

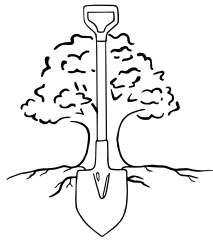
WETLAND DELINEATION REPORT

3611 LITTLE LARABEE CREEK RD BRIDGEVILLE, CA 95526

Parcel Number: 208-113-008-000

Prepared for
Humboldt County Planning Department

Prepared by



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EXECUTIVE SUMMARY

This report provides a summary of the results from the wetland delineation on 3611 Little Larabee Crk Rd, Bridgeville, CA 95526 parcel number: 208-113-008-000. The property is a 39.37-acre parcel located in coniferous forest approximately three miles east of Bridgeville CA, in the Larabee Creek Watershed. Field work for the delineation was conducted by Restoration Ecologist Jon Backus of West Coast Wild Ecological Restoration LLC on June 24, 2024. Methods followed the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987) and in accordance with the methods identified in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE, 2010). Three parameters were investigated and used to determine the presence of wetlands including: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. This report provides a summary of field results indicating no wetland habitat present in the specified project area according to the metrics investigated.

INTRODUCTION

Under the Clean Water Act, wetlands are defined as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” (33 CFR 328.3). Three parameters are used to determine the presence of wetlands including: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Under the US Army Corps of Engineers one positive indicator from each parameter must be found to make a positive wetland delineation.

Designated biologist Jon Backus of West Coast Wild Ecological Restoration LLC, was hired by property owner, Mika Cook, to conduct a wetland delineation for her property currently used for cannabis cultivation. The specified project area on the parcel is approximately 2,500 square feet on a slope adjacent to several hoop houses and barn. Wetland delineation methods followed U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010), examining the hydrology, vegetation and soils within the project area.

SITE LOCATION

The parcel is located approximately three miles east of Bridgeville, California off of CA-Hwy 36, between mile markers 31.5 and 31.63 at 3611 Little Larabee Crk Rd (Figure 1). The assessor's parcel number is 208-113-008-000; and the geographic coordinates of the first sampling point are 40.469627°N, -123.742577°W. It is located within the Larabee Creek Watershed in Humboldt County. The legal description is NE 1/4 OF NE 1/4 SEC 17 T1N-R4E.

SITE DESCRIPTION

The 39-acre parcel is roughly 35 miles east of the Pacific ocean at an elevation of approximately 1,320 feet (Figure 1). The 39-acre parcel is zoned as Timberland Production (TPZ). The vegetation consists of the mixed hardwood-Douglas fir alliance dominated by Douglas fir (*Pseudotsuga menziesii*) and tan oak (*Lithocarpus densiflorus*) with an understory of herbaceous plants including sword fern (*Polystichium munitum*), evergreen huckleberry (*Vaccinium ovatum*), and poison oak (*Toxicodendron diversilobum*). The specific project area encompasses roughly 2,500 square feet located near several hoop houses and a barn and adjacent to existing forest (Figure 2). Grading and terracing the area for development and cultivation has altered the natural topography, hydrology, and vegetation. The area prior to development was likely more of mixed hardwood-Douglas fir alliance. Surface water runs downhill from the road and hillside and collects on terraces and depressions created through grading. Previous grading also exposed seeps leading to further altered hydrology and pooling in the cultivation area where it was advised to install a French drain (Heitzman, 2017). The

property also recently underwent fire abatement measures, which included clearing trees and shrubs on the western side of the project area adjacent to existing forest. Clearing with heavy machinery caused disturbance to the soil surface and vegetation within the project area. Site photos included in Appendix B.

GEOLOGY

The generalized rock type for the project area is the franciscan complex, consisting of Cretaceous and Jurassic sandstone with small amounts of shale, chert, limestone, and conglomerate (UC Davis, 2019). The soils primarily consist of Hoagland (40%), Chalkmountain (30%), and Pasture rock (15%), with 15% minor components (UC Davis, 2019). Each of these soil types is found on mountain slopes of 15-50%. They have a thin layer of decomposed plant matter (0-1 inch) then varying levels of gravelly loam, loam and/or clay loam. Each of these series consists of very deep, well drained soils, with high runoff (UC Davis, 2019). The Chalkmountain series is in hydrologic soil group B with a moderate infiltration rate when thoroughly wet. Hydrologic soil group B consists of deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture (UC Davis, 2019). Hoagland and Pasture rock series are in hydrologic group C with a slow infiltration rates when thoroughly wet. These soils either have a layer that impedes the absorption of water or have moderate to fine textures that slow infiltration rates. These soils have a slow rate of water transmission. All three of these soil series have a 0% proportion of hydric soils (UC Davis, 2019).

HYDROLOGY

The parcel is located in the North Coast Mountain Range with slopes of 15-50% (Figure 3). Little Larabee Creek, a Class I watercourse, runs west along the northern property line. An unnamed Class III watercourse runs towards the northwest property corner. An unnamed Class II watercourse runs north in the adjacent parcel to the east. The property has been graded and terraced for development. Through this development water runs downhill and down the access road and collects on created terraces.

WEATHER

Field work for the delineation was conducted June 24, 2024 starting at 12:00 PM. The weather was sunny and clear, 74° F with no rainfall. Bridgeville had a total of 10.5 inches of rainfall in June 2024.

DELINEATION METHODS

Prior to conducting the field survey, available reference materials were reviewed, including Humboldt County Web GIS maps (Humboldt County Web GIS, 2024) and soil survey maps (UCD, 2019). Field work for the delineation was conducted June 24, 2024 by Restoration Ecologist Jon Backus. Delineation methods followed the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE, 2010).

Data on the three parameters used to determine the presence of wetlands was collected including the project areas hydrology, vegetation, and soil. The field visit began with an examination of the property's hydrology to identify depressions and standing water, followed by a vegetation survey where species were identified and recorded. A comprehensive list of plant species observed in the project area is included in Appendix A. Wetland indicator status of each species was determined based upon the National List of Plant Species That Occur in Wetlands: California (Reed 1988). The indicator status assigned to each species (OBL, FAC, FACW, FACU, UPL) designates the probability of that species occurring in a wetland. Obligate wetland (OBL) species almost always naturally occur in wetlands (> 99%). Facultative wetland (FACW) species usually occur in wetlands (67% – 99%), but are occasionally found in non-wetlands (1% – 33%). Facultative (FAC) species are equally likely to occur in wetlands and non-wetlands (34% – 66%). Facultative upland (FACU) species usually occur in non-wetlands (67% – 99%), but are occasionally found in wetlands (1% – 33%). Obligate upland (UPL) species almost always occur in non-wetlands (> 99%). (Reed, 1988). Data was recorded on Wetland Determination Data Forms and attached to this report (Appendix C).

Due to the disturbance caused by fire abatement treatments, methods under Section F. Atypical Situations of U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987) had to be employed. This involved surveying the entire site for wetland indicator species rather than using transect or random plot sampling methods for evaluating vegetation. Several wetland indicator species were identified within the project area (Appendix A). Their presence guided the selection of optimal locations for soil investigation. Soil pits were excavated adjacent to the areas where these wetland indicator plants were found (Figure 2), reaching a depth of 18 inches. Detailed observations and recordings were made of soil layers, depth, and color at each pit. Soil colors were matched against the Munsell soil color chart (GretagMacbeth, 2000). Additionally, the soil samples were carefully examined for further indicators of wetland hydrology, including gleying, oxidized root channels, and the presence of algal mats.

RESULTS

Vegetation

Due to the disturbance caused by fire abatement treatments, methods under Section F. Atypical Situations of U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987) had to be employed. This involved surveying the entire site for wetland indicator species rather than using transect or random plot sampling methods for evaluating vegetation. A complete list of vegetation surveyed in the project site is listed in Appendix A. The vegetation survey of the project area yielded one obligate wetland species (OBL), pennyroyal, *Mentha pulegium*, and two facultative wetland species (FACW) including spreading rush, *Juncus patens*, and Oregon ash, *Fraxinus latifolia*. Both the *Mentha* and *Juncus* were found on the eastern portion of the project area closer to the hoop houses and barn. Other vegetation in this area consisted of common weeds of disturbed areas including velvet grass, *Holcus lanatus*, birds foot trefoil, *Lotus corniculatus*, and Queen Anne's lace, *Daucus carota*. The *Fraxinus latifolia* was found within the forest on the western side of the project area among Douglas fir, *Pseudotsuga menziesii*, Scouler's willow, *Salix scouleriana*, tan oak, *Notholithocarpus densiflorus* and CA Bay, *Umbellularia californica*. The presence of the obligate wetland species *Mentha pulegium* can likely be attributed to the anthropogenic disturbance to hydrology. *Mentha pulegium* is a non-native invasive species that establishes and spreads in year-round or seasonally wet areas like marshes, streamsides, seeps, vernal pools, ditches, and swales. *Juncus patens* is a common facultative wetland plant found in both wetland and non-wetland habitats including seeps, springs, riparian zones, pond banks, roadside ditches and other moist habitats. All three species can survive summer drought. Surrounding vegetation mostly consists of plants adapted to aerobic conditions and belonging to the mixed hardwood-Douglas fir alliance. Data can be found on the Wetland Determination Data Forms attached to this report (Appendix C).

Hydrology

According to the US Army Corps of Engineers, wetland hydrology is defined by the substrate being saturated with water or covered by shallow water during the growing season of each year. The growing season is defined as the period of time between the last frost of spring and the first frost of fall, when the air temperature drops below the freezing point of 32°F. According to the California Average Last Frost Date Map, the average last frost date for Bridgeville, CA is between April 1 and April 10 (PlantMaps, 2024). There was no standing water present on site at the time of the delineation. Examination of the soils did not show evidence of standing water into the growing season. The unexpected presence of wetland plants in this area was likely due to changes in site hydrology. According to a 2017 Water Resource Protection Plan submitted to the California Regional Water Quality Board and provided by the current land owner, grading activities by the previous owner had exposed multiple seeps, causing water to accumulate on the graded flat for cultivation. In response, the current landowner worked with engineers to install a French drain system to remove excess water from the cultivation area and direct it towards the project area (Heitzman, 2017). As a result of this diverted water and runoff from the

road the project area became more saturated than it would be under natural conditions without grading and alterations to the hydrology. To assess whether water had accumulated sufficiently in the project area to foster wetland habitat, detailed soil examinations were conducted.

Soils

Soil samples were taken from two locations within the project area adjacent to wetland indicator species (Figure 2). Soil samples from both pits showed very little O horizon (<1 inch of organic matter) followed by consistent clay loam. Neither sample pit yielded evidence of hydric soils. The soil color (10YR 6/3) was fairly consistent within the top 18 inches at both sites and showed no signs of gleying. The soils match the characteristics described by the soil websurvey (UC Davis, 2019) and indicate standing water does not persist long enough to create anaerobic conditions in the soil.

RESULTS SUMMARY

Based on the findings of the wetland delineation, the project area is considered a non-wetland area under the definition provided in the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987). Although a few wetland indicator species were discovered in the project area, further assessments revealed no definitive evidence of wetlands. The site delineation, conducted two months into the growing season, did not identify any standing water at the project site. Soil examinations further substantiate these findings, showing consistent soil characteristics without indications of hydric soils or gleying, which are signs of prolonged saturation. Ultimately, the soil analysis aligns with information from the Soil Web Survey (UC Davis, 2019), indicating that any water accumulation does not persist long enough to establish the anaerobic conditions necessary for wetland habitat formation. The wetland indicator species found; *Juncus patens*, *Mentha pulegium*, and *Fraxinus latifolia* can all survive summer drought. The surrounding areas are dominated by plants typically adapted for aerobic soil conditions. The presence of some common wetland indicator plants in the project area can be attributed to the altered site hydrology. The previous grading activities and the installation of a French drain system create saturated growing conditions in a portion of the site during the winter and early spring but dry out during the growing season preventing the formation of hydric soils.

REFERENCES

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FIGURES

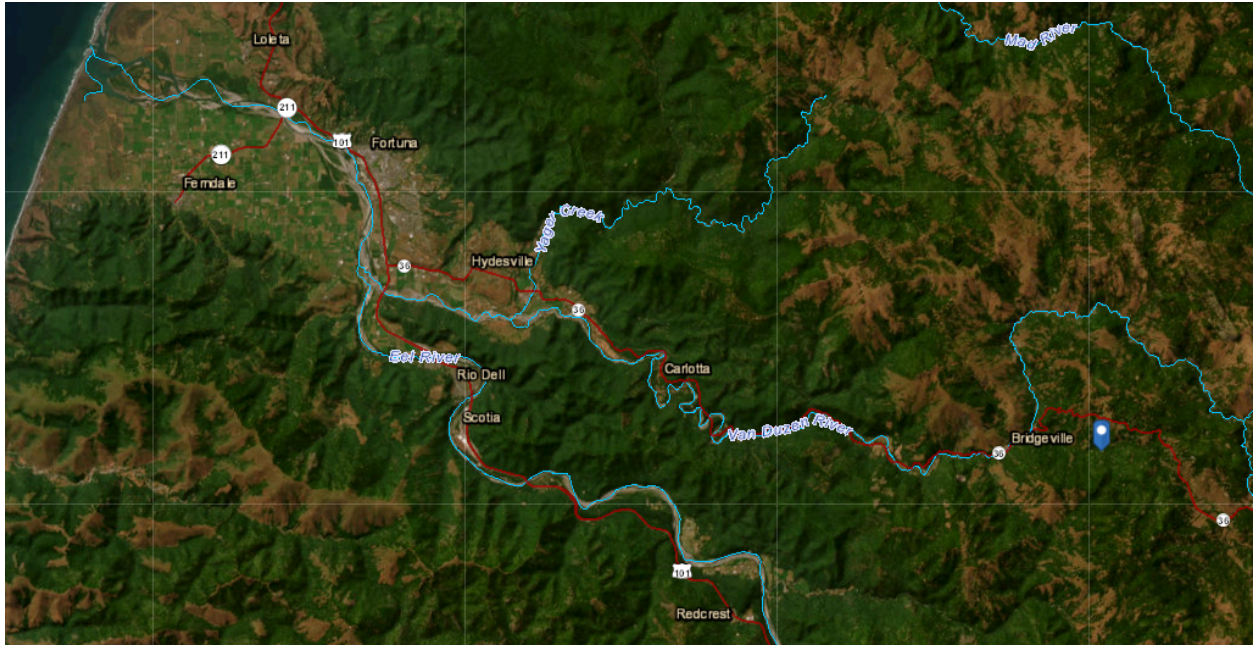


Figure 1: General Site Location. Approximately three miles east of Bridgeville, California off of CA-Hwy 36. From: Humboldt County Web GIS. Accessed July 10, 2024.



Figure 2: Project area location and sampling points. Sampling locations were selected based on presence of wetland indicator species. Base map from Humboldt County Web GIS. Accessed July 10, 2024.

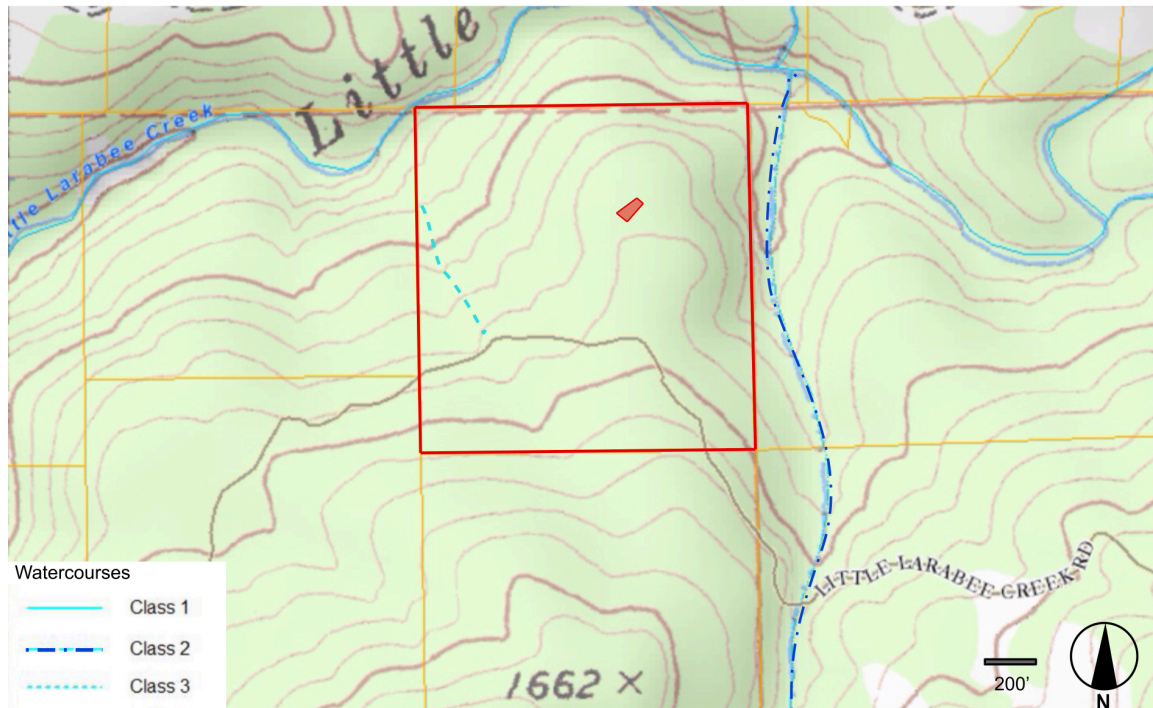


Figure 3: Topographic parcel map with approximate locations of hydrologic features including Little Larabee creek (Class I watercourse) north of the property line, a Class II waterway east of the parcel boundary and a Class III waterway located on the south western portion of the parcel. The project area for the delineation is marked by the red polygon in the north eastern portion of the parcel. Base map from Humboldt County Web GIS accessed July 10, 2024.

APPENDICES

Appendix A: Vegetation Species List for Entire Project Area

Scientific Name	Common Name *non-native species	Wetland Indicator Status
<i>Conyza canadensis</i>	Horseweed	FACU
<i>Daucus carota</i>	Queen Anne's lace*	FACU
<i>Festuca californica</i>	CA fescue	FACU
<i>Fraxinus latifolia</i>	Oregon ash	FACW
<i>Holcus lanatus</i>	Velvet Grass*	FAC
<i>Hypochaeris radicata</i>	Hairy Cat's Ear*	FACU
<i>Juncus patens</i>	Spreading rush	FACW
<i>Leucanthemum vulgare</i>	Oxeye daisy*	FACU
<i>Lolium multiflorum</i>	Italian rye*	FACU
<i>Lolium perenne</i>	Perennial ryegrass*	FAC
<i>Lotus corniculatus</i>	Birds foot trefoil*	FAC
<i>Mentha pulegium</i>	Pennyroyal*	OBL
<i>Notholithocarpus densiflorus</i>	Tan oak	UPL
<i>Paspalum dilatatum</i>	Dallis grass*	FAC
<i>Picris echioides</i>	Bristly Ox tongue*	FAC
<i>Polystichum munitum</i>	Sword fern	FACU
<i>Pseudotsuga menziesii</i>	Douglas fir	FACU
<i>Pteridium aquilinum</i>	Bracken fern	FACU
<i>Rubus armeniacus</i>	Himalayan blackberry*	FAC
<i>Rubus ursinus</i>	Trailing blackberry	FACU
<i>Salix scouleriana</i>	Scouler's willow	FAC
<i>Sonchus oleraceus</i>	Common sow thistle*	UPL
<i>Stachys bullata</i>	CA Hedgenettle	
<i>Toxicodendron diversilobum</i>	Poison oak	FAC
<i>Umbellularia californica</i>	CA Bay	FAC
<i>Vaccinium ovatum</i>	Huckleberry	FACU

APPENDIX B: Site Photos



Project site facing south west. Fire abatement measures disturbed project site vegetation including removal of trees on the western portion of the project site and disturbance to the herbaceous layer of vegetation from operating heavy machinery in the area.



Project site facing North west. No standing water observed on the project site.



Soil profile for sample plot 1. The soil color (10YR 6/3) was consistent within the top 18 inches and showed no signs of gleying. The characteristics of the soil indicate standing water does not persist long enough to create anaerobic conditions in the soil.



Above left: *Juncus patens* at project site. *Juncus patens* is a facultative wetland plant, usually found in wetlands but it can also be found in non-wetlands.

Above right: *Mentha pulegium* at project site. *Mentha pulegium* is a non-native obligate wetland plant, almost always growing in wetland habitat, though it can tolerate seasonal drought.

APPENDIX C: Wetland Determination Data Forms

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

Project/Site: 3611 LITTLE LARABEE CREEK RD City/County: BRIDGEVILLE, ADAMS CO Sampling Date: 06/24/24
 Applicant/Owner: MIKA COOK State: CA Sampling Point: _____
 Investigator(s): TON BACKUS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): HILLSLOPE / TERRACE Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 40.469627° N Long: -123.742577° W 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 _____	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒	
Wetland Hydrology Present?	Yes _____ No ☒	
Remarks: <u>Mentha pulegium (OBL) and Juncus patens (FACW) found within project site. Soil sampling showed no signs of hydric soils. No standing surface water at time of delineation.</u>		

VEGETATION – Use scientific names of plants. * Due to disturbance, methods under Section F. Atypical situations must be used

Tree Stratum (Plot size: *NA)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pseudotsuga menziesii</u>		Y	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. <u>Nettelithararpus densiflorus</u>		Y	UPL	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. <u>Fraxinus latifolia</u>		N	FACW	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
4. <u>Salix souleyana</u>		N	FAC	
5. <u>Umbellularia californica</u>		N	FAC	
Sapling/Shrub Stratum (Plot size: *NA)				Prevalence Index worksheet: <u>NA see notes</u>
1. <u>Rubus armeniacus</u>		N	FAC	Total % Cover of: _____ Multiply by: _____
2. <u>Rubus ursinus</u>		N	FACU	OBL species _____ x 1 = _____
3. <u>Toxicodendron diversilobum</u>		Y	FAC	FACW species _____ x 2 = _____
4. <u>Vaccinium ovatum</u>		Y	FACU	FAC species _____ x 3 = _____
				FACU species _____ x 4 = _____
				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: *NA)				Hydrophytic Vegetation Indicators:
1. <u>Corypha canadensis</u>		N	FACU	☒ 1 - Rapid Test for Hydrophytic Vegetation
2. <u>Daviesia caota</u>		N	FACU	_____ 2 - Dominance Test is >50%
3. <u>Eriogonum californicum</u>		N	FACU	_____ 3 - Prevalence Index is ≤3.0 ¹
4. <u>Holcus lanatus</u>		Y	FAC	_____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u>Hypochaeris radicata</u>		N	FACU	_____ 5 - Wetland Non-Vascular Plants ¹
6. <u>Juncus patens</u>		N	FACW	_____ Problematic Hydrophytic Vegetation ¹ (Explain)
7. <u>Lotium multiflorum</u>		Y	FACU	_____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. <u>Leucanthemum vulgare</u>		N	FACU	
9. <u>Mentha pulegium</u>		N	OBL	
10. <u>Polystichum moniliforme</u>		N	FACU	
11. <u>Plantago aquilinum</u>		N	FACU	
12. <u>Sonchus oleraceus</u>		N	FACU	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes ☒ No _____
1. _____				
2. _____				
% Bare Ground in Herb Stratum _____				

Remarks: Area previously graded for development, altering topography and hydrology. Parcel has undergone fire abatement measures, disturbing vegetation and soils to provide protective buffer from buildings.

Sampling Point: _____

HYDROLOGYUS Army Corps of Engineers