11697

Wetland and Watercourse Delineation Report
For

APN# 210-051-060-000
33087 State Highway 36
Bridgeville, CA. 95526

Prepared by:

James Regan
Botanist/Wetland Delineator
September 20, 2018

For:

MAD RIVER PROPERTIES, INC.
MCKINLEYVILLE, CA.

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1.0 INTRODUCTION AND PURPOSE

On 1 September 2018 Mr. James Regan (botanist/ wetland delineator) conducted site review for potential wet areas and watercourses within the subject parcel (APN 210-051-060-000) near the community of Bridgeville, CA. The subject property is located in a partially developed lot. Habitat within the plan area is varied and shows signs of past land management (timber harvest), some of the habitat is at least partially disturbed.

The approximately 40 acre parcel is largely composed of ***Pseudotsuga menzeisii* (Douglas' fir Forest) Forest Alliance** (Sawyer 2009) which has been entered for commercial timber harvest in the past. Skid trails, old logging roads and crossings, as well as landings and cleared areas are evident throughout the stand. Understory vegetation is generally light except on stand edges, in canopy openings, or along larger perennial watercourses. Soils are sometimes rocky and several large rock outcrops exist scattered within the parcel. The western quarter of the parcel contains a transition zone between Douglas' fir Forest into more open mix black oak and white oak woodland surrounded by and subtended by open foothill and valley grassland with a mix of native and non-native grasses and herbs. This habitat may be described as a mix of ***Quercus garryana* (Oregon white oak woodland) Woodland Alliance** and ***Quercus kelloggii* (California black oak forest) Woodland Alliance** (Sawyer 2009). The subject parcel contains two larger perennial watercourses and several seasonal tributaries. Some portions of the old road and skid trail system hold ponded water and were evaluated for presence of wetland indicators (Attachment A contains a map with wetlands and waters).

The parcel does contain one wetland feature and several small watercourses which were detected during the course of this investigation.

This assessment serves to provide a wetland determination/delineation conducted to investigate the environmental setting of the subject property for future development needs. This report is the result of surveys conducted on the dates above, reviews of relevant scientific literature, and professional knowledge. Mr. Regan holds a Bachelor's degree in botany and has worked as a professional botanist in Northern California (Humboldt, Trinity, and Mendocino Counties) for the past 15 years and as a wetland delineator for the past 10 years.

2.0 METHODS

2.1 PROJECT AREA AND PROXIMITY TO KNOWN RESOURCES

An assessment of potential impacts to adjacent watercourses or wetlands within 500 feet of the subject property was conducted by interpretation of aerial photography and resource maps courtesy of Google Earth, the United States Geologic Survey (USGS) 7.5' Larabee Valley quadrangle map, Humboldt County Web GIS, and United States Fish and Wildlife Service (USFWS) National Wetland Inventory. The subject parcel is 2,700-

3,000 feet above mean sea level. The subject area is situated north of State Highway 36 and south of The Van Duzen River, a perennial fish bearing watercourse which joins the Eel River near Fortuna, CA and ultimately drains to the Pacific Ocean. Watercourses within the subject property drain south then east to unnamed tributaries to Butte Creek which flows north into the Van Duzen River.

Several small watercourses exist within the subject parcel. These watercourses were identified using the ACOE "Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States" (Mercel, Licvar 2014). All mapped watercourses in the subject area showed at least two of the three primary indicators of OHWM which include a break in slope, a change in sediment profile, or a change in vegetation. Creeks within the parcel are generally characterized by a small change in slope from upland to the seasonally active channel and often show a change in sediment from fines and organics outside the OHWM and loose gravels and small cobble within. Creeks defined as perennial showed more defined bank and channel morphology, more developed riparian vegetation, and were flowing at the time of survey.

The property contains one spring fed, perennial watercourse, two larger perennial watercourses, several seasonal streams, dry swales, and one small wetland area located on the prism of an old road between two perennial creeks (these features are shown on the Wetland and Waters Map in Attachment A).

The National Wetland Inventory shows no known wetlands within the boundaries or within 500 feet of the subject parcel. The USFWS wetland location map included in Appendix A does contain one perennial stream (unnamed tributary to Butte Creek) located within the project area, as delineated by aerial interpretation by the USFWS. This stream and the associated buffer are included in attached maps.

2.2 GENERAL INFORMATION

Plots for the wetland delineation were surveyed on 1 September by Mr. James Regan. The subject area was assessed using guidelines outlined in the U.S. Army Corps of Engineers (ACOE) Wetland Delineation Manual Technical Report Y-87-1 (referred to as the 1987 manual) and the Draft Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region. The 1987 manual provides technical guidelines for identifying wetlands, distinguishing them from non-wetlands, and provides methods for applying the technical guidelines. Three key provisions of the ACOE wetland definition include:

i. Inundated or saturated soil conditions resulting from permanent or periodic inundation by ground or surface water.

ii. A prevalence of vegetation typically adapted for life in saturated soil conditions (hydrophytic vegetation)

iii. The presence of "normal circumstances"

Explicit in the ACOE definition is the consideration of three environmental parameters: Hydrology, Vegetation, and Soils. Positive wetland indicators of all three parameters are normally present in wetlands. The ACOE methodology requires one positive indicator from each parameter in order to make a positive wetland determination.

Plots were chosen using intuitive measures based on identification of obvious wetland features (i.e. vegetation, hydrology). A total of 2 representative sample plots were established within the subject property (Wetland Plot Map, Appendix A). ACOE Routine Wetland Determination Data Forms were used in the field to record site-specific soil, vegetation, and hydrologic information. A data form was completed for each sample observation point. Copies of these data forms are included as Appendix B.

2.3 VEGETATION

The entire parcel was assessed first to determine the location of distinct plant community types.

Dominant plant species were recorded on ACOE data forms at each plot surveyed during this investigation. Where the plant community consisted of herbaceous species, a $1m^2$ plot was used. Where there was woody overstory or woody shrub species a 10 meter diameter circular plot was used (in addition to the 1square meter herbaceous plot).

Dominant species were determined by estimating those having the greatest percentage of cover using the "50/20" rule. The "50/20" rule entails that for each sample point and associated plant community, dominant species are the most abundant species, when ranked in descending order of abundance and cumulatively totaled, that immediately exceed 50% of the total dominance measure for the stratum, plus any additional species comprising 20% or more of the total dominance measure for each stratum. Absolute cover contribution was estimated for each sample plot, due to layering of species and strata percent cover values may exceed 100%. The ACOE Manual (1987) directs that presence of a single individual of hydrophytic species does not mean that hydrophytic vegetation is present. However, hydrophytic vegetation is considered to be present if 50% of the dominant species have indicator status of OBL, FACW or FAC.

The 2008 *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* includes the addition of a prevalence index for determination if hydrophytic vegetation is present. 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). It is a more comprehensive analysis of the hydrophytic status of the community than one based on just a few dominant species. It is particularly useful (1) in communities with only one or two dominants, (2) in highly

diverse communities where many species may be present at roughly equal coverage, and (3) when strata differ greatly in total plant cover (e.g., total herb cover is 80 percent but sapling/shrub cover is only 10 percent). The prevalence index is used in this supplement to determine whether hydrophytic vegetation is present on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.

The following procedure is used to calculate a plot-based prevalence index. The method was described by Wentworth et al. (1988) and modified by Wakeley and Lichvar (1997). It uses the same field data (i.e., percent cover estimates for each plant species) that were used to select dominant species by the 50/20 rule, with the added constraint that at least 80 percent of the total vegetation cover on the plot must be of species that have been correctly identified and have an assigned indicator status (including UPL). For any species that occurs in more than one stratum, cover estimates are summed across strata. Steps for determining the prevalence index are as follows:

1. Identify and estimate the absolute percent cover of each species in each stratum of the community. Sum the cover estimates for any species that is present in more than one stratum.
2. Organize all species (across all strata) into groups according to their wetland indicator status (i.e., OBL, FACW, FAC, FACU, or UPL) and sum their cover values within groups. Do not include species that were not identified.
3. Calculate the prevalence index using the following formula:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

where:

PI = Prevalence index
A_{OBL} = Summed percent cover values of obligate (OBL) plant species;
A_{FACW} = Summed percent cover values of facultative wetland (FACW) plant species;
A_{FAC} = Summed percent cover values of facultative (FAC) plant species;
A_{FACU} = Summed percent cover values of facultative upland (FACU) plant species;
A_{UPL} = Summed percent cover values of upland (UPL) plant species.

Indicator status for each species was obtained from the WESTERN MOUNTAINS, VALLEYS, AND COAST 2016 Regional Wetland Plant List developed with the ACOE.

2.4 SOILS

The USDA web soil survey was queried for soil survey data for the project area. A soil map and short report were downloaded and are included in Attachment B. The majority of the project area falls into a soil map unit labeled as: Rockyglen – Tannin complex and Pasturerock – Coyoterock – Maneze complex. Additionally, the publication "*Soils of*

Western Humboldt County, California" (McLaughlin 1965) was also queried for the subject parcel and shows the area to be composed of Yorkville, Tyson, Melbourne, and Josephine soil types.

A total of 1 soil pit was dug during this examination. Pits were dug to a depth of at least 14 inches. Soil profiles were examined and profile descriptions were recorded on ACOE data sheets for soil characteristics throughout the soil profile (Appendix B). The Munsell color chart (Macbeth, 2000) was used to determine soil color, value, and chroma. Soil profile textures were determined using a standard soil texture by feel technique and ribbon test. All soil profiles were examined for secondary hydrology indicators including oxidized root channels and redoxomorphic concentrations.

2.5 HYDROLOGY

Each observation point was examined for indicators of wetland hydrology, and observations were recorded on ACOE data forms (Appendix B).

Indicators of wetland hydrology include drainage patterns, drift lines, sediment deposits, watermarks, and visual observations of saturated soils and/or inundation. Visual observations of soil saturation were made in each pit to determine the level at which water (if any) stands in each pit after several minutes had elapsed. Drainage patterns were determined by observing any signs of surface flow into or through the subject parcel. Aerial imagery was used courtesy of Google Earth, 2018 (photo is dated May 2016).

3.0 RESULTS

3.1 VEGETATION

Vegetation within the subject parcel is varied and somewhat disturbed. Vegetation communities were examined using the Manual of California Vegetation (Saywer 2009) and generally fall into three types including:

***Quercus kelloggii* (California black oak forest) Woodland Alliance**
***Quercus garryana* (Oregon white oak woodland) Woodland Alliance**
***Pseudotsuga menzeisii* (Douglas' fir Forest) Forest Alliance**

A mix of native and non-native grasses and forbs can be found in more open areas especially on the western boundary of the subject parcel. These habitats fall into the Holland Type category of **Valley and Foothill Grasslands** (Holland 1995), species found in the grassland are highly varied and a mix of both native and non-native grasses and forbs. The landscape is generally dry with potential wetland vegetation fairly well restricted to riparian areas around perennial creeks, however, two locations outside of creeks were found to contain hydric vegetation.

At the first sampled location (Plot 1 on attached forms and noted on wetland and waters map) a small seasonal watercourse which has been lightly disturbed by past land

management activities now shows signs of developing wetland character. The site lies in a low sided swale and likely receives water input from an access road above as well as direct inputs from seasonal rain events. The swale was graded in the past in order to create a small retention pond (less than 10 foot diameter and 2-3 feet deep, dry now) and now the site has only a tenuous connection to the higher order watercourse below. The sampled area was a low spot with dense hydric vegetation with a patch of cracked soil below that is un-vegetated but has remnant algal crust just above the small retention pit. It is evident that water moves through the site often enough to affect the vegetation. While the vegetation did meet the standards for hydric, wetland vegetation the soils did not show sufficient development of hydric character to designate this area as a wetland. The site has been classified as a seasonal watercourse and is included on attached maps.

A second small site (Plot 2) was located at the end of an access road between two perennial creeks. During a previous land management activity the road was pulled back from the creeks and a compact, bermed depression (approx. 15' diameter circular area, 176 ft^2/ .004 acres) was left at the end of the road. This site has obvious hydric vegetation.

3.2 SOILS

Results of samples taken from the test pits were recorded on the data sheets attached to the end of this report. Soils from sample pits were generally loam or clay loam.

Soils pits were dug to at least 14 inches at plot 1 (compact clay and rocks at Plot 1 prevented deeper excavation) and only 6 inches in plot 2 (soils showed obvious hydric indicators). Soils in all plots were examined and tested for texture and color to determine if wetland indicators exist. Plot 1 showed some evidence of anaerobic conditions (uncommon, small redox features) but did not meet the criteria for hydric soils. Soils at Plot 2 showed more than 2% prominent redox concentrations within a depleted soil matrix in the upper 5 inches of the soil profile, an indicator of hydric soil conditions.

3.3 HYDROLOGY

The delineations were performed in September 2018, in a year with average rainfall. Any primary indicators or secondary indicators that were present at any of the test pits or on the surface of any part of the subject area were recorded on the delineation forms. Field observations of hydrology include surface water, saturated soils, or shallow water table at the time of the samples. Plot 1 showed signs of channelized as well as overland flow along with primary and secondary indicators of wetland hydrology including a suitable topographic position, cracked surface soils, and remnant algal crust. Plot 2 contained positive indicators of wetland hydrology including suitable topographic position, water lines, water stained vegetation and a sparsely vegetation bottom. Neither plot held surface water or a shallow water tale at the time of sampling.

4.0 CONCLUSIONS

Positive wetland indicators of all three parameters are normally present in jurisdictional wetlands. The ACOE methodology requires one positive indicator from each parameter (vegetation, soils, and hydrology).

The subject parcel contains one small wetland feature, located at Plot 2, which should be addressed in any planned development. This feature may be described as a .004 acre Seasonal Palustrine Emergent Wetland. This feature is seasonal and dependent on rainfall to provide inputs in the winter and spring. The site likely dries up late in the season after the cessation of seasonal inputs. In addition to the small wetland sampled here the property contains (as described above and included on attached maps) a perennial spring and associated watercourse, as well as several perennial and seasonal watercourses.

5.0 TERMS AND CONDITIONS

This report and accompanying maps and data should be transmitted to the reviewing agents for review and included in any application for permits necessary for completion of any proposed development projects on the subject property.

Significance of wetlands and the necessity for mitigation during development is, however, decided by regional agents of the appropriate federal, state, and local agencies if and when the site is reviewed for permitting purposes.

This report is based on conditions observed and recorded in May and June 2018. This report has not been reviewed nor has concurrence with the conclusion been obtained. Verification by agencies may be necessary in the future. Land use practices and regulations can change thereby affecting current conditions and delineation results described herein.

This report was prepared for exclusive use; consultants are not liable for any actions arising out of the reliance of any third party on the information contained in this report.

Please call with any questions or comments.

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6.0 REFERENCES

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Appendix A

USFWS Wetland Location Map
USDA Soils Map
Wetland and Watercourse Location Map
Humboldt County Parcel Map

Goodrich 2018

Humboldt County Planning and Building Department

0 350 700 1,400 Feet

0 0.05 0.1 0.2 Miles

RF= 1:9,028 1 in = 752 ft

N W E S

Highways and Roads

- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads
- Private or Unclassified
- Major River or Stream

Blue Line Streams

- Perennial 1-3
- Perennial >4
- Intermittent
- Subsurface
- City Boundary
- Counties
- Parcels
- Parcels (no APN labels)

Printed: September 19, 2018 Web AppBuilder 2.0 for ArcGIS

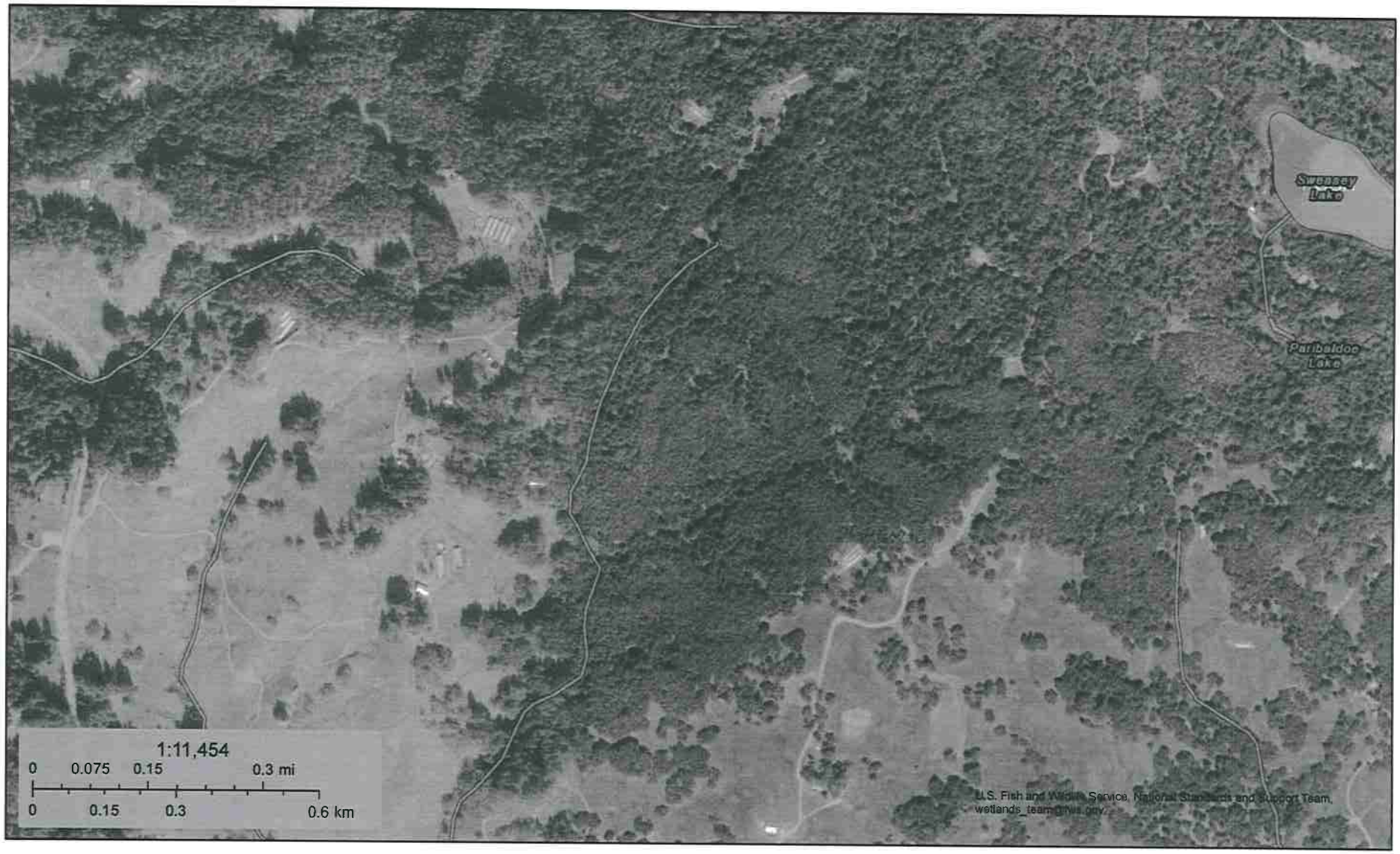
Map Disclaimer:
While every effort has been made to assure the accuracy of this information, it should be understood that it does not have the force & effect of law, rule, or regulation. Should any difference or error occur, the law will take precedence.

Source: NRCS, Humboldt County GIS, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, FRAP, FEMA, USGS

U.S. Fish and Wildlife Service

National Wetlands Inventory

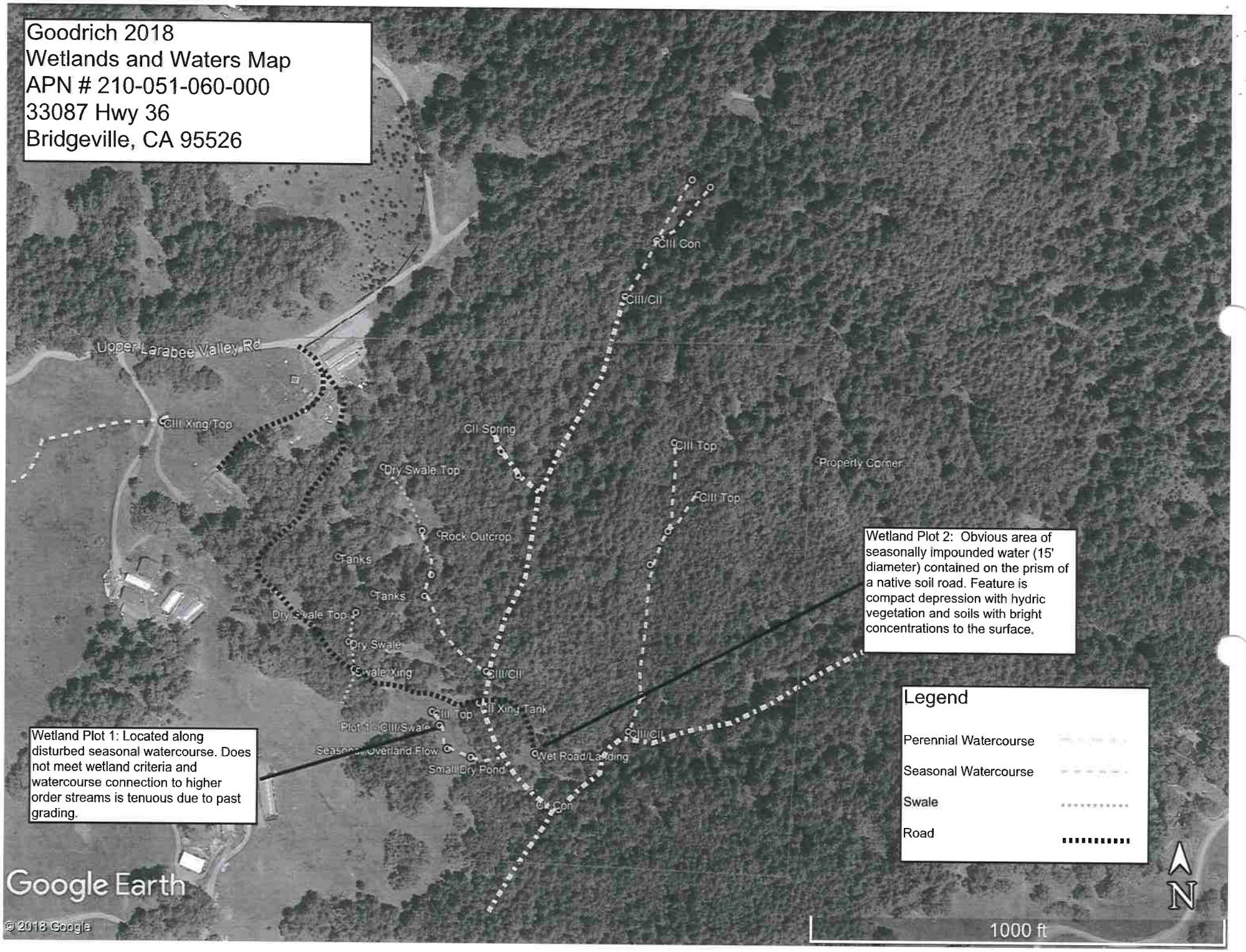
Goodrich 2018



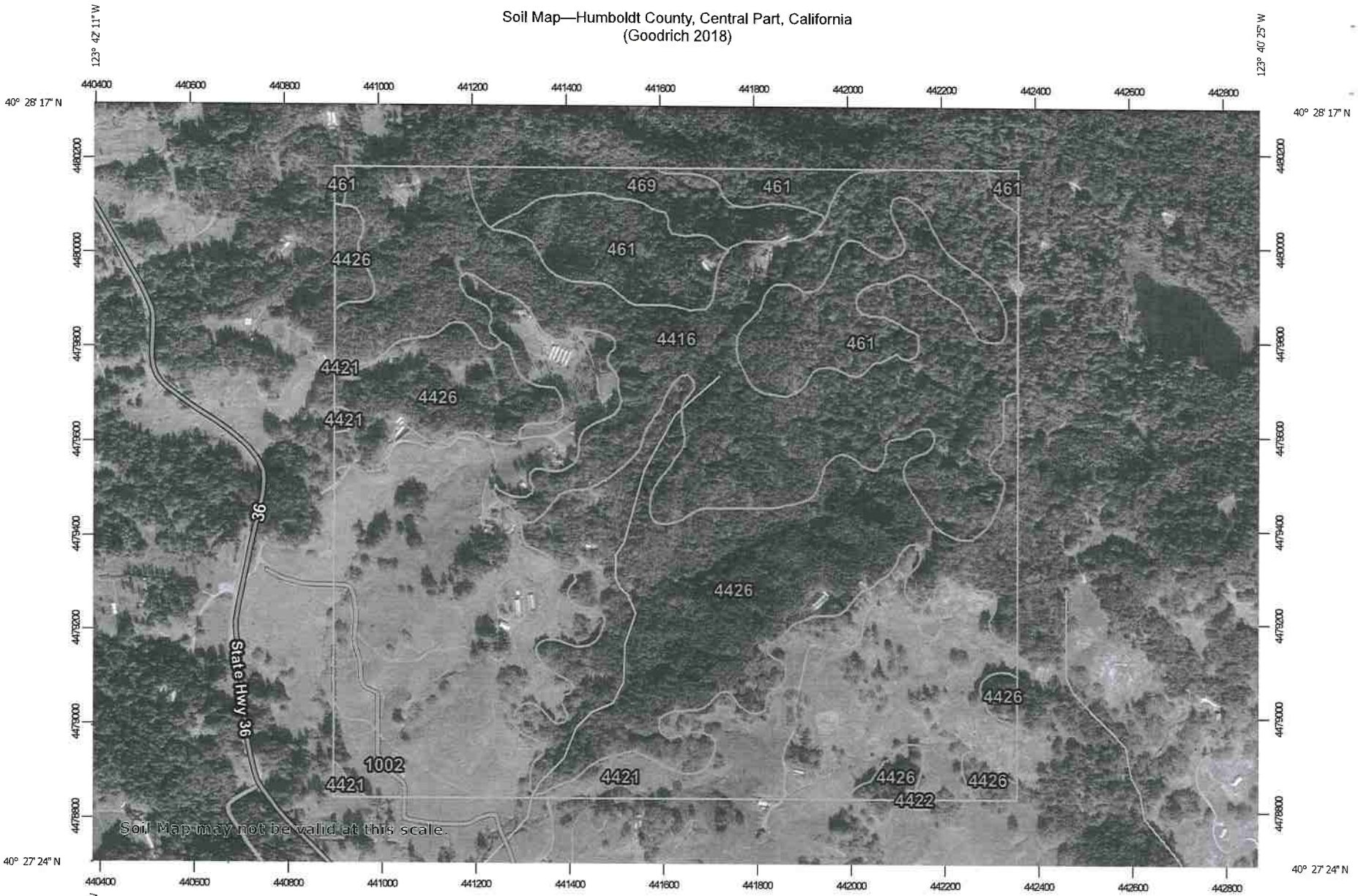
September 19, 2018

Wetlands

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


Goodrich 2018
Wetlands and Waters Map
APN # 210-051-060-000
33087 Hwy 36
Bridgeville, CA 95526
CIII Con
CIII/CII
Upper Larabee Valley Rd
CIII Xing/Top
CII Spring
CIII Top
Property Corner
Dry Swale Top
CIII Top
Rock Outcrop
Tanks
Tanks
Dry Swale Top
Dry Swale
Swale Xing
CIII/CII
CIII Top
CII Xing Tank
Plot 1 - CIII/Swale
CIII/CII
Seasonal Overland Flow
Small Dry Pond
Wet Road/Landing
CI Con
Wetland Plot 2: Obvious area of seasonally impounded water (15' diameter) contained on the prism of a native soil road. Feature is compact depression with hydric vegetation and soils with bright concentrations to the surface.
Wetland Plot 1: Located along disturbed seasonal watercourse. Does not meet wetland criteria and watercourse connection to higher order streams is tenuous due to past grading.
Legend
Perennial Watercourse
Seasonal Watercourse
Swale
Road
N
1000 ft
Google Earth
© 2018 Google

Soil Map—Humboldt County, Central Part, California
(Goodrich 2018)



Map Scale: 1:11,400 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 3, Sep 11, 2017

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

Date(s) aerial images were photographed: Aug 10, 2014—Mar 13, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
461	Tannin-Burgsblock-Rockyglen complex, 30 to 50 percent slopes	49.6	10.2%
469	Tannin-Burgsblock-Rockyglen complex, 50 to 75 percent slopes	15.6	3.2%
1002	Frostvalley-Mulecreek complex, 2 to 9 percent slopes	6.5	1.3%
4416	Rockyglen-Tannin complex, 9 to 30 percent slopes	130.9	27.0%
4421	Highyork-Elkcamp-Airstrip complex, 15 to 30 percent slopes	152.7	31.5%
4422	Highyork-Elkcamp-Airstrip complex, 30 to 50 percent slopes	0.0	0.0%
4426	Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes, dry	129.2	26.7%
Totals for Area of Interest		**484.4**	**100.0%**

Appendix B

Wetland Data Sheets

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

Project/Site: APN 210-051-060-000 City/County: Bridgeville, Humboldt Sampling Date: 9/1/18
Applicant/Owner: Goodrich State: CA Sampling Point: 1
Investigator(s): James Regan Section, Township, Range:
Landform (hillslope, terrace, etc.): midslope Local relief (concave, convex, none): Concave Slope (%): <10%
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, 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 X No	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes X No	

Remarks: Disturbed (in past) seasonal watercourse, sampled due to presence of potential wetland vegetation and water impoundment. Classified as seasonal watercourse.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10md)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10md)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Juncus effusus	30	Y	FACW
2. Carex tumulicola	10		
3. Carex gynodyma	5		
4. Carex hartfordii	3		
5. Hypericum perforatum	1		
6. Mentha pulegium	5		
7. Prunella vulgaris	5		
8. Anthoxanthum odoratum	10		
9. Holcus lanatus	10		
10. Juncus patens	30	Y	FACW
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: 10md)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 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.

Hydrophytic Vegetation Present? Yes X No

Remarks: Vegetation type restricted to swale/disturbed channel, surrounding area dominated by more upland grasslands.

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10yr 3/2	99	7.5 yr 5/8	1	C	M	clay loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Compact

Depth (inches): 12"

Hydric Soil Present? Yes ___ No ☒

Remarks:

bright concentrations found in clay dense clay inclusions / relic from grading activity?)

Does not meet indicator for reduced conditions

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ___ No ☒ Depth (inches): ___

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

Wetland Hydrology Present? Yes ☒ No ___

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

Remarks:

Algal mat + surface soil cracks located below plot on unvegetated surface, likely compacted, graded in past – grading alters impediment and has broken connection (partially) to perennial stream below.

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

Project/Site: APN 210-051-060-000 City/County: Bridgeville / Humboldt Sampling Date: 9/1/18

Applicant/Owner: Goodrich State: CA Sampling Point: 2

Investigator(s): James Regan Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace / road prism Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A 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 ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☒	No ☐	
Wetland Hydrology Present?	Yes ☒	No ☐	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Juncus effusus	50	Y	FACW
2. Juncus bolanderi	20	Y	OBL
3. Mentha pulegium	10		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

No Trees Rated in plot area or on road prism – Douglas fir forest surrounds site

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	<98	7.5YR 5/8	>2	C	M	clay loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes [X] No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No [X] Depth (inches): ___

Water Table Present? Yes ___ No [X] Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No [X] Depth (inches): ___

Wetland Hydrology Present? Yes [X] No ___

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

Remarks:

Seasonally Ponded