layer (if present):							
Depth (inches):       Hydric Soil Present? Yes       No         Remarks:       Prestimed distributed but M of trail (construct) in       No       No         Remarks:       Prestimed distributed but M of trail (construct) in       No       No         HYDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	Type <sup>-</sup>	<i>x</i> .						
Remarks:       Pressure d distribed buy M of trail construction         Primary indicators:       Pressure d distribed buy M of trail construction         Primary indicators:       Primary 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       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Saturation (A3)       Saturation (A3)       Saturation (C1)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic invertebrates (B13)       Dry-Season Water Table (C2)         Saturation (A3)       Saturation (C1)       Saturation Visible on Aerial Imagery (C9)         Dift Deposits (B3)       Oxidized Rhizospheres atong Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reducton in Tilled Solis (C6)       FAC-Neutral Test (D5)         Surface Soli Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Reised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Saturation Present?       Yes       No       Depth (inches):       Wetar Table Present? Yes       No         Saturation	Depth (inches):		Hydric Soil Present? Yes No					
Remarks:       prosumed distributed burn of trail construction         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (ninimum of one required; check all that apply)       Secondary Indicators (2 or more required)	Deptil (inches).	<b>K</b>						
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	Remarks: Dressimed July	shed have at trail couche	100					
Aig Ard G. Soil protific         Wetland Hydrology Indicators:         Primary Indicators (inhimum of one required; check all that apply)       Secondary Indicators (2 or more required)	hick dist	See Donat of that Congit	UC N 05					
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	did not dig go	1 protile						
Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	L L							
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)								
Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	HYDROLOGY							
Wetland Hydrology Indicators:         Primary Indicators (ininium of one required; check all that apply)       Secondary Indicators (2 or more required)		·····						
Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Saturation (A3)       Saturation (A3)       Saturation (B1)       Aquatic Indicators (2 or more required)         Water Marks (B1)       Aquatic Invertebrates (B13)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Agai Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Solis (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Depth (inches):       Wetland Hydrology Present? Yes       No         Saturation Present?       Yes       No       Depth (inches):       No       Matre Mark (Mark Mark Mark Mark Mark Mark Mark	Wetland Hydrology Indicators:							
	Primary Indicators (minimum of one req	uired; check all that apply)	Secondary Indicators (2 or more required)					
High Water Table (A2)       MLRA 1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Salt Crust (B11)       Drainage Patterns (B10)         Water Marks (B1)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Orift Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algai Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Field Observations:       Wettand Hydrology Present? Yes       No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present? Yes       No         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Remarks:       NO Mydrology on for	Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,					
	High Water Table (A2)	MLRA 1, 2, 4A, and 4B)	4A, and 4B)					
<ul> <li>Seturation (ro)</li> <li>Seturation (ro)</li> <li>Seturation (ro)</li> <li>Seturation Visible on Aerial Imagery (C9)</li> <li>Algal Mat or Crust (B4)</li> <li>Presence of Reduced Iron (C4)</li> <li>Shallow Aquitard (D3)</li> <li>Iron Deposits (B5)</li> <li>Recent Iron Reduction in Tilled Soils (C6)</li> <li>FAC-Neutral Test (D5)</li> <li>Surface Soil Cracks (B6)</li> <li>Stunted or Stressed Plants (D1) (LRR A)</li> <li>Raised Ant Mounds (D6) (LRR A)</li> <li>Inundation Visible on Aerial Imagery (B7)</li> <li>Other (Explain in Remarks)</li> <li>Frost-Heave Hummocks (D7)</li> <li>Saturation Present?</li> <li>Yes</li> <li>No</li> <li>Depth (inches):</li> <li>Wetland Hydrology Present?</li> <li>Yes</li> <li>No</li> <li>Depth (inches):</li> <li>Wetland Hydrology Present?</li> <li>Yes</li> <li>No</li> <li>Depth (inches):</li> <li>Wetland Hydrology Present?</li> <li>Yes</li> <li>No</li> <li>Alf of a fraction of the fraction of the part of</li></ul>	Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)					
Water Marks (B1)Aduatic Invertebrates (B13)Diversity of the provided and provid			Drainage r attentis (Dro)					
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No Hydrology on top of byth due for top byth Aarrow drain age firth of any have for the first of the firs	Water Marks (B1)	Aquatic invertebrates (B13)	Dry-Season Water Table (C2)					
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2)     Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3)     Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5)     Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)     Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)     Sparsely Vegetated Concave Surface (B8)     Field Observations:     Surface Water Present? Yes No Depth (inches):     Saturation Present? Yes No Depth (inches):     Gincludes capillary fringe)     Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:     Remarks: No hydrology on topof by the of any have for topo for the form of the order of	Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)					
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: NO hygerology on top of burk due for top of top buy Aatrow drain age firtch or ang have load train drain age firtch or ang have load train	Drift Deposits (B3)	Oxidized Rhizospheres along Living Room	ots (C3) Geomorphic Position (D2)					
Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Mo Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Mo Depth (inches): Saturation Present? Yes No Aurifield Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No Hord Fail Present Prese	Algai Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)					
Surface Soil Cracks (B6)	Iron Deposits (B5)	Recent Iron Reduction in Tilled Soils (C	6) FAC-Neutral Test (D5)					
Inundation Visible on Aerial Imagery (B7)Other (Explain in Remarks)Frost-Heave Hummocks (D7)Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? YesNoDepth (inches):Water Table Present? YesNoDepth (inches):Water Table Present? YesNoDepth (inches):Wetland Hydrology Present? YesNoDepth (inches):Wetland Hydrology Present? YesNo Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrology on top of burn due for topo for phy Aarrow drainage ditch of any had lood frain drainage ditch in otechnice we land we for topo for phy	Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) (I RR A	Raised Ant Mounds (D6) (LRR A)					
	Culture Con Clubic (20)	(BZ) Other (Evaluity in Remarks)	Erect Heave Hummerks (D7)					
<u>Field Observations:</u> Surface Water Present? Yes <u>No</u> Depth (inches): <u>Ves</u> <u>No</u> Depth (inches): <u>Ves</u> <u>No</u> <u>Depth (inches):</u> <u>Ves</u> <u>No</u> <u>Depth (inches):</u> <u>Ves</u> <u>No</u> <u>Depth (inches):</u> <u>Ves</u> <u>No</u> <u>Depth (inches):</u> <u>Ves</u> <u>No</u> <u>X'</u> (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: NO hydrology on topot by rm due for topot ophy Aarrow drainage Gitch o and had lood frail drainge Gitch in otermise woland area	Inundation Visible on Aerial Imager	y (B7) Other (Explain in Remarks)	Flost-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):         Saturation Present?       Yes No Depth (inches):         Wetland Hydrology Present?       Yes No         Cincludes capillary fringe)       Wetland Hydrology Present?         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:         Remarks:       No hydrology on top of byrm due for top of upphy         Aarrow       drainage         Arrow       drainage         Arrow       drainage         Arrow       drainage         Wetland Hydrology       Depth (inches):         No          Marrow       drainage         Arrow       drainage         Arrow       drainage         Arrow       drainage         Wetland Hydrology       drainage         Marrow       drainage         Wetland       drainage         Wetland       drainage         Wetland       drainage	Sparsely Vegetated Concave Surfa	ce (B8)						
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No <u>×</u> (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrology on top of byrm due for topo 5 up hy Aarrow drainage fitch o ang had lood frail drainge fitch in otermise up land a frail	Field Observations:							
Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No X. Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No X. (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrology on top of burn due for topog upphy Aarrow drainage fitch o ang had lood frail drainge fitch in otermise upland arrow	Surface Water Present? Yes	No Depth (inches):						
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No X (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrology on top of byrm due for topog upphy Aarrow drainage ditch o ang had lood frail drainge ditch in otermise upland arrow	Water Table Present? Yes	No Depth (inches)						
Remarks: NO hydrology on topot by M due to topos upphy Aarrow drainage ditch in otermise upland had lood trail drainge ditch in otermise upland area	Saturation Present?	No Dopth (inches):	land Hudrology Present? Vac No X'					
Remarks: NO hydrology on topot burn due for topog upphy Aarrow drainage ditch along had lood trail drainge ditch in otermise upland arrow	(includes capillary fringe)		anu nyurology Presentr Tes No					
Remarks: No hydrology on topot burn due to topography Narrow drainage ditch olong had lood trail drainge ditch in otermise upland deres	Describe Recorded Data (stream dauge	monitoring well aerial photos previous inspections)	if available:					
Remarks: No hydrology on top of burn due to topography Narrow drainage ditch olong had lood trail drainge ditch in otermise upland dares	( 00-, 00-, Frence) Frence, Frence, Herman,							
Remarks: No hydrology on topot burn due to topography Narrow drainage ditch olong had lood trail drainge ditch in otermise upland a frail								
Narrow drainage ditch olong had lood trail drainge ditch in otermise upland a frail	Remarks: No hun raing u	an time 1	1.					
Narrow drainage ditch olong had lood frail drainge ditch in otermise upland a frail		topor burn dup to t	apor s april					
drainge ditch in otermise upland a frail	Aarrow Irain.	are fitch glam 1. 11-1	マレント ノ					
drainge ditch in otethise upland after	Lot the Group of	The offer and have look	+1911					
- I addit I	ranning and have been word have road trail							
<u>N</u>	dualage ditch i	A oterhise uplant .r	1.7					

#### SOIL

## Sampling Point: SPB

Depth         Matrix         Redox Features         Tope         Loc         Texture         Remarks           0-9         10YP-2/1         100         100         102M         102M         102M         102M           27-16         10YP-2/1         100         100         103M         0276         5.6.[]         fragments           16-18         10YP-2/1         100         5.78.5/8         5.         C         M         03M         0276         5.6.[]         Fragments           16-18         10YP-2/1         100         5.75.78.5/8         7.         C         M Sady Bain         Carc         5.0.1.6.1.6.1.6.1.6.1.6.1.6.1.6.1.6.1.6.1	Profile Description: (Describe to the dep	th needed to document th	e indicator o	r confirm	the absence	of indicators.)	
Indeels       Gater (molest)       %       Type       Loc       Testure       Remarks         03-05       LOYP-2/1       LOO       LoA       LoA       LoA       LoA         12-16       LOYP-2/1       LOO       LoA       LoA       Care       Apoles         16-16       LOYR-3/1       LOO       Sandy Baw       Care       Apoles       Care       Apoles         18-24H       LOYR-3/1       LOO       Sandy Baw       Care       Care       Apoles         19-24H       LOYR-3/1       LOO       Sandy Baw       Care       Sandy Baw         19-24H       LOYR-3/1       LOO       Sandy Baw       Care       Sandy Baw         19-24H       LOYR-3/1       LOO       Sandy Baw       Care       Sandy Baw         19-25       Concentration       Depleted Matrix (CS)       -2 cm Mack (A10)       Sandy Baw       -2 cm Mack (A10)       -2 cm	Depth Matrix	Redox Featu	res				
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	(inches) Color (moist) %	Color (moist) %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
B-T2_10/P-2/1       100	0-8 1042-21 100				MEOL		
12-16       10/R-2/1       75       5 Y R.5/8       5       C       M       Ioam       Care: Addues         10-21+1       10/R.3/1       100       Sandy loam       Care: Suft Andres         10-21+1       10/R.3/1       93       7,5 Y R.5/8       7       C       M Sandy loam       Care: Suft Andres         10-21+1       10/R.3/1       93       7,5 Y R.5/8       7       C       M Sandy loam       Care: Suft Andres         11       93       7,5 Y R.5/8       7       C       M Sandy loam       Care: Suft Andres         10       11       93       7,5 Y R.5/8       7       C       M Sandy loam       Care: Suft Andres         11       11       11       11       11       M Sandy Response       Total Suft (A)       Ioam       Indicators (PL-Pore Lining, M-Matrix:         11       11       11       Sandy Response       Indicators (PL-Pore Lining, M-Matrix:       Indicators: (PL-Pore Li	8-12 104P2/1 100	<u></u>			LO3M	W 2% Shell tragments	
Ib-1(B)       [OYR.3/I]       [OO	12-16 10YR2/1 95	5YR5/8 5	C	M	loam	Care nodules	
IB - 24+       IO/TR-3/1       93       7,5YR,5/8       7       C       M SAds [bg/n       C arc soft AM4%+S         "Type: C-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       **Location: PL=Pore Lining, M=Matrix         Hypric Soli Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solis":         Histosi (A1)	16-18 104R 3/1 100				Sandy loam		
ID       2.1       DTROPY       ID       TASTROPY         International indicators       International indicators       Indicators       Indicators       Indicators         Indicators       (Applicable to all LRR, unless otherwise noted.)       Indicators	10-24+ 10YP 3/1 93	7540510 -	7 (	No 4	Sad Loo	Care Sitt Masses	
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls':         Histosol (A1)	10 211 10 KD/ 15	1.31346		1.1	Mag (00 m)	Care with Marris	
"Type:       C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soli Indicators:       (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solis!:         Histic Explection, RAM       Sinpped Matrix (S6)       2 com Muck (A10)         Histic (A2)       Sinpped Matrix (S6)       -2 com Muck (A10)         Depleted Below Dark Surface (A1)       Depleted Matrix (F3)       -0 cither (Explain in Remarks)         Depleted Below Dark Surface (A1)       Depleted Matrix (F3)       -0 cither (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (If present):       Type:							
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       *Location: PL=Pore Lining, M=Matrix, M=Matrix, Mydric Solis*:         Histosol (A1)       Sandy Redox (S5)       Indicators in CP Problematic Hydric Solis*:         Histosol (A2)       Sinpped Matrix (S6)       2 cm Muck (A10)         Histosol (A2)       Loarny Muck (Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Hydrogen Suified (A4)       Loarny Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Delw Dark Surface (A11)       Depleted Dark Surface (F7)       Sandy Muck (Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic.         Type:       Depleted Dark Surface (F1)       No X         Remarks:       Shell Fragments VISIblic C Surface in gopher Mo UN dS         No hydroz Gori Indicators:       MuRA 1, 2 4A, and 4B)       4A, and 4B)         Saturation (A3)       Saturation (C1)       Saturation (C1)       Saturation (C2)         Saturation (A3)       Statured researce Surface (B3)       Geomorphic Position (D2)         Saturation (A3)       Saturation Reduction in Titled Solis (C2)       Geomorphic Position (D2)         Saturation (A3)       Saturation Reduction in Titled Solis (C2)       Hydroge Patterns (B10)       Drai							
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.       *Location: PL=Pore Lining, M=Matrix         Hydric Soli Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solis':         Histosoli (A1)							
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls*:         Histic Epidedin (A1)       Sandy Redox (S5)      2 cm Muck (A10)         Histic Epidedin (A2)       Stripped Markix (S5)      Red Parent Material (T2)         Black Histic (A3)       Loamy Glayed Markix (F3)      Other (Explain in Remarks)         Depleted Below Dark Surface (A11)       Depleted Markix (F3)      Other (Explain in Remarks)        Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)      wetland Hydrology must be present.        Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)      wetland Hydrology must be present.        Remarks:       She[]       Fragment 45 V/S (b ( C) Surface ( M gop her Mo UA dS)         No       Mydric Soil Present?       No         Wetland Hydrology Indicators:	<sup>1</sup> Type: C=Concentration, D=Depletion, RM	=Reduced Matrix, CS=Cove	red or Coated	Sand Gra	ains. <sup>2</sup> Loo	cation: PL=Pore Lining, M=Matrix.	
	Hydric Soil Indicators: (Applicable to all	LRRs, unless otherwise n	oted.)		Indicato	ors for Problematic Hydric Soils <sup>3</sup> :	
	Histosol (A1)	Sandy Redox (S5)			2 cm	n Muck (A10)	
Black Histic (A3)       Loamy Mucky Mineral (F1) (axcept MLRA 1)       Very Shallow Dark Surface (F12)         Hydrogen Suffide (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       Redox Dark Surface (F6) <sup>1</sup> Indicators of hydrophytic vegetation and wetand hydrology must be present, unless disturbed or problematic.         Sandy Mucky Mineral (S1)       Depleted Matrix (F2)       Indicators of hydrophytic vegetation and wetand hydrology must be present, unless disturbed or problematic.         Restrictive Layer (If present):       Type:       Hydric Soil Present? Yes       No X         Remarks:       Shell Frag ment 5 VIS.Ib/Ic (C) Surface IM gop her MOUN dS       No X         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required);         Surface Vater (A1)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2         High Water Table (A2)       MLRA 1, 2, 4A, and 4B)       Drainage Patterms (B10)         Saturation (A3)       Saturation Robits (B3)       Drainage Patterms (B10)         Water Staile (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Saturation Visible On Aerial Imagery (B7)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Madi At or Crus (B4)       Presence of Reduced Inn (C4)       Shallow Aqui	Histic Epipedon (A2)	Stripped Matrix (S6)			Red	Parent Material (TF2)	
Hydrogen Sutified (A4)	Black Histic (A3)	Loamy Mucky Mineral	(F1) (except	MLRA 1)	Ver	y Shallow Dark Surface (TF12)	
	Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (	F2)		Oth	er (Explain in Remarks)	
	Depieted Below Dark Surface (A11)	Depleted Matrix (F3)	8)		<sup>3</sup> Indicate	ore of hydrophytic vegetation and	
	Sandy Mucky Mineral (S1)	Depleted Dark Surface	(F7)		wetla	ind hydrology must be present.	
Restrictive Layer (If present):	Sandy Gleved Matrix (S4)	Redox Depressions (F	8)		unles	as disturbed or problematic.	
Type:	Restrictive Layer (if present):						
Depth (inches):       Hydric Soil Present?       Yes       No X         Remarks:       Shell       Fragments visible C       Surface in gopher Mounds         No hydric soil indicators:       Primary Indicators:       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2         High Water Table (A2)       MLRA 1, 2, 4A, and 4B)       4A, and 4B)         Saturation (A3)       Saturatio Invertebrates (B13)       Dr-Season Water Table (C2)         Sediment Deposits (B2)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C         Orifi Deposits (B3)       Oxidized Rhizospheres along Living Roots (C3)       Geomorphic Position (D2)         Algal Mat or Crust (B4)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Iron Deposits (B5)       Recent Iron Reduction in Tilled Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       Stunted or Stressed Plants (D1) (LRR A)       Reised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Depth (inches): <u>224</u> Wetland Hydrology Pr	Type:						
Remarks:       Shell       Fragments visible © surface in gopher Mounds         No       hydriz soil indicators:         Primary Indicators (innimum of one required; check all that apply)       Secondary Indicators (2 or more required)	Depth (inches):				Hydric Soil	Present? Yes No X	
Definition       Subjection       Subjection <td>Remarks: CI II CI</td> <td></td> <td><u></u></td> <td></td> <td></td> <td>1</td>	Remarks: CI II CI		<u></u>			1	
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	No hydriz soit indic	ators observ	ed			A MATERIA	
Wetland Hydrology Indicators:         Secondary Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	HYDROLOGY						
Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)	Wetland Hydrology Indicators:						
	Primary Indicators (minimum of one require	d; check all that apply)			Seco	ndary Indicators (2 or more required)	
	Surface Water (A1)	Water-Stained Le	aves (B9) (ex	cept	V	Vater-Stained Leaves (B9) (MLRA 1, 2,	
	High Water Table (A2)	MLRA 1, 2, 44	, and 4B)			4A, and 4B)	
	Saturation (A3)	Salt Crust (B11)			0	Drainage Patterns (B10)	
	Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2)						
	Sediment Deposits (B2)	Hydrogen Sulfide	Odor (C1)		s	Saturation Visible on Aerial Imagery (C9)	
	Drift Deposits (B3)	Oxidized Rhizosp	heres along L	lving Roo	ts (C3) G	Geomorphic Position (D2)	
	Algai Mat of Crust (B4)	Presence of Redu	Iced Iron (C4)	) Colla (CC	, <u> </u>	AC Noutral Test (D5)	
	Surface Soil Cracks (DS)	Recent iron Redu	ed Placts (D4	JUIS (CD			
	Inundation Visible on Aerial Imagon (B	<ol> <li>Stunied or Stress</li> <li>Other (Evolution in</li> </ol>	Curiants (D1 Remarke)	( LICK A)	· P	rost-Heave Hummorks (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)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Sharsely Venetated Concave Surface (		Remarks)		_ '	TOST-TIERVE FIGHTINOCKS (DT)	
Surface Water Present?       Yes No Depth (inches):         Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         Understand Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:         Remarks:       A to	Field Observations:					······································	
Water Table Present?       Yes No Depth (inches):       >2.4         Saturation Present?       Yes No Depth (inches):       Wetland Hydrology Present? Yes No         Includes capillary fringe)       No Depth (inches):       Wetland Hydrology Present? Yes No         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Remarks:	Surface Water Present? Ves	No X Denth (inches)					
Saturation Present?       Yes No Depth (inches):       Wetland Hydrology Present? Yes No         Saturation Present?       Yes No Depth (inches):       Wetland Hydrology Present? Yes No         Cincludes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:         Remarks:       A to	Water Table Present? Ves	No × Depth (inches):	724	-			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturation Dresont?	No X Dopth (inches):	>24	Watte	nd Hydrolog		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(includes capillary fringe)	No Depth (inches):			na nyarolog	yriasonur 195 NO	
Remarks: 11 11 1 1	Describe Recorded Data (stream gauge, m	onitoring well, aerial photos,	previous insp	pections), i	if available:		
	Remarks:	ſ	1				
No wetland hydrobagy indicators	No wetland hyd	robay indica	tors				
	U U	S CO					

US Army Corps of Engineers

WETLAND DETERMINATION	DATA FORM - West	tern Mour	ntains, Valleys, and Coast Region
Project/Site: AVa lon Inn	City/County	Fort	Bragg/Mendo Sampling Date: 11 MAR 14
Applicant/Outpor: Hust		•	State: CA Sampling Point: SP/4
Applicative Asp. B. Spade	Section To	woehin Par	531 TI9N RI7W
rivestigator(s): <u>A3d &amp; Spage</u>	Section, 10		AND AND SIDE (%):
and form (nillslope, terrace, etc.): $-1$ (2)	Local relief	QL7	Lang: 173° 48,379 Datum NAD93
Subregion (LRR):	Lat: J Che	5	Long: 125 ()(57 ) Baldin Nong
Soil Map Unit Name: <u>FOP aque pt 2</u>	1- 15 10 510p		
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes	<u>X No</u>	(If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No	significantly disturbed?	Are *	Normal Circumstances" present? Yes No
Are Vegetation $N_{\delta}$ , Soil $N_{\delta}$ , or Hydrology $V_{\delta}$	_ naturally problematic?	(If ne	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site ma	p showing samplin	g point lo	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No X		
Hydric Soil Present? Yes	No <u>}</u> Is the with	ne Sampled	Area ud2 Yes No X
Wetland Hydrology Present? Yes	No X		
Remarks: Area to the east of I	oreak in slop	e daw	1 to Scitpus Microcarpus
wetland. SP14 is in an are	eq that has b	reen s	craped in the past
/EGETATION - Use scientific names of pl	ants.		
20/1-	Absolute Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>SOT</u> )	% Cover Species?	Status	Number of Dominant Species
1. None		·	That Are OBL, FACW, of FAC: (A)
2		·	Total Number of Dominant
A			Species Across Air Strata.
	0 = Total Co	over	Percent of Dominant Species 50% (A/B)
Sapling/Shrub Stratum (Plot size: 20'F)			Prevalence Index worksheet:
1. NONE	· · · · · · · · · · · · · · · · · · ·	. <u> </u>	Total % Cover of: Multiply by:
2		•	OBL species x 1 =
3			FACW species x 2 =
4		• <u> </u>	FAC species x 3 =
5	0 = Total C	over	FACU species x 4 =
Herb Stratum (Plot size: 10'r)			UPL species x 5 =
1. Plantago coronopus	<u>60 yes</u>	FACW	Column Totals: (A) (B)
2. Mediklago polymorpha	_ 25 Yes	FACU	Prevalence Index = B/A =
3. Eto drum Cicotarium	NO	NI(UPL)	Hydrophytic Vegetation Indicators:
4. GERONIUM disectivit	<u> </u>	FACL	1 - Rapid Test for Hydrophytic Vegetation
5. 120605 0151103		nev	2 - Dominance Test is >50%
7			3 - Prevalence Index is \$3.0
8			data in Remarks or on a separate sheet)
9			5 - Wetland Non-Vascular Plants <sup>1</sup>
10.			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
10'1	= Total Go	over	be present, unless disturbed of problematic.
Woody Vine Stratum (Plot size: 101)	44/17.6		
1. 5070 -1 placed in her	<u> </u>		Hydrophytic Vegetation
Z	= Total Co	ver	Present? Yes No
% Bare Ground in Herb Stratum	= Total Ct		
Remarks: Ruderal Spernes			
i decier species			

#### US Army Corps of Engineers

SOIL

Sampling Point: <u>5P14</u>

	1	the absence of indicators )
Profile Description: (Describe to the dep	th needed to document the indicator or confirm	The spance of indicators.)
Depth <u>Matrix</u>	Redox Features	Toxtura Damarke
(inches) Color (moist) %	Color (moist) % Type Loc	Texture Remarks
0-6 10YR2/1 100		Sandy loam stine roots small grave [
6-7 (rley 5/56Y 60		60% 10-30mm
0 12 4/3 40		
7-13+ 10YR4/2 100		2070 gravel w/angular
<u></u>		
		1001
		<u></u>
<sup>1</sup> Type: C=Concentration D=Depletion RM	=Reduced Matrix, CS=Covered or Coated Sand Gra	ains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soll indicators: (Applicable to all	LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
	Sondy Bodox (SE)	2 cm Muck (A10)
Histosol (A1)	Sandy Redox (S5)	2 diff fidex (110) Red Parent Material (TF2)
Histic Epipedon (A2)	Supped Matrix (50)	Very Shallow Dark Surface (TF12)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Other (Evolution Dank Outladd (11 12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Outer (Explain in Nemarks)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and
Thick Dark Surface (A12)	Redox Dark Surface (F6)	indicators of nyurophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wettand hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):	1 1 1	
Type: High percentage Con	packed ghave !	r
Denth (inches): 24r-AEP		Hydric Soil Present? Yes No
Deput (mones).		
Remarks: Next door to	appropriate Company -	litaly Sill coupled with
	Jeo allanda in company =	They fill covered with
Snallow layer with	501	
very difficult to dig	No hudwe soil indred	TITS an CONING
	1.0	US OBRIVED
HYDROLOGY		UIS USHIVED
HYDROLOGY Wetland Hydrology Indicators:	1.0	UIJ UIJRIVED
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require	d: check all that anniv)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require	d; check all that apply)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require	d; check all that apply) Water-Stained Leaves (B9) (except	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2,
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2)	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLOGY  Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3)	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Secondary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	<u>d; check all that apply)</u> <u>Water-Stained Leaves (B9) (except</u> <u>MLRA 1, 2, 4A, and 4B)</u> <u>Salt Crust (B11)</u> <u>Aquatic Invertebrates (B13)</u> Hydrogen Sulfide Odor (C1)	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)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	d; check all that apply) — Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) — Salt Crust (B11) — Aquatic Invertebrates (B13) — Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc	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)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Orift Deposits (B3) Alan Mat or Cruct (P4)		Secondary Indicators (2 or more required)     Water-Stained Leaves (B9) (MLRA 1, 2,     4A, and 4B)     Drainage Pattems (B10)     Dry-Season Water Table (C2)     Saturation Visible on Aerial Imagery (C9)     ots (C3) Geomorphic Position (D2)     Shallow Aquitard (D3)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Descriptions in Tided Only (C5)	Secondary Indicators (2 or more required)     Water-Stained Leaves (B9) (MLRA 1, 2,     4A, and 4B)     Drainage Pattems (B10)     Dry-Season Water Table (C2)     Saturation Visible on Aerial Imagery (C9)     Stallow Aquitard (D3)     EAC-Neutral Test (D5)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6	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)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A	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)     Shallow Aquitard (D3)     FAC-Neutral Test (D5)     Raised Ant Mounds (D6) (LRR A)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (E	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A B7) Other (Explain in Remarks)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A B7) Other (Explain in Remarks) (B8)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface Field Observations:	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A B7) Other (Explain in Remarks) (B8)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface Field Observations: Surface Marks Deposit2	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A B7) Other (Explain in Remarks) (B8)	Secondary Indicators (2 or more required)
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required)	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roc Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6 Stunted or Stressed Plants (D1) (LRR A 87) Other (Explain in Remarks) (B8) No Depth (inches):	Secondary Indicators (2 or more required)
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one require	d; check all that apply)	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)     Shallow Aquitard (D3)     FAC-Neutral Test (D5)     Raised Ant Mounds (D6) (LRR A)     Frost-Heave Hummocks (D7)
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required)	d; check all that apply)	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)     Shallow Aquitard (D3)     FAC-Neutral Test (D5)     Raised Ant Mounds (D6) (LRR A)     Frost-Heave Hummocks (D7) and Hydrology Present? Yes No
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one require	d; check all that apply)	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)     Shallow Aquitard (D3)     FAC-Neutral Test (D5)     Raised Ant Mounds (D6) (LRR A)     Frost-Heave Hummocks (D7)
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one require	d; check all that apply)	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)     Shallow Aquitard (D3)     FAC-Neutral Test (D5)     Raised Ant Mounds (D6) (LRR A)     Frost-Heave Hummocks (D7) and Hydrology Present? Yes No If available:
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one require	d; check all that apply)	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)     Saturation Visible on Aerial Imagery (C9)     Shallow Aquitard (D3)     FAC-Neutral Test (D5)     Raised Ant Mounds (D6) (LRR A)     Frost-Heave Hummocks (D7)  and Hydrology Present? Yes No if available:
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required)	d; check all that apply)	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)     Saturation Visible on Aerial Imagery (C9)     Shallow Aquitard (D3)     FAC-Neutral Test (D5)     Raised Ant Mounds (D6) (LRR A)     Frost-Heave Hummocks (D7) and Hydrology Present? Yes No if available:
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required)	d; check all that apply)	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) Sts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes No X if available: 95 Fatter than Infiltration
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one require	d; check all that apply)	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) Sts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes No X If available:
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required)	d; check all that apply) 	<u>Secondary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Sts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes No X If available:
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one require	d; check all that apply) $  \begin{array}{c} - & Water-Stained Leaves (B9) (except \\ MLRA 1, 2, 4A, and 4B) \\ - & Salt Crust (B11) \\ - & Aquatic Invertebrates (B13) \\ - & Hydrogen Sulfide Odor (C1) \\ - & Oxidized Rhizospheres along Living Roc  - & Presence of Reduced Iron (C4)  - & Recent Iron Reduction in Tilled Soils (C6  - & Stunted or Stressed Plants (D1) (LRR A  - & Other (Explain in Remarks)  (B8)  No \times Depth (inches): \geq 13No \times Depth (inches) \otimes 13No \times Depth (inches) \otimes 13No \times 13$	<u>Secondary Indicators (2 or more required)</u> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Sts (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes No X If available: PS rater than infiltratig
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one require	d; check all that apply) $  \begin{array}{c} - & Water-Stained Leaves (B9) (except \\ MLRA 1, 2, 4A, and 4B) \\ - & Salt Crust (B11) \\ - & Aquatic Invertebrates (B13) \\ - & Hydrogen Sulfide Odor (C1) \\ - & Oxidized Rhizospheres along Living Roc  - & Presence of Reduced Iron (C4)  - & Recent Iron Reduction in Tilled Soils (C6  - & Stunted or Stressed Plants (D1) (LRR A)  - & Other (Explain in Remarks)  (B8)  No \times Depth (inches): 213 Wetthe theorem of the stress is the stress i$	<u>Secondary Indicators (2 or more required)</u> <u>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</u> <u>Drainage Patterns (B10)</u> <u>Dry-Season Water Table (C2)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Stallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u> <u>Raised Ant Mounds (D6) (LRR A)</u> <u>Frost-Heave Hummocks (D7)</u> and Hydrology Present? Yes <u>No X</u> if available:

#### US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DATA	FORM -	Western	Mountains,	Valleys	, and Coast Region
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Projection: Ava log Ing Ing Chyrony: Evr Brag / Mend g Sampling Date: II MAR. I' Application-mer: Lugat messigned to: Asa B Spa 4e Section: Township, Range SJ T 19 N R 17W Landtom (histope, terrae, etc.): Flat Local relief (concurve, convex, none): None Sobregion (LRR): Asa B Spa 4e Landtom (histope, terrae, etc.): Flat Local relief (concurve, convex, none): None Are climate 1/ptocoge conditions on the site pytical for this time of year? Yea X to (ff no, etc.): None Are climate 1/ptocoge conditions on the site pytical for this time of year? Yea X to (ff no, etc.): None Are climate 1/ptocoge conditions on the site pytical for this time of year? Yea X to (ff no, etc.): The moves in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vagalation Present? Yes X No Yes X No X No X Wettand Hydroxy Present? Yes X No X Wettand Hydroxy Present? Yes X No X No X Wettand Hydroxy Present? X No X Wettand Hydroxy Present? X No X No X Wettand Hydroxy Present? X No X		western mountains, valleys, and coast Region			
Application Works       State: CA       Sampting Point: SP B         Investigator(s): Asa B       Spade       Sector, Township, Range: SJ 1       TIAN         Subregion (LRR): A       Lat: 31° 27.855       Long: 123° 18.368       Datum: NADB3         Solid Map Unit Name: Trapprints       Trapprints       No	Project/Site: AValon Inn City/	county: Fort Brage/Mendo sampling Date: 11 MAR 14			
Investigator(s): A32 B Spade       Section, Township, Range: S3 T 19N R 17W         Landom (Initiation, terrace, etc.): E12+       Local relief (concurve, convex, none): None         Soli Map Unit Name: Trapprince pts       Latt 29 27.285 B         Are climated (rytorogic conditions on the alter spical for this time of year? Yea       No	pplicant/Owner: Hunt SP 13				
Landorm (hillslope, tensoe, etc.): F[3+ Landorm (hillslope, etc.):	Investigator(s): ASA B SDA 49 Secti	ion Township Range: 531 T 19N R 17W			
Subregion (LRR):	Landform (hillslope terrace etc.): Flat	al relief (concerve, convex, concerve); NAAP Slope (%);			
Construction       List	Subracion (I BD): A	27 05 6 122° 48 36 1100°			
Solit Mathematic		<u><i>Linju</i></u> Long: <u>100</u> (0, <u>110</u> Datum: <u>NAPU</u>			
Are climatic / hydrologic conditions on the site typical for this time of year? Yea	Soli Map Unit Name:OPOPUEP15	NWI classification: NOVE			
Are Voerstellion NO. Soil NO. or Hydrology NO. asturally problematic?       Are Normal Circumstances' preserver Y es. X. No.         Are Vegetation NO. Soil NO. or Hydrology NO. anturally 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. No. X         Is the Sampled Area       within a Wattand's Yes. Conc. No ACE         Wetland Hydrology Present?       Yes. No. X         Interstand       Is the Sampled Area         within a Wattand's Present?       Yes. No. X         Wetland Hydrology Present?       Yes. Xo. Xo. Xo. Xo. Xo. Xo. Xo. Xo. Xo. Xo	Are climatic / hydrologic conditions on the site typical for this time of year?	res <u>X</u> No (If no, explain in Remarks.)			
Are Vegetation No.       Sol M2. or Hydrology N0. naturally problematic?       (If needed, explain any answers in Remarks.)         SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.       Hydrophydic Vegetation Present?       Yes       No         Hydrophydic Vegetation Present?       Yes       No       Is the Sampled Area       Yes       No         Wetlend Hydrology Present?       Yes       No       Is the Sampled Area       Yes       No         Remarks: A rea       to E. North of Dires Kin Slope       Whete Correx obnu pt a is present?         VEGETATION - Use scientific names of plants.         Tree Stratum       (Plot size: 30'r)       Absolute       Dominance Test worksheet:         1.       Nonce	Are Vegetation <u>No</u> , Soil <u>No</u> , or Hydrology <u>No</u> significantly distu	rbed? Are "Normal Circumstances" present? Yes X No			
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.         Hydrophytic Vegatation Present?       Yes       No       is the Sampled Area         Wetland Hydrology Present?       Yes       No       is the Sampled Area         Wetland Hydrology Present?       Yes       No       is the Sampled Area         Wetland Hydrology Present?       Yes       No       is the Sampled Area         Wetland Hydrology Present?       Yes       No       is the Sampled Area         Wetland Hydrology Present?       Yes       No       No         Remarks:       Area       to Excert Adohn y Fa       present 1         Number of Dominant Species       1       (A)       No       (A)         2	Are Vegetation <u>NO</u> , Soil <u>NO</u> , or Hydrology <u>NO</u> naturally problem	atic? (If needed, explain any answers in Remarks.)			
$ \begin{aligned}                                   $	SUMMARY OF FINDINGS - Attach site map showing sam	npling point locations, transects, important features, etc.			
Hydric Sol Present?       Ves       No       No <t< td=""><td>Hydrophytic Vegetation Present? Yes X No</td><td></td></t<>	Hydrophytic Vegetation Present? Yes X No				
Weiland Hydrology Present?       Yes       No       X       Weiland Y       Yes       No       X         Remarks: A rea       fe       k. North of break in slope where Corex obinupta is present       present         VEGETATION - Use scientific names of plants.       Dominant indicator X cover. Species? Status       Dominants species?       I. None         1.       None       X.Cover. Species? Status       Dominant Brecks       I. (A)         2.	Hydric Soil Present? Yes No ×	is the Sampled Area			
Remarks:       Area to be North of breskin slope where Corex dohupts is present         VEGETATION - Use scientific names of plants.       Dominant Indicator         Institution (Plot size: 30/r)       % Gover. Species? Status         1. Mone       Dominant Species         2.       That Are OBL, FACW, or FAC: 1.00%         3.       Dominant Species         4.       Deminant Species         2.       Deminant Species         3.       Deminant Species         3.       Deminant Species         2.       Deminant Species         3.       Deminant Species         2.       Deminant Species         3.       Deminant Species         4.       Deminant Species         2.       Deminant Species         3.       Deminant Species         4.       Deminant Species         5.       Deminant Species         1. Marce       Deminant Species         2.       Deminant Species         3.       Deminant Species         3.       Deminant Species         2.       Deminant Species         3.       Deminant Species         3.       Deminant Species         3.       Marce         1.	Wetland Hydrology Present? Yes No X	within a wetland? Yes <u>w</u> No <u>102</u>			
VEGETATION - Use scientific names of plants.         Tree Stratum (Plot size: 30/r	Remarks: Area to te North of breakinslope	where carex donupta is present			
VEGETATION - Use scientific names of plants.         Interestination of the statum (Plot size: 30'r)       Absolute Dominant Indicator Species? Status         1       Nonce       Image: Species? Status       Number of Dominant Species         2       Image: Species? Status       Image: Species? Status       Number of Dominant Species         3       Image: Species Across All Strata:       (B)         4       Image: Species Across All Strata:       (B)         9       Image: Species Across All Strata:       (B)         1       Monce       Image: Species Across All Strata:       (B)         2       Image: Species Across All Strata:       (B)         1       Monce       Image: Species Across All Strata:       (B)         2       Image: Species Across All Strata:       (B)       Percent of Dominant Species       Image: Species Across All Strata:       (B)         2       Image: Across All Strata:       (B)       Percent of Dominant Species       Image: Across All Strata:       (B)         3       Image: Across All Strata:       (Pot strata:       Image: Across All Strata:       (B)         4       Image: Across All Strata:       Image: Across All Strata:       Image: Across All Strata:       (C)         5       Image: Across All Strata: </td <td></td> <td></td>					
Tree Stratum (Plot size: $30'r$ )       Absolute Dominant Indicator         Number of Dominant Species         1 $30re$	VEGETATION – Use scientific names of plants				
Tree Stratum (Plot size: $30'r$ )       % Cover       Species?       Status         1. Mone       That Are OBL, FACW, or FAC:	Absolute Dor	ninant Indicator Dominance Test worksheet:			
1       None       That Are OBL, FACW, or FAC:       (A)         2       Total Number of Dominant       (B)         3       O       Total Number of Dominant       (B)         4       O       Percent of Dominant Species       (B)         1       None       O       Total Number of Dominant Species       (B)         2       O       = Total Cover       Percent of Dominant Species       (A)       (B)         2       O       = Total Cover       Percent of Dominant Species       (A)       (B)         3       Total % Cover of       Multiply by:       (B)       (B)       (B)       (C)         3       Marcial % Cover of       Multiply by:       (B)       (B)       (C)       (A)       (B)         4       O       Providence Index worksheet:       (C)       (	Tree Stratum (Plot size: 30'T) % Cover Spe	cies? <u>Status</u> Number of Dominant Species			
2.       Total Number of Dominant       [B]         3.	1. None	That Are OBL, FACW, or FAC: (A)			
3	2	Total Number of Dominant			
4.       D = Total Cover       Percent of Dominant Species       100% (AB)         Sapling/Shrub Stratum (Plot size: 20/r)       D = Total Cover       That Are OBL, FACW, or FAC: 100% (AB)         2.       Cover       Total % Cover of: 100% (AB)         3.       Cover       FACW species $0$ x1 = 0         5.       FACW species $0$ x1 = 0       FACW species $0$ x1 = 160         5.       D = Total Cover       FACW species $13$ x4 = 52         Herb Stratum (Plot size: $10^{1}$ C)       D = Total Cover       FACW species $12$ x5 = 60         1. Hallows       60 Yes       FAC         2. Stratus (Plot size: $10^{1}$ C)       D = Total Cover       Prevalence Index = B/A = $3 \cdot 02$ 3. through the Stratum Point Cillation       Cover       Prevalence Index = B/A = $3 \cdot 02$ 4. Ruftid o Sperma penicillation       Image Ponicillation       Prevalence Index is s30'         5. FFAcq and C (Ai lorAsts)       Image Ponicillations (Provide supporting data in Remarks or an separate sheet)         9.       Secure 101       Image Ponicillations (Provide supporting data in Remarks or an separate sheet)         9.       Secure 101       Image Ponicillation (Explain)         10.       Image Ponicillation (Provide supporting data in Remarks or an separate sheet)         9.       Secure 101       Image Ponicintic cover	3	Species Across All Strata: (B)			
Sabing/Shrub Stratum       (Plot size: $20'r$ ) $U = Total Cover$ 1. Nove       That Are OBL, FACW, or FAC: $100/e$ (A/B)         2.       Total % Cover of: $100/e$ (A/B)         3. $0 = Total % Cover of: 100/e (A/B)         3.       0 = Total % Cover of: 100/e (A/B)         4.       0 = Total % Cover of: 100/e (A/B)         5.       0 = Total Cover         1. Holcus       0 = Total Cover         2. Enclose       0 = Total Cover         3. Hordus       0 = Total Cover         4. Multiphytic Vegetation       12 = FACU         9.       0 = Accel at 2         10.       1 = Cover         10.       0 = Covet at 2         10$	4	Percent of Dominant Species			
Prevalence Index worksheet: Total % Cover of: Total % Cover of: Multiply by: Del species $O$ x1 = $O$ FAC worksheet: Total % Cover of: Multiply by: Del species $O$ x1 = $O$ FAC worksheet: Total % Cover of: Multiply by: Prevalence Index is 33 0' A Morphological Adaptations (Provide supporting data in Remarks: Veg 13 hept-esental we of veg coutside + adjacrAt to Carex obsoupt a Sward Just to the south a Woody the Encience index by: Not a Strong Indices for Not a Strong Indices for Not a Strong Indices for Multiply by: Multiply by: Multiply by: Multiply by: Prevelence Index is 30' A Morphological Adaptations (Provide supporting data in Remarks: Veg 13 hept-esental we of veg coutside + adjacrAt to Carex obsoupt a Strong Indices for Multiply by: Multiply by: Multiply by: Multiply by: Multiply by: Multiply by: Prevalence Index is 30' Multiply by: Multiply by: Multiply by: Multiply by:	Sapling/Shrub Stratum (Plot size: $20!r$ ) = To	tal Cover That Are OBL, FACW, or FAC: 100% (A/B)			
$\frac{1}{2} - \frac{1}{2} - \frac{1}$	1 None	Prevalence Index worksheet:			
3.       OBL species       C       x1 =       0         4.       FACW species       35       x2 =       70         5.       FAC species       GO       x3 =       150         Herb Stratum (Plot size:       0       fac species       13       x4 =       52         Herb Stratum (Plot size:       0       fac species       13       x4 =       52         1       Hall Covs       dnatus       60       fac species       12       x5 =       60         2       Grindelia       stricta       15       No       Fac species       12       x6 =       52         2       Grindelia       stricta       15       No       Fac species       12       x6 =       52       GO         2       Go per ma penicillation       15       No       Fac species       12       Column Totals:       120       A       S102         3       Inc.us       12       NI(UPL)       12       NI(UPL)       14       Regaria       3.02       14       S102       15       Regaria       3.01       14       15       S102       15       No       S2.01       14       16       16       16       16       16<	2	Total % Cover of: Multiply by:			
4	3	OBL species x 1 =			
5.       FAC species       GO $x3 = \frac{1'SO}{52}$ Herb Stratum (Plot size: $0/r$ $0 = Total Cover$ UPL species $13 \times x4 = \frac{52}{52}$ 1. Holcus (an atus)       60 test FAC       Column Totals: $120$ (A)       (B)         2. Grindelia stricta       15 No FACW         3. Uncus (escuri)       20 FACW       Prevalence index = B/A = $3 \cdot OZ$ 4. Butid O Sperma penicillatum       12 NI(UP)         5. Fragaria Chiloensis       10 FACW         8. Engaria Chiloensis       3 FACV         9. Engaria Chiloensis       3 FACV         9. Engaria Chiloensis       3 FACV         10. Engaria Chiloensis       10 Forvide supporting data in Remarks or on a separate sheet)         9. Engaria       5 Wetland Non-Vascular Plants'         10. Engaria       120 = Total Cover         6 Diation (Plot size: $10/r$ 120 = Total Cover         6 Woody Vine Stratum (Plot size: $10/r$ 120 = Total Cover         6 Bare Ground in Herb Stratum       0 = Total Cover         6 Bare Ground in Herb Stratum       0 = Total Cover         7 Wegetation       Yes X No         9 Strat-d Stratum       0 = Total Cover         7 Kearat       10 - Yes K No         10. Englis tepresentaline of veg Cutside + a dyacrAt to Carex ob	4	FACW species $35$ x 2 = $70$			
Herb Stratum (Plot size: $0 = Total Cover$ FACU species $15 \times 4 = 52$ Herb Stratum (Plot size: $0 \neq s$ FAC $15 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Column Totals: $12 \times 5 = 60$ $12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 = 60$ $10 \times 12 \times 5 = 60$ Stratum (Plot size: $10 \times 12 \times 5 \times $	5.	FAC species $\underline{60}$ x 3 = $\underline{160}$			
Herb Stratum (Plot size:       0 'P'		FACU species $13 \times 4 = 52$			
1. Holcus lanatus       60 fest the         2. Grindelia stricta       15 No FACW         3. Incus lescurii       20 FACW         4. Rytid osperma penicillatum       12 NI(UP)         5. Fragaria Chiloensis       10 FACW         6. Plantago lanceolata       3 FACU         9	Herb Stratum (Plot size: 10 F)	UPL species $12 \times 5 = 60$			
2. (Strindelia Stricta       15       No       FACW         3. Mincus lescurii       20       FACW       Prevalence Index = B/A = 3,02         4. Rytid o Sperma penicillatum       12       NI(UP)       1 - Rapid Test for Hydrophytic Vegetation         5. Fragaria Chiloensis       10       FACV       X 2 - Dominance Test is >50%         6. Plantago. anceolata       3       FACV       X 2 - Dominance Test is >50%         7.       3       FACV       X 2 - Dominance Test is >50%         8.       3       FACV       3 - Prevalence Index is \$3.0'         7.	1. Holcus langtus 60 Y	<u></u>			
3. Marcis 1e5curii       20       FACW         4. Ryfid 05perma penicillatum       12       NI(UPL)         5. Fragaria chiloensis       10       FACV         6. Plantago lanceolata       3       FACV         7.       3. Frequencial chiloensis       3. Frequencial chiloensis         8.       3. Frequencial chiloensis       3. Frequencial chiloensis         9.       3. Frequencial chiloensis       3. Frequencial chiloensis         9.       5. Wetland Non-Vascular Plants'       -         10.       5. Wetland Non-Vascular Plants'       -         11.       -       -       -         12.       -       -       -       -         11.       -       -       -       -         12.       -       -       -       -         11.       -       -       -       -         12.       -       -       -       -         12.       -       -       -       -       -         12.       -       -       -       -       -       -         10.       -       -       -       -       -       -       -         12.       -	2. Stindelia stricta 15	No FACH Prevalence Index = B/A = 3,0Z			
4. Kgtid 05permå penicillatum       12       NI(UPL)       1 - Rapid Test for Hydrophytic Vegetation         5. Fragaria ChilorAsis       10       FACU       X 2 - Dominance Test is >50%         6. Plantago anceolata       3       FACU       3 - Prevalence Index is \$3.0°         7.       3       FACU       - A cophological Adaptations' (Provide supporting data in Remarks or on a separate sheet)         9.	3. VINCUS LESCUTII 20	FACW Hydrophytic Vegetation Indicators:			
5. <u>Fragaria CANTORISTS</u> <u>ID</u> <u>FACV</u> 6. <u>Plantago</u> <u>anceolata</u> <u>3</u> <u>FACV</u> 7. <u></u> <u>3</u> - Prevalence Index is <3.0 <sup>1</sup> 7. <u></u> <u>3</u> - Prevalence Index is <3.0 <sup>1</sup> 7. <u></u> <u>3</u> - Prevalence Index is <3.0 <sup>1</sup> 4. Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) 9. <u></u> <u>5</u> - Wetland Non-Vascular Plants <sup>1</sup> 10. <u></u> <u>5</u> - Wetland Non-Vascular Plants <sup>1</sup> 11. <u></u> <u>120</u> = Total Cover <u>Woody Vine Stratum</u> (Plot size: <u>10<sup>1</sup>r</u> <u>120</u> = Total Cover <u>60/24</u> 1. <u>Nolve</u> 2. <u></u> <u>60/24</u> 1. <u>Nolve</u> = Total Cover <u>60/24</u> 1. <u>Nolve</u> = Total Cover <u>60/24</u> 1. <u>Nolve</u> = Total Cover <u>60/24</u> 1. <u>Nolve</u> <u>10</u> <u>10</u> <u>10</u> <u>10</u> <u>10</u> <u>10</u> <u>10</u> <u>10</u>	4. <u>Kytidosperma penicillatum 12</u>	<u>N(UPL)</u> 1 - Rapid Test for Hydrophytic Vegetation			
6. <u>PIAT ago</u> <u>lanceolata</u> <u>S</u> <u>FACU</u> <u>3</u> - Prevalence index is s3.0 <sup>1</sup> 7	5. Fragaria Childensis (0	$\frac{ -\Lambda CV }{ \Sigma ^{2}}$ 2 - Dominance Test is >50%			
1.	6. Plant 290 lanceolars 3	<u>FACU</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup>			
8.	7	4 - Morphological Adaptations <sup>1</sup> (Provide supporting			
3.	0	uata in remarks or on a separate sneet)			
11.		0 - vveuario inon-vascuiar Plants'			
Woody Vine Stratum (Plot size:	11	Indicators of hydric soil and wetland hydrology must			
<u>Woody Vine Stratum</u> (Plot size: 10/r 1. <u>Nohe</u> 2	120	be present, unless disturbed or problematic.			
1. <u>Nohe</u> 2	<u>Woody Vine Stratum</u> (Plot size: $10^{17}$ <u>6072</u>				
2	1. None	Hydrophytic			
% Bare Ground in Herb Stratum       Q       = Total Cover       Present?       Yes       A       No         Remarks:       Veg is representative of veg cutside + adjacent to Carex obnupta         Sward Just to the south.       Veg is dominated by invasive FAC grass Not a strong indicator	2	Vegetation			
<sup>9%</sup> Bare Ground in Herb Stratum <u>U</u> Remarks: Veg is representative of veg outside + adjacent to Canex obnupty Sward Just to the south. Veg is dominated by invasive FAC grass Not a strong indicator IS Army Corps of Engineers	= Tota	al Cover Present? Yes <u>X</u> No			
Sward Just to the south. Veg is dominated by invasive FAC grass Not a strong indicator	% Bare Ground in Herb Stratum				
Sward Just to the south. Veg is dominated by invasive FAC grass Not a strong indicator	Kemarks: Veg is representative of veg cu	taide + adjacent to Carex obnuota			
Veg is dominated by invasive FAC grass Not a strong indicator	Sward Just to the south. J				
	Veg is dominated by invasive F.	AC grass Not a strong indicator			
INVALUE AND	US Army Corps of Engineers	Western Neurtrine Videor and Coast Vision 2.0			



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

**Avalon Inn** 



# 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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214—Tropaquepts, 0 to 15 percent slopes	
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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

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 soillandscape 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



	MAP L	EGEND			MAP INFORMATION
Area of Int	terest (AOI)	00	Spoil Area		The soil surveys that comprise your AOI were mapped at 1:24,000.
	Area of Interest (AOI)	٥	Stony Spot	ſ	Warning: Soil Man may not be valid at this scale
Solis	Soil Map Unit Polygons	0	Very Stony Spot		Warning. Soir Map may not be value at this scale.
	Soil Man Unit Lines	\$	Wet Spot		Enlargement of maps beyond the scale of mapping can cause
-	Soil Man Unit Points	$\triangle$	Other		misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting
L.		, ***	Special Line Features		soils that could have been shown at a more detailed scale.
special	Blowout	Water Fea	tures	L	
	Borrow Pit	$\sim$	Streams and Canals		Please rely on the bar scale on each map sheet for map
	Clay Spot	Transport	ation		measurements.
<b>疾</b>	Classed Depression	•••	Rails		Source of Map: Natural Resources Conservation Service
×		~	Interstate Highways		Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
ď.	Gravel Pit	~	US Routes		Coordinate System. Web Mercator (Er SC.3037)
000	Gravelly Spot	$\approx$	Major Roads		Maps from the Web Soil Survey are based on the Web Mercator
ø	Landfill	~	Local Roads		projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the
Λ.	Lava Flow	Backgrou	nd		Albers equal-area conic projection, should be used if more accurate
علاج	Marsh or swamp	Mar.	Aerial Photography		calculations of distance or area are required.
Ŕ	Mine or Quarry				This product is generated from the USDA-NRCS certified data as of
0	Miscellaneous Water				the version date(s) listed below.
0	Perennial Water				Soil Sunvey Area: Mandaoina County Weatern Bart California
~	Rock Outcrop				Survey Area Data: Version 10, Sep 30, 2014
+	Saline Spot				
• • •	Sandy Spot				Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
-	Severely Eroded Spot				
ô	Sinkhole				Date(s) aerial images were photographed: Jun 16, 2010—Jun 27, 2010
à	Slide or Slip				
ø	Sodic Spot				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

Mendocino County, Western Part, California (CA694)					
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI		
214	Tropaquepts, 0 to 15 percent slopes	3.8	100.0%		
Totals for Area of Interest		3.8	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 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 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**

Depth to restrictive feature: More than 80 inches Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None

#### **Minor Components**

#### Tregoning

Percent of map unit: 5 percent Landform: Marine terraces

#### Shinglemill

Percent of map unit: 5 percent Landform: Marine terraces

#### Aborigine

Percent of map unit: 5 percent Landform: Marine terraces

#### Blacklock

*Percent of map unit:* 5 percent *Landform:* Marine terraces

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### ADDENDUM TO BIOLOGICAL SCOPING SURVEY REPORT, BOTANICAL SURVEY AND WETLAND DELINEATION

FOR

Avalon Inn (APN 069-241-27 & -04) 1201 & 1211 North Main Street Fort Bragg, CA Mendocino County



prepared for: Robert Hunt Hunt InnVestments 210 N 3<sup>rd</sup> Street McCall, ID 83638

prepared by: Spade Natural Resources Consulting Asa B. Spade 703 North Main Street Fort Bragg, CA 95437 (707) 964-6947 asabspade@hotmail.com

November 30, 2015

### Purpose

This document serves as an addendum to the Biological Scoping Survey Report, Botanical Survey and Wetland Delineation published by Spade Natural Resources Consulting, dated April 21, 2015. Over the last several months the project has been refined as agencies including the California Coastal Commission, City of Fort Bragg, California Department of Fish and Wildlife, and the US Army Corps of Engineers have provided additional information and guidance. This document will address concerns expressed, changes in the project, and changes in interpretation of the rarity of a plant community, that have occurred since the April 21, 2015 report was published.

### **1. Coastal Blackberry Brambles**

The April 2015 report describes a "roughly 2,000 square feet of area... dominated by native blackberry (*Rubus ursinus*), present along the west property boundaries, just outside of wetlands, adjacent to the Haul Road." This area was considered a potential ESHA for the purpose of the report due to its currently published state rarity ranking of "S3" and a 30ft buffer was recommended through reduced buffer analysis.

Spade Natural Resources Consulting's Environmental Scientist, Asa B. Spade, noted that *Rubus ursinus* coastal bramble seemed much more common than the S3 ranking describes. Mr. Spade initiated personal communication with CDFW Staff Environmental Scientist, Todd Keeler-Wolf, who agreed with Mr. Spade's observations saying in part:

"Following our work in Sonoma County this past year we have found that the more we have looked, the more we see of that generic *Rubus ursinus* community, while we are still clear that the other 4 associations are less common. That means upon finalizing our descriptions for Sonoma county, we will "demote" the *R. ursinus* association rarity to a G4 rather than a G3 and rank only the *R. spectabilis*, *R. parviflorus*, or the more diverse associations with more than one *Rubus* species, (in addition to other species) as the rarer (S3) types of associations."

The *Rubus ursinus* patches present on the subject parcels do not contain *R. spectabilis* or *R. parviflorus,* nor are they highly diverse plant communities; rather, they are low diversity, low quality patches that have resulted from the lack of maintenance over the last decade. In addition, *Rubus ursinus* is a common plant throughout coastal California and for some distance inland. It can quickly become dominant in open areas when a disturbance regime, such as grazing or mowing, is removed. In our professional opinion the *Rubus ursinus* coastal brambles present should not be considered a rare plant community, and do not require any direct protection or buffers.

## 2. Development Within Buffers

The proposed development includes portions of trail (Figure 1) connecting the user serving facility buildings with the Haul Road, as well as stormwater swales, within protective wetland buffers recommended by SpadeNRC. In our professional opinion these proposed developments will not promote significant negative impacts to the adjacent wetlands, and in some ways will improve conditions and the protective nature of the buffer area. Included as an appendix to Avalon Inn APN 069-241-27 & 069-241-04

Scoping, Botanical, Wildlife Surveys & Wetland Delineation 2

this document is a new analysis of the proposed development utilizing the ESHA development criteria in the City of Fort Bragg Coastal Element, Policy 1.9, in consideration of the reduced buffer to less than 100 feet from wetlands, as well as Policy 1.10, Permitted Uses within ESHA Buffers.

Trails proposed within the wetland buffers total 261ft in length. They will be raised walkways, 5 feet in width constructed of weather resistant decking and will include wood curbs and pathway lighting. The proposed trails will benefit the adjacent wetland areas by directing foot traffic and providing a visual and physical boundary between landscaped areas that visitors can be expected to use, and the natural area and wetland habitat beyond. Without dedicated surfaced trails it is common for "volunteer" trails to form between locations. Volunteer trails often form in less than ideal locations and are hard to direct, maintain, and eliminate when necessary. Visitors can be expected to use of all visitors can act as a physical and visual boundary; the difference in landscaping on each side of the trail, along with interpretive signage, will signal to visitors that the area beyond the trail is natural habitat and not intended for visitor use. Constructing the trails too close to the buildings may defeat this physiological effect; increasing the overall footprint of visitor use.



**Figure 1. Project footprint.** The proposed development and undeveloped areas. Depicted in the upper (western) portion of the drawing are lines delineating the edge of the wetland, a 30-foot and 50-foot buffer. Portions of the trail are proposed within the 50-foot buffer adjacent to the higher quality wetland and within the 30-foot buffer of the lower quality wetland.

The locations of the proposed trails and stormwater swales are currently vegetated primarily by invasive non-native grass species. The vegetation currently present is not functionally related to the wetland habitat to be protected. Allowing installation of stormwater swales vegetated by carefully selected native species will increase the wetlands' functional capacity, their ability to be self-sustaining and to maintain natural species diversity. Stormwater swales adjacent to a wetland habitat can increase the functionality of the buffer area and the adjacent wetland habitat areas. The stormwater swales can be designed to provide nesting, feeding, breeding, resting and safety for species that spend at least part of their life cycle within the adjacent wetland habitat. The swales will also benefit the adjacent wetland by slowing runoff water which will carry less sediment into the wetlands and allow a greater amount of time for the water to infiltrate and merge with the shallow groundwater-table. The swales will contribute to the groundwater, and therefore the sustainability of the wetland, more than a flat topography because they will be able to retain a greater volume of water during higher flow rain events; a flat topography would result in more of the water leaving the site as surface flow.

### Conclusion

Recommendations for the protection of *Rubus ursinus* coastal brambles have been removed; they are unlikely to be considered rare and sensitive and do not need protection. Trails and stormwater swales within the wetland buffer area are consistent with allowable development and will not increase the impact to the wetland habitat being protected by the buffer. Trails with signage will educate visitors on the value of the habitat present and provide visual and physical boundaries to visitor use. Stormwater swales will buffer the wetlands during high flow rain events and allow more water to infiltrate into the ground. The swales will provide habitat that is more functionally related to the invasive species currently present, providing areas more useful to species present in the wetlands.

#### Appendix A. Reduced Buffer Analysis.

Policy OS- 1.9 Utilize the following criteria to establish buffer areas:

#### a. Biological Significance of Adjacent Lands.

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, or resting).

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 ESHA that is adjacent to the proposed development.

#### No functional relationships are noted. Lands adjacent to the wetlands are disturbed ruderal areas and non-native grasslands.

**b.** Sensitivity of Species to Disturbance. 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:

(1b-i) Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;

(1b-ii) An assessment of the short-term and long-term adaptability of various species to human disturbance;

(1b-iii) An assessment of the impact and activity levels of the proposed development on the resource.

No sensitive plant or wildlife species were observed. Surveys for nesting birds and avoidance measures for special status frogs are recommended prior to development, as outlined in proposed mitigation measures, in order to avoid any impacts.

*c. Erosion susceptibility.* The width of the buffer zone shall be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, erosion potential, and vegetative cover of the parcel proposed for development and adjacent lands. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.

The building envelope is relatively flat with low potential for detrimental impacts to sensitive areas from construction related erosion. Silt fencing is recommended as outlined in the proposed mitigation measures.

*d. Use natural topography.* Where feasible, use hills and bluffs adjacent to Environmentally Sensitive Habitat Areas, to buffer these habitat areas. Where otherwise permitted, locate development on the sides of hills away from Environmentally Sensitive Habitat Areas. Include bluff faces in the buffer area.

There are no topographical features that would apply as a buffer to the wetlands/special status plant communities.

e. Use existing man-made features. Where feasible, use man-made features such as roads and dikes to buffer environmentally sensitive habitat areas.

There are no existing cultural features to utilize in the proposed improvement area.

#### Policy OS-1.9 Utilize the following criteria to establish buffer areas:

*f. Lot Configuration and Location of Existing Development.* 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.

Buildings to the south are directly adjacent to the south wetland, and the lot to the north is developed with gravel storage/driveway areas to the edge of the northern wetland. The proposed buffers would ensure on-site structures would be located a greater distance from the wetlands then surrounding development to the north and south. Additionally, planting of native vegetation in the buffer is recommended to ensure additional protection.

g. Type and Scale of Development Proposed. 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.

Required buffer areas shall be measured from the following points as applicable:

- The outer edge of the canopy of riparian vegetation for riparian ESHA, or from the top of stream bank where no riparian vegetation exists.
- The upland edge of a wetland for a wetland ESHA.
- The outer edge of the plants that comprise the rare plant community for rare plant community ESHA.

Proposed development is to consist of a 50,689 square foot, 66-room visitor serving facility with a conference center and 86 parking spaces. The adjacent property to the south is developed with a visitor serving facility and the property to the north is developed with an industrial gravel storage and processing plant. Taking into consideration the proposed and adjacent developments and recommended protective measures, a 30-foot buffer area is recommended to protect the south wetland and a 50-foot buffer is recommended to protect the north wetland and the plant communities therein. The buffer area is measured from the outer edge of the wetlands and special status plant communities.

#### Policy OS- 1.10 Permitted Uses within ESHA Buffers. Development within an Environmentally Sensitive Habitat Area buffer shall be limited to the following uses:

#### a. Wetland Buffer.

i. Uses allowed within the adjacent Wetland ESHA pursuant to Policy OS-1.3.

ii. Nature trails and interpretive signage designed to provide information about the value and protection of the resources.

iii. Invasive plant eradication projects if they are designed to protect and enhance habitat values.

i. No diking, dredging, or filling is proposed within the buffer area.

ii. A total of 261 linear feet of 5-foot wide, raised weather resistant decking walkways are proposed within the wetland buffer areas. Trails proposed within the buffer area will connect the user serving facilities to the Haul Road which is a popular natural recreation destination and access to the beach in many locations. The trails are proposed to include interpretive signage designed to provide information about the value and protection of the adjacent wetland habitat. Dedicated trails will provide control of visitor foot traffic and prevent informal trails from forming in undesired locations. Trails will provide physical and visual boundaries between areas indented for visitor use and the natural areas on the opposite side.

iii. The locations of the proposed trails and stormwater swales are currently vegetated primarily by invasive non-native grass species. The vegetation currently present is not functionally related to the wetland habitat to be protected. Allowing installation of stormwater swales vegetated by carefully selected native species will increase the wetlands' functional capacity, their ability to be self-sustaining and to maintain natural species diversity.

#### b. Riparian Buffer.

i. Uses allowed within the adjacent River and Stream ESHA pursuant to Policy OS-1.5.

ii. Uses allowed within the adjacent ESHA pursuant to Policy OS-1.6.

iii. Buried pipelines and utility lines.

iv. Bridges.

v. Drainage and flood control facilities.

#### No development is proposed within Riparian Buffer.

#### c. Other types of ESHA Buffer.

i. Uses allowed within the adjacent ESHA pursuant to Policy OS-1.6.

ii. Buried pipelines and utility lines.

iii. Bridges.

iv. Drainage and flood control facilities.

No development is proposed within ESHA buffers other than the Wetland Buffers addressed above.

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March 22, 2018

Bob Hunt, Hunt Investments PO Box 1470 McCall, ID 83638

RE: Update to Stay Current on Biology 1201 & 1211 North Main Street Fort Bragg, CA APN 069-241-27 & -04

Dear Mr. Hunt,

Spade Natural Resources Consulting performed biological surveys and published a Biological Scoping Survey Report, Botanical Survey and Wetland Delineation in April of 2015. I, Asa Spade, author of the 2015 report, now working as Senior Biologist for Wynn Coastal Planning Inc., conducted follow up surveys of the original two project parcels as well as additional surveys on adjacent State Parks lands in 2017. Survey dates in 2017 included February 28, March 8 and May 30. Progress on the site design, informed by my 2015 and later survey efforts has continued and as time has passed we felt it prudent to conduct an additional survey to ensure that all site conditions continue to be consistent with those reported in 2015.

On March 19, 2018, I visited the two Hunt-Avalon project parcels. I spent approximately an hour conducting a botanical and biological update survey. All site conditions were consistent with the information provided in the April 2015 report. No significant change in plant communities, wetland, and other resources have occurred. The 2015 report accurately describes resources and current conditions at the site as of the date of this latest site visit.

Sincerely,

Asa B. Spade Mr &

Senior Biologist Wynn Coastal Planning

# ADDENDUM to BIOLOGICAL SCOPING SURVEY REPORT, BOTANICAL SURVEY and WETLAND DELINEATION:

## Stormwater Runoff Capture and Pretreatment Design Alternatives Analysis and Reduced Buffer Analysis



<sup>tor</sup> The Avalon Inn 1201 & 1211 North Main Street Fort Bragg, CA (APNs 069-241-07 & 069-241-04) Mendocino County

> Property Owner Robert Hunt Hunt InnVestments 210 N 3<sup>rd</sup> Street McCall, ID 83638

Report Prepared By:

Teresa R. Spade, AICP, Senior Biologist

March 26, 2018

Wynn Coastal Planning 703 North Main Street, Fort Bragg CA 95437 ph: 707-964-2537 fx: 707-964-2622 www.WCPlan.com

#### Purpose

This document serves as a second addendum to the Biological Scoping Survey Report, Botanical Survey and Wetland Delineation published by Spade Natural Resources Consulting, dated April 21, 2015. Over the last several months, a design to capture and treat stormwater runoff has been developed and refined for the project. The preferred option for stormwater treatment consists of a Low Impact Development (LID) swale system which is generally located approximately 30 to 50 feet from existing wetlands, and spillways to address stormwater runoff beyond the design storm which connect to wetlands and are therefore as close as zero feet to the wetlands. This document is a Reduced Buffer Analysis, which substantiates the buffer reduction to 30 feet for the purpose of the LID stormwater runoff swale developments, and the buffer reduction to zero feet for spillways. The reduced buffer analysis is supported by an Alternatives Analysis, included as **Appendix A**.

#### **Reduced Buffer Analysis**

The subject of the reduced buffer analysis is for a stormwater management design which captures and treats stormwater from the proposed Avalon Inn and its parking area. The design consists of a system of Low Impact Development swales to be located 30 to 50 feet south of the existing wetlands. Additionally, emergency spillways are to be constructed within the buffer area, connecting directly to the wetlands, for the purpose of addressing storms above and beyond the design storm.

An addendum dated November 30, 2015 was submitted, which is comprised of a Reduced Buffer Analysis for proposed trails within 30 feet of the southern wetland and within 50 feet of the northern wetland. At the time of that analysis, the stormwater runoff design was in its early design stages. Although the swale system is mentioned in the earlier analysis, its location is not shown on the project footprint figure included with the earlier analysis, and its specific location relative to the wetland resource is now discussed. Several iterations of design have occurred since, culminating in the preferred option, which is the proposed option discussed herein.


Figure 1. Project footprint. The proposed stormwater runoff design plan relative to wetlands.

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### **Reduced Buffer Analysis.**

### Policy OS- 1.9 Utilize the following criteria to establish buffer areas:

### a. Biological Significance of Adjacent Lands.

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).

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 ESHA that is adjacent to the proposed development.

No functional relationships are noted. Lands adjacent to the wetlands are disturbed ruderal areas and non-native grasslands. It is appropriate for the buffer area to be measured from the edge of the existing wetland.

**b.** Sensitivity of Species to Disturbance. 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:

(1b-i) Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;

(1b-ii) An assessment of the short-term and long-term adaptability of various species to human disturbance;

(1b-iii) An assessment of the impact and activity levels of the proposed development on the resource.

Surveys for nesting birds and avoidance measures for special status frogs are recommended prior to development, as outlined in proposed mitigation measures, in order to avoid any impacts during construction. Ongoing function of the swale systems to be located 30 feet from the wetland are not expected to result in detrimental impacts to wildlife located in the adjacent wetland. Spillways address emergency flooding for storms above the design storm. This occasional stormwater input is not expected to result in detrimental impacts.

*c. Erosion susceptibility.* The width of the buffer zone shall be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, erosion potential, and vegetative cover of the parcel proposed for development and adjacent lands. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.

The building envelope is relatively flat with low potential for detrimental impacts to sensitive areas from construction related erosion. Silt fencing is recommended as outlined in the proposed mitigation measures. The purpose of the proposed swale is to pretreat stormwater to prevent pollutants from entering the wetlands. The constructed spillways will prevent erosion of the Haul Road and other areas adjacent to the wetlands during heavy stormwater events.

**d.** Use natural topography. Where feasible, use hills and bluffs adjacent to Environmentally Sensitive Habitat Areas, to buffer these habitat areas. Where otherwise permitted, locate development on the sides of hills away from Environmentally Sensitive Habitat Areas. Include bluff faces in the buffer area.

There are no topographical features that would apply as a buffer to the wetlands/special status plant communities.

e. Use existing man-made features. Where feasible, use man-made features such as roads and dikes to buffer environmentally sensitive habitat areas.

There are no existing cultural features to utilize in the proposed improvement area. The existing wetland areas to be protected are, in part, man-made features resulting from the construction of the Haul Road and the concentration of water through culverts beneath Highway 1.

### Policy OS- 1.9 Utilize the following criteria to establish buffer areas:

**f. Lot Configuration and Location of Existing Development.** 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.

Buildings to the south are directly adjacent to the south wetland, and the lot to the north is developed with gravel storage/driveway areas to the edge of the northern wetland. The proposed buffers would ensure on-site structures would be located a greater distance from the wetlands then surrounding development to the north and south. Additionally, planting of native vegetation in the buffer is recommended to ensure additional protection.

g. Type and Scale of Development Proposed. 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.

*Required buffer areas shall be measured from the following points as applicable:* 

- The outer edge of the canopy of riparian vegetation for riparian ESHA, or from the top of stream bank where no riparian vegetation exists.
- The upland edge of a wetland for a wetland ESHA.
- The outer edge of the plants that comprise the rare plant community for rare plant community ESHA.

Proposed stormwater runoff design is to treat stormwater from a ~46,500 square foot (footprint), visitor serving facility and 77 associated vehicle parking spaces. The adjacent property to the south is developed with a visitor serving facility and the property to the north is developed with an industrial gravel storage and processing plant. Taking into consideration the proposed and adjacent developments and recommended protective measures, for the stormwater runoff swale system, a 30-foot buffer area is recommended to protect the south wetland and a 30-foot buffer is recommended to protect the north wetland and the plant communities therein. The buffer area is measured from the outer edge of the wetlands and special status plant communities. The spillways, by necessity, need to be directly connected to the wetlands.

Policy OS- 1.10 Permitted Uses within ESHA Buffers. Development within an Environmentally Sensitive Habitat Area buffer shall be limited to the following uses:

### a. Wetland Buffer.

i. Uses allowed within the adjacent Wetland ESHA pursuant to Policy OS-1.3.

ii. Nature trails and interpretive signage designed to provide information about the value and protection of theresources.

iii. Invasive plant eradication projects if they are designed to protect and enhance habitatvalues.

A reduction to the buffer area from 100 to 30 feet is proposed, with proposed stormwater treatment swales to be located as close as 30 feet to wetlands. Within the 30 foot buffer area, emergency spillways would be constructed to allow for stormwater runoff above and beyond the design storm, which is the 85<sup>th</sup> percentile 24 hour storm event, to be conveyed to the wetlands in a safe and efficient manner, minimizing erosion potential which could otherwise damage built structures such as the Haul Road, and could result in an increase in sedimentation from erosion. Policy OS 1.3 allows for a limited number of uses within a wetland, including diking, filling and dredging when there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects. New uses are limited to uses such as new port, energy, and coastal dependent industrial facilities, including commercial fishing facilities, maintaining existing dredged depths, navigational channels, turning basins, mooring areas, and boat launching ramps, incidental public services like burying cables and pipes, inspection of piers, and maintenance of existing intake and outfall pipelines, restoration, nature study, aquaculture, or similar resource dependent activities. The proposed spillways are flood control structures which fall within the intended meaning of the limitations outlined above. The structures have been carefully considered and have been determined to be the least environmentally damaging alternative. Failure to install the spillways has the potential to result in damage to nearby structures such as the Haul Road from occasional significant storm events, which would as an associated impact increase sedimentation into the wetlands.

### b. Riparian Buffer.

i. Uses allowed within the adjacent River and Stream ESHA pursuant to Policy OS-1.5.

ii. Uses allowed within the adjacent ESHA pursuant to Policy OS-1.6.

iii. Buried pipelines and utility lines.

iv. Bridges.

v. Drainage and flood control facilities.

No development is proposed within a Riparian Buffer.

### c. Other types of ESHA Buffer.

*i. Uses allowed within the adjacent ESHA pursuant to Policy OS-1.6. ii. Buried pipelines and utility lines. iii. Bridges.* 

iv. Drainage and flood control facilities.

The proposed development consists of a spillway, which is a drainage and flood control facility. This is an allowable use within the ESHA buffer area for "Other types of ESHA," as listed above.

# ALTERNATIVES ANALYSIS FOR HUNT AVALON DRAINAGE PLAN

<sup>for</sup> The Avalon Inn 1201 & 1211 North Main Street Fort Bragg, CA 95437 APNs 069-241-07, -04 Mendocino County

> Property Owners: Robert Hunt Hunt Inn Investments 201 N 3<sup>rd</sup> Street McCall, ID 83638



Report Prepared By: Teresa R. Spade, AICP, Senior Biologist

> March 26, 2018 Exhibit update August 22, 2018

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### 1. BACKGROUND

Improvements are proposed to the ~3.32 acre property that will result in an increase in impervious surfaces from construction of new inn structures and an associated parking lot. The lot gently slopes to the west towards the ocean, and stormwater runoff from the site and surrounding areas sheets across gently sloping areas to wetlands located along the northwest and southwest boundaries of the property. These wetlands are currently fed in part by the sheet flow that runs through the project area. The increase in impervious surfaces from new construction is expected to result in an increase in sheet flow of stormwater runoff from the project area after the structures are built. Pollutants from parked cars and other new development would potentially flow with stormwater runoff directly into wetlands if no pretreatment is built into the design. Additionally, due to the increase in runoff, there is a potential for flooding of the parking area, new structures, and/or the Haul Road without proper drainage engineering.

The conceptual designs for the stormwater runoff drainage plan have been refined over the course of the past two years. The final stormwater designs that were considered (Alternatives A, B & C) follow a Low Impact Development (LID) tenet; stormwater runoff is pre-treated via natural soil permeation onsite, improving water quality to wetlands and other water resources beyond the project area. The designs are to be engineered and sized for an 85th percentile storm, and incorporate placement of retention basins and swales, and locations of spillways, outlets and dissipaters in order to most efficiently pretreat stormwater, protect and allow for sustainability of onsite wetlands, and prevent unwanted flooding of existing and new structures.

The refinement of the design focused on ways to best protect the wetlands and structures. The final locations of detention basins, swales and spillways were selected because they allow for effective pretreatment of design storm runoff in swales while assuring larger storm events will not cause flooding and damage to existing and proposed structures.

The alternatives that were considered are discussed below as Alternative A, Alternative B, and Alternative C. These alternatives are additionally shown as **Figure 1**, **Figure 2**, **& Figure 4**.

### 2. ALNTERNATIVE A DESIGN FEATURES

Alternative A is the preferred alternative.

This plan features on-site stormwater retention swales and basins which capture and pre-treat stormwater runoff to the 85th percentile design storm. Emergency spillways are included in the design to direct stormwater from storms above the 85th percentile to flow directly into the wetlands. This alternative is preferred because it allows for pretreatment of runoff from most stormwater events, while also safely directing flows from larger storm events away from man-made structures and into the wetlands. This most recent alternative incorporates a new design not seen in the previous versions, to best protect on-site resources in the vicinity of the wetlands, and also responds to the latest updates in the parking design. This alternative is illustrated in **Figure 1**.

### 2.1. Northwest Permeable Pavement and Emergency Spillway

Shaded areas shown in the northernmost portion of the parking lot would be paved with a permeable treatment which is expected to address stormwater runoff to the 85th percentile design storm. Runoff from storms above the 85th percentile storm would enter a constructed spillway swale to the wetland.

### 2.2. Northwest Swale

Stormwater from the lower portion of the parking area, Building 1 and some of Building 2 would be captured in the Northwest Swale and Central Bio-Retention Area. Flows in excess of 85<sup>th</sup> percentile storms would spill over the Central Bio-Retention Area and through an Emergency Spillway path into the northwest wetland.

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### 2.3. Southwest Swale

A Southwest Swale would capture stormwater flows in the vicinity of Building 2 and Building 3, and route stormwater to the Central Bio-Retention Area. Stormwater runoff in excess of the 85<sup>th</sup> percentile storm would spill over from the Central Bio-Retention Area into the existing northwest wetland.

### 3. ALTERNATIVE B DESIGN FEATURES

This plan features on-site stormwater retention basins which capture and pre-treat stormwater runoff before it enters wetlands. This plan uses existing topography to allow flows in excess of the 85<sup>th</sup> percentile design storm to flow naturally to wetlands. No infrastructure would occur within the 30 foot buffer area to wetlands or off-site. This alternative was rejected because of the potential for flows from large storms to cause damage to the Haul Road and other built structures. Without proper engineering of spillways, stormwater in excess of the design storm cannot be sufficiently routed away from man-made structures. This alternative is illustrated in **Figure 2**.

### 3.1. Northwest Surround Swale

Stormwater from the parking area, Building 1 and some of Building 2 would be captured in the Northwest Surround Swale. A detention basin/swale would be constructed just beyond the 30 foot buffer to the existing wetland; the continuous basin/swale would wrap around the entire east side of the existing wetland, and would be designed to retain and treat stormwater runoff up to the 85<sup>th</sup> percentile design storm. Flows in excess of 85<sup>th</sup> percentile storms would naturally spill over to the existing ditch on the east side of the Haul Road, and would naturally flow via the existing ditch to the wetlands, as is the existing condition **Figure 3**.

### 3.2. Southwest Detention Basins

Two stormwater detention ponds would treat runoff flowing from the southeastern area of the parcel, where stormwater runoff from the Event Center, Building Three, and portions of Building Two would drain. Water from southwest detention basins would permeate the soil and seep towards the southern wetland, allowing for pretreated runoff to infiltrate into the wetland. The detention basins will be sized to treat stormwater up to the 85<sup>th</sup> percentile storm. Stormwater runoff in excess of the 85<sup>th</sup> percentile storm would naturally spill over into the existing southwest wetland.

### 4. ALTERNATIVE C DESIGN FEATURES

Drainage naturally flows in three directions on the site: 1) to the southwest; 2) to the west; and 3) to the northwest **Figure 4**. This stormwater design alternative focuses on allowing runoff to maintain its natural course, and allows for pre- treated hydrological replenishment of existing wetlands at a level similar to pre- development. Spade Natural Resources Consulting (SNRC) prepared a Biological Scoping Survey on State Parks land to the west of the subject property to aid in evaluating this alternative (<u>Addendum</u> <u>Biological Scoping Survey Report and Wetland Delineation, dated March 7, 2017; available by request</u>). Though natural resource avoidance was not impossible, this alternative was rejected because of heavy infrastructure footprint and infrastructure maintenance requirements on both the subject property and on State Parks property to the west.

### 4.1. Southwest Detention Basins

Two stormwater ponds would treat runoff flowing from the southeastern area of the parcel, where stormwater runoff from the Event Center, Building Three, and portions of Building Two would drain. Water from southwest detention basins would permeate the soil and seep towards the southern wetland, allowing for pretreated runoff to infiltrate into the wetland. Drainage would also be connected to the central detention basins, so that runoff beyond the 85<sup>th</sup> percentile design storm would safely flow to the low elevation outlet.

### 4.2. Central (West) Stormwater Detention Basins and Low Elevation Outlet

The majority of the runoff heads in a westerly direction from the central portion of the site where development is proposed, towards the larger wetland present in the northwest corner of the property. Stormwater runoff from most of the parking area, Building 1, and portions of Building 2 would flow to

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stormwater detention basins created along the southern edge of the larger wetland. Permeation between basins and wetlands would allow for pre-treated hydrology to seep into the larger wetland on the easternmost side of the central basin system, while a pipe under the Haul Road would outlet at a low elevation of around 28 feet above sea level on California State Parks property, facilitating responsible direction of flows beyond the 85<sup>th</sup> percentile design safely away from existing and proposed structures. These large storm flows would outlet on a riprap energy dissipater to allow soil permeability while preventing erosion at the stormwater outlet on State Parks property.

### 4.3. Northwest Detention Basin

The northwestern most portion of the parking area will dip to a low elevation of approximately 37 feet above sea level when improvements are made to accommodate visual resources. Drainage at this elevation would need to be pumped if it were to be forced south to a central stormwater basin. Instead, a northern basin is designed to intercept and pre-treat stormwater flows from the north part of the parking area. The northern basin would allow pretreated water to permeate to the north wetland; overflow from the northern basin would be piped to the central detention system to accommodate large storm treatment.

### 5. ALTERNATIVES THAT WERE NOT PURSUED AND WHY

### 5.1. No Runoff Plan

The "no runoff plan" alternative consists of not developing a plan to address stormwater runoff. This would not meet stormwater treatment requirements and would likely result in flooding of the parking area and potential flooding of the new hotel buildings and Haul road. Allowing runoff from newly created impervious surfaces could cause potential erosion and sedimentation issues on and offsite, and would result in untreated stormwater runoff entering into wetlands.

### 5.2. Wetland Avoidance Design

Runoff pre-treatment in a series of basins disconnected from the existing wetlands would effectively result in the creation of new wetlands emanating as pre-treatment basins, at the cost of hydrological sustainability of the existing wetlands. The existing wetlands would be reduced in size due to the decrease in stormwater runoff, which would instead be directed to the newly created basins. Additionally, the potential for damage to man-made structures resulting from flooding is an issue when the wetland is disconnected from the surrounding hydrology.

### 6. CONCLUSION

Alternative A is the preferred alternative. This alternative pre-treats stormwater from the project area through a combination of permeable paving and Low Impact Development swales and Bio-Retention Area. Emergency spillways connect to the northern wetland, conveying stormwater from storms above the 85<sup>th</sup> percentile design storm safely away from structures.

Hunt-Avalon Addendum to Biological Scoping Survey, Botanical Survey & Wetland Delineation March 26, 2018 Hunt-Avalon Alternatives Analysis for Drainage Plan

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Figure 1 SHN Stormwater Management Plan Sheet C-1, 2018.08, Alternative A (preferred alternative).

Hunt-Avalon Addendum to Biological Scoping Survey, Botanical Survey & Wetland Delineation March 26, 2018 Hunt-Avalon Alternatives Analysis for Drainage Plan March 26, 2018, *Exhibit update August 22, 2018* 

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Figure 2 SHN Stormwater Management Plan, 2017.03, Sheet C-1A, on-site drainage [Alternative B for the purpose of this analysis].

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Figure 3 Stormwater runoff flow from ditch to wetlands along Haul Road per Alternative B.

Hunt-Avalon Addendum to Biological Scoping Survey, Botanical Survey & Wetland Delineation March 26, 2018 Hunt-Avalon Alternatives Analysis for Drainage Plan

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Figure 4 SHN Stormwater Management Plan, 2017.03, Sheet C-1A, with outlet to State Parks, [Alternative C, for the purpose of this analysis].

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## WETLAND RESTORATION, BUFFER ENHANCEMENT, & MITIGATION AND MONITORING PLAN

for

1201 & 1211 North Main Street Fort Bragg, CA APN 069-241-27 & -04 Mendocino County

Property Owners: Bob Hunt, Hunt Investments PO Box 1470 McCall, ID 83638



Report Prepared By: Asa Spade – Senior Biologist

August 7, 2019

Wynn Coastal Planning & Biology 703 North Main Street, Fort Bragg CA 95437 ph: 707-964-2537 fx: 707-964-2622 www.WCPlan.com

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### 1. PROJECT SUMMARY

Natural resources and wetland delineation surveys were conducted as a part of the coastal development permit (CDP #1-2013) process to identify the potential building envelope for a visitor serving facility and parking area on a previously developed ~3.7-acre property consisting of two parcels, zoned Highway Visitor Commercial (CH) and Open Space (OS), located in the City of Fort Bragg in the Coastal Zone.

Two wetlands were identified on the property. The northern wetland is approximately 19,000 square feet in size, and the southern wetland is approximately 10,000 square feet in size, for a total area of approximately 0.9 acre of wetlands on the subject properties.

The project was designed to maximize developable area of the parcel for an inn and parking lot while avoiding the southern wetland by at least 30 feet and the northern wetland by at least 50 feet. SHN designed infrastructure and created a stormwater management plan to accommodate runoff up to the 85<sup>th</sup> percentile storm. The system is designed to treat and infiltrate the majority of rainwater running off the buildings, parking lot, and other non-permeable surfaces. Rain in excess of the 85<sup>th</sup> percentile storm will enter the northern wetlands through two swales designed to minimally alter topography within the wetland buffer in order to enhance the buffer area and wetland beyond it.

Currently, the two wetland areas are moderately impacted by invasive plant species including Himalayan blackberry, cape ivy, yellow flag iris, callalily, and wild radish. The areas outside the wetland, within the wetland buffers, are dominated by non-native plants that do not have functional relationships to the wetland habitat. As a part of the development process, the owners are proposing to enhance the wetlands and wetland buffer areas to improve the wetland habitat, and the functional relationships and protective ability of the habitat surrounding the wetlands. Enhancement will include removal of invasive species, planting appropriate natives, and soil amendment and minor re-contouring within the buffer area to improve wetland hydrology and habitat values.

### 2. BACKGROUND

A Biological Scoping Survey and wetland delineation was performed on the combined 3.7-acres of two parcels (APN 069-241-27 & -04) by Asa Spade, and published on April 21, 2015. The purpose of the studies was to locate special status plants and communities, wetlands and riparian areas, and special status animal habitats to determine if they would be directly or indirectly impacted by the proposed development. Subsequent surveys and studies have been conducted to provide additional information and to ensure that the reports reflects current conditions.

In order to maximize the usable area of the parcels and minimize wetland buffer distance while providing sufficient protection to the natural resources present this wetland restoration, buffer enhancement, and mitigation and monitoring plan has been developed.

### 2.1. Responsible Parties

The party responsible for making sure Mitigation and Monitoring Plan performance goals are met is:

Bob Hunt, Hunt InnVestments PO Box 1470 McCall, ID 83638

This wetland restoration, buffer enhancement, & mitigation and monitoring plan was written by:

Asa Spade Senior Biologist Wynn Coastal Planning & Biology 703 North Main Street Fort Bragg, CA 95437 707-964-2537 Asa@WCPlan.com

### 3. PREVIOUS AND EXISTING ECOLOGICAL CONDITIONS

A fire in 2007 destroyed the inn that existed on the site prior to that time. **Figure 1** is a photograph of the inn on the southern parcel and residence and gravel stockpiles on the northern parcel, as well as the surrounding ecological conditions in 2002. The majority of the inn grounds were kept as a mowed lawn. Wetland vegetation can be seen in the lower left-hand side of the inn lot in the photo and a channel to the lower right. The vegetation along the strip of land lower in the photo (west of the lawn) appears to more closely resemble the vegetation further west across the Haul Road on State Parks land. The second parcel, to the north of the inn parcel shown, was used by the then adjacent business, Baxman Gravel, to stockpile gravel and other road base materials.



Figure 1. Image 11414, California Coastal Records Project, shows the lawn on the subject property in 2002.

Currently the vegetation on the subject parcels is comprised mainly of non-native, ornamental, and invasive plant species, with wetland communities along the northwest and southwest property boundaries. The main plant community present on the property, including the majority of the wetland buffer, is non-native grassland. Dominant species within the non-native grassland include common velvet grass (*Holcus lanatus*), creeping bentgrass (*Agrostis stolonifera*), tall fescue (*Festuca arundinacea*), sweet vernal grass (*Anthoxanthum odoratum*) and wild radish (*Raphanus sativus*). Non-native ruderal areas, invasive plants and ornamentals cover a significant portion of the property not covered by non-native grassland. Dominant plant species in ruderal areas, including the wetland buffer area east of the northern wetland, on what was the Baxman gravel site, include English plantain (*Plantago lanceolata*), bur-clover (*Medicago polymorpha*), buckhorn plantain (*Plantago coronopus*), wild radish (*Raphanus sativa*), vetch (*Vicia sativa*), and cape ivy (*Delairea odorata*).

Two areas of wetland are present on site. The northern wetland is approximately 19,000 square feet in size, and the southern wetland is approximately 10,000 square feet in size, for a total area of approximately 0.9 acre of wetlands on the subject properties. Within and near wetlands, patches of native vegetation were present. California blackberry brambles (*Rubus ursinus* ~2,000sqft) were present along the west property boundaries, just outside of wetlands, adjacent to the Haul Road. California wax myrtle (*Morella californica* ~2,300sqft) was present along the eastern edge of the northern wetland. Small-fruited bulrush (*Scirpus microcarpus* ~1,600sqft), broadleaf cattails (*Typha latifolia* ~2,500sqft), slough sedge (*Carex obnupta* ~3,750sqft), and water parsley (*Oenanthe sarmentosa* ~300sqft), were present within the northern wetland. Nootka rose (*Rosa nutkana* ~2,000sqft) occurred in a narrow patch along the Haul Road on the western side of the southern wetland.



Figure 2. Wetlands documented on the site, with site hydrology indicated.

Portions of the wetlands on site are dominated by non-native invasive plants including Himalayan blackberry (*Rubus armeniacus*), cape ivy (*Delairea odorata*), pennyroyal (*Mentha pulegium*), callalily (*Zantedeschia aethiopica*), lollypop tree (*Myoporum laetum*), and yellow flag iris (*Iris pseudacorus*).



Figure 3. Himalayan blackberry along the western parcel boundary.



Figure 4. Calla lily within the northern wetland.



Figure 5. Lollypop trees within the southern wetland.



Figure 6. Yellow flag iris within the southern wetland at the southwestern corner of the project site.



Figure 7. Cape ivy within the northern wetland.



Figure 8. Iceplant within the northern wetland buffer area.



Figure 9. Wild radish directly adjacent to the northern wetland along the Haul Road.



Figure 10. Compacted soils and ruderal vegetation east of the northern wetland on the parcel that was previously Baxman gravel's stockpile area.

### 4. **RESTORATION POTENTIAL**

Targeted removal of specified non-native invasive plants will allow areas to revegetate with native species. Native plant species are more appropriate for native wildlife and will improve habitat. Minor recontouring of areas within the wetland buffer will improve site hydrology allowing for the best retention of rainwater on site. Ripping and amending the hard-compacted soils in the portion of the wetland buffer affected by the Baxman gravel operation will allow ruderal non-native vegetation to be replaced with native vegetation and allow rainwater to infiltrate the soil in this area. Removal of non-native vegetation within the wetland buffer and installation of appropriate native plants will enhance the wetland habitat, increasing the functional relationship between the wetlands and the habitat within the buffer area. Installation of appropriate native plants within the buffer areas biodiversity, add missing biological functions to the habitat, and perform habitat protective functions such as reducing light and noise entering the wetland habitat.

### 5. RESTORATION PLAN

### 5.1. Basis for Design

The intent of the Wetland Restoration and Buffer Enhancement Mitigation & Management Plan is to provide guidance on improving and maintaining a healthy wetland ecosystem. Following this plan will allow for development and use of the parcel at the same time are making the wetland habitat better than its conditions at the start of the project. This plan outlines performance goals and suggests methods for the property owner to meet these goals in order to increase wetland quality and improve the protective and habitat functions of the wetland buffer.

The proposed plan is performance-based which allows for management to be carried out in an adaptive manner whereby monitoring provides feedback and shows the manager areas within which efforts are successful, as well as areas that may need a different approach in order to meet the performance goals. Monitoring and restoration should occur for five years to meet the performance goals.

### 5.2. Performance Goals and Success Criteria

Goals for active management are as follows:

- 1. Maintain or increase the area meeting the definition of Coastal Act Wetland. At the end of the mitigation monitoring period wetland area shall be ≥ 29,000 square feet.
- 2. Remove target non-native invasives: Himalayan blackberry (*Rubus armeniacus*), cape ivy (*Delairea odorata*), callalily (*Zantedeschia aethiopica*), iceplant (*Carpobrotus* spp.), bulbil bugle lily (*Watsonia meriana*), and yellow flag iris (*Iris pseudacorus*), from the wetland and buffer area. No plants of these target species shall be present within the wetland nor buffer area at the end of the mitigation monitoring period.
- **3.** Increase wetland and wetland buffer native biodiversity. The wetland and wetland buffer areas shall support 20% more species of native plants at the end of the mitigation and monitoring period than the baseline count at the beginning of the project.
- 4. Increase relative coverage of native plants as compared to non-native plants. Relative coverage of native plants shall be ≥80% within the wetland and ≥70% within the buffer area at the end of the mitigation monitoring period. It should be noted that complete elimination of non-native species is an unrealistic goal. Some active management of non-natives within the wetland and buffer areas will always be necessary but the goal is to establish self-sustaining populations of native plants that will exclude as many non-natives as possible. Repeated soil disturbance caused by more intensive plant management provides more opportunities for ruderal non-native species to become established and this activity may also be more detrimental to native wildlife than the presence of some non-native plants.
- 5. Facilitate the wetland's natural flood control function and groundwater infiltration by contouring site topography and improving compacted soils to make them more friable.
- 6. Produce a quarterly record of management activities and site performance and submit this information to the planning department on a yearly basis. Photo points shall be established and photographs of the northern wetland, northern wetland buffer area, southern wetland, and southern wetland buffer area shall be taken each quarter. The annual report shall include

qualitative and quantitative data regarding each of the performance criterion outlined above.

### 6. IMPLEMENTATION

Suggested implementation procedures for the wetland restoration and buffer enhancement are outlined below. Completion of these procedures is a means and not an end; other ways to meet the goals and performance criteria outlined above may be utilized. Some adaptive management based on results is appropriate and expected. Conditions at the site, weather, and plant performance will all inform management decisions.

### 6.1. Contour Topography within the Wetland Buffer

SHN Consulting Engineers & Geologists, INC. has developed a stormwater management plan for the site. Within the wetland buffer, the plan includes two emergency spillways and a swale directing runoff from impervious surfaces on the site into a bio-retention swale outside the buffer area. Minor grading and recontouring of these areas within the buffer should be completed in order to direct overflow water resulting from large storm events into the northern wetland. The baseline condition of two of these areas is that they are vegetated with non-native grasses. The third area, an emergency spillway at the northern end of the project site, will be located in an area that is compacted and sparsely vegetated with non-native ruderal species. Grading and contouring should disturb and move the minimum volume of substrate necessary to achieve the functionality of the swale and emergency spillways as designed by SHN. Soils in these areas should be amended as necessary to support native vegetation and should be revegetated with native vegetation appropriate to the function of these features and the adjacent wetland habitat. These activities will improve the wetland buffer habitat by increasing native vegetation and will improve the wetland by maximizing the amount of stormwater runoff retained on site.

### 6.2. Rip and Amend Compacted Substrate within the Northern Wetland Buffer

Soils above the wetland on the western portion of the northern parcel have been compacted over time by the gravel operations on this parcel. The soil within the wetland buffer is thin and compacted, supporting only ruderal non-native species and non-native grasses. This area has very low habitat value and no functional relationships to the wetland it is buffering. Rather than taking a hands-off approach to this buffer area it should be enhanced in order to better protect the wetland and to expand the habitat value.

Soils in this area should be evaluated to determine the extent of fill and compaction. The upper layers should be ripped with appropriate heavy equipment (excluding within the Sensitive Resource Area nodig zone), such as a backhoe or excavator, to a depth that effectively eliminates the compacted layer, or at least to 12 inches. Most plant roots are within the upper 12 inches of soil. Soils in this area should be tested for their ability to support native grasses and forbs and amended with appropriate materials according to the testing. Loosening of soil and adding amendments will result in a greater soil volume than the baseline. The removal of some of the soils may be necessary to maintain appropriate topography. Minor recountouring should occur in this area to facilitate natural drainage and to direct water discharged from the emergency spillway during a heavy rainfall event, as described in implementation section 6.1. above.

### 6.3. Invasive Plant Removal

Himalayan blackberry (*Rubus armeniacus*), cape ivy (*Delairea odorata*), callalily (*Zantedeschia aethiopica*), iceplant (*Carpobrotus* spp.), bulbil bugle lily (*Watsonia meriana*), and yellow flag iris (*Iris pseudacorus*) should be removed to the greatest extent practicable. These plants are to be specifically targeted for 100% removal, which should be achievable with the proper effort over the 5 year restoration period. These plants species easily resprout from roots and/or rhizomes, which must be grubbed out. Non-native plants within the wetland should be removed with hand tools. Power tools such as chainsaws and rototillers may be appropriate but heavy equipment should not be used within the wetland or in the Sensitive Resource Area no-dig zone. Within the buffer area the use of heavy equipment and vehicles used to load up and remove material should be minimized.

The majority of the invasive plants should be removed in a single effort in the first year of the

project; however, it is expected that root and rhizomes will be missed and will begin to regenerate. These plants should be removed when they become identifiable, or at least yearly until all plants of the target species listed above are eliminated (**Table 1**).

A second set of plants that should be removed includes Monterey pine (*Pinus radiata*), lollypop tree (*Myoporum laetum*), red hot poker (*Kniphofia uvaria*), garden nasturtium (*Tropaeolum majus*), cotoneaster (*Cotoneaster* spp.), Escallonia (*Escalonia* sp.). These plants are ornamental non-native plants introduced as landscaping that can spread but are generally not as pernicious. 100% removal of these species should be relatively easy to achieve.

Additional non-native plants present within the wetland and buffer area that should be removed to the extent practicable include poison hemlock (*Conium maculatum*), periwinkle (*Vinca* spp.), bull thistle (*Cirsium vulgare*), wild radish (*Raphanus sativus*), teasel (*Dipsacus* spp.), burclover (*Medicago* spp.), Aaron's beard (*Hypericum calycinum*), pennyroyal (*Mentha pulegium*), monbretia (*Crocosmia crocosmiiflora*), bentgrass (*Agrostis* spp.), sweet vernal grass (*Anthoxanthum odoratum*), rattlesnake grass (*Briza maxima*), ripgut brome (*Bromus diandrus*), orchard grass (*Dactylis glomerata*), ryegrass (*Festuca perennis*), common velvetgrass (*Holcus lanatus*), and purple-awned wallaby grass (*Rytidosperma penicillatum*). This category of plants includes non-native invasive species that have become naturalized in coastal Northern California. The plants in this third category are unlikely to be eliminated from the project site; they should be managed as well as possible. The performance criteria allow for some presence of non-native plant coverage in acknowledgement of the diminishing returns expected in the effort to eliminate all non-native invasive species present within the wetland and buffer areas.

Category 1 species listed separately at the beginning of this section and within the performance criteria have been chosen because of their significant baseline coverage and due to the potential for eventual success eliminating them from the site. Category 2 species should be relatively easy to eliminate. Category 3 plants will be practically impossible to completely eliminate from the site but should be reduced as much as possible.

Category 1: Targeted invasive species - 100% Eradication				
Rubus armeniacus	Himalayan blackberry			
Delairea odorata	cape ivy			
Zantedeschia aethiopica	callalily			
Carpobrotus spp.	iceplant			
Watsonia meriana	bulbil bugle lily			
Iris pseudacorus	yellow flag iris			
Category 2: Non-Native but not as invasive – 100	% removal			
Pinus radiata	Monterey pine			
Myoporum laetum	lollypop tree			
Escalonia sp.	Escallonia			
Kniphofia uvaria	red hot poker			
Tropaeolum majus	garden nasturtium			
Cotoneaster spp.	cotoneaster			
Category 3: Ongoing Management – Removal to greatest extent feasible				
Conium maculatum	poison hemlock			
Vinca spp.	periwinkle			
Cirsium vulgare	bull thistle			
Raphanus sativus	wild radish			
Dipsacus spp.	teasel			
Medicago spp.	burclover			
Hypericum calycinum	Aaron's beard			
Mentha pulegium	pennyroyal			

### Table 1. Non-native and invasive species targeted for removal.

Crocosmia ×crocosmiiflora	monbretia
Agrostis spp.	bentgrass
Anthoxanthum odoratum	sweet vernal grass
Briza maxima	rattlesnake grass
Bromus diandrus	ripgut brome
Dactylis glomerata	orchard grass
Festuca perennis	ryegrass
Holcus lanatus	common velvetgrass
Rytidosperma penicillatum	purple-awned wallaby grass

### 6.4. Establish Native Plants to Increase Native Coverage and Biodiversity

Removal of non-native plants from the wetland and buffer areas will result in disturbed bare soil. Elimination of invasives may be more successful if disturbed soils are immediately watered and allowed to rest for two to three weeks. This will encourage seeds in the soil to sprout. Two to three weeks later non-native seedlings should be eliminated with a hoe. Once seedlings are eliminated, areas with barren soil should be immediately planted and seeded with native plants. Allowing disturbed soils to rest for two to three weeks prior to planting as described is recommended but may not always be practical depending on the time of year activities occur.

In some cases plant removal will need to occur at different times of the year than plant installations depending upon the best strategy against target non-native plants. Generally, the best time to install new plants will be in the fall when rains begin, in order to minimize the necessity for watering and to maximize plant survival.

**Table 2** is a list of appropriate native plants for the habitat present within the wetland and surrounding buffer. Many of the plants are already present within the wetland; others are suggested additions to the wetland and/or buffer areas. Adding additional species to those present will increase biodiversity of plants as well as wildlife that utilize these plants as food, cover, nesting materials, etc. The table includes information on the average maximum height and preferred moisture gradient of the plants, as well as the zones denoted in the planting map (**Figure 11**) where each species is appropriate. The list also denotes with an asterisk, those plants that were not documented on the site during previous surveys. This list can be used to determine which plants are new to the site for purposes of increasing species richness, which is one of the criteria for success.

Table 2. Site appropriate plants for the wetland and buffer area. Plants marked with an asterisk\* were not documented during the initial surveys but are native and appropriate to the habitat present. Addition of these species would count toward increasing site biodiversity. Average height was determined based on biologist's knowledge of and familiarity with these species in comparable habitats on the Mendocino Coast.

Scientific name	Common name	Average Height (feet)	Wetland Status	Planting Zones	
Erythranthe guttata	seep monkeyflower	1.5	OBL	С	
Erythranthe inodora*	musk monkeyflower	0.1	OBL	С	
Juncus bolanderi*	Bolander's rush	1.7	OBL	С	
Carex obnupta	slough sedge	2	OBL	С	
Carex harfordii	Monterey sedge	1.5	OBL	С	
Scirpus microcarpus	small panicled bulrush	2	OBL	С	
Potentilla anserina ssp. pacifica	Pacific potentilla	0.1	OBL	C, E	
Rhododendron columbianum*	Labrador tea	4.5	OBL	D	
Equisetum telmatia	giant horsetail	3	FACW	С	
Camassia quamash*	Camas lily	1.7	FACW	E	
Grindelia stricta*	gumweed	2	FACW	E, F	
Stachys chamissonis	coast hedge-nettle	1	FACW	C	
Calamagrostis nutkaensis*	Pacific reedgrass	2.5	FACW	E, F	
Artemesia douglasiana*	California mugwort	3	FACW	B, D	
Plantago subnuda	naked plantain	0.3	FACW	C, E	
Juncus breweri	Brewer's rush	1	FACW	С	
Juncus hesperius*	coast rush	1	FACW	C, F	
Sisyrinchium californicum*	golden-eyed grass	0.5	FACW	C	
Deschampsia cespitosa ssp. holciformis	coastal tufted hairgrass	0.3	FACW	E	
Juncus patens*	spreading rush	1.5	FACW	E	
Lilium maritimum*	coast lily	3	FACW	E, F	
Morella californica	wax myrtle	10	FACW	D	
Stachys rigida		1.2	FACW	E	
Grindella stricta	coastal gumweed	2	FACW	E	
	blue-eyed grass	0.5	FACW	E	
Hosackia gracilis	coastal lotus	0.1	FACW	E	
Rosa nutkana var. nutkana	Nootka rose	3.5	FAC	В	
Heracleum lanatum	cow parsnip	3.5	FAC	D, F	
Scrophularia californica	California bee plant	2	FAC	F	
Athyrium filix-femina*	lady fern	2	FAC	E, F	
Danthonia californica*	California oatgrass	1.3	FAC	В	
Elymus glaucus	blue wildrye	2	FACU	B	
Carex tumulicola*	split awn sedge	0.5	FACU	F	
Ribes sanguineum*	pink flowering current	6	FACU	B, D	
Vaccinium ovatum*	evergreen huckleberry	5	FACU	B, D	
Prunella vulgaris	self-heal	0.3	FACU	F	
Fragaria chiloensis	beach strawberry	0.1	FACU	F	
Erigeron glaucus	seaside daisy	0.2	FACU	F	
Achillea millefolium	yarrow	1	FACU	F	
Artemesia suksdorfii*	coastal mugwort	3	FACU	B, D	
Polystichum munitum	western sword fern	2.5	FACU	B, D	
Solidago canadensis	Canadian goldenrod	2	FACU	B, F	
Solidago spathulata	coast goldenrod	0.5	FACU	B, F	
Chamerion angustifolium	fireweed	1	FACU	F	
Anaphalis margaritacea	pearly everlasting	1	FACU	B, F	
Iris douglasiana	Douglas iris	1.5	UPL	B, F	
Marah oreganus	wild cucumber	3	UPL	В	
Baccharis pilularis	coyote brush	5	UPL	В	
Frangula californica*	California coffeeberry	5	UPL	D	
Bromus carinatus	California brome	2	UPL	B, D	
Treatment: A=preservation, B=soil amendment, C=wet	and restoration, D=buffer enhancement (shi	rubs), E=spillway (low plants), F=	buffer enhancem	ent (low plants)	



Figure 11. Restoration Planting Map, illustrating various Treatment Areas keyed to Table 2 Species List

### 6.5. Establish Native Plants to Provide Screening

In some locations it may be desirable to plant shrubs within the wetland buffer between the development and the wetland. Shrubs will help reduce entry into the wetland by guests and will screen the wetland from noise, nighttime light, and visual disturbance. These functions will provide better conditions for wildlife using the wetland areas. A line of wax myrtle shrubs (Figure 12), presumably shaped by wind and salt spray, occurs along a portion of the eastern edge to the northern wetland. This hedge provides a good model of what can be created in the other target areas within the wetland buffer. Concerns over public view of the ocean from the highway may preclude the installation of a hedge along the remainder of the northern wetland. The view of the ocean from the highway over portions of the northern wetland, and the southern wetland, however, will already be blocked by proposed development. In these areas native shrubs should be planted along the outside (eastern) edge of the buffer area. Care will be taken to ensure that first-floor guests are afforded a view of the ocean. Probably the most likely shrub species to successfully become established will be wax myrtle (Morella californica). For variety and biodiversity some additional evergreen shrub species can be substituted including covote brush (Baccharis pilularis), evergreen huckleberry (Vaccinium ovatum), California coffeeberry (Frangula californica), or Labrador tea (Rhododendron columbianum). Sword fern (Polystichum munitum) may also be used in some locations.



Figure 12. Hedge of wax myrtle along the edge of the northern wetland that performs a screening function protecting the wetland habitat beyond.

### 6.6. Project Adaptation

Using the annual monitoring procedure, active management components will be assessed based upon the performance goals. If the performance goals are not being achieved or if there is evidence that they are vulnerable to failure, a consultation with CA Department of Fish and Wildlife should occur where criteria may be reassessed based upon current and projected conditions.

### 6.7. Monitoring

An active management monitoring report will be written on an annual basis, for a minimum of five years, and until most or all performance goals have been met for three consecutive years. The report will describe the methods used during that monitoring period to eradicate weeds, improve wetland quality and conditions develop and maintain wetland buffer vegetation and functionality. Any new invasive plant species observed will be described. Barriers to achieving the performance goals should be identified, described, and strategies to overcome these barriers shall be developed and implemented. Pictures will be included, and a description of whether and how performance goals were met will be noted.

### 7. SCHEDULE

The table below gives an approximate outline of when in the life of the project each component of the restoration plan should be undertaken.

Table 3. Restoration plan implementation schedul	an implementation schedule	mpl	plan	estoration	3. R	Table .
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Phase	Implementation Date	Description	
Phase 1 - Site Grading and Restor	ration		
Establish photo points	Before other activities	Establish photo points for northern wetland, northern wetland buffer area southern wetland, and southern wetland buffer area. Record baseline conditions.	
Contour topography	Fall, Year 1	Contour topography for 2 emergency spillways and swale (Area E)	
Loosen and amend compacted soils	Fall, Year 1	Upper layer of soil in Area B should be ripped and amended	
Begin invasive plant removal	Year 1	Begin removing invasive plants in Areas B - F. Category 1 plants should be targeted for removal. Category 2 plants should be removed to a feasible extent (Table 1)	
Recommended - germinate seed bank	Year 1	After soils are disturbed and barren of vegetation, soil should be watered sufficiently to allow present seed bank to germinate. Two to three weeks later seedlings should be eliminated with a hoe.	
Plant and seed natives in barren soil	Year 1	After the above recommended step or immediately after soil is barren, barre areas should be planted and seeded with natives. If this occurs during the dry portion of the year watering should occur until rains are sufficient.	
Establish screening plants	Winter, Year 1	Shrubs should be planted in Area D. If this occurs during the dry portion of the year watering should occur until rains are sufficient.	
Establish low growing plants	Winter, Year 1	Low growing plants should be planted and established in Area E. If this occurs during the dry portion of the year watering should occur until rains are sufficient	
Document efforts	Winter, Year 1	Document restoration efforts through photographs, number and location of plants installed, record qualitative and quantitative data for each success criteria.	
Phase 2 – Maintenance and Docu	imentation		
Site monitoring	Quarterly, Year 2-5+	Document restoration efforts through photographs, number and location of plants installed, record qualitative and quantitative data for each success criteria.	
Yearly reporting	Winter, Year 2-5+	Provide all documentation recorded in quarterly monitoring to the appropriate authority as discussed in the reporting section below.	
Supplemental invasive removal	Quarterly, Year 2-5+	Remove resprouting invasive plants in Areas B-F.	
Supplemental native planting	Winter, Year 2-5+	Seed and install native plants as necessary to achieve success criteria	
Final Report	Winter, Year 5+	Write and submit a final report when success criteria have been achieved and maintained. If success criteria have not been achieved at the end of the 5 <sup>th</sup> year then the restoration efforts shall continue until these criteria are met. If it becomes apparent that some criteria will not be met then coordination with City Planning shall occur to determine how criteria can be met and/or to reassess what goals must be achieved for the restoration to be considered successful.	

### 8. REPORTING

Reporting will occur on an annual basis, and reports will be received by the City of Fort Bragg Planning Department by December 31 of each year until all (or most with agency consultation) performance goals have been met for at least three consecutive years.

Reports will be sent by US Mail to:

Attn: Sarah McCormick, Assistant Planner Community Development Department City of Fort Bragg 416 North Franklin Street Fort Bragg, CA 95437

Reports will include the following information:

- Name and contact information of person in charge of monitoring activities, and name and contact information of reporting party.
- Evaluation of each of the performance criterion; along with recommendations for meeting each of the criterion not already met.
- Color photos of the active management areas, from each photo point, each quarter of the reporting period.
- A summary of any issues encountered and management steps taken during the reporting period.
- Methods used during that monitoring period to eradicate weeds, improve wetland and buffer quality.
- Any new invasive plant species observed or evidence of other potential problems will be described.

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### **10. INVESTIGATOR BIOGRAPHIES**

### **Contributing Biologists**

**Asa B Spade** graduated from Humboldt State University with a Bachelor's Degree 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. Asa has trained with the Carex Working Group in identifying grasses and sedges of Northern California. 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, and the California red-legged frog. He has contributed to more than 150 coastal development projects in Mendocino County.



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July 1, 2020

Sarah McCormick, Assistant Planner City of Fort Bragg 416 N. Franklin St. Fort Bragg, CA, 95437 smccormick@fortbragg.com

RE: CDP #1-2013 (Avalon Hotel) Response to public comment re Avalon Hotel (IS/MND) 1201 & 1211 North Main Street Fort Bragg CA 95437 APNs 069-241-27-00 & -38-00

Dear Sarah,

Wynn Coastal Planning and Biology would like to provide some additional information and recommendations as a response to concerns voiced by members of the public including the Mendocino Coast Audubon Society and the Dorothy King Young chapter to the California Native Plant Society (CNPS).

CNPS suggests that the wetland delineation report may have underestimated the area of wetland habitat because it relied on survey data taken during a severe drought year.

CNPS cites a website reporting severe drought in the "Western US region". Drought does not affect all areas within a region equally. Rainfall recorded at the weather station at the Fort Bragg Airport, less than 1 mile from the project site documented significant rainfall during the hydrology study conducted from February 11, 2014, to April 25, 2014. The beginning of the study was delayed because the majority of rains came later than normal that season and commenced just after a saturating rainfall event. It should be noted that a shallow groundwater study is not a normal part of "routine level" Army Corps wetland delineation; it provides information above and beyond the standard by which the majority of determinations are made. The methodology and results of the wetland delineation for this project were certified by the Army Corps of Engineers which made a site visit to confirm the results presented.



Figure 1. While the early season was dry, the hydrology study commenced just after the first significant rainfall event and extended through the remainder of the season's rainfall.

Biological scoping and botanical surveys were indeed conducted 100ft beyond the parcel boundaries but results of the surveys were not reported for the State Parks west of the Haul Road walking path. This is because wetlands present along the western portion of the project parcel were deemed to be more restricting than any potential ESHA west of the Haul Road. The map presented in **Figure 2** below shows that the configuration of the proposed development is such that all proposed structures are greater than 100ft from any natural or naturalized vegetation west of the Haul Road. The public access path, and habitat restoration and enhancement activities will occur closer to the MacKerricher Headlands but are considered allowable resource dependent development and/or restoration which is regulated differently than the rest of the project.



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APN: 069-241-07, -04 ADDRESS: 1201 & 1211 North Main Street Fort Bragg, CA **100' Development Buffers** 

Figure 2. Map showing that proposed development is greater than 100ft from State Parks lands west of the Haul Road.

In addition to survey dates provided in the Biological Scoping, Botanical and Wetland Delineation report published April 21, 2015, additional surveys were performed on the subject parcel and within the portions of State Parks lands west of the subject parcel. Additional surveys were performed on February 28, March 8 & 13, May 22 & 30, and July 19, 2017. The findings of these additional surveys were consistent with surveys conducted to inform the 2015 report. Wynn Coastal Planning and Biology Senior Biologist Asa Spade met on site with State Parks Senior Environmental Scientist Brendan O'Neil to view and discuss natural resources present. A potential project alternative involving a stormwater overflow drain exiting on State Parks property was considered and discussed. Mr. O'Neil was open to the concept but ultimately this alternative was deemed infeasible by the project property owner.

**Figure 3** depicts natural resources observed and mapped during the analysis for the stormwater drain alternative superimposed onto the current project footprint map. **Figure 4** shows the resources present that would be likely to be considered ESHA and depicts 50ft and 100ft buffers from them. None of the special status resources present on State Parks are within 100ft of structures such as buildings and parking lots that are proposed for the Avalon Hotel. The proposed public access trail is within 100ft of slough sedge sward (*Carex obnupta* Herbaceous Alliance S3 G4 presumed wetland ESHA), tufted hairgrass meadow (*Deschampsia caespitosa* Herbaceous Alliance S4? G5 presumed sensitive community ESHA) and a population of coastal lotus (*Hosackia gracilis*, presumed hostplant of a federally endangered butterfly not seen since 1983). The proposed public easement trail on the subject parcel is not expected to cause any direct impacts to these resources. The easement has the same purpose as, and is further away from, these resources than the Haul Road which it leads to.



Figure 3. Resources mapped during consideration of an alternative not proposed.



Figure 4. Map depicting presumed ESHAs west of the Haul Road with 50ft and 100ft buffers.

CNPS voices concerns over additional impacts to coastal natural resources on State Parks property west of the Haul Road walking trail. One of the concerns are social trails through State Parks used by adjacent hotel guests and members of the general public, and the potential for their expansion due to the new hotel replacing the hotel that previously existed on the project parcel.

The project applicants have added to their project, a proposal for habitat enhancement plantings of wax myrtle (Morella californica) west of the Haul Road after an additional meeting at the site with State Parks personnel. A preliminary Morella californica Mitigation, Monitoring, and Reporting Plan is attached to this letter. Approximately 250 young wax myrtles will be planted on six-foot centers within the fill prism west of the Haul Road (Figure 5). This area (Figure 6 - Figure 8) is mounded slightly higher than the native grade due to excess materials resulting from construction of the Haul Road and is vegetated primarily with non-native vegetation including common velvet grass (Holcus lanatus), sweet vernal grass (Anthoxanthum odoratum), English plantain (Plantago lanceolata), wild radish (Raphanus sativa), and iceplant (Carpobrotus edulis). The plantings will avoid areas vegetated with native vegetation as well as wetland habitat present. In addition to enhancement of the habitat by the introduction of native plants that will shade out the non-native plants in these areas, the plantings will also help close off access to the adjacent bluff edge, first by being marked as a habitat restoration area with a temporary symbolic barrier such as a rope, and eventually the wax myrtles will grow together to form a physical barrier. A wax myrtle hedge (Figure 9) already exists in one location across from the proposed project. The proposed wax myrtle plantings are intended to become a continuation of this hedge with similar characteristic and function for wildlife and as a barrier to access of the bluff edge beyond the hedge.




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Aerial Map -Proposed Morella californica Planting

Figure 5. Location of proposed habitat enhancement wax myrtle plantings.



Figure 6. Looking north. Photo showing proposed location of wax myrtle plantings within the Haul Road fill prism dominated by non-native vegetation west of the Haul Road walking trail.



*Figure 7. Looking north. Photo showing proposed location of wax myrtle plantings within the Haul Road fill prism dominated by non-native vegetation west of the Haul Road walking trail.* 



Figure 8. Looking south. Photo showing proposed location of wax myrtle plantings within the Haul Road fill prism dominated by non-native vegetation west of the Haul Road walking trail.

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Figure 9. Existing wax myrtle hedge west of the proposed hotel parking lot. The proposed wax myrtle plantings are intended to become a continuation of this hedge, with similar characteristics and function.

The 2015 report included avoidance mitigation measures to protect special status bird species. In more recently written reports Wynn Coastal Planning & Biology has provided the following avoidance mitigation measures for protection of birds and bats, and we recommend they be included for this project:

### Potential Impact 1: Potential Impact to Birds

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

### Measure 1a: Seasonal Avoidance

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

#### Measure 1b: 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 the nest site weekly during the breeding season to ensure the buffer is sufficient to protect the nest site from potential disturbance.

# Measure 1c: Construction activities during daylight hours

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

# Potential Impact 2: Potential Impact to Bats

Construction in the study area has the potential to impact special status bat species. 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.

# Measure 2a: 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 if development activities. If active bat roosts are observed, no ground disturbance or vegetation removal 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.

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

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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.



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											

Measure 2b: Construction activities during daylight hours

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

We hope that this additional information and recommendations address some of the concerns raised by interested community members.

A Sincerely, Asa Spade

Senior Biologist