



Botanical Survey

Mabe Table Bluff Botanical Survey

Reference: 016209
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By: Joseph Saler, Biologist/Botanist

On July 27 and August 1, 2016 SHN Consulting Engineers & Geologists, Inc. botanist Joseph Saler conducted a botanical site reconnaissance and survey for special status botanical species¹ across the entire parcel designated APN 308-231-002. This included the portions of the parcel on both sides of Hawks Hill Road, and the right of way for Hawks Hill and Table Bluff Roads, along the parcel. This covers an area of approximately 4.68 acres along the top of the shoulder of Table Bluff. No project has been developed for the parcel, however, it is expected that the parcel would be developed with a single family dwelling and agricultural use. To ascertain such development potential the entire parcel was surveyed to ensure that no listed botanical species potentially occurring on the parcel were missed. The site is within the United States Geological Survey (USGS) 7.5-minute Fields Landing quadrangle located in Humboldt County. This Botanical Report documents the botanical site investigation and findings.

Background

The parcel designated APN 308-231-002 is located on Table Bluff at latitude 40.6654, and longitude -124.2257 (see figure 1). Table bluff has been the location of intense agricultural use for over 100 years, which has largely determined the botanical species found within the parcel during the survey. The parcel is surrounded by agricultural use on two sides, and was at one time used for agriculture as evidenced by fencing. Additionally, there was a mobile home on the parcel in the past as seen on old aerial imagery and evidenced by piping, electrical hookups, a cement pad and sidewalk, and a gravel driveway. Due to the past agricultural use of the parcel and the history of development on the parcel, it is unlikely that any listed botanical species would be found on site.

Soils across the parcel are of the Rhonerville soil series, which consists of silty clay loam textured soils with deep, dark topsoil down to approximately 24 inches. These soils are deep and well drained which can support a wide range of vegetation. Due to the well drained nature of the soils across the entire parcel, very little wetland species were observed, with few species having more than facultative upland species¹.

¹ The Term "Special Status Species" is used collectively to refer to species that are state or federally listed, species that are state or federal candidates for listing, and all species listed by the California Natural Diversity Database. This term is consistent with the biological resources that need to be assessed pursuant to the California Environmental Quality Act.



Figure 2: Survey area. Includes Right of way along Table Bluff Road and Hawks Hill Road (referred to as Rasmussen Rd in figure). Note agricultural fields to the south and west.

Methodology

A list of plant species potentially present within the parcel was developed from information available from the California Consortium of Herbaria and the Calflora Project. A search of the California Natural Diversity Data Base (CNDDB) for known rare, threatened, or endangered species within the Fields Landing and adjacent quadrangles resulted in 23 plant species. An additional search for known rare, threatened, or endangered species within the Fields Landing and adjacent quadrangles using the California Native Plant Society (CNPS) rare plant inventory resulted in 23 additional species for a total of 46 plant species. Of these, 11 species have low to medium potential to occur within the parcel (See Tables 1 and 2 for listed species). No listed species had a high potential of occurring on-site. The bulk of the remaining species occupy wetland habitats, beach habitat, or forested habitats. These species do not have suitable habitat within the parcel, which is on top of a shoulder of Table Bluff and is characterized by non-native grassland and shrubland, with a few isolated trees. Using information about sensitive species potentially

present in the project area, SHN undertook a botanical investigation in an attempt to determine if any of these species were actually located at the project site, and if project activities would have any adverse impacts to individuals or habitat.

Botanical Investigation

A focused botanical survey was conducted pursuant to the California Department of Fish and Wildlife (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2009).

The survey protocol consisted of a database query and a focused botanical field survey for target species within suitable and potentially suitable habitat. Prior to conducting fieldwork, the following references were reviewed:

- CNDDDB query for Field's Landing and the surrounding USGS 7.5 minute topographic quadrangles² (CDFW, 2016a).
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS], 2016) query for a list of all plant species reported for the Field's Landing and the surrounding USGS 7.5 minute topographic quadrangles².
- U.S. Fish and Wildlife Service (USFWS) Listed/Proposed Threatened and Endangered Species for the Field's Landing Quadrangle (Candidates Included; USFWS, 2016).
- Biogeographical Information and Observation System (BIOS; CDFW, 2016b).

From the database query, a list of potential target species for the study area was compiled and is presented as Table 1 and Table 2 in Appendix A. These tables include all plant species reported by the CNDDDB and CNPS. There are currently three botanical species identified by the USFWS as Threatened, Endangered, or Candidate species proposed for listing as either threatened or endangered under the Federal Endangered Species Act (FESA) that could potentially occur near the survey area. This includes the western lily (*Lilium occidentale*), beach layia (*Layia carnosa*), and Menzies' wallflower (*Erysimum menziesii*).

A field survey was conducted on July 27 and August 1, 2016 for all special status plant species potentially present (Table 1 and 2, Appendix A) in the study area. The survey was conducted on foot and covered the entire parcel as well as the right of way along Table Bluff and Hawks Hill Roads (Figure 1 for approximate survey boundary). The survey was conducted outside of the estimated flowering period for the seacoast ragwort (*Packera bolanderi* var. *bolanderi*), which has low potential of existing on site. The seacoast ragwort is known to have an estimated flowering period from April to May. It is unlikely that this species occurs within the survey area due to a lack of habitat; therefore it is unlikely that this species was missed due to the timing of the survey. Additional species had bloom periods outside the time of the survey however none of these species had any potential of existing within the survey area due to a lack of habitat. These species include the seaside bittercress (*Cardamine angulata*) (April-June), Oregon paintbrush (*Castilleja litoralis*) (June), pacific golden saxifrage (*Chrysosplenium glechomifolium*) (February-May), Menzies' wallflower (*Erysimum menziesii*) (March-April), shortleaved evax (*Hesperoanax sparsiflora* var.

² Eureka, Arcata South, McWhinney Creek, Hydesville, Fortuna, Ferndale, Cannibal Island

Jim Mabe

Table Bluff Botanical Survey

August 11, 2016

Page 4

brevifolia) (March-June), Howell's montia (*Montia howellii*) (March-May), and the California pinefoot (*Pityopsis californica*) (May). Because these species do not have habitat present within the parcel, they were not missed due to a lack of flowering during the time of the survey.

Reference sites were visited for listed species that occur near the survey area, to access these populations for vegetative, flowering or fruiting status. A nearby population of the western lily was observed as a reference site and found to be in full bloom, indicating that the survey was conducted within the correct bloom period for this species within the area.

In addition to surveying for target species, a list of all botanical species encountered was compiled. Plants were identified to the lowest taxonomic level possible to distinguish special-status species from others. A list of observed species is attached as Table 3, Appendix B. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al. 2012) and subsequent online revisions.

Results

The habitat found across the parcel varied from non-native grassland to coastal shrubland dominated by cascara (*Frangula purshiana*), to large thickets of California blackberry (*Rubus ursinus*). Over 100 species were observed on site (Table 3, appendix B) of which 47.5% were native, reflecting the past agricultural and development uses of the parcel. The majority of the parcel was densely vegetated with some areas covered by large thickets of California blackberry. Several young Sitka spruce (*Picea sitchensis*) and Monterey pine (*Pinus radiata*) provided deep shade on the southern portion of the parcel. The parcel had 30% cover by non-native grassland, 65% cover by shrubs and cascara and 5% cover by maturing conifer trees. The habitats and plant communities within the parcel appear to represent a transitional community from an agricultural pasture to natural woodland, reflecting the years since the parcel was used for agriculture. Mature Sitka spruce and natural woodland is present to the northeast of the parcel across Table Bluff Road from the survey area. Dominant shrubs across the parcel include cascara, California blackberry, coyote brush (*Baccharis pilularis*), Scotch broom (*Cytisus scoparius*) and salal (*Gaultheria shallon*).

No listed species or special status plant species were observed on-site. The disturbed nature of the site, invasive species, high shrub density, and elevated levels of herbivory make it unlikely that any listed species are present within the parcel. Of the 46 listed species recorded for the Fields Landing and surrounding 7.5 minute quadrangles, 11 had some potential of occurring on site. Based on the habitat occurring on-site, the Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *Patula*) and the western lily (*Lilium occidentale*) had moderate potential of occurring within the survey area, however neither was observed. The Siskiyou checkerbloom is found within coastal bluff scrub, coastal prairie, coastal coniferous forest, and along roadcuts. These habitat types are present within the survey area, or nearby. The coastal prairie within the survey area is of very low quality, and exhibits overwhelming dominance by non-native species such as sweet vernal grass (*Anthoxanthum odoratum*) and velvet grass (*Holcus lanatus*). The shrub habitat is very dense with California blackberry thickets and dense cover in some areas by scotch broom (*Cytisus scoparius*) possibly precluding the growth of this species. The road cuts represent potential habitat for the Siskiyou checkerbloom, however, no plants were observed. While potential habitat for this species did exist within the parcel, the parcel was scrutinized, and the survey occurred within the bloom period. The

Jim Mabe
Table Bluff Botanical Survey

August 11, 2016

Page 5

Siskiyou checkerbloom was not observed, and therefore, most likely does not exist within the area of the survey.

The western lily occurs on Table Bluff nearby, and is listed as an endangered species by the United States Fish and Wildlife Service (USFWS). Due to the project's proximity to known populations of this species, the parcel was scrutinized for the existence of this species on site. Habitat to support this species was not present within the survey area. The western lily requires loose soils that are wet for portions of the year. The parcel represents a dry shoulder of Table Bluff, and is well drained, although roadside ditches did represent potential habitat. In addition to the dry nature of the site and moderately compacted soils, the parcel was heavily browsed by deer. The area was crisscrossed by deer paths, and many species of plants showed signs of heavy herbivory. The western lily is very susceptible to herbivory and is preferentially browsed. Because of the history of agricultural use of the parcel, high levels of herbivory, and the dry nature of the site, it is highly unlikely that this species exists on-site.

The other nine species with a low potential of occurrence on site were searched for during the survey. The lack of habitat for the species, and the heavy cover by non-native or invasive species, precluded them from occurring within the survey area.



Photo 1: View of project area looking southwest. Note adjacent agricultural field and cover by Rubus and poison hemlock.



Photo 2: View of project area looking south. Vegetation representative of the grassland habitat found across the parcel.



Photo 3: View of shrubs encroaching into grassland.

Conclusions

There are 46 special status botanical species reported within the region consisting of the study area's quadrangle (Fields Landing) and the surrounding topographic quadrangles (CDFW, 2016a; CNPS, 2016, USFWS, 2016). This section summarizes conclusions based on the research and field investigations documented.

Of the 46 special status botanical species, 11 species listed in Table 1 and Table 2 (Appendix A) are considered to have a low or moderate potential to occur within the study area. No special status plant species were detected during the survey, and no additional surveys or mitigation measures are warranted.

Avoidance and Minimization

No special status plant species were observed within or adjacent to the project area. Therefore, no avoidance or minimizations of impacts are recommended.

Mitigation Measures

No special status plant species were observed within or adjacent to the project area. There is limited, if any, habitat within the project area for rare plant species known to occur in the region. Therefore, no mitigation measures are recommended.

References Cited

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, D.H. Wilken (eds). (2012). *The Jepson Manual: Vascular Plants of California, Second Edition*. Berkeley, CA:University of California Press, Berkeley.
- Calflora. (2016). Information on California plants for education, research and conservation. California: The Calflora Database. Accessed March 2016 at: URL: <http://www.calflora.org/>.
- California Department of Fish and Wildlife. (2016a). California Natural Diversity Database Accessed March 2016 at: URL: <http://www.dfg.ca.gov/biogeodata/cnddb/>.
- . (2016b). Biogeographic Information and Observation System. Accessed at: URL:<http://bios.dfg.ca.gov/>.
- . (2009). Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Sacramento, CA:CDFW.
- California Native Plant Society. (2016). Inventory of Endangered Plants (online edition v8-02). Accessed March 2016 at: <http://www.cnps.org/inventory>.

Jim Mabe

Table Bluff Botanical Survey

August 11, 2016

Page 8

Consortium of California Herbaria (2016). Data provided by the participants of the Consortium of California Herbaria. Accessed Mar. 2016 at: URL: <http://ucjeps.berkeley.edu/consortium/>.

U.S. Department of the Interior, Fish and Wildlife Service. (2016). Listed/Proposed Threatened and Endangered Species (Candidates Included) for the Fields Landing Quadrangle, Arcata Fish and Wildlife Office. Available from <http://www.fws.gov/arcata/specieslist/search.asp>.

U.S. Fish and Wildlife Service. (2009). *Lilium occidentale* (western lily) 5-year review: Summary and Evaluation. Arcata Field Office. Arcata, CA.

U.S. Geological Survey. (NR). 7.5-Minute Fields Landing Topographic Quadrangle. NR:USGS.

Appendix A

Regionally Potential Sensitive Species

Regionally Potential Sensitive Species

Mabe Botanical Survey

Loleta, California

A California Natural Diversity Database (CNDDDB; CDFW, 2016a) RareFind and California Native Plant Society Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2016) search was completed for the 7.5-minute U.S. Geological Survey (USGS) Field's Landing quadrangle and the surrounding USGS 7.5 minute topographic quadrangles (Table 1 and Table 2). Additionally, the US Fish and Wildlife Service (USFWS) species list was used to determine the potential presence of federally protected plant species (Table 1 and Table 2).

The databases were queried for historical and existing occurrences of state and federally listed Threatened, Endangered, and Candidate plant species and species proposed for listing. In addition to querying the CNDDDB, a list of all federally listed species that are known to occur or may occur in the Field's Landing quadrangle was obtained from the Arcata U.S. Fish and Wildlife Service (USFWS) website (USFWS, 2016). Three special status botanical species were reported by the USFWS including the beach layia (*Layia carnosa*), Menzies wallflower (*Erysimum menziesii*), and the western lily (*Lilium occidentale*). While these species were reported for the area, the USFWS stated that habitat was not present within the project area to support these species.

Table 1 and 2 present the botanical species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. Each species was evaluated for its potential to occur within the study area according to the following criteria:

- 1) **None.** Species listed as having "none" with regard to their potential to occur on the study area are those species for which:
 - there is no suitable habitat present in the study area. (Habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, and so on].)
- 2) **Low.** Species listed as having a "low" potential to occur in the study area are those for which:
 - there is no known record of occurrence in the vicinity of the study area, and
 - there is marginal or very limited suitable habitat present in the study area.
- 3) **Moderate.** Species listed as having a "moderate" potential to occur on the study area are those species for which:
 - there is a known record of occurrence in the vicinity of the study area, and
 - there is suitable habitat present in the study area.
- 4) **High.** Species listed as having a "high" potential to occur in the study area are those species for which:
 - there is a known record of occurrence in the vicinity of the study area (there are many records and/or records in close proximity), and
 - there is highly suitable habitat present in the study area.
- 5) **Present.** Species listed as "present" in the study area are those species for which:
 - the species was observed in the study area during the investigations.

**Table 1 GNDBB
Potential Regionally Occurring Special Status Botanical Species
Mabe, Loleta CA**

Scientific Name	Common Name	FedList	CalList	SRank	RPlant Rank	Habitats	GenHab	MicroHab	Bloom Period	Potential of Occurrence
Abronia umbellata var. breviflora	pink sand-verbena	None	None	S1	1B.1	Coastal dunes	Coastal dunes and coastal strand.	Foredunes and interdunes with sparse cover. Usually the plant closest to the ocean. 0-10 m.	June – Oct.	None. Habitat not present
Anomobryum julaceum	slender silver moss	None	None	S2	4.2	Broadleaved upland forest, Lower montane conifer forest, North coast conifer forest	Broadleaved upland forest, lower montane conifer forest, N. coast conifer forest.	Grows on damp rocks and soil; acidic substrates. Usually on road cuts. 100-1000 m.	N/A	None. Habitat not present
Bryoria spiralis	twisted horsehair lichen	None	None	S1S2	1B.1	North coast coniferous forest	North coast coniferous forest.	Usually on conifers. 0-30 m.	N/A	None. Habitat not present
Cardamine angulata	seaside bittercress	None	None	S1	2B.1	Lower montane conifer forest N. coast coniferous forest, Wetland	North coast coniferous forest, lower montane coniferous forest.	Wet areas, streambanks. 90-155 m.	April-June	None. Habitat not present
Carex arcta	northern clustered sedge	None	None	S1	2B.2	Bog & fen, North coast coniferous forest, Wetland	Bogs and fens, north coast coniferous forest.	Mesic sites. 60-1405 m.	June-Sept.	None. Habitat not present
Carex leptalea	bristle-stalked sedge	None	None	S1	2B.2	Bog & fen, Freshwater marsh, Marsh & swamp, Meadow & seep, Wetland	Bogs and fens, meadows, marshes&swamps, meadows&seeps.	Mostly known from bogs and wet meadows. 0-700 m.	Mar-July	None. Habitat not present
Castilleja littoralis	Oregon coast paintbrush	None	None	S3	2B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub	Coastal bluff scrub, coastal dunes, coastal scrub.	Sandy sites. 5-255 m.	June	None. Habitat not present

Jim Mabe
 Table Bluff Botanical Survey
 August 11, 2016
 Page 2

Scientific Name	Common Name	FedList	CalList	SRank	RPlant Rank	Habitats	GenHab	MicroHab	Bloom Period	Potential of Occurrence
Erysimum menziesii	Menzies' wallflower	Endngrd	Endngrd	S1	1B.1	Coastal dunes	Coastal dunes.	Localized on dunes and coastal strand. 0-35 m.	Mar-April	None. Habitat not present
Fissidens pauperculus	minute pocket moss	None	None	S2	1B.2	North coast coniferous forest, Redwood	North coast coniferous forest.	Damp soil along the coast. In dry streambeds and on stream banks. 10-1024 m.	N/A	None. Habitat not present
Gilia capitata ssp. pacifica	Pacific gilia	None	None	S2	1B.2	Chaparral, Coastal bluff scrub, Coast prairie, Valley & foothill grassland	Coast bluff scrub, chaparral, coast prairie, valley & foothill grassland.	5-1345 m.	April-Aug	Low. Habitat potentially present
Gilia millefoliata	dark-eyed gilia	None	None	S2	1B.2	Coastal dunes	Coastal dunes.	2-30 m.	April-July	None. Habitat not present
Lathyrus japonicus	seaside pea	None	None	S2	2B.1	Coastal dunes	Coastal dunes.	1-30 m.	May-Aug	None. Habitat not present
Laylia carnosa	beach laylia	Endngrd	Endngrd	S2	1B.1	Coastal dunes Coastal scrub	Semi-stabilized dunes, behind foredunes	On sparsely vegetated areas. 0-30 m.	Mar-July	None. Habitat not present
Lilium occidentale	western lily	Endngrd	Endngrd	S1	1B.1	Bog & fen, Coast bluff scrub, Coast prairie, Coast scrub, Freshwater marsh, Marsh & swamp, N. coast coniferous forest, Wetland	Coastal scrub, freshwater marsh, bogs and fens, coastal bluff scrub, coastal prairie, N. Coast conifer forest, marshes&swamps.	Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 2-185 m.	June-July	Low. Habitat and proper soils not present

Scientific Name	Common Name	FedList	CalList	SRank	RPlant Rank	Habitats	GenHab	MicroHab	Bloom Period	Potential of Occurrence
<i>Lycopodium clavatum</i>	running-pine	None	None	S3	4.1	Lower montane coniferous forest, Marsh & swamp, N. coast conifer forest, Wetland	Lower montane conifer forest, N. coast coniferous forest, marshes and swamps.	Forest understory, edges, openings, roadsides; mesic sites with partial shade and light. 45-1225 m.	June-Aug	Low. Quality habitat not present
<i>Monotropa uniflora</i>	ghost-pipe	None	None	S2	2B.2	Broadleaved upland forest, North coast coniferous forest	Broadleaved upland forest, north coast coniferous forest.	Often under redwoods or western hemlock. 15-855 m.	June-Aug	None. Habitat not present
<i>Montia howellii</i>	Howell's montia	None	None	S2	2B.2	Meadow & seep, N. coast conifer forest, Vernal pool, Wetland	Meadows and seeps, north coast coniferous forest, vernal pools.	Vernally wet sites; often on compacted soil. 10-1005 m.	Mar-May	None. Habitat not present
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	None	None	S2S3	2B.2	Coastal scrub, North coast coniferous forest	Coastal scrub, north coast coniferous forest.	Sometimes along roadsides. 30-915 m.	April-May	Low. Habitat not present
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	None	None	S3	4.2	Broadleaf upland forest, Coast prairie, Coast scrub, N. coast conifer forest, Riparian forest	Broadleaf upland forest, coast prairie, coast scrub, North coast conifer forest, riparian forest.	Woodlands and clearings near coast; often in disturbed areas. 0-730 m.	April-Aug.	Low. Quality habitat not present
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	None	None	S2	1B.2	Coast bluff scrub, Coast prairie, N. coast conifer forest	Coast bluff scrub, coastal prairie, north coast coniferous forest.	Open coastal forest; roadcuts. 5-1255 m.	May-Aug.	Medium. Habitat present, disturbed

Jim Mabe
 Table Bluff Botanical Survey
 August 11, 2016
 Page 4

Scientific Name	Common Name	FedList	CallList	SRank	RPlant Rank	Habitats	GenHab	MicroHab	Bloom Period	Potential of Occurrence
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	None	None	S1	1B.2	Lower montane conifer forest, Meadow & seep, N. coast conifer forest, Wetland	Meadows and seeps, north coast coniferous forest, lower montane coniferous forest.	Near meadows, in gravelly soil. 5-1805 m.	June-Aug.	None. Wetland habitat not present
<i>Usnea longissima</i>	Methuselah's beard lichen	None	None	S4	4.2	Broadleaved upland forest North coast coniferous forest Oldgrowth Redwood	North Coast coniferous forest, broadleaved upland forest.	"redwood zone" on big leaf maple, oaks, ash, Douglas-fir, and bay. 50-1460 m in California.	N/A	None. Habitat not present
<i>Viola palustris</i>	alpine marsh violet	None	None	S1S2	2B.2	Bog & fen, Coastal scrub, Wetland	Coastal scrub, bogs and fens.	Swampy, shrubby places in coastal scrub or coastal bogs. 0-150 m.	Mar-Aug.	None. Habitat not present

1. -: No Status/Listing
 CRPR: California Rare Plant Rank
 1A: includes plants presumed extinct in CA.
 1B: includes plants that are rare, threatened, or endangered in California and elsewhere.
 2A: includes plants presumed expatriated in California but more common elsewhere.
 2B: includes plants that are rare, threatened, or endangered in California but more common elsewhere
 3: includes plants for which more information is needed—a review list.
 4: includes plants of limited distribution and should be documented as they are watch list species
 Threat Ranks:
 .1: Seriously threatened in CA (over 80% of occurrence threatened/high degree and immediacy threat)
 .2: Moderately threatened in CA (20-80 % occurrences threatened).
 .3: Not very threatened in California (<20% of occurrences threatened).
2. Plant habitat descriptions are from The Jepson Manual (Baldwin *et al.* 2012), California Natural Diversity Database (CDFW, 2016), and CNPS (2016).
3. Blooming period from The Jepson Manual (Baldwin *et al.* 2012) and CNPS (2016).

**Table 2 CNPS
 Potential Regionally Occurring Special-Status Botanical Species
 Mabe, Loleta CA**

Scientific Name	Common Name	Family	Lifeform	RPInt Rank	State Rank	Global Rank	Bloom Period	Potential of Occurrence
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	Nyctaginaceae	perennial herb	1B.1	S1	G4G5T2	June-October	None
<i>Angelica lucida</i>	sea-watch	Apiaceae	perennial herb	4.2	S3	G5	May-Sept.	None
<i>Anomobryum julaceum</i>	slender silver moss	Bryaceae	moss	4.2	S2	G5?	N/A	None
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	Fabaceae	perennial herb	1B.2	S2	G2T2	April-Oct.	None
<i>Bryoria pseudocapillaris</i>	false gray horsehair lichen	Parmeliaceae	fruticose lichen (epiphytic)	3.2	S2	G3	N/A	None
<i>Bryoria spiralifera</i>	twisted horsehair lichen	Parmellaceae	fruticose lichen (epiphytic)	1B.1	S1S2	G3	N/A	None
<i>Cardamine angulata</i>	seaside bittercress	Brassicaceae	perennial herb	2B.1	S1	G5	April-June	None
<i>Carex arcta</i>	northern clustered sedge	Cyperaceae	perennial herb	2B.2	S1	G5	June-Sept.	None
<i>Carex leptalea</i>	bristle-stalked sedge	Cyperaceae	perennial rhizomatous herb	2B.2	S1	G5	March-July	None
<i>Carex lyngbyei</i>	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	2B.2	S3	G5	April-August	None
<i>Carex praticola</i>	northern meadow sedge	Cyperaceae	perennial herb	2B.2	S2	G5	May-July	Low
<i>Castilleja litoralis</i>	Oregon coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	2B.2	S3	G3	June	None
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S2	G4?T2	June-October	None

Jim Mabe
 Table Bluff Botanical Survey
 August 11, 2016
 Page 6

Scientific Name	Common Name	Family	Lifeform	RPInt Rank	State Rank	Global Rank	Bloom Period	Potential of Occurrence
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	Saxifragaceae	perennial herb	4.3	S3	G5	Feb.- May	None
<i>Clarkia amoena ssp. whitneyi</i>	Whitney's farewell-to-spring	Onagraceae	annual herb	1B.1	S1	G5T1	June- August	None
<i>Erysimum menziesii</i>	Menzies' wallflower	Brassicaceae	perennial herb	1B.1	S1	G1	March- April	None
<i>Erythronium revolutum</i>	coast fawn lily	Liliaceae	perennial bulbiferous herb	2B.2	S3	G4G5	March- July	None
<i>Fissidens pauperculus</i>	minute pocket moss	Fissidentaceae	moss	1B.2	S2	G3?	N/A	None
<i>Gilia capitata ssp. pacifica</i>	Pacific gilia	Polemoniaceae	annual herb	1B.2	S2	G5T3	April- August	Low
<i>Gilia millefoliata</i>	dark-eyed gilia	Polemoniaceae	annual herb	1B.2	S2	G2	April- July	None
<i>Glehnia littoralis ssp. leiocarpa</i>	American glehnia	Apiaceae	perennial herb	4.2	S3	G5T5	May- August	None
<i>Hesperovax sparsiflora var. brevifolia</i>	short-leaved evax	Asteraceae	annual herb	1B.2	S2	G4T3	March- June	None
<i>Hesperolinon adenophyllum</i>	glandular western flax	Linaceae	annual herb	1B.2	S3	G3	May- August	None
<i>Lathyrus japonicus</i>	seaside pea	Fabaceae	perennial rhizomatous herb	2B.1	S2	G5	May- August	None
<i>Lathyrus palustris</i>	marsh pea	Fabaceae	perennial herb	2B.2	S2	G5	March- August	None
<i>Layla carnosa</i>	beach layia	Asteraceae	annual herb	1B.1	S2	G2	March- July	None
<i>Lilium kelloggii</i>	Kellogg's lily	Liliaceae	perennial bulbiferous herb	4.3	S3	G3	May- August	None
<i>Lilium occidentale</i>	western lily	Liliaceae	perennial bulbiferous herb	1B.1	S1	G1	June-Jul	Medlum

Scientific Name	Common Name	Family	Lifeform	RPInt Rank	State Rank	Global Rank	Bloom Period	Potential of Occurrence
<i>Lilium rubescens</i>	redwood lily	Liliaceae	perennial bulbiferous herb	4.2	S3	G3	April-August	None
<i>Listera cordata</i>	heart-leaved twayblade	Orchidaceae	perennial herb	4.2	S4	G5	Feb.-July	None
<i>Lycopodium clavatum</i>	running-pine	Lycopodiaceae	perennial rhizomatous herb	4.1	S3	G5	June-August	Low
<i>Mitellastrum caulescens</i>	leafy-stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	4.2	S4	G5	May-July	None
<i>Monotropa uniflora</i>	ghost-pipe	Ericaceae	perennial herb (achlorophyllous)	2B.2	S2	G5	June-August	None
<i>Montia howellii</i>	Howell's montia	Montiaceae	annual herb	2B.2	S2	G3G4	March-May	None
<i>Oenothera wolfii</i>	Wolf's evening-primrose	Onagraceae	perennial herb	1B.1	S1	G2	May-October	Low
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	Asteraceae	perennial rhizomatous herb	2B.2	S2S3	G4T4	April-May	Low
<i>Pityopus californicus</i>	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	4.2	S4	G4G5	May	None
<i>Pleuropogon refractus</i>	nodding semaphore grass	Poaceae	perennial rhizomatous herb	4.2	S4	G4	April-August	Low
<i>Polemonium carneum</i>	Oregon polemonium	Polemoniaceae	perennial herb	2B.2	S2	G3G4	April-Sept.	Low
<i>Puccinellia pumila</i>	dwarf alkali grass	Poaceae	perennial herb	2B.2	SH	G4?	July	None
<i>Ribes laxiflorum</i>	trailing black currant	Grossulariaceae	perennial deciduous shrub	4.3	S4	G5	March-July	Low
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	Malvaceae	perennial herb	4.2	S3	G3	April-August	Low
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	Malvaceae	perennial rhizomatous herb	1B.2	S2	G5T2	May-August	Medium

Scientific Name	Common Name	Family	Lifeform	RPInt Rank	State Rank	Global Rank	Bloom Period	Potential of Occurrence
<i>Sidalcea oregana ssp. eximia</i>	coast checkerbloom	Malvaceae	perennial herb	1B.2	S1	G5T1	June-August	None
<i>Usnea longissima</i>	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)	4.2	S4	G4	N/A	None
<i>Viola palustris</i>	alpine marsh violet	Violaceae	perennial rhizomatous herb	2B.2	S1S2	G5	March-August	None

1. -: No Status/Listing
 CRPR: California Rare Plant Rank
 1A: includes plants presumed extinct in CA.
 1B: includes plants that are rare, threatened, or endangered in California and elsewhere.
 2A: includes plants presumed expatriated in California but more common elsewhere.
 2B: includes plants that are rare, threatened, or endangered in California but more common elsewhere
 3: includes plants for which more information is needed—a review list.
 4: includes plants of limited distribution and should be documented as they are watch list species
 Threat Ranks:
 .1: Seriously threatened in CA (over 80% of occurrence threatened/high degree and immediacy threat)
 .2: Moderately threatened in CA (20-80 % occurrences threatened).
 .3: Not very threatened in California (<20% of occurrences threatened).
 2. Plant habitat descriptions are from The Jepson Manual (Baldwin *et al.* 2012), California Natural Diversity Database (CDFW, 2016), and CNPS (2016).
 3. Blooming period from The Jepson Manual (Baldwin *et al.* 2012) and CNPS (2016).

Appendix B

Species observed 7/27, 8/1/2016

**Table 3
Observed Botanical Species List
Table Bluff Rd Loleta, CA**

Plants Observed 7/27/16 and 8/1/16

Scientific Name	Common Name	Native?	Wetland Status
Trees			
<i>Abies grandis</i>	grand fir	Y	FACU
<i>Frangula purshiana</i>	casacara	Y	FAC
<i>Juniperus sp.</i>	cultivated juniper	N	N/A
<i>Picea sitchensis</i>	Sitka spruce	Y	FAC
<i>Pinus radiata</i>	Monterrey pine	N	NL
<i>Prunus cerasifera</i>	wild plum	N	UPL
<i>Pseudotsuga menziesii</i>	Douglas fir	Y	FACU
<i>Salix lasiandra</i>	pacific willow	Y	FACW
Shrubs			
<i>Baccharis pilularis</i>	coyote brush	Y	UPL
<i>Corylus cornuta</i>	hazelnut	Y	FACU
<i>Cytisus scoparius</i>	scotchbroom	N	UPL
<i>Erica lusitanica</i>	Spanish heather	N	UPL
<i>Gaultheria shallon</i>	salal	Y	FACU
<i>Genista monspessulana</i>	French broom	N	UPL
<i>Ilex aquifolium</i>	English holly	N	FACU
<i>Lonicera involucrata</i>	twinberry	Y	FAC
<i>Oemleria cerasiformis</i>	indian plum	Y	FACU
<i>Ribes sanguineum</i>	flowering currant	Y	FACU
<i>Rosa californica</i>	California rose	Y	FAC
<i>Rosa rubiginosa</i>	sweetbriar	N	UPL
<i>Rubus armeniacus</i>	Himalayan blackberry	N	FAC
<i>Rubus parviflorus</i>	thimbleberry	Y	FACU
<i>Rubus ursinus</i>	California blackberry	Y	FACU
<i>Sambucus racemosa</i>	red elderberry	Y	FACU
<i>Spirea douglasiana</i>	Douglas spirea	Y	FACW
<i>Symphoricarpos albus</i>	common snowberry	Y	FACU
<i>Vaccinium ovatum</i>	evergreen huckleberry	Y	FACU
Herbs			
<i>Achillea millefolium</i>	common yarrow	Y	FACU
<i>Anaphalis margaritaceae</i>	pearly everlasting	Y	FACU
<i>Aquilegia formosa</i>	western columbine	Y	FAC
<i>Brassica rapa</i>	common mustard	N	FACU

Scientific Name	Common Name	Native?	Wetland Status
<i>Carduus pycnocephalus</i>	Italian thistle	N	UPL
<i>Cirsium arvense</i>	Canada thistle	N	FAC
<i>Cirsium vulgare</i>	bull thistle	N	FACU
<i>Conium maculatum</i>	poison hemlock	N	FAC
<i>Crepis capillaris</i>	smooth hawksbeard	N	FACU
<i>Daucus carota</i>	Queen Anne's lace	N	FACU
<i>Digitalis purpurea</i>	foxglove	N	FACU
<i>Dipsacus fullonum</i>	wild teasel	N	FAC
<i>Epilobium ciliatum</i>	Northern willowherb	Y	FACW
<i>Erigeron canadensis</i>	Canada horseweed	Y	FACU
<i>Fragaria vesca</i>	California strawberry	Y	FACU
<i>Galium aparine</i>	cleaver plant	N	FACU
<i>Geranium dissectum</i>	cutleaf geranium	N	UPL
<i>Heracleum maxima</i>	cow parsley	Y	FAC
<i>Horkelia californica</i>	California horkelia	Y	NL
<i>Hypochaeris radicata</i>	hairy cats-ear	N	FACU
<i>Iris douglasiana</i>	Douglas iris	Y	UPL
<i>Leucantheum vulgare</i>	oxeye daisy	N	UPL
<i>Linum bienne</i>	flax	N	UPL
<i>Lotus corniculatus</i>	bird's foot trefoil	N	FAC
<i>Lupinus rivularis</i>	riverbank lupine	Y	FAC
<i>Lysimachia arvensis</i>	scarlet pimpernel	N	FAC
<i>Maianthemum racemosum</i>	false Solomon's seal	Y	FAC
<i>Mentha pulegium</i>	pennyroyal	N	OBL
<i>Navarretia squarrosa</i>	skunkweed	Y	FACU
<i>Parentucellia viscosa</i>	yellow glandweed	N	FAC
<i>Plantago lanceolata</i>	English plantain	N	FACU
<i>Prunella vulgaris</i>	self heal	Y	FACU
<i>Pseudognaphalium ramosissimum</i>	pink cudweed	Y	UPL
<i>Ranunculus repens</i>	creeping buttercup	N	FAC
<i>Rhaphanus sativa</i>	wild radish	N	UPL
<i>Rumex acetosella</i>	sheep sorrel	N	FACU
<i>Rumex crispus</i>	curly dock	N	FAC
<i>Scrophularia californica</i>	California bee plant	Y	FAC
<i>Senecio minimus</i>	coastal burnweed	N	FACU
<i>Silybum marianum</i>	blessed milk thistle	N	UPL
<i>Solanum americanum</i>	American nightshade	Y	FACU
<i>Solanum aviculare</i>	New Zealand nightshade	N	NL
<i>Solidago elongata</i>	West coast Canada goldenrod	Y	FACU
<i>Sonchus oleraceus</i>	sow thistle	N	UPL

Scientific Name	Common Name	Native?	Wetland Status
<i>Stachys ajugoides</i>	bugle hedgenettle	Y	OBL
<i>Symphyotrichum chilense</i>	California aster	Y	FAC
<i>Taraxicum officinale</i>	dandelion	N	FACU
<i>Tellima grandiflora</i>	fringe cups	Y	FACU
<i>Trifolium pratense</i>	red clover	N	FACU
<i>Trifolium repens</i>	white clover	N	FAC
<i>Urtica dioica</i>	stinging nettle	Y	FAC
<i>Vicia hirsuta</i>	tiny vetch	N	UPL
<i>Vicia sativa</i>	spring vetch	N	UPL
<i>Zeltnera venusta</i>	charming centaury	Y	NL
Grasses			
<i>Aira caryophylla</i>	silver hairgrass	N	FACU
<i>Anthoxanthum odoratum</i>	sweet vernal grass	N	FACU
<i>Avena sativa</i>	wild oat	N	UPL
<i>Briza maxima</i>	large quaking grass	N	UPL
<i>Briza minor</i>	small quaking grass	N	FAC
<i>Bromus carinatus</i>	California brome	Y	NL
<i>Bromus diandrus</i>	ripgut brome	N	UPL
<i>Bromus hordeacus</i>	soft chess	N	FACU
<i>Dactylis glomerata</i>	orchard grass	N	FACU
<i>Elymus glaucus</i>	blue wildrye	Y	FACU
<i>Festuca arundinacea</i>	tall fescue	N	FACU
<i>Festuca microstachys</i>	small fescue	Y	UPL
<i>Festuca perenne</i>	Italian wildrye	N	FAC
<i>Festuca rubra</i>	red fescue	Y	FAC
<i>Holcus lanatus</i>	velvet grass	N	FAC
<i>Phalaris aquatica</i>	harding grass	N	FACU
<i>Poa pratensis</i>	Kentucky bluegrass	N	FAC
Ferns and Allies			
<i>Polystichum munitum</i>	sword fern	Y	FACU
<i>Pteridium aquilinum</i>	bracken fern	Y	FACU
Sedges and Rushes			
<i>Carex leptopoda</i>	slender footed sedge	Y	FAC
Total		47.5% Native	40.75% FAC or wetter species
1. (USDA 2012) Indicators are abbreviated as follows: OBL: Obligate FACW: Facultative FAC: Facultative FACU: Facultative upland UPL: Upland NL: Not listed			



Preliminary Jurisdictional Wetland Delineation

Jim Mabe Parcel
Loleta, California

Prepared for:
Jim Mabe

SH Engineers & Geologists

812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

August 2016
016209

Reference: 016209

Preliminary Jurisdictional Wetland Delineation

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Prepared by:



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QA/QC: BB/CG

Table of Contents

	Page
Abbreviations and Acronyms.....	iii
1.0 Introduction.....	1
1.1 Purpose.....	1
1.2 Project Location.....	1
2.0 Project Description.....	1
3.0 Environmental Setting.....	5
4.0 Geologic Setting	5
5.0 Regulatory Setting	5
5.1 Federal Laws.....	5
5.1.1 Section 401 and 404 of the Clean Water Act.....	5
5.1.2 Rivers and Harbors Appropriation Act of 1899	7
5.2 State Laws - Porter-Cologne Water Quality Act.....	7
6.0 Methodology.....	7
6.1 Vegetation Methodology	9
6.2 Soils Methodology	10
6.3 Hydrology Methodology	10
7.0 Results.....	10
7.1.1 Vegetation	10
7.2 Soils	11
7.3 Hydrology.....	12
7.4 Ordinary High Water Mark (OHWM).....	12
8.0 Conclusions.....	13
9.0 Limitations	13
10.0 References Cited.....	13

Appendices

- A. National Wetlands Inventory
- B. Site Photographs
- C. Wetland Determination Data Forms
- D. Plant List

List of Illustrations

Figures	Follows Page
1. Site Vicinity	1
2. Study Area and Delineated Wetlands.....	1
Table 1. Wetland Delineation Results	Page 11

Abbreviations and Acronyms

ACOE	United States Army Corps of Engineers
APN	Assessor's parcel number
CDEC	California Data Exchange Center
CFR	Code of Federal Regulations
CP	control point
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
ERDC/CRREL	United States Army Engineer Research and Development Center/Cold Regions Research and Engineering Laboratory
FAC	facultative wetland plant species
FACU	facultative-upland plant species
FACW	facultative-wet wetland plant species
GPS	global positioning system
NCDC	National Climatic Data Center
NL	not listed plant species
NOAA	National Oceanic & Atmospheric Administration
NR	no reference
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland plant species
OHWM	ordinary high water mark
PF01C	freshwater forested/shrub wetland
R3UBF	Riverine Wetland
RWQCB	California Regional Water Quality Control Board
SHN	SHN Engineers & Geologists, Inc.
SWRCB	State Water Resources Control Board
TP	test pit
UPL	upland plant species
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey

WDRs waste discharge requirements
WETS NRCS Climate Analysis for Wetlands
WFO weather forecast office
WoS waters of the State
WoUS waters of the United States

1.0 Introduction

SHN Engineers & Geologists, Inc. has prepared this preliminary jurisdictional wetland delineation for Jim Mabe in Loleta, California. On behalf of jurisdictional agencies over the study area, Mr. Mabe has requested a wetland delineation and botanical assessment for an open space consisting of one parcel divided into two portions by Rasmussen (Hawk's Hill) Road, near Loleta, CA.

1.1 Purpose

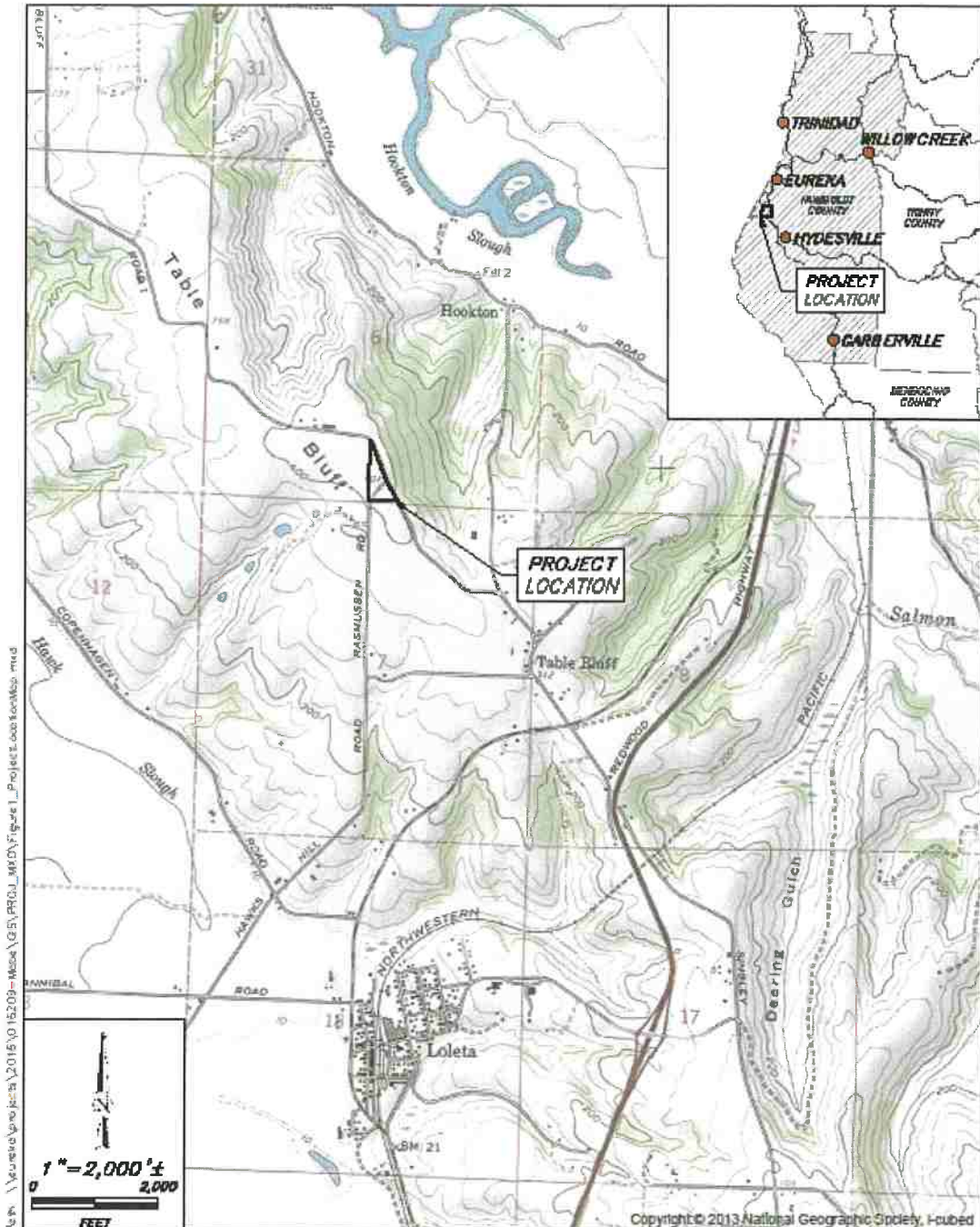
The purpose of this report is to identify potential wetlands and other waters of the U.S. within the study area, as defined by the United States Army Corps of Engineers (ACOE) methodology. The wetland delineation will help guide design, planning and permitting of a residential development within the study area. In conjunction with this delineation, a botanical assessment has been performed due to the site's habitat suitability for the western lily, *Lilium occidentale*, as well as a known population of this species three miles west of the parcel.

1.2 Project Location

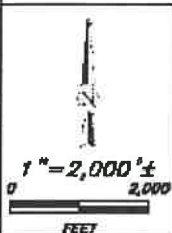
The project is located near Loleta, an un-incorporated community in Humboldt County (Figure 1; United States Geological Survey [USGS] Fields Landing 7.5-minute Quadrangle, Township 3 North, Range 1 West, Section 6, Humboldt Meridian). The property designated APN 308-231-002 straddles the north end of Hawk's Hill Road, at its junction with Table Bluff Road, 1.7 miles northeast of Loleta. The parcel lies 1.15 miles west of Highway 101 and 0.7 miles south of Hookton Slough, with a centerpoint latitude and longitude of 40.66536°/-124.22574°.

2.0 Project Description


The proposed project is a new single-family residential development. The site, surrounded by open pastureland that is grazed heavily, has been fenced long enough to allow shrubs and small broadleafed trees to emerge throughout the site. Before designing the development, a wetland delineation was required to determine setbacks and potential mitigation for the new construction. The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) does not have wetlands mapped within the project area. This wetland study was performed to investigate the presence or absence of wetlands on-site, and (if present) to determine the size and an accurate boundary of wetlands found throughout the study area.



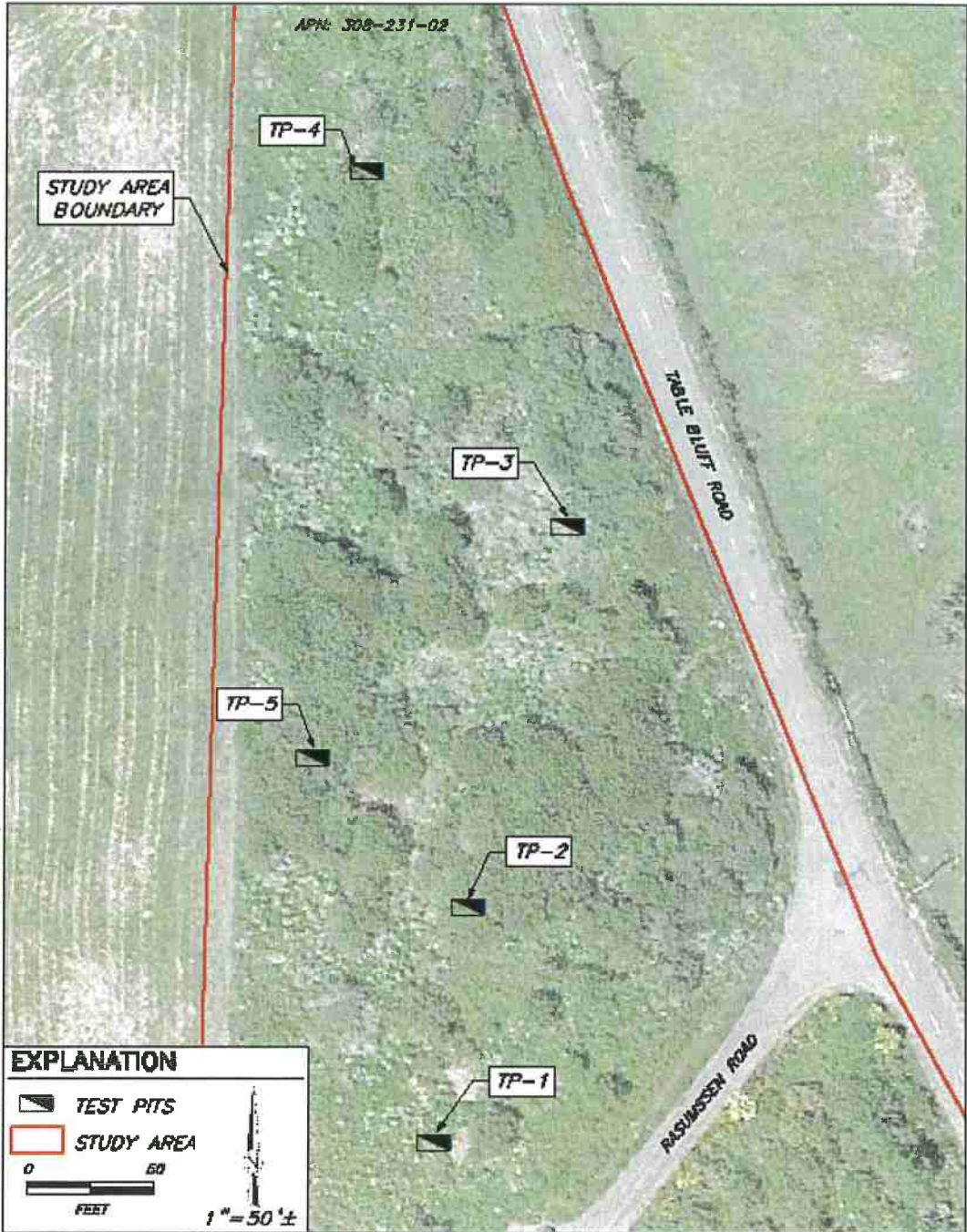
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 Consulting Engineers & Geologists, Inc.	Jim Mabe Jim Mabe Parcel Loleta, California		Project Location SEEN 015120	
	August 2016	Figure1_ProjectLocationMap	Figure 1	





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 Consulting Engineers & Geologists, Inc.	Jim Mabe Jim Mabe Parcel Loleta, California		Wetland Test Pits West SIN 016209
	August 2016	Figure2a_WetlandTestPitsWest	Figure 2a





3.0 Environmental Setting

Elevation throughout the project area averages approximately 418 feet above mean sea level. Topography is mostly flat, with a gentle slope (0-3%) from the central portion of the property sloping toward the south and north (See Figure 2 and Appendix B, photo B1 and B2). Zoned Agriculture exclusive on the County of Humboldt GIS zoning map, 4.68 acres comprise the parcel examined in this report. Lying on a coastal terrace north of the town of Loleta, the site overlooks the Loleta Bottoms to the southwest. As with the majority of coastal bluff habitats around Loleta and Humboldt Bay, the land area has been manipulated for nearly 100 years with agricultural practices such as wheat cropping and heavy grazing regimes (McLaughlin & Harradine 1965). This heavy impact has led to a loss of the native loam topsoil and native plant communities in the pasture areas. With relatively high clay content, wet season grazing has led to soil compaction and slope erosion on surrounding parcels (Photo 1, Appendix 2). Due to the perimeter fence on this parcel, livestock grazing and compaction have been prevented, maintaining soil development and health.

The average annual precipitation for this area from October 1 through March 31 is 40.33 inches (WeatherDB, 2016). Rainfall for the period from October 1, 2015, through March 31, 2016, was 43.87 inches (CDEC, 2016), indicating that the 2015-2016 rain season is in an above-normal category.

4.0 Geologic Setting

The site is set upon an uplifted marine terrace between Humboldt Bay and the Eel River Delta. Soils within the project area have the United States Department of Agriculture (USDA) classification of Rohnerville Series, and are mapped in the *Soils of Western Humboldt County California* soil survey (McLaughlin, 1965). This series is a brunizem soil formed from sedimentary rock alluvium. The rock alluvium is predominantly greywacke and sandstone, providing a medium acid reaction.

5.0 Regulatory Setting

5.1 Federal Laws

5.1.1 Section 401 and 404 of the Clean Water Act

Under Section 404 (33 U.S. Code [USC] 1344) of the Clean Water Act (CWA), as amended, the ACOE and the Environmental Protection Agency (EPA) retain primary responsibility for permits to discharge dredged or fill material into "navigable waters of the United States." All

discharges of dredged or fill material into jurisdictional Waters of the United States (WoUS) that result in permanent or temporary losses of the WoUS are regulated by the ACOE. A permit from the ACOE must be obtained before placing fill or grading in wetlands or other WoUS, unless the activity is exempt from the CWA Section 404 regulation (for example, certain farming and forestry activities).

In summary, the definition of WoUS as defined by 33 Code of Federal Regulations (CFR) Section 328.3 includes:

1. waters used for commerce,
2. interstate wetlands,
3. all other waters (including lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds),
4. impoundments of water,
5. tributaries to aforementioned waters,
6. territorial seas, and
7. wetlands adjacent to waters.

Under 33 CFR 328.3, WoUS do not include prior converted cropland or waste treatment systems.

In 2008, the EPA and ACOE released a guidance memorandum implementing the Supreme Court's decision in the cases of the *Rapanos v. U.S.* and *Carabell v. U.S.* As a result of these cases, the agencies will apply a significant nexus standard to the following categories to determine if it meets the definition of WoUS:

- Non-navigable tributaries that are not relatively permanent
- Wetland adjacent to non-navigable tributaries that are not relatively permanent
- Wetland adjacent to but does not directly abut a relatively permanent tributary

Section 401 of the CWA (33 USC 1341) requires applicants that need a federal license or permit to obtain a certification from the state in which the discharge originates or would originate, or if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs).

5.1.2 Rivers and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures across any navigable water. Placing obstructions to navigation outside established federal lines and excavating from, or depositing material in, such waters, requires permits from the ACOE Section 10 (33 USC 403) of the Rivers and Harbors Appropriation Act. The Act further prohibits the unauthorized obstruction or alteration of any navigable WoUS.

5.2 State Laws - Porter-Cologne Water Quality Act

The state maintains independent regulatory authority over the placement of waste, including fill, into Waters of the State (WoS) under the Porter-Cologne Water Quality Act. WoS are defined by the Porter-Cologne Water Quality Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters. WoS are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Projects that require an ACOE permit, or fall under other federal jurisdiction, and have the potential to impact WoS are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge to WoS, then the local RWQCB has the option to regulate such activities under its state authority in the form of waste discharge requirements (WDRs) or certification of WDRs. Water Quality Order No. 2004-0004-DWQ specifies general WDRs for dredged or fill discharges to waters deemed by the ACOE to be outside of federal jurisdiction under Section 404 of the CWA.

6.0 Methodology

Wetland delineation methods described in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and *The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (ACOE, 2010) were used to identify potential wetlands and other waters. The routine method for wetland delineation described in the ACOE 1987 manual was used to identify potential wetlands within the study area. The ACOE method relies on a three-parameter approach, in which criteria for hydrophytic vegetation, hydric soils, and wetland hydrology must each be met (present at the point of field investigation) to conclude that an area qualifies as a jurisdictional wetland. Since this site lies within the Coastal Zone, 1-parameter wetlands were also sought.

Hydrophytic vegetation refers to plant species known to be adapted to wetland sites. To classify the hydrophytic plants onsite, the most recent *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* was used (ACOE, 2016). Hydric soils are soils that are formed under saturated conditions, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, 2010). Wetland hydrology is demonstrated through direct evidence (primary indicators) or indirect evidence (secondary indicators) of flooding, ponding, or saturation for a significant portion of the growing season (ACOE, 2010).

At each investigation point, one test pit (TP) was excavated to determine if any wetland parameters were present or developing. When indicators of a wetland parameter are located, a pit is typically excavated within the apparent upland area, with a paired pit excavated in the apparent wetland area to determine the wetland boundary. No indications of wetland parameters were found onsite, so only individual pits were dug to document site conditions.

Prior to conducting the field investigation, SHN staff reviewed the 1979 USGS topographic quadrangle map (Figure 1), Soils of Western Humboldt County California, and NWI map (USFWS, 2016) (Appendix A). During the field investigation, sample points were characterized at the site for the aforementioned botanical, hydrological, and soil parameters.

Point locations were selected to:

- achieve appropriate coverage and characterization of wetland and upland habitats,
- document potential changes in the vegetative community (such as, a shift in the dominant species), and
- determine the approximate boundary line between wetlands and uplands by determining the extent of key wetland criteria (hydrology, hydric soils, and hydrophytic vegetation).

A preliminary scoping assessment was performed on May 25, followed by thorough field investigations on July 27 and August 1, 2016. A total of 11 test pits were excavated to characterize the area and record information for soils, vegetation, and hydrology on ACOE Wetland Determination Data Forms (Appendix C). None of the pits displayed wetland parameters so further investigation was not required. Locations of TPs are shown on Figure 2. Photos of the study area are included in Appendix B.

All field mapping was completed by marking pit locations in proximity to surrounding roads, fence lines and trees or tree clusters on an aerial image. Since soils were generally homogeneous throughout the site, it was determined that use of the global positioning system was not necessary. Pit locations were delineated by circling the pit with marking paint, along with installation of a numbered pin flag at each pit.

6.1 Vegetation Methodology

While the period considered ideal for botanical surveys is typically April through June, this site lies within the area known for the occurrence of the rare Western Lily, *Lilium occidentale*. Late July is the prime blooming time for this species. With normal winter and spring rains, all other species still contained seed heads, making identification easy. Streamline staff performed a preliminary wetland & botanical assessment on May 25 and found no trace of *Lilium*, *Sidalcea*, or other rare species at that time. During the May assessment, there was no indication of wetlands. While Streamline staff is well versed in spotting early basal leaves and late season seed stalks of plants such as checkerbloom and lilies, the final fieldwork was done during the prime lily blooming period to ensure maximum confidence in the survey.

Prior to the field investigation, a review of plant species reported from the project area was performed by querying the "Consortium of California Herbaria" database records and "Calflora" observations. Absolute percent cover of each plant species was visually estimated within the sample point and within each vegetation stratum. The herbaceous stratum was inspected at a 5-foot radius centered on the sample point. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin *et al.*, 2012) in addition to the online Jepson Interchange (U. C. Berkeley, 2016) for verification of species whose taxonomy may have changed since its publication.

The wetland indicator status of plant species for this investigation was based on the *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* (Lichvar *et al.*, 2016). Plant species were classified as:

- Obligate (OBL)—occurs almost always within a wetland (estimated probability 99%).
- Facultative-wet (FACW)—usually occurs in wetlands (estimated probability 67-99%).
- Facultative (FAC)—equally likely to occur in wetlands or non-wetlands (estimated probability 33-67%).
- Facultative-upland (FACU)—usually occurs in non-wetlands (estimated probability 1-33%).
- Upland (UPL)—occurs almost always in non-wetlands (estimated probability 99%).
- Not listed (NL)—is scored as an upland plant and is calculated as such on wetland determination forms.

The 50/20 method¹ was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. Since neither hydric soils nor wetland hydrology were present, the prevalence index² was not applied. The occurrence and type of plant cover determine whether jurisdictional areas are identified as satisfying the vegetation criteria of a wetland or other waters.

1. The 50/20 rule: for each stratum of the plant community, dominant species are the most abundant species that (when ranked in descending order of abundance and cumulatively totaled) immediately exceed 50% of total dominance measure for the stratum, plus any additional species that individually comprise 20% or more of the total dominance measure for the stratum (ACOE, 2010).

6.2 Soils Methodology

Soils were field-verified for the presence or absence of hydric conditions. All TPs were dug to the maximum depth that would incorporate hydric soil indicators. The thickness of each soil horizon was measured. The Munsell Soil Color Chart (Kollmorgen Instruments Corporation, 1998) was referenced to determine the redoximorphic features and moist soil matrix colors (if present). Soils were closely inspected for hydric soil indicators, as defined by the NRCS "Field Indicators of Hydric Soils in the United States" (Version 7.0; USDA, 2010).

6.3 Hydrology Methodology

The presence of wetland hydrology indicators was determined by direct observation (or lack thereof) of surface water, groundwater, or shallow soil saturation during the field investigation. Since direct observation gave negative results, hydrology determinations were sought based on hydrology indicators (for example, drainage patterns, geomorphic position, and dry season water table) rather than actual direct evidence from saturation or inundation. Additionally, observations were made that would indicate whether or not the site is subject to flooding or standing water. Potential indicators would include water marks, drift deposits, sediment deposits, and similar features. Indicators of extended period saturation would include oxidized rhizospheres surrounding living roots or the presence of reduced iron or hydrogen sulfide in the soil profile.

7.0 Results

The preliminary field investigation was conducted on May 25, with the final field work performed on July 27 and August 1, 2016. Test pits (TP) were dug to characterize the area and record information on soils, vegetation, and hydrology. Locations of TPs are shown on Figure 2; completed "Wetland Determination Data Forms" are presented in Appendix C. Photos of the study area are shown in Appendix B.

7.1.1 Vegetation

The study area consists of relatively flat pasture habitat that has allowed shrubs and small broadleaf trees to emerge since the fence has prevented livestock grazing. Non-native grass species comprised the majority of plant cover and biomass, with other non-native ruderal herbaceous species composing the remainder. The vegetation was relatively similar throughout the site, consisting primarily of *Rubus ursinus* mixed with non-native grasses (Photo B2).

-
2. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot or other sampling unit, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, AND UPL = 5) and weighting is by abundance (absolute percent cover).

Scattered randomly around the site were *Frangula purshiana* and *Baccharis pilularis*. Although several facultative species such as *Frangula purshiana*, *Holcus lanatus* and *Conium maculatum* were common on the parcel, these plants were balanced out by the dominance of upland species such as *Rubus ursinus*, *Raphanus sativa* and *Anthoxanthum odoratum*. None of the test pit sites were dominated by hydrophytic vegetation.

A complete plant list is compiled in Table D-1 in Appendix D.

7.2 Soils

The wetland delineation study area, zoned Agriculture exclusive on the County of Humboldt GIS zoning map, contains 4.68 acres at latitude 40.6654 and longitude -124.2257. Lying on a coastal terrace north of the town of Loleta, the site overlooks the Loleta Bottoms to the southwest. While the surrounding soils showed evidence of overgrazing, including compaction and erosion, the parcel examined in this delineation had deep, friable soils showing evidence of healthy soil building processes and excellent infiltration (Photo B3). Although evidence of disturbance included the presence of ruderal species such as *Digitalis*, *Hieracleum* and *Raphanus*, along with the remains of a homestead, the volume of plant growth on the uncompacted soil has allowed organic matter, root mass and soil structure to develop, unlike the conditions found on the adjacent overgrazed parcels (Photo B4). Evidence of a former residence included a cement pad and stripped electrical hookups.

This site lies exclusively within the Rhonerville Soil Series described in the 1965 McLaughlin and Harradine Soil Survey, with the Rhonerville 2 map unit covering the entire site (Photo 2, Attachment 2). All of these are Silty Clay Loam-textured soils with deep, dark topsoil down to about 24 inches. This series is classified as a fine silty, mixed, isomesic Hymic Normudult. With a moderate local climate and 40 inches of average annual rainfall, the local soils often support a dominance of facultative (hydrophytic) vegetation. However, the deep, well drained soils on this site appear to preclude development of wetland characteristics, including hydrophytic vegetation dominance (Photo 3, Attachment 2). The entire parcel was flat.

The Rohnerville soils qualify as Storie Rating 1 soils.

The Rohnerville Series consists of deep, moderately well drained, medium to fine textured alluvial soils on high river or marine terraces. Parent materials are mixed and the profile is medium in reaction. Slopes are flat or very gently undulating. Mean annual precipitation is between 1,016 to 1,270 millimeters. Mean annual temperature is about 11 degrees C.

*The typical profile:
A horizons:
Hue: 10YR*

Value: 5 dry, 2 moist
Chroma: 2 (changing to 3 in A3 dry), moist or dry
Texture: silty clay loam
Clay content: 32 to 34 percent
Rock fragments: 0 percent gravel
Reaction: medium acid

B horizon:
Hue: 10YR dry, 7.5YR moist
Value: 6 dry, 5 moist
Chroma: 4, moist or dry
Texture: silty clay loam
Clay content: 34 to 40 percent
Rock fragments: 0 percent gravel
Reaction: medium acid

C horizon: (when present)
Hue: 10YR dry, 7.5YR moist
Value: 6 dry, 5 moist
Chroma: 4, moist or dry
Texture: silty clay loam
Clay content: 32 percent

Rock fragments: 0 percent gravel
Reaction: moderately acid

(McCloughlin & Harradine, 1965).

Eleven test pits were excavated in the wetland study area representing 11 study locations: all pits were excavated as individual sites since no significant changes in vegetation or geomorphic position were evident (Figure 2). No pits contained hydric soils.

7.3 Hydrology

No wetland hydrology was present at any of the test pits. Pits were excavated to a depth of 24 inches to check for dry season water table, but all pits displayed a negative test for this indicator as well as all other hydrology indicators.

7.4 Ordinary High Water Mark (OHWM)

No OHWM features were observed at any location within or near the parcel.

8.0 Conclusions

The USFWS NWI website (Appendix A) did not show any wetlands within the boundary of the survey area. This survey was conducted in order to investigate definitively the presence or absence of wetlands on site, and the boundaries of any potential wetlands, for both 3-parameter Army Corps jurisdictional classification, as well as 1-parameter California Coastal Act classification. SHN conducted a study to investigate and define any boundaries. The site investigation occurred during a season with above-normal rainfall through the winter and spring season of 2015-2016. Following the ACOE 3-parameter guidelines, no portion of this parcel displayed any wetland parameters.

9.0 Limitations

The conclusions in this report represent a “snapshot in time” and it is possible that some species were not present at the time of the fieldwork.

This report documents the investigation by, and best professional judgment of, SHN’s botanist and soil scientist. The conclusions should be verified by the ACOE through receipt of a jurisdictional determination letter.

Upland Area	Area (acres)
1 (entire site)	4.68
Total	4.68

10.0 References Cited

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. (2012). *The Jepson Manual: Vascular Plants of California, second edition*. Berkeley, CA:University of California Press, Berkeley.
- Calflora. (NR). “Calflora” Database. (accessed July 2016). Accessed at: <http://calflora.org/>
- California Data Exchange Center. (accessed July 2016). Eureka Woodley Island. Accessed at: <http://cdec.water.ca.gov/cgi-progs/precip/PRECIPMON>
- Consortium of California Herbaria. (NR). “Consortium of California Herbaria” Accessed at: <http://ucjeps.berkeley.edu/consortium/>
- Environmental Laboratory. (1987). *Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1*. Vicksburg, MS:ACOE Waterways Experiment Station.
- Esri et al. (April 2016). Aerial Photograph of Fortuna, Humboldt County, California. NR: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.
- Google Earth (May 24, 2016). 40.6654°/-124.2257°. Accessed on April 5, 2016. NR: Google Earth.

- Kollmorgen Instruments Corporation. (1998). *Munsell Soil Color Charts*. Baltimore, MD:Macbeth Division of Kollmorgen Instruments Corporation.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin (2016). The National Wetland Plant List: 2016 Wetland Ratings. *Phytoneuron* 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
- McLaughlin, J. & Harradine, F. (1965). *Soils of Western Humboldt County California*. In Cooperation Between the Department of Soils and Plant Nutrition, UC Davis, and Humboldt Co.
- National Geographic Society. (2013). [i-cubed. Topographic Map of Fields Landing, California](http://maps.nationalgeographic.com/maps). Accessed at: <http://maps.nationalgeographic.com/maps>
- National Oceanic & Atmospheric Administration, National Climatic Data Center. (accessed May 2016). NOAA/NCDC Database, Eureka Weather Forecast Office Woodley Island, CA US. Accessed at: <https://www.ncdc.noaa.gov/cdo-web/datatools/normals>
- Ogle, B. A. (1953). "Geology of the Eel River Valley Area, Humboldt County, California," *California Department of Natural Resources, Division of Mines, Bulletin 164*. 128p Sacramento, CA:CDMG.
- Soil Survey Staff. (2015). "Official Soil Series Descriptions (OSDs)." Accessed at: http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/home/?cid=nrcs142p2_053587
- University of California, Berkeley. (Accessed April 2016). "Consortium of California Herbaria." Accessed at: <http://ucjeps.berkeley.edu/consortium/>
- U.S. Army Corps of Engineers. (2010). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region*, J.S. Wakeley, R.W. Lichvar, and C.V. Noble (eds) ERDC/EL TR-08-03. Vicksburg, MS:ACOE Research and Development Center.
- U.S. Department of Agriculture, Natural Resources Conservation Service. (2010). *Field Indicators of Hydric Soils in the United States, Version 7.0*. G.W. Hurt, L.M. Vasilas (eds.). NR: USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.
- . (2012). Wetland Indicator Status. Accessed at: <http://plants.usda.gov/wetinfo.html>
- U.S. Code of Federal Regulations. (NR). "33 CFR 328. Title 33, Navigation and Navigable Waters; Chapter II; Army Corp of Engineers, Dept. of Defense, Part 328, Regulatory Program of the U.S. Army Corps of Engineers." NR:ACOE.
- U.S. Fish and Wildlife Service. (Accessed April 2016). National Wetlands Inventory. Accessed at: <http://www.fws.gov/wetlands/data/mapper.HTML/>
- WeatherDB. Accessed August 13, 2016 at: <https://rainfall.weatherdb.com/>

A

National Wetlands Inventory



U.S. Fish and Wildlife Service

National Wetlands Inventory

Mabe Wetlands Inventory



August 18, 2016

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

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

B

Site Photographs



Photo B1: West Edge of Site Overlooking Heavily Grazed Pasturelands.



Photo B2: Typical Site Vegetation Showing *Frangula*, *Baccharis*, *Anthoxanthum* and *Iris*.



Photo B3: Soil Pit Showing Dry, Friable Nature.



Photo B4: Soil Ped Showing Excellent Structure and Many Fine Roots.

C

Wetland Determination Data Forms

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

Project/Site: Mabe, Table bluff Rd. City/County: Humboldt Sampling Date: 7/27/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 1
 Investigator(s): JS, SP Section, Township, Range: SW 1/4, SE 1/4 Sec 6, T3N, R1W
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): A, MLRA Lat: 40.6654 Long: -124.2257 Datum: WGS84
 Soil Map Unit Name: R02, Rhonerville silty clay loam, 0-3% slope 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 , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks:
R02 = Fine silty, mixed, isomesic Humic Norm udult

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Rubus arsinus</u>	<u>79</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Rubus armeniacus</u>	<u>10</u>		<u>FAC</u>	
3. <u>Conium maculatum</u>	<u>1</u>		<u>FAC</u>	
4. <u>Baccharis pilularis</u>	<u>1</u>		<u>UPL</u>	
5. <u>Polystichum munium</u>	<u>5</u>		<u>FACU</u>	
6. <u>Fragaria aurasiatica</u>	<u>1</u>		<u>FAC</u>	
7. <u>Cirsium vulgare</u>	<u>5</u>		<u>FACU</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>102</u> = Total Cover <u>51/104</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:				

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-15	10YR 2/2	100					L	
15-19	10YR 3/2	100					L	
19-26	10YR 4/4	70					L	
	10YR 3/2	30					L	Cracking

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

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

Project/Site: Mabe, Table Bluff Rd. City/County: Humboldt Sampling Date: 7/27/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 2
 Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Hilltop Local relief (concave, convex, none): Convex Slope (%): 2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Tragopogon pinnatifidus</u>	<u>95%</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
<u>95%</u> = Total Cover				Total % Cover of: _____ Multiply by: _____
Sapling/Shrub Stratum (Plot size: - _____)				OBL species _____ x 1 = _____
1. _____	_____	_____	_____	FACW species _____ x 2 = _____
2. _____	_____	_____	_____	FAC species _____ x 3 = _____
3. _____	_____	_____	_____	FACU species _____ x 4 = _____
4. _____	_____	_____	_____	UPL species _____ x 5 = _____
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
= Total Cover				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Rubus ursinus</u>	<u>52</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. <u>Conium maculatum</u>	<u>15</u>	_____	<u>FAC</u>	<input type="checkbox"/> 2 - Dominance Test is >50%
3. <u>Raphanus sativa</u>	<u>27%</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. <u>Polystichum munitum</u>	<u>5</u>	_____	<u>FACU</u>	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u>Stachys ajacoides</u>	<u>2</u>	_____	<u>OBL</u>	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹
6. <u>Heterocleme phloxinum</u>	<u>3</u>	_____	<u>FAC</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>104</u> = Total Cover <u>52</u> / <u>20.8</u>				Hydrophytic Vegetation Present?
Woody Vine Stratum (Plot size: _____)				Yes _____ No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 2/2	100					Loam	Some compaction, prior disturbance
10-17	10YR 3/2	100					L	
17-25	10YR 3/4	65					L	Crotovina
	10YR 3/2	35					L	

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

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

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: Mabe, Table bluff Rd City/County: Humboldt Sampling Date: 7/27/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 3
 Investigator(s): Joseph Salas, Sean Pally Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Digitaria purpurea</u>	<u>27</u>		<u>FACU</u>	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. <u>Hedys lanatum</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Baccharis pilularis</u>	<u>20</u>		<u>UPL</u>	
4. <u>Plantago aquilinum</u>	<u>15</u>		<u>FACU</u>	
5. <u>Rubus ursinus</u>	<u>56</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
6. <u>Cassia maculatum</u>	<u>5</u>		<u>FAC</u>	
7. <u>Cirsium vulgare</u>	<u>5</u>		<u>FACU</u>	
8. <u>Fragaria virginiana</u>	<u>1</u>		<u>FAC</u>	
9. <u>Raphanus sativum</u>	<u>10</u>		<u>UPL</u>	
10. _____	_____	_____	_____	
<u>179</u> = Total Cover <u>89.5</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover <u>35.8</u>				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 2/2	100						
14-18	7.5YR 3/2	100						
18-24	10YR 3/4	80						
	7.5YR 3/2	20						Crotovina

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

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

Project/Site: Mabe, Table Bluff Rd. City/County: Humboldt Sampling Date: 7/27/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 4
 Investigator(s): JS, SP Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
--	---	---	--

Remarks: _____

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
= Total Cover				Total % Cover of: _____ Multiply by: _____
= Total Cover				OBL species _____ x 1 = _____
= Total Cover				FACW species _____ x 2 = _____
= Total Cover				FAC species _____ x 3 = _____
= Total Cover				FACU species _____ x 4 = _____
= Total Cover				UPL species _____ x 5 = _____
= Total Cover				Column Totals: _____ (A) _____ (B)
= Total Cover				Prevalence Index = B/A = _____
= Total Cover				Hydrophytic Vegetation Indicators:
= Total Cover				1 - Rapid Test for Hydrophytic Vegetation
= Total Cover				2 - Dominance Test is >50%
= Total Cover				3 - Prevalence Index is ≤3.0 ¹
= Total Cover				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
= Total Cover				5 - Wetland Non-Vascular Plants ¹
= Total Cover				Problematic Hydrophytic Vegetation ¹ (Explain)
= Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
= Total Cover				Remarks: _____

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/2	100					L	
12-16	10YR 2/2	100					L	Compacted
16-24+	10YR 3/4	100					L	
	10YR 2/2	30					L	Crotovena

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

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

Water Table Present? Yes _____ No Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: Mabe, Table Bluff Rd. City/County: Humboldt Sampling Date: 7/27/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 5
 Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
1. <u>Frangula purshiana</u>	<u>92</u>	<u>✓</u>	<u>FAC</u>	
2. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
3. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
4. _____				
Sampling/Shrub Stratum (Plot size: _____) <u>92</u> = Total Cover				
1. _____				
2. _____				
Herb Stratum (Plot size: _____) _____ = Total Cover				
1. <u>Hieracium maximum</u>	<u>3</u>		<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Conium maculatum</u>	<u>11</u>		<u>FAC</u>	
3. <u>Cirsium vulgare</u>	<u>8</u>		<u>FACU</u>	
4. <u>Rubus ursinus</u>	<u>52</u>	<u>✓</u>	<u>FACU</u>	
5. <u>Raphanus sativa</u>	<u>30</u>	<u>✓</u>	<u>UPL</u>	
6. <u>Stachys ajugoides</u>	<u>10</u>		<u>OBL</u>	
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
Woody Vine Stratum (Plot size: _____) <u>114</u> = Total Cover <u>57</u> <u>228</u>				
1. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. _____				
% Bare Ground in Herb Stratum _____ = Total Cover				
Remarks:				

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 2/2	100					L	
10-22	10YR 3/2	100					L	
22-32+	10YR 3/3	87					L	
	10YR 3/2	13					L	Castovina

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

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

Project/Site: _____ City/County: Humboldt Sampling Date: 7/27/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 6
 Investigator(s): JS, SP Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 3
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Coccoloba fringula purshiana</u>	<u>35</u>	<input checked="" type="checkbox"/>		Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>35</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Rubus ursinus</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Heracalium maximum</u>	<u>2</u>		<u>FAC</u>	
3. <u>Urtica dioica</u>	<u>8</u>		<u>FAC</u>	
4. <u>Solanum americanum</u>	<u>2</u>		<u>FACU</u>	
5. <u>Conium maculatum</u>	<u>25</u>		<u>FAC</u>	
6. <u>Digitalis purpurea</u>	<u>10</u>		<u>FACU</u>	
7. <u>Galium vulgare</u>	<u>2</u>		<u>FACU</u>	
8. <u>Vicia hirsuta</u>	<u>2</u>		<u>FACU</u>	
9. <u>Lysimachia arvensis</u> Pimpernel	<u>2</u>		<u>FAC</u>	
10. <u>Galium aparine</u>	<u>3</u>		<u>FACU</u>	
11. _____				
<u>136</u> = Total Cover <u>58</u> <u>27.2</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

SOIL

Sampling Point: 6

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-15	10YR 2/2	100					L	
15-20	10YR 3/2	92					L	
	10YR 5/8	8					L	
20-24+	10YR 3/4	92					L	
	10YR 3/2	8					L	Crotovena

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

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

Project/Site: Mabe, Table bluff Road City/County: Humboldt Sampling Date: 8/1/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 1E
 Investigator(s): Joseph Sales, Sam Polly Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 7
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Rubus ursinus</u>	<u>42</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Conium maculatum</u>	<u>5</u>		<u>FAC</u>	
3. <u>Digitalis purpurea</u>	<u>12</u>		<u>FACU</u>	
4. <u>Folcus lanatus</u>	<u>27</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
5. <u>Heracleum maxima</u>	<u>2</u>		<u>FAC</u>	
6. <u>Poa pratensis</u>	<u>5</u>		<u>FAC</u>	
7. <u>Sesuvio minimum</u>	<u>2</u>		<u>FACU</u>	
8. <u>Achillea millefolium</u>	<u>3</u>		<u>FACU</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>48</u> = Total Cover <u>47</u> <u>19.6</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				
= Total Cover				
Remarks:				

Hydrophytic Vegetation Present? Yes _____ No

SOIL

Sampling Point: 1E

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR3/2	100					L	
10-24	10YR3/2	100					L	

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

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

Indicators for Problematic Hydric Soils³:

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: Mabe, Table Bluff Rd. City/County: Humboldt Sampling Date: 8/1/16
 Applicant/Owner: Jim Mabe State: GA Sampling Point: 2E
 Investigator(s): Joseph Sotter, Sam Polty Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____ x 1 = _____
1. <u>Baccharis pilularis</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	FACW species _____ x 2 = _____
2. _____	_____	_____	_____	FAC species _____ x 3 = _____
3. _____	_____	_____	_____	FACU species _____ x 4 = _____
4. _____	_____	_____	_____	UPL species _____ x 5 = _____
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
<u>15</u> = Total Cover				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Rubus ursinus</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	___ 1 - Rapid Test for Hydrophytic Vegetation
2. <u>Heridium aquilinum</u>	<u>5</u>	_____	<u>FACU</u>	___ 2 - Dominance Test is >50%
3. <u>Conium maculatum</u>	<u>2</u>	_____	<u>FAC</u>	___ 3 - Prevalence Index is ≤3.0 ¹
4. <u>Heracleum maxima</u>	<u>5</u>	_____	<u>FAC</u>	___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u>Dipsacus fullonum</u>	<u>3</u>	_____	<u>FAC</u>	___ 5 - Wetland Non-Vascular Plants ¹
6. <u>Digitalis purpurea</u>	<u>10</u>	_____	<u>FACU</u>	___ Problematic Hydrophytic Vegetation ¹ (Explain)
7. <u>Helleborus</u>	<u>2</u>	_____	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	Remarks:
11. _____	_____	_____	_____	
<u>97</u> = Total Cover <u>465</u> <u>19.4</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				

SOIL

Sampling Point: 2E

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1)	10YR2/2	100					loam	
1-24	10YR2/2	100					L	
24+	10YR3/4	100					L	

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

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

Project/Site: Mabe, Table bluff Rd. City/County: Humboldt Sampling Date: 8/1/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 3E
 Investigator(s): SAM Polly, Joseph Siler Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Frangula purshiana</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)	
4. _____				Prevalence Index worksheet:	
<u>15</u> = Total Cover					Total % Cover of: _____
Sapling/Shrub Stratum (Plot size: _____)					Multiply by:
1. _____					OBL species _____ x 1 = _____
2. _____					FACW species _____ x 2 = _____
3. _____				FAC species _____ x 3 = _____	
4. _____				FACU species _____ x 4 = _____	
5. _____				UPL species _____ x 5 = _____	
= Total Cover				Column Totals: _____ (A) _____ (B)	
Herb Stratum (Plot size: _____)				Prevalence Index = B/A = _____	
1. <u>Rubus ursinus</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Hydrophytic Vegetation Indicators:	
2. <u>Polygonum minimum</u>	<u>13</u>		<u>FACU</u>		___ 1 - Rapid Test for Hydrophytic Vegetation
3. <u>Pteridium aquilinum</u>	<u>10</u>		<u>FACU</u>		___ 2 - Dominance Test is >50%
4. <u>Heracleum maximum</u>	<u>8</u>		<u>FAC</u>		___ 3 - Prevalence Index is ≤3.0 ¹
5. <u>Holcus lanatus</u>	<u>20</u>		<u>FAC</u>		___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
6. <u>Carex leptopoda</u>	<u>3</u>		<u>FAC</u>		___ 5 - Wetland Non-Vascular Plants ¹
7. <u>Digitalis purpurea</u>	<u>6</u>		<u>FACU</u>		___ Problematic Hydrophytic Vegetation ¹ (Explain)
8. <u>Stachys ajacoides</u>	<u>2</u>		<u>Obl</u>		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
9. _____					
10. _____					
11. _____					
<u>112</u> = Total Cover <u>55</u> <u>224</u>					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
1. _____					
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: 3E

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 2/2	100					Loam	
20-24+	10YR 4/3	62					L	
	0YR 2/2	38						Mixed from upper horizon

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

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

Water Table Present? Yes _____ No Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: Mabe, Table Bluff Rd. City/County: Humboldt Sampling Date: 8/1/16
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 4'E
 Investigator(s): Sam Polly, Joseph Siler Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Baccharis pilularis</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Senecio MINUS</u>	<u>5</u>	_____	<u>FACU</u>	
2. <u>Iris douglasiana</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
3. <u>Rubus ursinus</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Digitalis purpurea</u>	<u>10</u>	_____	<u>FACU</u>	
5. <u>Sedum bleasdalei</u>	<u>1</u>	_____	<u>UPL</u>	
6. <u>Achillea millefolium</u>	<u>1</u>	_____	<u>FACU</u>	
7. <u>Cirsium vulgare</u>	<u>1</u>	_____	<u>FACU</u>	
8. <u>Fragula purshiana</u>	<u>1</u>	_____	<u>FAC</u>	
9. <u>Lysimachia arvensis</u> <u>scantlet</u>	<u>1</u>	_____	<u>FAC</u>	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
= Total Cover <u>85</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover _____				
% Bare Ground in Herb Stratum _____				
Remarks:				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

SOIL

Sampling Point: 4E

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 2/2	100					Loam	
20-24	10YR 3/2	95					Loam	
	10YR 3/3	5					Loam	

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

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

Water Table Present? Yes _____ No Depth (inches): _____

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: Mabe, Table Bluff Rd City/County: Humboldt Sampling Date: 8/1/2016
 Applicant/Owner: Jim Mabe State: CA Sampling Point: 5E
 Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Carex <u>frangula purshiana</u>	20	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
20 = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Anthoxanthum odoratum</u>	65	<input checked="" type="checkbox"/>	FACU	
2. <u>Pteridium aquilinum</u>	12		FACU	
3. <u>Rubus ursinus</u>	10		FACU	
4. <u>Solidago elongata</u>	8		FACU	
5. <u>Digitalis purpurea</u>	3		FACU	
6. <u>Polystichum munitum</u>	2		FACU	
7. <u>Galium aparine</u>	1		FACU	
8. <u>Achillea millefolium</u>	1		FACU	
9. _____				
10. _____				
11. _____				
99 = Total Cover <u>44.5</u> <u>17.8</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

Hydrophytic Vegetation Present? Yes _____ No

SOIL

Sampling Point: 5E

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-13	10YR2/2	100					L	
13-20	10YR2/2	100					L	Soils (soil) (soil)
20-24	10YR3/3	100					L	

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

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present? Yes _____ No <u>X</u>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <u>X</u>	Depth (inches): _____	

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

Remarks:

D

Plant List

Table D-1
Observed Botanical Species List
Table Bluff Rd Loleta, CA

Plants Observed 7/27/16 and 8/1/16

Scientific Name	Common Name	Native?	Wetland Status
Trees			
<i>Abies grandis</i>	grand fir	Y	FACU
<i>Frangula purshiana</i>	casacara	Y	FAC
<i>Juniperus sp.</i>	cultivated juniper	N	N/A
<i>Picea sitchensis</i>	Sitka spruce	Y	FAC
<i>Pinus radiata</i>	Monterrey pine	N	NL
<i>Prunus cerasifera</i>	wild plum	N	UPL
<i>Pseudotsuga menziesii</i>	Douglas fir	Y	FACU
<i>Salix lasiandra</i>	pacific willow	Y	FACW
Shrubs			
<i>Baccharis pilularis</i>	coyote brush	Y	UPL
<i>Corylus cornuta</i>	hazelnut	Y	FACU
<i>Cytisus scoparius</i>	scotchbroom	N	UPL
<i>Erica lusitanica</i>	Spanish heather	N	UPL
<i>Gaultheria shallon</i>	salal	Y	FACU
<i>Genista monspessulana</i>	French broom	N	UPL
<i>Ilex aquifolium</i>	English holly	N	FACU
<i>Lonicera involucrata</i>	twinberry	Y	FAC
<i>Oemleria cerasiformis</i>	indian plum	Y	FACU
<i>Ribes sanguineum</i>	flowering currant	Y	FACU
<i>Rosa californica</i>	California rose	Y	FAC
<i>Rosa rubiginosa</i>	sweetbriar	N	UPL
<i>Rubus armeniacus</i>	Himalayan blackberry	N	FAC
<i>Rubus parviflorus</i>	thimbleberry	Y	FACU
<i>Rubus ursinus</i>	California blackberry	Y	FACU
<i>Sambucus racemosa</i>	red elderberry	Y	FACU
<i>Spirea douglasiana</i>	Douglas spirea	Y	FACW

Scientific Name	Common Name	Native?	Wetland Status
<i>Symphoricarpos albus</i>	common snowberry	Y	FACU
<i>Vaccinium ovatum</i>	evergreen huckleberry	Y	FACU
Herbs			
<i>Achillea millefolium</i>	common yarrow	Y	FACU
<i>Anaphalis margaritacea</i>	pearly everlasting	Y	FACU
<i>Aquilegia formosa</i>	western columbine	Y	FAC
<i>Brassica rapa</i>	common mustard	N	FACU
<i>Carduus pycnocephalus</i>	Italian thistle	N	UPL
<i>Cirsium arvense</i>	Canada thistle	N	FAC
<i>Cirsium vulgare</i>	bull thistle	N	FACU
<i>Conium maculatum</i>	poison hemlock	N	FAC
<i>Crepis capillaris</i>	smooth hawksbeard	N	FACU
<i>Daucus carota</i>	Queen Anne's lace	N	FACU
<i>Digitalis purpurea</i>	foxglove	N	FACU
<i>Dipsacus fullonum</i>	wild teasel	N	FAC
<i>Epilobium ciliatum</i>	Northern willowherb	Y	FACW
<i>Erigeron canadensis</i>	Canada horseweed	Y	FACU
<i>Fragaria vesca</i>	California strawberry	Y	FACU
<i>Galium aparine</i>	cleaver plant	N	FACU
<i>Geranium dissectum</i>	cutleaf geranium	N	UPL
<i>Heracleum maxima</i>	cow parsley	Y	FAC
<i>Horkelia californica</i>	California horkelia	Y	NL
<i>Hypochaeris radicata</i>	hairy cats-ear	N	FACU
<i>Iris douglasiana</i>	Douglas iris	Y	UPL
<i>Leucantheumum vulgare</i>	oxeye daisy	N	UPL
<i>Linum bienne</i>	flax	N	UPL
<i>Lotus corniculatus</i>	bird's foot trefoil	N	FAC
<i>Lupinus rivularis</i>	riverbank lupine	Y	FAC
<i>Lysimachia arvensis</i>	scarlet pimpernel	N	FAC
<i>Maianthemum racemosum</i>	false Solomon's seal	Y	FAC
<i>Mentha pulegium</i>	pennyroyal	N	OBL

Scientific Name	Common Name	Native?	Wetland Status
<i>Navarretia squarrosa</i>	skunkweed	Y	FACU
<i>Parentucellia viscosa</i>	yellow glandweed	N	FAC
<i>Plantago lanceolata</i>	English plantain	N	FACU
<i>Prunella vulgaris</i>	self heal	Y	FACU
<i>Pseudognaphalium ramosissimum</i>	pink cudweed	Y	UPL
<i>Ranunculus repens</i>	creeping buttercup	N	FAC
<i>Rhaphanus sativa</i>	wild radish	N	UPL
<i>Rumex acetosella</i>	sheep sorrel	N	FACU
<i>Rumex crispus</i>	curly dock	N	FAC
<i>Scrophularia californica</i>	California bee plant	Y	FAC
<i>Senecio minimus</i>	coastal burnweed	N	FACU
<i>Silybum marianum</i>	blessed milk thistle	N	UPL
<i>Solanum americanum</i>	American nightshade	Y	FACU
<i>Solanum aviculare</i>	New Zealand nightshade	N	NL
<i>Solidago elongata</i>	West coast Canada goldenrod	Y	FACU
<i>Sonchus oleraceus</i>	sow thistle	N	UPL
<i>Stachys ajugoides</i>	bugle hedgenettle	Y	OBL
<i>Symphyotrichum chilense</i>	California aster	Y	FAC
<i>Taraxicum officinale</i>	dandelion	N	FACU
<i>Tellima grandiflora</i>	fringe cups	Y	FACU
<i>Trifolium pratense</i>	red clover	N	FACU
<i>Trifolium repens</i>	white clover	N	FAC
<i>Urtica dioica</i>	stinging nettle	Y	FAC
<i>Vicia hirsuta</i>	tiny vetch	N	UPL
<i>Vicia sativa</i>	spring vetch	N	UPL
<i>Zeltnera venusta</i>	charming centaury	Y	NL
Grasses			
<i>Aira caryophylla</i>	silver hairgrass	N	FACU
<i>Anthoxanthum odoratum</i>	sweet vernal grass	N	FACU
<i>Avena sativa</i>	wild oat	N	UPL

Scientific Name	Common Name	Native?	Wetland Status
<i>Briza maxima</i>	large quaking grass	N	UPL
<i>Briza minor</i>	small quaking grass	N	FAC
<i>Bromus carinatus</i>	California brome	Y	NL
<i>Bromus diandrus</i>	ripgut brome	N	UPL
<i>Bromus hordeaceus</i>	soft chess	N	FACU
<i>Dactylis glomerata</i>	orchard grass	N	FACU
<i>Elymus glaucus</i>	blue wildrye	Y	FACU
<i>Festuca arundinacea</i>	tall fescue	N	FACU
<i>Festuca microstachys</i>	small fescue	Y	UPL
<i>Festuca perenne</i>	Italian wildrye	N	FAC
<i>Festuca rubra</i>	red fescue	Y	FAC
<i>Holcus lanatus</i>	velvet grass	N	FAC
<i>Phalaris aquatica</i>	harding grass	N	FACU
<i>Poa pratensis</i>	Kentucky bluegrass	N	FAC
Ferns and Allies			
<i>Polystichum munitum</i>	sword fern	Y	FACU
<i>Pteridium aquilinum</i>	bracken fern	Y	FACU
Sedges and Rushes			
<i>Carex leptopoda</i>	slender footed sedge	Y	FAC
	Total	47.5% Native	40.75% FAC or Wetter Species
1. (USDA 2012) Indicators are abbreviated as follows: OBL: Obligate FACW: Facultative FAC: Facultative FACU: Facultative upland UPL: Upland NL: Not listed			