Wetland and Watercourse Delineation Report
For
APN# 211-283-007
McCann, Humboldt Co., CA.

Prepared by:

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Botanist/Wetland Delineator
June 30 2019

For:

MAD RIVER PROPERTIES, INC.
MCKINLEYVILLE, CA.

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1.0 INTRODUCTION AND PURPOSE

On 1 and 20 June 2019 Mr. James Regan (botanist/ wetland delineator) conducted site review for potential wet areas and watercourses within an approximate 18 acre portion of the subject parcel (APN 211-283-007) located the community of McCann, CA. (see Humboldt County Parcel Map in Appendix A).

The study area consists of an open pasture located on a riverine terrace on the east bank of the Eel River upstream of the confluence with the South Fork Eel River. Upland areas north of the pasture consist of a mixed coniferous forest dominated by redwood and Douglas' fir. Several black oaks (*Quercus kelloggii*) are found on the boundary between the upland coniferous forest and the open pasture. A row of planted Pine trees including Monterrey (*Pinus radiata*) and Bishop pine (*Pinus muricata*) as well as several Douglas' fir (*Pseudotsuga menzeisii*) have been installed as a wind break between the pasture and the gravel bar on the Eel River. A similar installation exists along the parcel boundary on the southeast end of the pasture. Several maples (*Acer macrophyllum*) and cottonwood (*Populus trichocarpa*) trees as well as at least one *Robinia* tree exist within the planted windbreaks and on the edges of the pasture along a small perennial watercourse on the north end of the study area. Several apple trees (*Malus pumila*) can be found scattered on the parcel.

An approximate 5.2 acre area within the pasture has been fenced and excluded from grazing, the remainder of the pasture is grazed by cows and horses. Vegetation in the un-grazed area is generally tall and dominated by common rangeland grasses. Vegetation in the grazed portion is low and clumpy and composed of a mix of range grasses and low herbaceous vegetation.

Large clumps of Himalayan blackberry (*Rubus armeniacus*) can be found scattered throughout the pasture and existing as dense hedges, some have been mown down.

Several native soil ranch roads/Jeep trails cross the pasture (shown on attached plot map). A powerline corridor crosses the study area as well.

A small perennial watercourse exists within the study area, the upslope extent was not surveyed. Several small seasonal watercourses enter the study area from upslope and are intercepted by a man-made ditch that directs the seasonal flows to the perennial watercourse and on to the Eel River, the upslope extent of these waters was not surveyed. These seasonal watercourses likely ran through the pasture in the past. Aerial photography appears to show the construction of the ditch along with several logging skid trails between 2009 and 2010. This likely coincided with a timber harvest entry. Since that time seasonal flows have been excluded from the pasture area.

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' Myers Flat quadrangle map, Humboldt County Web GIS, and United States Fish and Wildlife Service (USFWS) National Wetland Inventory. The subject parcel is approximately 160-200 feet above mean sea level. The Eel River, a large fish bearing stream is located directly adjacent to the subject parcel to the southwest USFWS wetland maps show a large area of riverine wetland on the gravel bars associated with the Eel River and several palustrine emergent wetlands located downstream of the subject parcel (too far to be shown on USFWS Map). Neither the USFWS wetland map nor the Humboldt County resource map show any previously identified wetlands within the selected study area.

In addition, historic aerial photos were reviewed for indicators of wetlands or watercourses on the subject parcels. With the exception of the apparent timber harvest and construction of the skid roads and ditches the parcel appears to have been in a similar state for at least the past 20 years.

Current USGS topo maps do not show any creeks or wetlands on the subject parcel, however, evidence of current watercourse channels was noted on the subject parcels during the time of this investigation and are included on the attached plot map.

Seasonal and perennial 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.

2.2 GENERAL INFORMATION

Plots for the wetland delineation were surveyed on 1 and 20 June 2019 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). Plots were placed in the areas most likely to contain wetland features and processes. A total of 8 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

Current USDA soils maps were obtained from the USDA Web Soil Survey and are included in Attachment A. The majority of the project area falls into a soil map unit labeled as: Shively Flat and Parkland-Garberville Complex. Soil unit descriptions for these two soils as well as Sproulish-Canoecreek-Redwohly, the dominant soil occurring in the uplands above the study area, are included in the attached soil report.

A total of 8 soil pits were dug during this examination. Pits were dug to a depth of at least 18 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, 2019 (photo is dated 21 April 2019).

3.0 RESULTS

3.1 VEGETATION

Vegetation within the study area is composed of a mix of native and non-native grasses and herbaceous forbs as well as large patches of Himalayan blackberry. Plot locations were chosen to represent both vegetation patterns as well as topographic variation.

Plots 1, 2, 3, and 6 are located in the lowest portion of the pasture and all four were found to contain vegetation that was indicative of wetland settings. This area was a concave terrace dominated by several buttercup species (*Ranunculus*) with a strong component of the obligate plant *Mentha pulegium* (pennyroyal), and barley (*Hordeum marianum*). Plots 5 and 8 also had vegetation mixes that met the dominance indicator but at Plot 8 that mix failed the prevalence test indicating a mix of wetland and upland species and a tenuous indication of long term wetland setting. Plots 4 and 7 had vegetation communities that did not meet the standard for hydric vegetation and are located outside of the mapped wetland boundary. Plots 1, 2, 3, and 6 had the strongest indicators of wetland vegetation and were located in the lowest, most compact areas along the Jeep trail, powerline corridor, and cow paths leading down to the river bar.

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 with plots closer to the Eel River with a high sand content.

Soils pits were dug to at least 18 inches. Soils in all plots were examined and tested for texture and color to determine if wetland indicators exist.

Plots 1, 2, 3, and 4 met the criteria for hydric soils by the F3 indicator for a Depleted Matrix while plot 6 met the criteria by the S5 indicator for Sandy Redox. Plots 1, 2, 3, and 6 fall within the wetland area delineated in this report, Plot 4 does not. Plots 7 and 8 both showed some indication that anaerobic processes do occur; they do not apparently endure long enough to meet hydric soil indicator thresholds.

3.3 HYDROLOGY

The delineations were performed in June 2019, in a year with slightly above 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. All plots except Plot 8 contained positive indicators of wetland hydrology in the form of oxidized root pores along living roots. These features were present in the first 4 to 6 inches of the soil profile. All of these plots are located in areas with compact surfaces due to vehicle or foot traffic and likely past mowing and land-clearing activities. This appears to be an indication that rainwater both falls directly on the site as well as migrates from upslope areas. A large portion of the surface flow from upland areas (especially in seasonal channels) is likely caught in the ditch and transported around the site. No standing surface water, shallow water table, or saturated soil conditions were observed within the study area during either site visit but

topography and secondary indicators of wetland hydrology indicate that lower portions of the pasture may hold water for a significant portion of the year.

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). Plots were placed in the areas most likely to be considered wetlands.

The subject parcel contains areas that meet criteria for all three parameters for a jurisdictional wetland.

An approximate 1.70 Palustrine Emergent Wetland is located within the study area. The location of this feature is included on the Wetland Plot Map in Appendix A. Plots 1, 2, 3 and 6 showed positive primary indicators for jurisdictional wetlands in all three categories and serve to represent the wetland area delineated herein. The remainder of the study area, represented by Plots 5, 7, and 8 does contain some positive indicators of a wetland setting but does not meet the standard for a jurisdictional wetland.

It is possible that the study area did have a stronger wetland setting in the past and that the connections to historic inputs have been broken or altered enough during adjacent land use including timber harvest, mowing, grading, and land clearing activities on the subject parcel that the wetland setting is no longer present in some areas.

5.0 TERMS AND CONDITIONS

This report is based on conditions observed and recorded in June 2019. 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 and accompanying maps and data should be transmitted to the appropriate 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 decided by regional agents of the appropriate federal, state, and local agencies if and when the site is reviewed for permitting purposes.

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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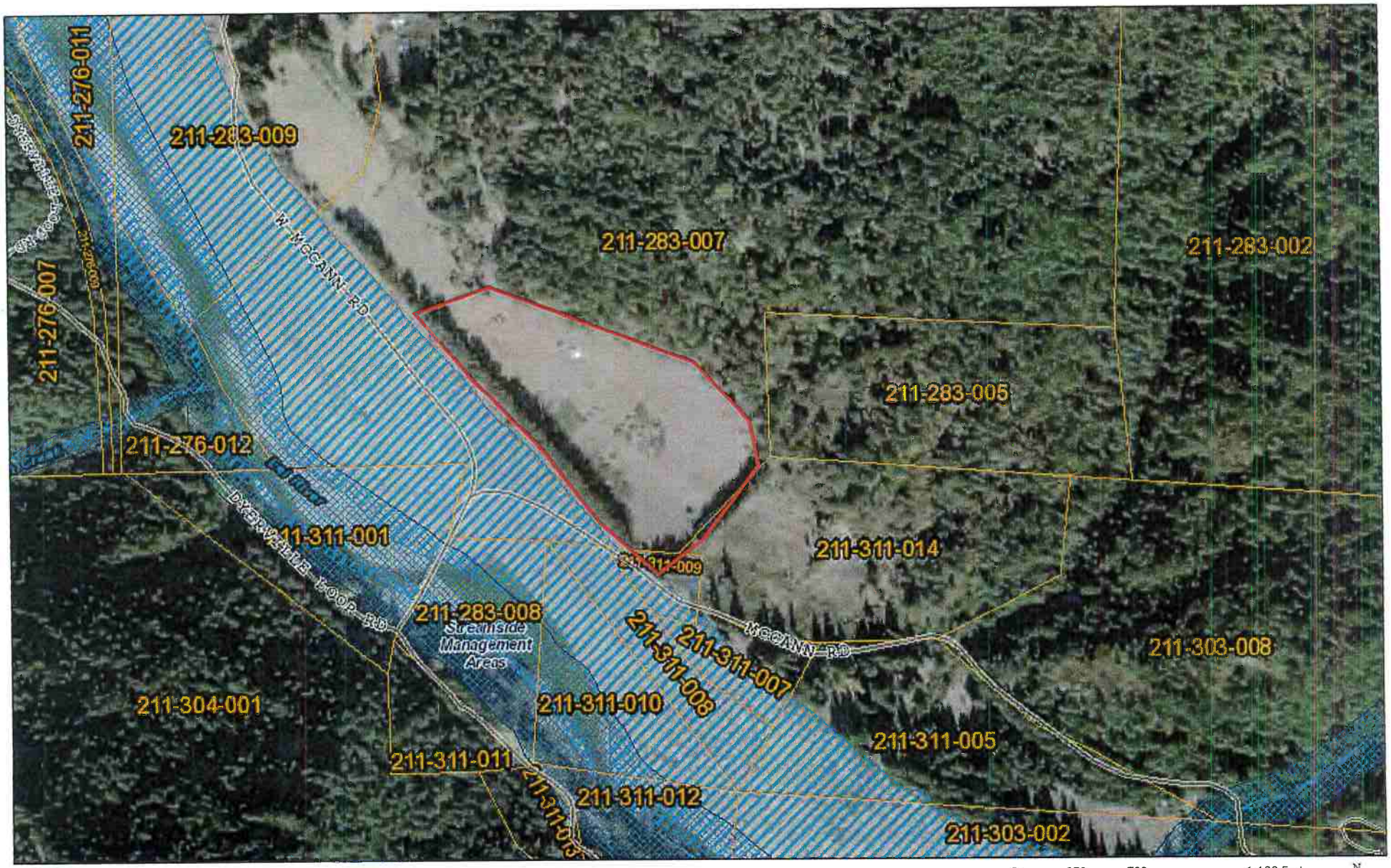
Appendix A

Humboldt County Parcel Map
USFWS Wetland Location Map
USDA Soils Report
Wetland Delineation Plot Map



McCann_HumCoMap

Humboldt County Planning and Building Department

Printed: June 30, 2019 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.

Highways and Roads

- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads
- Private or Unclassified
- Major River or Stream
- Parcels
- Streamside Management Areas
- Study Area

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

Sources: NRCS
Humboldt County GIS
Esri, HERE, Garmin, (c) 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

U.S. Fish and Wildlife Service

National Wetlands Inventory

McCann_USFWSwetlandsMap

June 30, 2019

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.

Wetlands

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

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

Soil Map—Humboldt County, South Part, California
(McCann 2019)

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
- Study Area

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, South Part, California
Survey Area Data: Version 7, Sep 13, 2018

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

Date(s) aerial images were photographed: Dec 31, 2009—Nov 6, 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
100	Water and Fluvents, 0 to 2 percent slopes	86.3	22.9%
143	Shivelyflat, 0 to 2 percent slopes	38.9	10.3%
151	Parkland-Garberville complex, 2 to 9 percent slopes	29.6	7.8%
179	Eelriver and Cottoneva soils, 0 to 2 percent slopes	16.1	4.3%
513	Redwoodhouse-Yagercreek-Mailridge complex, 30 to 50 percent slopes	13.9	3.7%
514	Redwoodhouse-Yagercreek-Mailridge complex, 50 to 75 percent slopes	21.0	5.6%
571	Sproulish-Canoecreek-Redwohly complex, 30 to 50 percent slopes	129.5	34.4%
572	Canoecreek-Sproulish-Redwohly complex, 50 to 75 percent slopes	41.1	10.9%
573	Sproulish-Canoecreek-Redwohly complex, 15 to 30 percent slopes, warm	0.5	0.1%
Totals for Area of Interest		**376.8**	**100.0%**

Humboldt County, South Part, California

151—Parkland-Garberville complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: v79t
Elevation: 60 to 460 feet
Mean annual precipitation: 49 to 90 inches
Mean annual air temperature: 55 to 59 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Parkland and similar soils: 45 percent
Garberville and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkland

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Ap - 0 to 5 inches: loam
ABt - 5 to 7 inches: loam
Bt1 - 7 to 18 inches: silt loam
Bt2 - 18 to 29 inches: clay loam
Bt3 - 29 to 43 inches: clay loam
Bt4 - 43 to 61 inches: clay loam
Bt5 - 61 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Garberville

Setting

Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Ap - 0 to 12 inches: gravelly loam
A - 12 to 19 inches: gravelly loam
Bt1 - 19 to 28 inches: gravelly clay loam
Bt2 - 28 to 39 inches: gravelly clay loam
Bt3 - 39 to 50 inches: gravelly sandy clay loam
BC - 50 to 59 inches: very gravelly sandy loam
C - 59 to 79 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Conklin

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex

Hydric soil rating: No

Grannycreek

Percent of map unit: 5 percent
Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Hydric soil rating: Yes

Frenchman

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Gschwend

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 7, Sep 13, 2018

Humboldt County, South Part, California

143—Shivelyflat, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: v6gz
Elevation: 50 to 490 feet
Mean annual precipitation: 40 to 70 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Shivelyflat and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shivelyflat

Setting

Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Ap1 - 0 to 8 inches: silt loam
Ap2 - 8 to 17 inches: silt loam
Ap3 - 17 to 31 inches: silt loam
C1 - 31 to 40 inches: silt loam
C2 - 40 to 54 inches: silt loam
C3 - 54 to 73 inches: silt loam
C4 - 73 to 79 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 10 to 20 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 12.4 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Eelriver
Percent of map unit: 5 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Pepperwood
Percent of map unit: 5 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Cottoneva
Percent of map unit: 3 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Weott
Percent of map unit: 2 percent
Landform: Flood-plain steps, backswamps, depressions
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 7, Sep 13, 2018

Humboldt County, South Part, California

571—Sproulish-Canoecreek-Redwohly complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 1v5vx
Elevation: 100 to 3,280 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Sproulish and similar soils: 50 percent
Canoecreek and similar soils: 20 percent
Redwohly and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sproulish

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from mudstone and/or colluvium derived from sandstone and/or residuum weathered from mudstone and/or residuum weathered from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oe - 1 to 2 inches: moderately decomposed plant material
A - 2 to 12 inches: gravelly loam
Bt1 - 12 to 22 inches: loam
Bt2 - 22 to 35 inches: clay loam
Bt3 - 35 to 47 inches: paragravelly silty clay loam
BCt - 47 to 71 inches: very paragravelly clay loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Canoecreek

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, mountaintop
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium and residuum derived from sandstone and mudstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 12 inches: very gravelly loam
Bt1 - 12 to 26 inches: very gravelly loam
Bt2 - 26 to 43 inches: very gravelly loam
Bt3 - 43 to 59 inches: very gravelly loam
BCt - 59 to 79 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Redwohly

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and/or residuum weathered from mudstone

Typical profile

A - 0 to 1 inches: loam
AB - 1 to 4 inches: silt loam
Bt1 - 4 to 16 inches: silt loam
Bt2 - 16 to 28 inches: paragravelly silt loam
BC - 28 to 37 inches: extremely paragravelly loam
C - 37 to 63 inches: paragravel

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 20 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Redwoodhouse

Percent of map unit: 8 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Briceland

Percent of map unit: 5 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Center third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 7, Sep 13, 2018


Wetland Delineation Plot Map
APN # 211-283-007
McCann , Humboldt County, CA.
Legend
Plot Locations
Perennial Watercourse
Seasonal Watercourse
Ditch
Jeep Trail/Ranch Road
Wetland Boundary
Powerline Corridor
CII
CII Xing
CII ditch
CII outlet
CII
CII
CII Culvert
Inside Ditch
SP 4
SP 8
Willow Rd
SP 7
SP 1
CIII Culvert
Google Earth
©2018 Google
900 ft
N

Appendix B

Wetland Data Sheets

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

Project/Site: McCann APN# 211-283-007 City/County: Humboldt Co. Sampling Date: 6/1/19

Applicant/Owner: State: CA. Sampling Point: SP 1

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat & Pearsland - Garberville 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 X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - seasonal creeks ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Ranunculus cal/muricatus/repens	30?	Y	FAC/FACW
2. Mentha pulegium	30%	Y	OBL
3. Hordeum marinum	30%	Y	FAC
4. Trifolium repens	10%		
5. Juncus bufonius	<3%		
6.			
7.			
8.			
9.			
10.			
11.			
	103 = Total Cover		
Woody Vine Stratum (Plot size: 10m)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (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:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Powerline corridor + jeep/ranch roads cross field. low, grazed vegetation

SOIL

Sampling Point: SP1

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
0-6	10yr 4/2	92	10yr 4/6	8%	C	PL	Clay-loam	
7-20+	10yr 4/1	68%	10yr 4/6	28	C	M	Clay-loam-silt	
	10yr 5/3	30%						

[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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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)
- ___ 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)
- X 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 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:

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

Project/Site: McCann APN# 211-283-007 City/County: Humboldt Co. Sampling Date: 6/1/19

Applicant/Owner: State: CA. Sampling Point: SP 2

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat & Pharkland - Garberville 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 X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - seasonal creeks ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Ranunculus cal/muric./rep.	30	Y	FAC/FACW
2. Hordeum marinum	30	Y	FAC
3. Mentha pulegium	30	Y	OBL
4. Rumex conglomeratus	<5		
5. Trifolium subterraneum	<5		
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 10m)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (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:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP2

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
0-8	10yr 4/2	93%	10yr 5/6	7%	C	PL/M	silty clay loam	
8-20+	10yr 4/2	60%	10yr 5/6	2%	C	M	clay loam	
	2.5yr 5/2	38%						

[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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Plot is in powerline corridor/jeep trail. Compact surface.

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)
- X 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 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:

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

Project/Site: McCann APN# 211-253-007 City/County: Humboldt Co. Sampling Date: 6/1/19

Applicant/Owner: State: CA. Sampling Point: SP 3

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat & Pearsland - Garberville 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 X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - seasonal creeks ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Hordeum marinum	30	Y	FAC
2. Bromus hordeaceus	30	Y	FACU
3. Festuca myuros	8		NI
4. Mentha pulegium	10		OBL
5. Plantago lanceolata	5		FACU
6. Convolvulus arvensis	<2		NI
7. Festuca perennis	5		FAC
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 10m)			
1. Rubus armeniacus	20%	Y	FAC
2.			
	20% = Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ~~50%~~ 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	35	x 4 =	140
UPL species	10	x 5 =	50
Column Totals:	110 (A)		365 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Passes dominance test but fails prevalence test - marginally hydric

SOIL

Sampling Point: SP 3

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
0-4	10yr 4/2	95	10yr 5/6	5	C	PL	silty loam	
5-20+	10yr 4/1 + 4/2	100					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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Compact surface from cattle graze

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)
- X 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 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:

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

Project/Site: McCann APN# 211-283-007 City/County: Humboldt Co. Sampling Date: 6/1/19

Applicant/Owner: State: CA. Sampling Point: SP4

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat & Pherkland - Garberville 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 ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - seasonal creeks ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. ~~Pinus radiata~~			
2. fir			
3. Pinus radiata	50%	Y	NI
4.			
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		

Herb Stratum (Plot size: 1m²)			
1. Ranunculus parviflorus		Y	FACU
2. Bellis perennis		Y	NI
3. Poa annua		Y	FAC
4. Rumex conglomeratus		Y	FACW
5. Plantago lanceolata		Y	FACU
6. Festuca arundinacea		Y	NI
7. Mentha pulegium		Y	OBL
8. Cardus pycnocephalus	<3	Y	NI
9.			
10.			
11.			
	40 = Total Cover		

Woody Vine Stratum (Plot size: 10m)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (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:

- ___ 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.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Sparse vegetation on ranch road below fenced area. Compact. Planted Pines.

SOIL

Sampling Point: SP4

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
0-4	10yr 4/2	95	10yr 5/6	5	C	PL	Sandy loam	Jeep trail
5-20+	10yr 4/1+4/2	100						

[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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Carport Jeep Trail

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)
- X 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 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:

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

Project/Site: McCann APN# 211-283-007 City/County: Humboldt Co. Sampling Date: 6/20/19

Applicant/Owner: State: CA Sampling Point: SP 5

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat & Pearland - Gasquet complex 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: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - Seagrave Creek ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Mentha pulegium	75	Y	OBL
2. Bellis perennis	5		
3. Cardus pycnocephalus	5		
4. Bromus hordeaceus	5		
5. Convolvulus arvensis	5		
6. Plantago lanceolata	10		
7. Festuca (Lolium) perenne	5		
8. Festuca myuros	<3		
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: 10m)			
1. Rubus armeniacus	75	Y	FAC
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:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP 5

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
0-6"	10yr 3/2	95	10 yr 5/6	5	C	PL	Silty loam	
6"-7"								
7"-18"	10yr 3/2	98	10 yr 3/4	2				

[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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 ___ No X

Remarks:

Does not meet criteria for F3, F6

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)
- X 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 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:

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

Project/Site: McCann APN# 211-253-007 City/County: Humboldt Co. Sampling Date: 6/20/19

Applicant/Owner: State: CA. Sampling Point: SP 6

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat & Pearland - Garberville 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 X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - Jeagan Creeks ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Cynosurus echinatus	8		NI
2. Cardus pycnocephalus	5		NI
3. Raphanus sativus	<5		NI
4. Hordeum marinum	10	Y	FAC
5. Bellis perennis	<2		NI
6. Festuca (Lolium) perenne	8		FAC
7. Rumex crispus	<3		FAC
8. Trifolium dubium	<2		FACU
9. Bromus hordeaceus	<5		FACU
10. Mentha pulegium	40	Y	OBL
11.			
	88 = Total Cover		
Woody Vine Stratum (Plot size: 10m)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 15 %

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:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: low spot at end of jeep trail

SOIL

Sampling Point: SP 6

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
0-2	10yr 3/2	97	10yr 4/6	3	C	PL	Sandy loam	
3-6	10yr 3/2	98	10yr 4/6	2	C	M	Sand	
7-20	10yr 3/1	100					Sand	

[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)
- X 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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

~~Does not qualify for S5,~~

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)
- X 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 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:

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

Project/Site: McCann APN# 211-283-007 City/County: Humboldt Co. Sampling Date: 6/20/19

Applicant/Owner: State: CA. Sampling Point: SP 7

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat & Pharkland - Garberville 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 ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - seasonal creeks ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Marrubium vulgare	10	Y	OBL
2. Bellis perennis	<3		NI
3. Raphanus sativus	10	Y	NI
4. Cardus pycnocephalus	10	Y	NI
5. Hordeum marinum	8	Y	FAC
6. Bromus hordeaceus	5		FACU
7. Silybum marianum	10	Y	
8. Cynosurus echinatus	8	Y	NI
9. Hypochaeris radicata	5		
10. Plantago lanceolata	5		FACU
11. Taraxacum officinale	<5		
	____ = Total Cover		
Woody Vine Stratum (Plot size: 10m²)			
1. Rubus armeniacus	15	Y	FAC
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42% (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:

- ___ 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.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
+ Rumex acetosella <5%
+ Trifolium subterraneum <2%
Mix of common grazed pasture species.

SOIL

Sampling Point: SP 7

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 3/2	97	10yr 4/6	3	C	PL	loose loam	
6-18	10yr 3/1	85					clay loam	
	10yr 3/1	15					clay inclusions	

[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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 _____ No X

Remarks:

Does not meet criteria for F3 or F6

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)
- X 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 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:

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

Project/Site: McCann APN# 211-283-007 City/County: Humboldt Co. Sampling Date: 6/20/19

Applicant/Owner: State: CA. Sampling Point: SP 8

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

Landform (hillslope, terrace, etc.): toe slope - terrace Local relief (concave, convex, none): flat - concave Slope (%): 0-3

Subregion (LRR): A Lat: 40.3284 Long: -123.8359 Datum:

Soil Map Unit Name: Shively flat + Pheasland - Garberville 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 ____	No X	

Remarks: Site is grazed/mown and has been for at least 20 years, likely longer. Hydrology has been altered +/- since 2009/2010 - seasonal creeks ditched around site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Bromus hordeaceus	40	Y	FACU
2. Festuca (Iolium) perenne	30	Y	FAC
3. Plantago lanceolata	12		FACU
4. Raphanus sativus	8		NI
5. Hordeum marinum	3		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: 10m)			
1. Rubus armeniacus	28	Y	FAC
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum Ø (Not Thatch)

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66? (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	x 1 =	—
FACW species	—	x 2 =	—
FAC species	58 61	x 3 =	183
FACU species	52	x 4 =	208
UPL species	8	x 5 =	40
Column Totals:	121 (A)		431 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Ungrazed portion of field (fenced) – thick grasses Passes dominance fails prevalence - MARGINAL

SOIL

Sampling Point: SP 8

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
0-6	10yr 4/1	99	10yr 4/4	1	C	M	Sandy clay loam	
7-18	10yr 3/2	100						

[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)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 _____ No X

Remarks:

Does not meet S5, F3, or F6 or F7

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 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 _____ No X

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

Remarks: