Appendices

Appendix A

NOP and NOP Comments

Notice of Preparation
Draft EIR

Russ Creek and Centerville Slough Restoration Project

Humboldt County Resource Conservation District

April 27, 2022

Notice of Preparation
Draft Environmental Impact Report
Russ Creek and Centerville Slough Restoration Project

Humboldt County Resource Conservation District, Lead Agency
5630 South Broadway
Eureka, CA 95503

Attention: Jill Demers, Executive Director
(707) 442-6058 x 5

In collaboration with:

USDA – Natural Resources Conservation Service
430 G Street, Room 4164
Davis, CA 95616

Attention: Dean Kwasny, Easement Program Specialist
(530) 792-5648

GHD Inc.
718 Third Street
Eureka, CA 95501

Contact: Jeremy Svehla, Project Manager
T (707) 443-8326 **|** E jeremy.svehla@ghd.com **|** ghd.com

Contents

Appendices

1. Introduction

1.1 CEQA Requirements

This proposed Project is subject to the requirements of the California Environmental Quality Act (CEQA). The CEQA lead agency is the Humboldt County Resource Conservation District (HCRCD), the decision-making body being the HCRCD. The HCRCD is responsible for assuring the completion of the appropriate evaluation and processes required by CEQA. The HCRCD has the sole responsibility to make the appropriate findings and determinations with respect to the CEQA process and disposition of the Project. The purpose of this Notice of Preparation (NOP) is to solicit participation in determining the scope of the Environmental Impact Report (EIR) which would be prepared for the Russ Creek and Centerville Slough Restoration Project (Project) with regard to the Project description described below. The EIR being prepared is intended to satisfy the requirements of CEQA (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Sec 15000-15387).

1.2 General Information

Protect Title: Russ Creek and Centerville Slough Restoration Project

Lead Agency: Humboldt County Resource Conservation District, Lead Agency
5630 South Broadway
Eureka, CA 95503
Attention: Jill Demers, Executive Director

Availability of Project Documents/Files: Project documents/files are available for review at the Humboldt County Resource Conservation District, Lead Agency, located at 5630 South Broadway, Eureka, 95503 California. The NOP is available on the HCRCD's website: http://humboldtrcd.org/

Written Comments: Written comments on the scope of the EIR can be sent to Jill Demers, Executive Director, Humboldt County Resource Conservation District, Lead Agency, located at 5630 South Broadway, Eureka, California 95503. Comments may also be sent via email to jillhcrcd@gmail.com with "Russ Creek and Centerville Slough Restoration Project, Comments on NOP" in the title.

Comment Period: CEQA Guidelines Section 15082 (b) requires a 30-day response period for input about the scope and content of the EIR. The comment period for the NOP begins on April 27, 2022 and ends on May 26, 2022. The post mark deadline for submitting written or emailed comments is May 26, 2022, at 5:00 PM.

Public and Agency Scoping Meeting: A hybrid (in-person and virtual) public scoping meeting to accept comments on the environmental issues germane to the Project will be held on May 20, 2022, from 2:00 to 4:00 PM at the Humboldt County Agriculture Center, 5630 South Broadway, Eureka, 95503 California and via Zoom phone +1(669)900-6833 (Meeting ID: 838 9516 5708; Passcode: 2345) or Zoom weblink: https://us02web.zoom.us/j/83895165708?pwd=T0h3UGdXdFNsanBYdENZaTN1YmtuQT09

1.3 Previous CEQA Analysis and Public Review

A previous project (Eel River Estuary and Centerville Slough Enhancement Project, formerly referred to as the Eel River Estuary Preserve Ecosystem Enhancement Project, SCH#2014122040) was proposed for a similar project area. The EIR was circulated in September 2016. The EIR was then amended and recirculated in December 2016. The recirculated EIR was certified by the CEQA Lead Agency (California Coastal Conservancy) in February 2017. The project was never constructed and has since been redesigned. The redesigned project is described herein this NOP.

2. Project Location and Setting

The Project Area is approximately 1,860-acres and is located approximately four miles west of the City of Ferndale, in Humboldt County, California (Figure 1). The Project Area primarily includes various parcels privately owned by the Russ family and parcels owned by The Wildlands Conservancy (TWC) known as the Eel River Estuary Preserve (EREP). The west side of the Project encompasses the near shore dunes of Centerville Beach and extends to the Pacific Ocean. East of the dunes, the Project supports a system of sloughs and pastures that comprise a portion of the Salt River watershed, itself a tributary to the Eel River estuary. The northern portion of the Project Area borders the Eel River. Much of the southern half of the Project east of the former Centerville Slough was reclaimed and has been converted to pasture for agricultural purposes. Some of this land represents diked former tidelands that are separated from the estuarine wetlands by a series of dikes and the Cutoff Slough tide gates. An upland area occupies the southeastern portion of the Project, where vehicular access is gained from Russ Lane via Centerville Road. Centerville Road is maintained by Humboldt County and is the southern extent of the Project. Few structures occur on site, but there is one residence at the southwestern edge of the Project, two barns within the upland area near Russ Lane (referred to as the Potato Barn and Quonset Hut), a third barn (North Barn) located between Cutoff Slough and the near shore dunes, approximately midway between the north and south property lines and a fourth barn (South Barn) located in the southwest corner of the Project Area. The North and South barns are connected by unimproved roads to the Potato Barn.

EREP includes agricultural (grazing) land, tidal salt marsh, brackish marsh, riparian scrub, sloughs/open water channels, freshwater ponds and ditches, and nearshore dune ridges and swales. The Russ family owns the parcels of land immediately south of the EREP; this area includes grazing land with managed ditches, open water channels and mixed freshwater and brackish marsh and dunes.

The climate is Mediterranean with precipitation most abundant in the winter months, and the average annual rainfall is approximately 48.5 inches. Approximately two thirds of the year, the site is influenced by coastal fog. Prominent water features include Russ Creek, remnant Centerville Slough, Cutoff Slough, and the Western Drainage Ditch (which in turn conveys the flow of Shaw Creek and Creamery Ditch), as well as smaller (seasonal) slough channels and drainage ditches. The northern end of the site borders the mouth of the Eel River.

Humboldt County General Plan land use for the Project Area is Natural Resources (NR/R) and Agriculture Exclusive (AE), which includes prime agricultural lands. Primary uses are limited to the production of food, fiber, plants, timber, timber agriculturally related uses, and agriculture related recreational uses. Very-low intensity residential uses may be allowed if they are incidental to the property and if they support agricultural activities or are necessary for the enhancement and protection of the natural resources of the area. Minimum parcel size is 60 acres, except divisions to 20 acres may be permitted where the parcel is subject to an agricultural preserve contract or agreement, such as the Williamson Act. Zoning for the Project Area is NR/R and AE-60/W,F,R,T, which is consistent with the land use designation. Combining zones include Coastal Wetland Areas (W), Flood Hazard Areas (F), Streams and Riparian Corridors Protection (R), and Transitional Agricultural Lands (T).

A large portion of the Project Area is enrolled in Williamson Act contracts.

The Natural Resources Conservation Service (NRCS) has worked cooperatively with the private landowners to acquire three Agricultural Conservation Easement Program - Wetland Reserve Easements (ACEP-WRE) on EREP totaling 1,077.75 acres of the Project Area, and two on Russ property totaling 162.21 acres of the Project Area, of which one is nearing finalization. These are perpetual conservation easements that seek to protect and restore wetland habitat while allowing limited livestock grazing in suitable habitat types. NRCS will be serving as the federal cooperating agency for this Project.

3. Project Description

3.1 Project Goals and Objectives

The goal of the Project is to improve geomorphic and ecosystem function that will enhance habitats for native fisheries and aquatic species, support water bird and wildlife species, and increase agricultural land viability and resiliency to changing geomorphological and climatic conditions. The Project would enhance existing tidal wetlands and restore marginal diked pasture land to a mosaic of natural habitats, including estuarine and tidal slough channels, freshwater streams, and agricultural pastures, all within the context of promoting the resilience of the Project Area and viability of adjacent agricultural lands outside of the Project Area.

Specific objectives of the Project include:

- Restore natural functions and processes of tidal cycles, riverine inundation and sedimentation, tidal channel connectivity, and wetlands maintenance by removing or modifying existing infrastructure and reestablishing historic tidal channels
- Increase resiliency of existing agricultural lands to sea level rise by reconfiguring dikes and enhancing dune function that promotes natural dune formation processes that reduce over wash during extreme high tides and storm events
- Improve access for agricultural land management, maintenance, outdoor recreation, and nature study compatible with existing land uses and the ACEP-WRE conservation easements
- Enhance native plant communities, and expansion of rare plant habitat, through active and passive habitat development, control and eradication of invasive non-native species, and establishment of native species
- Improve access to restored aquatic habitats for salmonids and other aquatic dependent species by increasing migratory access between estuarine and inland waters and by restoring overwintering and rearing habitat for juvenile salmonids
- Improve drainage efficiency and sediment transport while enhancing tidal processes by reestablishing connectivity of Russ Creek and Shaw Creek to a restored Centerville Slough
- Establish a long-term adaptive management and maintenance program for the Project

3.2 Overall Concept

The Project would restore a landscape of mostly diked pasture land to a mosaic of pasture and natural habitats, including estuarine and tidal slough channels, freshwater streams, freshwater ponds and agricultural pastures. Critical to achieving this is the restoration of tidal flow and an enhancement in tidal flushing to reactivate wetland functions. Reestablishing the connection of Centerville Slough to the Eel

River and removing and reconfiguring dikes would provide full tidal prism into a restore Centerville Slough, restoring historic tidal slough channels that have been filled and degraded due to reclamation efforts, sediment, and significant tectonic activity. Improvements to tidal channels and the tidal prism would restore aquatic organism passage from the Eel River to Centerville Slough, Shaw Creek and Russ Creek, while improving drainage and the transport of sediment. Additionally, adding new tide gates structures to Shaw Creek, Russ Creek, and other strategic locations would increase reliability of the drainage efficiency and reduce saltwater intrusion of surrounding pasture lands. Realignment and restoration of Centerville Slough, Russ Creek and Shaw Creek are expected to support overwintering juvenile salmonids, water bird habitat and drainage from the landscape, and maintain an existing drainage easement agreement. Improved drainage, sediment transport, and habitat conditions would be established along Russ Creek. Project components are illustrated in Figure 2.

As a strategy to increase agricultural land viability and reduce vulnerability from frequent dune over-wash events and projected sea level rise, proposed placement of set-back berms provide increased resiliency to ongoing and projected geomorphic and climactic changes. The longevity of this Project depends upon the successful restoration of natural ecological processes and the frequency and nature of maintenance activities but would be heavily influenced by uncontrollable natural events within this dynamic, highly altered and geologically unstable watershed. As a result, this Project would include an adaptive management and maintenance program to provide a feedback mechanism between monitoring, maintenance, and management actions.

3.3 Proposed Project Activities

Reestablish Full Tidal Cycle to Centerville Slough Marsh Network

Historically, Centerville Slough extended south from the Salt River, parallel to the dune network to the community of Centerville at the base of the Wildcat Mountains. Reclamation and the associated reduction in the tidal prism, coupled with actively directed Russ Creek avulsions, resulted in a significant reduction in hydraulic capacity. The Western Drainage Ditch is all that remains as a remnant drainage feature. Russ Creek and Shaw Creek, which once flowed into Centerville Slough, now terminate with avulsion and overland sheet flows over existing pastures and create large sediment loads that impact agricultural uses.

The Project proposes to realign and expand Centerville Slough along former tidal channels and reestablish the Centerville Slough connection to Eel and Salt Rivers in order to increase the tidal prism within the Project Area. The Centerville Slough channel would be sized to enhance flood storage, conveyance of flood flows and sediments, and restore brackish aquatic habitat. Some of the existing levees/dikes would be removed to increase tidal exchange within the site. The increased tidal prism would increase sediment transport throughout the system.

Create and Enhance Inter- and Sub-Tidal Habitats

Portions of the Project Area that were diked and drained for agricultural purposes are currently at elevations below current tidal marsh elevations due in part to ground subsidence from tectonic activity and oxidation. The lack of frequent tidal and river flooding has also minimized sediment accretion in these disconnected areas. Other portions of the Project Area that were diked and drained have elevated overtime due to deposition of sediment from Shaw and Russ Creeks. This in-balance of sediment exchange across the Project Area has resulted in infilling of the Centerville Slough and associated historic tidal channels. The Project proposes to restore and enhance the Centerville Slough marsh network, which would be comprised of four hydrologically connected and enhanced marsh areas, including the Outer Marsh, Inner Marsh, Russ

Creek Marsh, and Angels Camp Marsh, in order to restore ecosystem services throughout the Project Area to enhance habitat and agricultural productivity. Active improvements throughout the marsh areas would include the restoration and creation of new tidal channels, enhancement of existing tidal channels, construction of tidal ridges along tidal channels to improve sediment transport processes, restoration and enhancement of ecotone/estuarian habitat, and removal of existing access roads through proposed wetlands. Marsh areas would be graded to provide habitat variability and promote sediment accretion in subsided areas through a network of inter-tidal lagoons and hummocks. The lagoons would passively evolve into inter-tidal salt marshes with sediment accretion from the Eel River and Russ Creek over time, providing diverse habitats of mudflat, saltmarsh, and subtidal channels. Native planting and invasive species removal would occur as a part of the restoration work and ongoing site management.

Protect and Enhance Drainage, Land Uses, and Habitats

Threats to the richness of existing habitat and land uses include disturbances of dunes, saltwater intrusion, sedimentation of watercourses, subsidence and natural conversion of agricultural pasture, and invasive species. While some areas within the Project Area are targeted for wetland restoration and enhancement, other areas would be preserved for continued agricultural land uses. The Project design would preserve and enhance agricultural land uses on properties within and adjacent to the Project Area.

Enhance Existing Berm and Construct New Agricultural Protection and Access Berm

An agricultural protection and access berm would be constructed on the eastern side of the Centerville Slough Marsh Network to prevent inundation of adjacent agricultural lands from tidal, brackish water. An access road/walking path would be located on the berm to provide passive outdoor recreation, nature study opportunities, and access for site maintenance. Onsite sediment would be used to construct berms, elevate marsh plains, and create habitat ridges and hummocks.

Realign Russ Creek and connect to Centerville Slough

A new fish friendly tide gate would be installed in the access berm to reconnect Russ Creek to the Centerville Slough-Russ Creek Marsh area in order to improve site drainage, create in-channel flood storage, reestablish a long estuary-stream ecotone and provide a wetland prism that includes freshwater wetland and/or riparian habitat, as well as habitat connectivity for anadromous fish. The area around Russ Creek would be modified to improve drainage efficiency and maintain areas in agricultural production. Modifications could include raising ground levels around Russ Creek to contain flows, constructing a new planted berm, and/or realigning and new drainage ditches to convey runoff to new tide gates.

Improve Agricultural Drainage and Pasture Productivity

Improvement of agricultural lands would occur through active implementation projects and ongoing management.

- Tide gates
  - Tide gates would be installed in the access berm to re-connect Shaw Creek and Creamery Ditch to Centerville Sough that will improve sediment transport, and fish passage.
  - Additional tide gates would be installed at strategic locations to hydrologically connect inboard ditches for agricultural drainage to the Centerville Slough-Russ Creek Marsh area and to allow drainage connection of the Halley property behind the southern portion of the berm to the Centerville Slough-Angel Creek Marsh area.
- Livestock management

  - New fencing would allow vegetation to recover in designated areas and prevent livestock from accessing wetland areas.
- Access routes, culverts, and bridges
  - Project implementation and future management would require durable yet limited access routes that minimize impacts to the Project Area. Some existing access routes, culverts and bridges would be improved and maintained, while others may be decommissioned. Routes would be designed to accommodate a range of vehicle types and weight classes and culverts replaced as needed to increase access reliability.

Convert Existing Uplands to Wetlands

A portion of uplands within the Project Area would be converted to wetlands in order to balance wetland fills associated with new berms.

Enhance Back Dune Berms

Significant disturbance from off-road vehicle use and dune over-wash has occurred to the dune field west of the Project Area. The Project would include passive and active techniques to prevent further dune loss and migration of existing dunes into Centerville Slough. This would occur through the construction of back dune berms to reduce wave over-wash, direct drainage, and capture sand to passively build up the foredune. Native dune species would be planted along with construction of sand fencing to capture sand and prevent migration inland. The Project would focus on back dune enhancements outside of designated Snowy Plover Critical Habitat.

Elevate Centerville Road

Depending on the alternative selected, a portion of Centerville Road (approximately 300 linear feet) may be elevated, generally within its current footprint, to prevent increase in flood frequency of the County Road.

Repair the Existing Cutoff Slough Tide Gate

Minor repairs to the existing Cutoff Slough tide gate may be made to increase resiliency of agricultural fields to sea level rise.

Beneficial Re-use of Sediment

Excavated sediment would be reused on site and would not be hauled off-site for disposal. On-site sediment reuse would include:

- Construction of back dune berms
- Application to agricultural areas subject to rising saline groundwater
- Construction of new berms and rehabilitation of the existing berms and permanent access roads
- Construction of tidal ridges and marsh plain fill

Develop Adaptive Maintenance, Management, and Monitoring Plan

The Project would include an adaptive management and maintenance program to provide a feedback mechanism between monitoring, maintenance, and management actions.

Provide Public Education and Access

Access to the Project Area is currently limited. Russ properties are managed for livestock grazing. TWC property is managed for livestock grazing and for outdoor recreation and education opportunities. The EREP has a waterfowl hunting lease, welcomes scheduled and docent led small group site visits, and uses the site to educate elementary school children about wetland and estuary systems and agriculture as practiced in the coastal zone. Public access is not anticipated to increase as a result of the proposed Project. No public education or access is proposed outside of the EREP portion of the Project.

Kayak Put In and Take Out

A kayak put in and take out would be installed near the restored Centerville Slough on EREP in order to facilitate post-Project monitoring and maintenance, aquatic educational programs and limited recreational use by visitors. The launch will consist of a 10 to 15-foot-wide graveled slope extending from the bank of the slough to the slough channel to facilitate launching of kayaks and small non-motorized watercraft.

Road and Access Improvements

In order to ensure the viability of continued agricultural operations and management within and around the Project Area, a variety of minor access improvements are proposed on EREP, such as new gates, parking area, vault toilet, lighting and fencing. These minor access improvements will be located outside of the ACEP-WRE conservation easement boundaries.

4. Probable Environmental Effects

The following discussion evaluates potential adverse effects by resource category based on preliminary review of the proposed Project. The environmental categories presented below are from Appendix G of the CEQA Guidelines. Mitigation measures would be developed in the EIR and presented along with additional and specific site information and analysis. There is the potential for significant impacts to occur as a result of the proposed Project, even with the use of mitigation measures; therefore, an EIR would be prepared to evaluate potential environmental effects as a result of the proposed Project and would also evaluate alternatives. The EIR would recommend mitigation measures, as feasible, to lessen the significance of any impacts identified as potentially significant. Per CEQA Guidelines Section 15082 (a)(1)(c), the probable environmental effects of the Project are summarized below.

4.1 Aesthetics

Would the project:	
a)	Have a substantial adverse effect on a scenic vista?
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
c)	In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The Project Area is in a highly scenic area and includes tidal wetlands, freshwater marsh, sand dunes, grasslands, agricultural pastures, and beach frontage. Project activities are not anticipated to substantially degrade scenic resources in the Project Area. However, the EIR would analyze the potential impacts to aesthetic resources, and if necessary and appropriate, include feasible mitigation measures to address any potentially significant impacts.

4.2 Agricultural & Forestry Resources

Would the project:
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
d) Result in the loss of forest land or conversion of forest land to non-forest use?
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The proposed Project would strike a balance between restoration of critical ecosystem functions and preservation of agricultural resources, including sustaining agricultural productivity. An Agricultural Conversion Analysis prepared for the Project would be utilized to determine the impacts/benefits to agricultural land resources on the Project Area and would be used as supporting information for the EIR. A portion of the Project Area's agricultural lands are under Williamson Act contract and are intended to remain under contract post Project. Potential impacts could be the loss of Important Farmland or the conversion of agricultural land to another use. The EIR would analyze the potential effects to agricultural resources from implementation of the Project and include feasible mitigation measures, if needed, to reduce any potentially significant impacts to a less than significant level. The Project Area does not include any forest land or land zoned timberland.

4.3 Air Quality

Would the project:
a) Conflict with or obstruct implementation of the applicable air quality plan?
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
d) Expose sensitive receptors to substantial pollutant concentrations?
e) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The Project Area is located within the North Coast Air Basin (NCAB), which is under the jurisdiction of the North Coast Unified Air Quality Management District (NCUAQMD). The NCAB is currently in attainment (or is unclassified) for all state and federal ambient air quality standards, with the exception of the state standard for particulate matter less than ten micrometers in diameter (PM_{10}). The EIR would discuss the temporary impacts from construction and operational activities and identify potential mitigation measures if needed. The EIR would discuss the Project's conformity with applicable air quality plans and exposure of sensitive receptors to criteria air pollutants and odors, and mitigation measures would be included where applicable.

4.4 Biological Resources

Would the project:
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

A wide variety of wildlife, including special-status species inhabit the Project Area, utilize the site and may be affected by implementation of the Project. The Project Area also includes wetlands, riparian areas, coastal dunes and uplands that support a diverse array of aquatic and terrestrial biological resources. The EIR would utilize a number of special studies in the preparation of this section such as habitat mapping, sensitive plant and animal studies, wetland delineations, vegetation mapping, biological evaluations, and other existing reports/studies. The EIR would analyze potential impacts to special status-species, wetlands, riparian habitat, coastal dunes and include feasible mitigation measures to address any potentially significant impacts. The EIR would also discuss the Project’s conformity with local policies or plans protecting biological resources.

4.5 Cultural Resources

Would the project:
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
c) Disturb any human remains, including those interred outside of formal cemeteries?

A Cultural Resources Investigation has been prepared for the Project by Roscoe and Associates to inventory cultural resources and assess potential impacts on these resources from Project activities. Potential impacts could include the impaction of unknown cultural resources. The EIR would include the results from this investigation and include mitigation measures for the inadvertent discovery of cultural resources and the inadvertent discovery of human remains.

4.6 Energy

Would the project:
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Construction of the Project would consume energy as a result of combustion of fossil fuels used in construction equipment and vehicles from workers commuting to and from the site. The Project would require the use of several pieces of heavy earthmoving equipment, and construction commute and utility vehicles. The County has not yet adopted a Climate Action Plan; however, impact analysis will evaluate the Project's potential impact related to energy resources. This potential impact would be further discussed in the EIR and appropriate mitigation measures would be included if applicable.

4.7 Geology & Soils

Would the project:
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
ii. Strong seismic ground shaking?
iii. Seismic related ground failure, including liquefaction?
iv. Landslides?
b) Result in substantial soil erosion or the loss of topsoil?
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Geologic and soils issues include potential erosion and sedimentation during and after construction due to proposed grading, excavation, channel reconfiguration, levee reconfiguration, and filling. The EIR would describe the Project Area's existing geologic conditions and soils based on existing information and technical reports prepared for the Project. Potential impacts could include soil erosion or the loss of topsoil. The EIR would include an analysis of the geology of the site as it relates to slope stability, earthquake hazards, landslides, and any other potential geologic hazards, and recommend appropriate best management practices and mitigation measures if applicable.

4.8 Greenhouse Gas Emissions

Would the project:
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction of the Project would cause release of GHG emissions as a result of combustion of fossil fuels used in construction equipment and vehicles from workers commuting to and from the site. The Project would require the use of several pieces of heavy earthmoving equipment, and construction commute and utility vehicles. The NCUAQMD has not adopted a threshold for construction-related GHG emissions against which to evaluate significance and has not established construction-generated criteria air pollutant screening levels above which quantitative air quality emissions would be required; however, this potential impact would be further discussed in the EIR and appropriate mitigation measures would be included if applicable.

4.9 Hazards & Hazardous Materials

Would the project:	
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Phase I and II Environmental Site Assessments were completed within the Project Area to support the previous EIR. The information from these assessments would be used in the analysis of this resource category and appropriate mitigation measures would be incorporated if applicable. Potential impacts could include the discovery of unknown hazardous materials during construction, or the release of hazardous materials associated with transport, use and disposal. The EIR would discuss the existing conditions with regard to potential hazards in the Project Area, identify appropriate spill prevention measures, identify potential impacts to Project workers and recreation users due to potential soil contamination and other potential hazards at the site, and describe necessary mitigation measures.

4.10 Hydrology & Water Quality

Would the project:	
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
i.	result in a substantial erosion or siltation on- or off-site;
ii.	substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
iii.	create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
iv.	impede or redirect flood flows?
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Project could affect water quality through release of contaminants and sediment from construction activities. The Project could alter hydrodynamic processes, which control local salinity levels. The Project could increase turbidity during and after construction, adversely affecting water quality. In addition, flows in Centerville Slough, Cutoff Slough, Russ Creek and Salt River are likely to change with the increased tidal prism following restoration; these increased flows could affect water quality, erosion along these waterways, and fisheries use of these waterways. The reconfiguration of the existing levee system could alter flood patterns to adjacent properties including Centerville Road. The EIR will discuss these issues and potential effects to surface and groundwater and incorporate mitigation measure if applicable.

4.11 Land Use & Planning

Would the project:
a) Physically divide an established community?
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The Project would require a Conditional Use Permit from Humboldt County and a Coastal Development Permit from the Coastal Commission per the California Coastal Act. The EIR will describe existing land uses in the Project Area, assess Project impacts and identify any potential land use conflicts. The EIR will review the County's General Plan and the Eel River Area Plan and summarize applicable goals and policies and assess the Project's consistency with applicable General Plan and Eel River Area Plan goals and policies, land use designations, and the County Zoning Ordinance. The need for mitigation measures related to land use and planning is not anticipated.

4.12 Mineral Resources

Would the project:
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

There are no mining operations in the Project Area. The Project would not require the use of a substantial amount of any mineral resource and would not result in the loss of availability of known mineral resources of value to the state, region or locally. The EIR would analyze potential effects to mineral resources. The need for mitigation measures related to mineral resources is not anticipated.

4.13 Noise

Would the project:
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
b) Generation of excessive groundborne vibration or groundborne noise levels?
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Noise levels would increase temporarily during construction activities at the Project Area. The EIR would describe the existing noise levels in the Project Area and identify any noise sensitive receptors. The EIR would evaluate the potential for temporary noise impacts from construction. Project construction would be limited to daytime hours. Future operational noise levels would be compared to existing noise levels to determine if the Project would cause a significant increase in ambient noise levels and mitigation measures would be included if applicable.

4.14 Population & Housing

Would the project:
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed Project would not add either new homes or businesses and no new housing is proposed. The Project would not displace any housing or people, on or adjacent to the site. The need for mitigation measures relation to population and housing is not anticipated.

4.15 Public Services

Would the project:
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
i. Fire protection?
ii. Police protection?
iii. Schools?
iv. Parks?
v. Other public facilities?

Except in the event of an emergency, the Project would place no material demand on fire and police services. The Project would not place additional demands on schools, parks, or other services. The Project does not include the construction of residential or commercial structures, and the Project is not anticipated to result in substantial population growth in the area; and therefore, would not substantially increase the need or use of public services and amenities.

4.16 Recreation

Would the project:
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The Project is not anticipated to place additional demands on recreational facilities and the Project does not require recreational facility construction or expansion. The Project does include features, described above, that relate to recreation. These include: 1) maintenance roads and turn-outs that can serve as pedestrian pathways and overlooks with interpretative signage; 2) A kayak put in and take out to Centerville Slough, and; 3) Minor improvements to existing infrastructure intended to avoid interactions between recreational and agricultural operations and be compatible with the NRCS ACEP-WREs. The EIR would analyze potential impacts to recreational resources and identify feasible mitigation measures if significant impacts are identified.

4.17 Transportation & Traffic

Would the project:
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
c) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?
d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
e) Result in inadequate emergency access?

The Project would result in a temporary increase in traffic during construction and minimal traffic post construction, potentially affecting levels of service on local streets. The EIR would discuss existing traffic volumes and level of service in the Project Area and recommend mitigation measures (such as the implementation of a traffic control plan) that would ensure any potential significant environmental impacts on transportation would remain less than significant.

4.18 Tribal Cultural Resources

Would the project:
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources; or included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. The Project may potentially encounter known or as-of-yet unknown archaeological materials during Project-related construction activities. If such resources were to represent “tribal cultural resources” as defined by CEQA, any substantial change to or destruction of such resources would be a significant impact. The Humboldt County Resource Conservation District will complete tribal consultation with local tribes through the AB 52 process. Any tribal cultural resources identified through tribal consultation would be evaluated in the EIR. The EIR will analyze tribal cultural resources per Public Resources Code Section 21080.3.1, and include mitigation measures, if applicable, per Public Resources Code Section 21080.3.2.

4.19 Utilities & Service Systems

Would the project:
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The Project does not include the construction of facilities (residential, commercial, or industrial) that would place additional demands on public water systems, wastewater systems, or landfills. The EIR would include information obtained from the County of Humboldt and applicable utility providers regarding any potential constraints. The need for mitigation measures related to utilities and service systems is not anticipated.

4.20 Wildfire

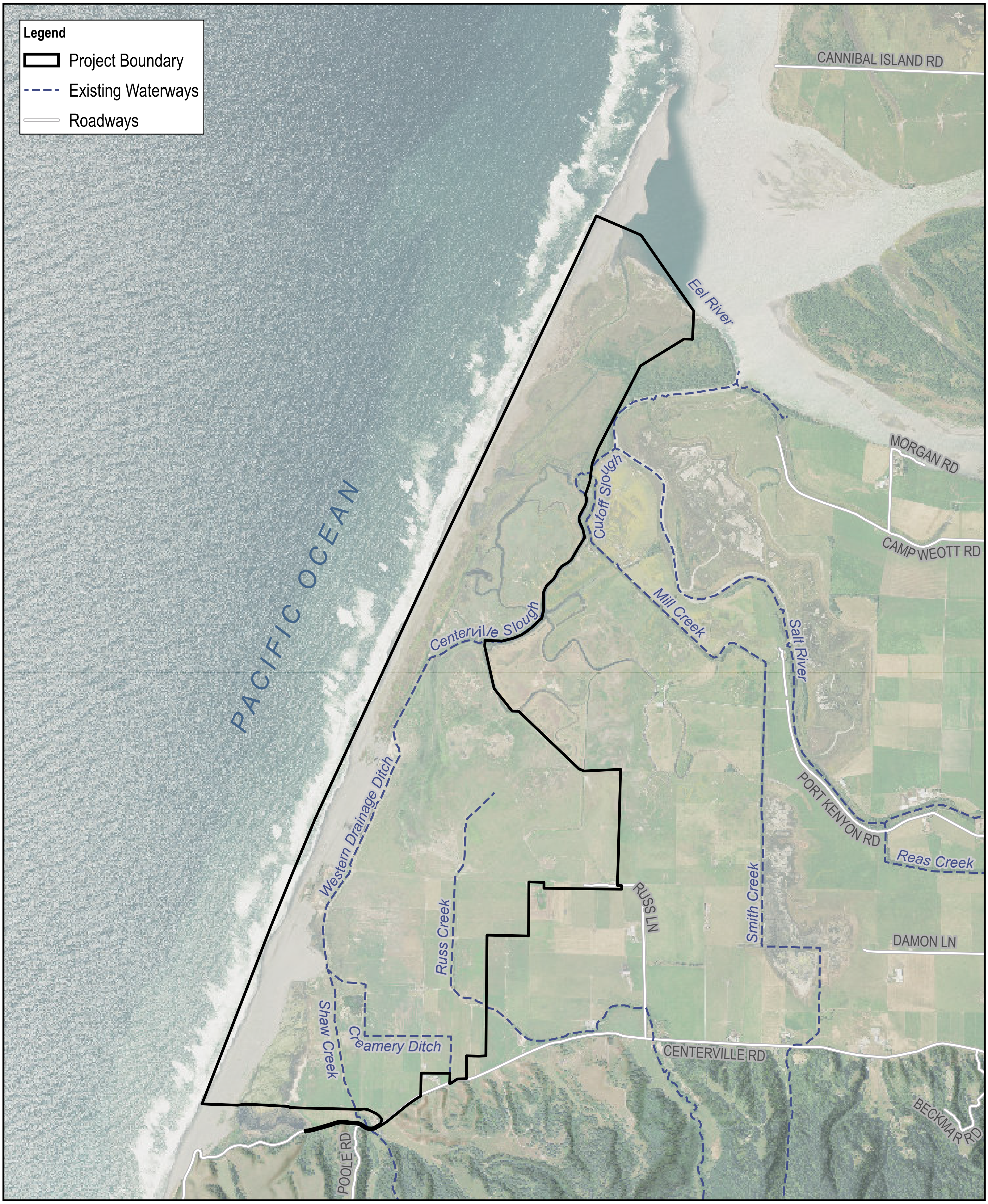
Would the project:
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes?

The Project is not anticipated to impair emergency response or evacuation plans, exacerbate wildfire risks, or expose people or structures to significant risks as a result of wildfire. The EIR would include information obtained from the County of Humboldt and Local and State Responsibility Area emergency service providers regarding potential risks. The need for mitigation measures related to wildfire is not anticipated.

Appendices

Appendix A

Figures



Paper Size ANSI A

0 1,000 2,000 3,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

Humboldt County Resource Conservation District
Russ Creek and Centerville Slough Restoration Project

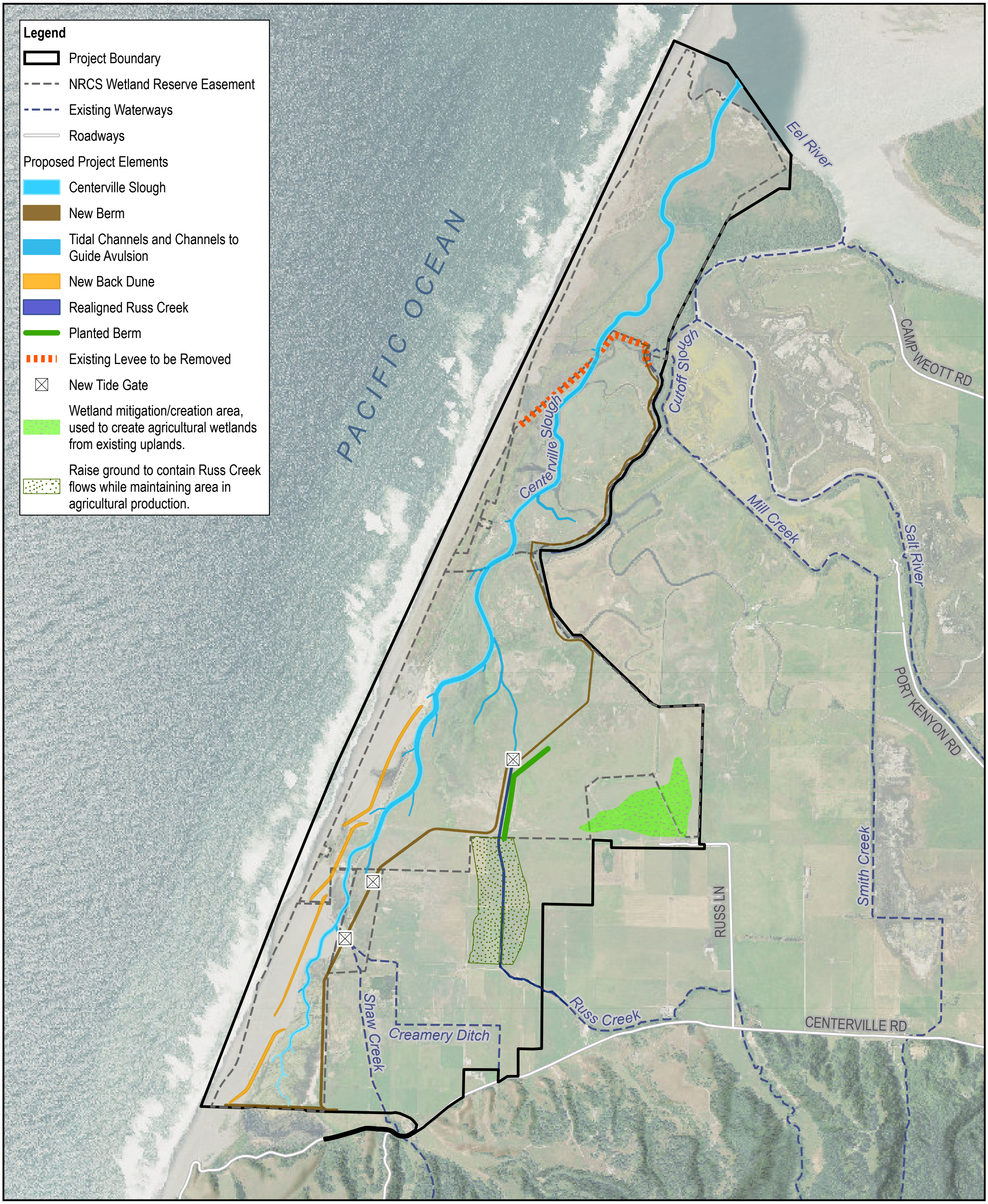
Project No. **11187323**
Revision No. **D**
Date **Apr 2022**

EIR Notice of Preparation
Approximate Project Boundary

FIGURE 1

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_EIR_NOP\11187323_EIR_NOP.aprx
Print date: 25 Apr 2022 - 14:09

Data source: Project Boundary, GHD 4/14/22; Waterways NHD and GHD, 2022; Humboldt County roads, 3/11/2021; NAIP 2020; World Hillshade: Esri, NASA, NGA, USGS, FEMA. Created by: jclark2



Paper Size ANSI A

0 1,000 2,000 3,000

Feet

N

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

GHD

Humboldt County Resource Conservation District
Russ Creek and Centerville Slough Restoration Project

Project No. **11187323**
Revision No. **-**
Date **Apr 2022**

EIR Notice of Preparation
Approximate Project Components

FIGURE 2

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_EIR_NOP\11187323_EIR_NOP.aprx
Print date: 25 Apr 2022 - 14:34

Data source: Project Boundary, GHD 3/4/22; Humboldt County parcels, 3/3/2022; NAIP 2020; World Hillshade: Esri, NASA, NGA, USGS, FEMA. Created by: jclark2

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director
715 P Street, MS 1803
Sacramento, CA. 95814
T: (916) 445-5986

05/20/2022

County: Humboldt - Humboldt County Resource Conservation District
Jill Deemers
jillhcrcd@gmail.com

Construction Site Well Review (CSWR) ID: 1012492

Assessor Parcel Number(s): 10013101, 10013102, 10014307, 10101116, 10014202, 10012105, 10013104, 10014201, 10013103, 10012104, 10012103, 10012101, 31008103, 10014209, 10014304, 10014303, 10014221, 10110204, 10101105, 10101114, 10014308, 10014208, 10014211, 10014302, 10014301

Property Owner(s): Wildlands Conservancy

Project Location Address: Russ Creek and Centerville Slough 40.596885, -124.329484, Eureka, California 95501

Project Title: Russ Creek and Centerville Slough Restoration Project

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells.

The California Geologic Energy Management Division (CalGEM) has received and reviewed the above referenced project dated 5/2/2022. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation.

The project is located in Humboldt County, within the boundaries of the following fields:

N/A

Our records indicate there are no known oil or gas wells located within the project boundary as identified in the application.

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0

- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§ 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and 3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading, excavations, or other land use issues.

If during development activities, any wells are encountered that were not part of this review, the property owner is expected to immediately notify the Division's construction site well review engineer in the Northern district office, and file for Division review an amended site plan with well casing diagrams. The District office will send a follow-up well evaluation letter to the property owner and local permitting agency.

Should you have any questions, please contact me at (805) 937-7246 or via email at Miguel.Cabrera@conservation.ca.gov.

Sincerely,

Miguel Cabrera
Northern District Deputy

cc: Jill Deemers - Plan Checker

From:	Andrea Hilton
To:	Andrea Hilton
Subject:	FW: Russ Creek and Centerville Slough Restoration Project, Comments on NOP
Date:	Monday, May 23, 2022 8:06:25 AM

----- Forwarded Message -----
From: Yahoo Desk <nocopump@frontiernet.net>
To: Jill Demers <jillhcrcd@gmail.com>
Sent: Sunday, May 22, 2022, 01:48:13 PM PDT
Subject: Russ Creek and Centerville Slough Restoration Project, Comments on NOP

After reviewing the Draft EIR of the Russ Creek and Centerville Slough Restoration Project, I find one major concern. The southern boundary of the project is shown as a proposed berm. Centerville road is shown in white on the Figure 2 map just south of that proposed berm. I see no concern or accommodations for the Headwaters of Centerville Slough that exists south of Centerville Road in that location and drains north. My concern is that if there is no consideration for the Headwaters of Centerville Slough water flow in that location, where is that water drainage suppose to go? That drainage flows north and the proposed berm location on Figure 2 would cut off water flow in any direction, resulting in that Headwater source flooding Centerville Road.

I would appreciate this being taken into consideration before finalization of this plan.

Cheryl Laffranchi
8550 Centerville Road
Ferndale, Ca. 95536

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

NATIVE AMERICAN HERITAGE COMMISSION

May 9, 2022

Jill Demers
Humboldt County Resource Conservation District
5630 South Broadway
Eureka, CA 95503

Re: 2022040559, Russ Creek and Centerville Slough Restoration Project, Humboldt County

Dear Ms. Demers:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of <u>portions</u> of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

   a. Avoidance and preservation of the resources in place, including, but not limited to:

      i. Planning and construction to avoid the resources and protect the cultural and natural context.

      ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

   b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

      i. Protecting the cultural character and integrity of the resource.

      ii. Protecting the traditional use of the resource.

      iii. Protecting the confidentiality of the resource.

   c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

   d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

   e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

   f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

   a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

   b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

   c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
   a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
   b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
   a. If part or all of the APE has been previously surveyed for cultural resources.
   b. If any known cultural resources have already been recorded on or adjacent to the APE.
   c. If the probability is low, moderate, or high that cultural resources are located in the APE.
   d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
   a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
   b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

   a. A Sacred Lands File search. Remember that tribes do not alway Sacred Lands File, nor are they required to do so. A Sacred Lands Fi consultation with tribes that are traditionally and culturally affiliated project's APE.

   b. A Native American Tribal Consultation List of appropriate tribes f project site and to assist in planning for avoidance, preservation in p measures.

4. Remember that the lack of surface evidence of archaeological resourc does not preclude their subsurface existence.

   a. Lead agencies should include in their mitigation and monitoring the identification and evaluation of inadvertently discovered archa Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of certified archaeologist and a culturally affiliated Native American w should monitor all ground-disturbing activities.

   b. Lead agencies should include in their mitigation and monitoring for the disposition of recovered cultural items that are not burial ass affiliated Native Americans.

   c. Lead agencies should include in their mitigation and monitoring for the treatment and disposition of inadvertently discovered Native and Safety Code §7050.5, Public Resources Code §5097.98, and Cc subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and followed in the event of an inadvertent discovery of any Native Am associated grave goods in a location other than a dedicated cem

If you have any questions or need additional information, please contact me a Cameron.Vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

cc: State Clearinghouse

STATE OF CALIFORNIA GAVIN NEWSOM, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

JENNIFER LUCCHESI, *Executive Officer*
(916) 574-1800
TTY CA Relay Service: **711** *or Phone* **800.735.2922**
from Voice Phone **800.735.2929**
or for Spanish **800.855.3000**

Contact Phone: **(916) 574-1890**

Established in 1938

May 26, 2022

File Ref: SCH # 2022040557

Jill Demers
Humboldt County Resource Conservation District
5630 South Broadway
Eureka, CA 95503

VIA REGULAR & ELECTRONIC MAIL: jillhcrcd@gmail.com

Subject: Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the Russ Creek and Centerville Slough Restoration Project, Humboldt County

Dear Jill Demers:

The California State Lands Commission (Commission) staff has reviewed the subject NOP for an EIR for the Russ Creek and Centerville Slough Restoration Project (Project), which is being prepared by the Humboldt County Resource Conservation District (District). The District, as a California public agency proposing to carry out the Project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The Commission is a trustee agency because of its trust responsibility for projects that could directly or indirectly affect State sovereign land and their accompanying Public Trust resources or uses. Additionally, because the Project involves work on State sovereign land, the Commission is also a responsible agency. Commission staff requests that the District consult with us on preparation of the Draft EIR (DEIR) as required by CEQA section 21153, subdivision (a), and the State CEQA Guidelines section 15086, subdivisions (a)(1) and (a)(2).

Commission Jurisdiction and Public Trust Lands

The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the ordinary high-water mark as generally indicated by the mean high tide line (MHTL), except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high-water mark, except where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

At the Project area, the Eel River, portions of Centerville Slough, and the Pacific Ocean waterward of the MHTL are State sovereign land under the Commission's jurisdiction. A lease for the use of State sovereign land will be required from the Commission for any portion of the Project encroaching on State sovereign land. Please see the contact information below for more information on leasing requirements with the Commission.

Project Description

The Project would restore a landscape of mostly diked pasture land to a mosaic of pasture and natural habitats, including estuarine and tidal slough channels, freshwater streams, freshwater ponds, and agricultural pastures. The goal of the Project is to improve geomorphic and ecosystem function that will enhance habitats for native fisheries and aquatic species, support water bird and wildlife species, and increase agricultural land viability and resiliency to changing geomorphological and climatic conditions. As a strategy to increase agricultural land viability and reduce vulnerability from frequent dune over-wash events and projected sea level rise, proposed placement of set-back berms provides increased resiliency to ongoing and projected geomorphic and climactic changes. Reestablishing the connection of Centerville Slough to the Eel River and removing and reconfiguring dikes would provide full tidal prism into a restored Centerville Slough.

Environmental Review

Commission staff requests that the District consider the following comments when preparing the DEIR.

General Comments

1. Project Description: A thorough and complete Project Description should be included in the DEIR in order to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives. The Project Description should be as precise as possible in describing the details of all allowable activities (e.g., types of equipment or methods that may be used, maximum area of impact or volume of

sediment removed or disturbed, seasonal work windows, locations for material disposal, construction schedule and staging areas, etc.), as well as the details of the timing and length of activities. Thorough descriptions will facilitate Commission staff's determination of the extent and locations of its leasing jurisdiction, make for a more robust analysis of the work that may be performed, and minimize the potential for subsequent environmental analysis to be required. Please be as specific as possible regarding all proposed work within the Commission's jurisdiction waterward of the MHTL, inclusive of the historic bed of the Eel River, Centerville Slough, and if applicable, below the MHTL of the Pacific Ocean. Please describe construction access, staging areas, and equipment for proposed dune restoration and all other work occurring within close proximity to the MHTL of the Pacific Ocean. Provide additional details regarding proposed passive and active techniques for invasive species management and improvement of dune function.

Biological Resources

2. The DEIR should disclose and analyze all potentially significant effects on sensitive species and habitats in and around the Project area, including special-status wildlife, fish, and plants, and if appropriate, identify feasible mitigation measures to reduce those impacts. The District should conduct queries of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database and U.S. Fish and Wildlife Service's (USFWS) Special Status Species Database to identify any special-status plant or wildlife species that may occur in the Project area. The DEIR should also include a discussion of consultation with the CDFW, USFWS, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), including any recommended mitigation measures and potentially required permits identified by these agencies.

3. Construction Noise: The DEIR should also evaluate noise and vibration impacts on fish and birds from construction, restoration, or flood control activities in the water, on the dikes, and for water conveyance and tide gate structures. Mitigation measures could include species-specific work windows as defined by CDFW, USFWS, and NMFS. Again, staff recommends early consultation with these agencies to minimize the impacts of the Project on sensitive species.

Cultural Resources

4. Title to Resources: The DEIR should also mention that the title to all archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the California State Lands Commission (Pub. Resources Code, § 6313). Commission staff requests that the District consult with Staff Attorney Jamie Garrett, should any cultural resources on state lands be discovered during construction of the proposed Project. In addition, staff requests that the following statement be included in the DEIR's Mitigation and Monitoring Plan: "The final disposition of archaeological, historical, and paleontological resources recovered on State sovereign land under the

jurisdiction of the California State Lands Commission must be approved by the Commission."

Hydrology and Sea Level Rise

5. In the Environmental Setting section of the DEIR, please provide detail regarding the Project area's surface hydrology features and characteristics, groundwater characteristics, history of flood events and any known land uses and structures subject to flood hazards, and any flood zone designations for the Project area. Please also provide a description of the former hydrology and floodplain of the Project vicinity prior to the construction of dikes, tide gates, and other drainage control structures that resulted in the conversion of wetlands and tidelands to other land uses, such as pasture lands for grazing.

   In addition to impacts from proposed modifications of Project area hydrology, sedimentation processes, biological resources, and geomorphic channel modifications, the DEIR should also analyze potential for these impacts on the affected reaches of the Salt River, Eel River, and coastal processes and resources outside of the Project area, including sediment discharge in the Pacific Ocean.

   Please also provide a detailed analysis of how the Project will attempt to plan for sea level rise through enhanced floodplain drainage, capacity, open space, preservation and enhancement of dune areas, and any potential future conflicts with surrounding land uses, such as agricultural and grazing land uses.

Recreation

6. Please provide a comprehensive description of existing recreational uses and public access to waterways and coastal resources within the Project area, particularly waterways within the Commission's jurisdiction. In addition to inland waterways, describe recreational uses of the dunes, beach, and surf zone of the Pacific Ocean, and identify public access locations to the Pacific Ocean within the Project vicinity, such as Centerville Beach. Describe any restrictions or limitations on public access to the Project area during construction and methods to provide notice to the public prior to construction.

Alternatives

7. In addition to describing mitigation measures that would avoid or reduce the potentially significant impacts of the Project, the District should identify and analyze a range of reasonable alternatives to the proposed Project that would attain most of the Project objectives while avoiding or reducing one or more of the potentially significant impacts (see State CEQA Guidelines § 15126.6).

Environmental Justice

8. Environmental justice is defined by California law as "the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to

the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." (Gov. Code § 65040.12) This definition is consistent with the Public Trust Doctrine's principle that management of trust lands is for the benefit of all people.

The Commission adopted an updated Environmental Justice Policy and Implementation Blueprint in December 2018 to ensure that environmental justice is an essential consideration in the agency's processes, decisions, and programs. The twelve goals outlined in the Policy reflect an urgent need to address the inequities of the past, so they do not continue. Through its policy, the Commission reaffirms its commitment to an informed and open process in which all people are treated equitably and with dignity, and in which its decisions are tempered by environmental justice considerations.

Although not legally required in a CEQA document, Commission staff suggests that the District include a section describing the environmental justice community outreach and engagement undertaken in developing the DEIR and the results of such outreach. The California Office of Environmental Health Hazard Assessment developed the CalEnviroScreen mapping tool to assist agencies with locating census tracts near proposed projects and identifying the environmental burdens, should there be any, that disproportionately impact those communities. Environmental justice communities often lack access to the decision-making process and experience barriers to becoming involved in that process. It is crucial that these communities are consulted as early as possible in the project planning process. Commission staff strongly recommends using the CalEnviroScreen tool and then, as applicable, reaching out through local community organizations, such as the California Environmental Justice Alliance. Engaging in early outreach will facilitate more equitable access for all community members. In this manner, the CEQA public comment process can improve and provide an opportunity for more members of the public to provide input related to environmental justice. Commission staff also recommends incorporating or addressing opportunities for community engagement in mitigation measures. Commission staff will review the environmental justice outreach and associated results as part of any future Commission action.

Thank you for the opportunity to comment on the NOP for the Project. As a trustee and responsible agency, the Commission requests that you consult with us on this Project and keep us advised of changes to the Project Description and all other important developments. Please send additional information on the Project to the Commission staff listed below as the DEIR is being prepared. Please refer questions concerning environmental review to Jason Ramos, Senior Environmental Scientist, at (916) 574-1814 or via e-mail at Jason.Ramos@slc.ca.gov. For questions concerning archaeological or historic resources under Commission jurisdiction, please contact Jamie Garrett, Staff Attorney, at Jamie.Garrett@slc.ca.gov or (916) 574-0398. For questions concerning Commission leasing jurisdiction, please contact Ninette Lee, Public Land Manager, at (916) 574-1869, or via e-mail at Ninette.Lee@slc.ca.gov.

Sincerely,

Nicole Dobroski, Chief
Division of Environmental Planning
and Management

CC: Office of Planning and Research
N. Lee
J. Ramos
J. Garrett

On Thu, May 12, 2022 at 1:41 PM Teicher, Margarete@Waterboards <Margarete.Teicher@waterboards.ca.gov> wrote:

To: Ms. Jill Demers, Executive Director

Humboldt County Resource Conservation District

5630 South Broadway

Eureka, CA 95503

jillhcrcd@gmail.com

Regional Water Board staff has reviewed the April 27, 2022, *Notice of Preparation, Draft EIR, Russ Creek and Centerville Slough Restoration Project, Humboldt County Resource Conservation District* (NOP).

We offer the following comments on the NOP:

1. The subject proposed project, as described in the NOP, has the potential to directly or indirectly impact waters of the State. Therefore, you will be required to apply for a Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects). Anyone proposing to conduct a project that requires a federal permit or involves dredge or fill activities that may result in a discharge to U.S. surface waters and/or waters of the state are required to obtain a Clean Water Act (CWA) Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects) from the North Coast Regional Water Quality Control Board, verifying that the project activities will comply with state water quality standards. The type of 401 certification coverage depends on the type of project activity, location, and federal permit issued.
2. We encourage you to meet with Regional Water Board 401 staff early in the design process, before submitting a CWA 401 certification application, to discuss the potential project impacts, measures to avoid and minimize impacts to waters of the State, and mitigation for unavoidable impacts. Also, we encourage you to visit our website for more information on our water quality certification program at Water Quality Compliance | California Northcoast Regional Water Quality Control Board as well as our Restoration Program at Restoration Program | California Northcoast Regional Water Quality Control Board.

We look forward to meeting with you to discuss your project.

Thank you.

Margarete "Maggie" Teicher

North Coast Regional Water Quality Control Board

5550 Skylane Blvd., Suite A

Santa Rosa, CA 95403

Margarete.Teicher@waterboards.ca.gov

(707) 576-2501

Work Schedule 8:00-4:30

****Due to COVID restrictions, I am mostly working from home. The best way to contact me is via email.****

Appendix B

CalEEMod Model Output and Emissions Computations

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Russ Creek and Centerville Slough Restoration Project 2024
Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	1,860.00	81,021,600.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use is a mix of natural terrain such as coastal dunes and sloughs, as well as agirucultural uses.

Construction Phase - Project Specific Construction Phasing and schedule

Off-road Equipment - Project specfic equipment and phasing

Grading - No import or export of materials

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	40510800	20255400
tblAreaCoating	Area_Nonresidential_Interior	121532400	60766200
tblConstructionPhase	NumDays	15,500.00	131.00
tblConstructionPhase	NumDays	15,500.00	131.00
tblConstructionPhase	NumDays	15,500.00	25.00
tblConstructionPhase	NumDays	6,000.00	131.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

Russ Creek and Centerville Slough Restoration Project 2024 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblLandUse	LandUseSquareFeet	0.00	81,021,600.00
tblLandUse	LotAcreage	0.00	1,860.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	9.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.9882	8.3626	7.7012	0.0204	2.8744	0.3479	3.2223	1.3674	0.3208	1.6882	0.0000	1,789.1090	1,789.1090	0.5498	2.0600e-003	1,803.4675
Maximum	**0.9882**	**8.3626**	**7.7012**	**0.0204**	**2.8744**	**0.3479**	**3.2223**	**1.3674**	**0.3208**	**1.6882**	**0.0000**	**1,789.1090**	**1,789.1090**	**0.5498**	**2.0600e-003**	**1,803.4675**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Vegetation Control	Site Preparation	5/15/2024	10/14/2024	6	131	
2	Channel Excavation and Levee Lowering	Grading	5/15/2024	10/14/2024	6	131	
3	Berm Fill and Tide Gate Placement	Grading	5/15/2024	10/14/2024	6	131	
4	Berm Road Base Placement	Grading	9/15/2024	10/14/2024	6	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 425.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vegetation Control	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Channel Excavation and Levee Lowering	Excavators	5	8.00	158	0.38
Channel Excavation and Levee Lowering	Generator Sets	1	8.00	84	0.74
Channel Excavation and Levee Lowering	Off-Highway Trucks	10	8.00	402	0.38
Channel Excavation and Levee Lowering	Rubber Tired Dozers	2	8.00	247	0.40
Channel Excavation and Levee Lowering	Scrapers	2	9.00	367	0.48
Channel Excavation and Levee Lowering	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Berm Fill and Tide Gate Placement	Excavators	2	10.00	158	0.38
Berm Fill and Tide Gate Placement	Graders	2	8.00	187	0.41
Berm Fill and Tide Gate Placement	Rollers	2	9.00	80	0.38
Berm Fill and Tide Gate Placement	Rubber Tired Dozers	4	8.00	247	0.40
Berm Fill and Tide Gate Placement	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Berm Road Base Placement	Dumpers/Tenders	8	8.00	16	0.38
Berm Road Base Placement	Rollers	2	8.00	80	0.38
Berm Road Base Placement	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Russ Creek and Centerville Slough Restoration Project 2024 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Vegetation Control	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Channel Excavation and Levee Lowering	22	55.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Berm Fill and Tide Gate Placement	12	30.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Berm Road Base Placement	12	30.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Russ Creek and Centerville Slough Restoration Project 2024 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Vegetation Control - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4300e-003	0.0949	0.1464	2.0000e-004		4.3500e-003	4.3500e-003		4.0100e-003	4.0100e-003	0.0000	17.9312	17.9312	5.8000e-003	0.0000	18.0761
Total	**9.4300e-003**	**0.0949**	**0.1464**	**2.0000e-004**	**0.0000**	**4.3500e-003**	**4.3500e-003**	**0.0000**	**4.0100e-003**	**4.0100e-003**	**0.0000**	**17.9312**	**17.9312**	**5.8000e-003**	**0.0000**	**18.0761**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	8.8000e-004	8.6200e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.8952	1.8952	6.0000e-005	7.0000e-005	1.9165
Total	**1.3000e-003**	**8.8000e-004**	**8.6200e-003**	**2.0000e-005**	**2.3600e-003**	**1.0000e-005**	**2.3700e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**1.8952**	**1.8952**	**6.0000e-005**	**7.0000e-005**	**1.9165**

Russ Creek and Centerville Slough Restoration Project 2024 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Channel Excavation and Levee Lowering - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0147	0.0000	1.0147	0.4580	0.0000	0.4580	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6252	5.0635	5.0206	0.0146		0.2040	0.2040		0.1882	0.1882	0.0000	1,276.9981	1,276.9981	0.4025	0.0000	1,287.0614
Total	**0.6252**	**5.0635**	**5.0206**	**0.0146**	**1.0147**	**0.2040**	**1.2186**	**0.4580**	**0.1882**	**0.6463**	**0.0000**	**1,276.9981**	**1,276.9981**	**0.4025**	**0.0000**	**1,287.0614**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0238	0.0162	0.1581	3.8000e-004	0.0432	2.6000e-004	0.0435	0.0115	2.4000e-004	0.0118	0.0000	34.7458	34.7458	1.1700e-003	1.2100e-003	35.1349
Total	**0.0238**	**0.0162**	**0.1581**	**3.8000e-004**	**0.0432**	**2.6000e-004**	**0.0435**	**0.0115**	**2.4000e-004**	**0.0118**	**0.0000**	**34.7458**	**34.7458**	**1.1700e-003**	**1.2100e-003**	**35.1349**

Russ Creek and Centerville Slough Restoration Project 2024 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Berm Fill and Tide Gate Placement - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7862	0.0000	1.7862	0.8898	0.0000	0.8898	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2984	3.0559	2.1375	4.7400e-003		0.1337	0.1337		0.1230	0.1230	0.0000	416.8334	416.8334	0.1348	0.0000	420.2037
Total	**0.2984**	**3.0559**	**2.1375**	**4.7400e-003**	**1.7862**	**0.1337**	**1.9199**	**0.8898**	**0.1230**	**1.0128**	**0.0000**	**416.8334**	**416.8334**	**0.1348**	**0.0000**	**420.2037**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0130	8.8300e-003	0.0862	2.1000e-004	0.0236	1.4000e-004	0.0237	6.2800e-003	1.3000e-004	6.4100e-003	0.0000	18.9522	18.9522	6.4000e-004	6.6000e-004	19.1645
Total	**0.0130**	**8.8300e-003**	**0.0862**	**2.1000e-004**	**0.0236**	**1.4000e-004**	**0.0237**	**6.2800e-003**	**1.3000e-004**	**6.4100e-003**	**0.0000**	**18.9522**	**18.9522**	**6.4000e-004**	**6.6000e-004**	**19.1645**

Russ Creek and Centerville Slough Restoration Project 2024 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Berm Road Base Placement - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.1208	0.1272	2.2000e-004		5.4000e-003	5.4000e-003		5.1100e-003	5.1100e-003	0.0000	18.1363	18.1363	4.6700e-003	0.0000	18.2531
Total	**0.0146**	**0.1208**	**0.1272**	**2.2000e-004**	**0.0000**	**5.4000e-003**	**5.4000e-003**	**0.0000**	**5.1100e-003**	**5.1100e-003**	**0.0000**	**18.1363**	**18.1363**	**4.6700e-003**	**0.0000**	**18.2531**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4800e-003	1.6900e-003	0.0165	4.0000e-005	4.5000e-003	3.0000e-005	4.5200e-003	1.2000e-003	3.0000e-005	1.2200e-003	0.0000	3.6168	3.6168	1.2000e-004	1.3000e-004	3.6573
Total	**2.4800e-003**	**1.6900e-003**	**0.0165**	**4.0000e-005**	**4.5000e-003**	**3.0000e-005**	**4.5200e-003**	**1.2000e-003**	**3.0000e-005**	**1.2200e-003**	**0.0000**	**3.6168**	**3.6168**	**1.2000e-004**	**1.3000e-004**	**3.6573**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Russ Creek and Centerville Slough Restoration Project 2025
Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	1,860.00	81,021,600.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use is a mix of natural terrain such as coastal dunes and sloughs, as well as agirucultural uses.

Construction Phase - Project Specific Construction Phasing and schedule

Off-road Equipment - Project specfic equipment and phasing

Off-road Equipment - Project specfic equipment and phasing

Off-road Equipment - Project specfic equipment and phasing

Off-road Equipment - Project specfic equipment and phasing

Grading - No import or export of materials

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	40510800	20255400
tblAreaCoating	Area_Nonresidential_Interior	121532400	60766200
tblConstructionPhase	NumDays	15,500.00	131.00
tblConstructionPhase	NumDays	15,500.00	131.00

Russ Creek and Centerville Slough Restoration Project 2025 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	15,500.00	25.00
tblConstructionPhase	NumDays	6,000.00	131.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblLandUse	LandUseSquareFeet	0.00	81,021,600.00
tblLandUse	LotAcreage	0.00	1,860.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	9.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.9226	7.4225	7.4836	0.0203	2.8744	0.3020	3.1765	1.3674	0.2785	1.6459	0.0000	1,786.7867	1,786.7867	0.5493	1.9000e-003	1,801.0853
Maximum	**0.9226**	**7.4225**	**7.4836**	**0.0203**	**2.8744**	**0.3020**	**3.1765**	**1.3674**	**0.2785**	**1.6459**	**0.0000**	**1,786.7867**	**1,786.7867**	**0.5493**	**1.9000e-003**	**1,801.0853**

Russ Creek and Centerville Slough Restoration Project 2025 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Vegetation Control	Site Preparation	5/15/2025	10/14/2025	6	131	
2	Channel Excavation and Levee Lowering	Grading	5/15/2025	10/14/2025	6	131	
3	Berm Fill and Tide Gate Placement	Grading	5/15/2025	10/14/2025	6	131	
4	Berm Road Base Placement	Grading	9/15/2025	10/13/2025	6	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 425.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vegetation Control	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Channel Excavation and Levee Lowering	Excavators	5	8.00	158	0.38
Channel Excavation and Levee Lowering	Generator Sets	1	8.00	84	0.74
Channel Excavation and Levee Lowering	Off-Highway Trucks	10	8.00	402	0.38
Channel Excavation and Levee Lowering	Rubber Tired Dozers	2	8.00	247	0.40
Channel Excavation and Levee Lowering	Scrapers	2	9.00	367	0.48
Channel Excavation and Levee Lowering	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Berm Fill and Tide Gate Placement	Excavators	2	10.00	158	0.38
Berm Fill and Tide Gate Placement	Graders	2	8.00	187	0.41
Berm Fill and Tide Gate Placement	Rollers	2	9.00	80	0.38
Berm Fill and Tide Gate Placement	Rubber Tired Dozers	4	8.00	247	0.40
Berm Fill and Tide Gate Placement	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Berm Road Base Placement	Dumpers/Tenders	8	8.00	16	0.38
Berm Road Base Placement	Rollers	2	8.00	80	0.38

Russ Creek and Centerville Slough Restoration Project 2025 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Berm Road Base Placement	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Vegetation Control	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Channel Excavation and Levee Lowering	22	55.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Berm Fill and Tide Gate Placement	12	30.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Berm Road Base Placement	12	30.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Russ Creek and Centerville Slough Restoration Project 2025 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Vegetation Control - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6500e-003	0.0875	0.1460	2.0000e-004		3.5400e-003	3.5400e-003		3.2600e-003	3.2600e-003	0.0000	17.9483	17.9483	5.8000e-003	0.0000	18.0935
Total	**8.6500e-003**	**0.0875**	**0.1460**	**2.0000e-004**	**0.0000**	**3.5400e-003**	**3.5400e-003**	**0.0000**	**3.2600e-003**	**3.2600e-003**	**0.0000**	**17.9483**	**17.9483**	**5.8000e-003**	**0.0000**	**18.0935**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	7.9000e-004	7.9100e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.8355	1.8355	6.0000e-005	6.0000e-005	1.8550
Total	**1.2300e-003**	**7.9000e-004**	**7.9100e-003**	**2.0000e-005**	**2.3600e-003**	**1.0000e-005**	**2.3700e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**1.8355**	**1.8355**	**6.0000e-005**	**6.0000e-005**	**1.8550**

Russ Creek and Centerville Slough Restoration Project 2025 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Channel Excavation and Levee Lowering - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0147	0.0000	1.0147	0.4580	0.0000	0.4580	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5862	4.4168	4.8714	0.0146		0.1750	0.1750		0.1615	0.1615	0.0000	1,276.5233	1,276.5233	0.4023	0.0000	1,286.5795
Total	**0.5862**	**4.4168**	**4.8714**	**0.0146**	**1.0147**	**0.1750**	**1.1897**	**0.4580**	**0.1615**	**0.6195**	**0.0000**	**1,276.5233**	**1,276.5233**	**0.4023**	**0.0000**	**1,286.5795**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0225	0.0144	0.1449	3.7000e-004	0.0432	2.4000e-004	0.0434	0.0115	2.3000e-004	0.0117	0.0000	33.6505	33.6505	1.0500e-003	1.1100e-003	34.0085
Total	**0.0225**	**0.0144**	**0.1449**	**3.7000e-004**	**0.0432**	**2.4000e-004**	**0.0434**	**0.0115**	**2.3000e-004**	**0.0117**	**0.0000**	**33.6505**	**33.6505**	**1.0500e-003**	**1.1100e-003**	**34.0085**

Russ Creek and Centerville Slough Restoration Project 2025 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Berm Fill and Tide Gate Placement - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7862	0.0000	1.7862	0.8898	0.0000	0.8898	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2754	2.7778	2.0922	4.7400e-003		0.1182	0.1182		0.1087	0.1087	0.0000	416.8305	416.8305	0.1348	0.0000	420.2008
Total	**0.2754**	**2.7778**	**2.0922**	**4.7400e-003**	**1.7862**	**0.1182**	**1.9044**	**0.8898**	**0.1087**	**0.9985**	**0.0000**	**416.8305**	**416.8305**	**0.1348**	**0.0000**	**420.2008**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	7.8700e-003	0.0791	2.0000e-004	0.0236	1.3000e-004	0.0237	6.2800e-003	1.2000e-004	6.4000e-003	0.0000	18.3548	18.3548	5.8000e-004	6.1000e-004	18.5501
Total	**0.0123**	**7.8700e-003**	**0.0791**	**2.0000e-004**	**0.0236**	**1.3000e-004**	**0.0237**	**6.2800e-003**	**1.2000e-004**	**6.4000e-003**	**0.0000**	**18.3548**	**18.3548**	**5.8000e-004**	**6.1000e-004**	**18.5501**

Russ Creek and Centerville Slough Restoration Project 2025 - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Berm Road Base Placement - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0141	0.1159	0.1270	2.2000e-004		4.8900e-003	4.8900e-003		4.6400e-003	4.6400e-003	0.0000	18.1410	18.1410	4.6700e-003	0.0000	18.2578
Total	**0.0141**	**0.1159**	**0.1270**	**2.2000e-004**	**0.0000**	**4.8900e-003**	**4.8900e-003**	**0.0000**	**4.6400e-003**	**4.6400e-003**	**0.0000**	**18.1410**	**18.1410**	**4.6700e-003**	**0.0000**	**18.2578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3400e-003	1.5000e-003	0.0151	4.0000e-005	4.5000e-003	3.0000e-005	4.5200e-003	1.2000e-003	2.0000e-005	1.2200e-003	0.0000	3.5028	3.5028	1.1000e-004	1.2000e-004	3.5401
Total	**2.3400e-003**	**1.5000e-003**	**0.0151**	**4.0000e-005**	**4.5000e-003**	**3.0000e-005**	**4.5200e-003**	**1.2000e-003**	**2.0000e-005**	**1.2200e-003**	**0.0000**	**3.5028**	**3.5028**	**1.1000e-004**	**1.2000e-004**	**3.5401**

Appendix C

Summary of Upland and Habitat Mapping

Technical Memorandum

August 8, 2022

To	Jill Demers and Doreen Hansen, Humboldt County Resource Conservation District (HCRCD) Dean Kwasny and Nathan Key, Natural Resources Conservation Services (NRCS)
From	Jane Cipra, GHD Botanist
Reviewed	Misha Schwarz, GHD Wetland Scientist Jeremy Svehla, GHD Project Manager
Ref. No.	11187323
Subject	Russ Creek & Centerville Slough Enhancement Project - Sensitive Natural Communities, Rare Plants and Upland Delineation

1. Introduction

The Eel River Estuary north of Centerville Beach is a tidal river delta that was diked in the 19th century for agricultural use and is now a mosaic of wetlands and pastures actively managed for grazing. These pastures are seasonally flooded by the Eel River, and in the last 20 years have been subject to an increased frequency of overwash from ocean waves. Recent overwash events have eroded protective foredune vegetation and flooded the inland freshwater pastures, causing vegetation community conversion from freshwater wetlands to brackish marshes and brackish pasture. Based on aerial imagery (Google Earth 2019) foredune and nearshore vegetation have been eroded by overwash events over 1.7 linear miles north of Centerville Beach since 2004. A study of Eel River Shorelines Trends measured the net shoreline erosion in the Project Area from 1948 to 2016 to be 16.39 meters, or a loss of 0.24 meter per year (GHD 2018).

The wetlands in the Project Area have been delineated over multiple years by Mad River Biologists (MRB) in 2009 and 2011, Morrisette in 2012, and GHD Inc. (GHD) staff, along with rare plant surveys, and vegetation community mapping since 2013 (Table 1). GHD staff delineated uplands in the Eel River Estuary Preserve (EREP) in the fall of 2013, and surveyed the vegetation in the EREP in 2014. GHD staff delineated uplands and surveyed the vegetation of the Russ Ranch & Timber (RR&T) Properties south of the Preserve in 2015. In 2021, upland delineation and vegetation mapping were revisited and updated due to the changing conditions of the Project Area. GHD staff completed the upland delineations in the right-of-way along Centerville Road on April 27, 2022 and surveyed the road shoulders for rare species in April and June of 2022.

This memorandum is a compilation and summary of all past and current work; mapping of vegetation, rare plants, and uplands in the Project Area.

Table 1 Previous studies and reports in the Project Area.

Author, Year	Title	Study
MRB 2009	Delineation of Wetland and Waters of the US for Connick Ranch	Delineation of wetlands
MRB 2011	Eel River Estuary Preserve Biological Evaluation and Wetland Delineation for Proposed Bridge Construction and Road Improvement Project	Wetland delineation
Morrissette 2012	Eel River Estuary Preserve Biological Evaluation and Wetland Delineation for Russ Creek Bridge Replacement Project.	Wetland delineation
GHD 2013	Eel River Estuary Preserve	Habitat and vegetation mapping
GHD 2014	Eel River Estuary Preserve (EREP) Ecosystem Enhancement Project	Delineation of uplands
GHD 2014	Special-Status Species Evaluation and Special-Status Plant and Animal Surveys for Eel River Estuary Preserve (EREP), Ferndale, California	Special-status plant and animal survey
GHD 2015	Russ Ranch and Timber	Delineation of uplands
GHD 2015	Special-Status Plant Survey for Russ Ranch and Timber component of the Eel River Estuary Preserve Ecosystem Enhancement Project	Rare plant survey

1.1 Location

The Project Area is located on the coast in Humboldt County, west of Ferndale, California. The Project Study Boundary (PSB) extends from Centerville Beach in the south, to the confluence of the Eel and Salt Rivers to the north (**Attachment A; Figure 1**). The Project Area is owned by two private landowners: the southern 601 acres are owned by RR&T, and the northern 1,239 acres comprise the EREP owned by The Wildlands Conservancy (TWC). The Project Area includes coastal dunes and swales, and a patchwork of agricultural lands, tidal salt marsh, brackish marsh, sloughs/open water channels, freshwater ponds and ditches up to 1.3 miles inland from the Pacific Ocean. Prominent water features include the Salt River, Russ Creek, Shaw Creek, and the southern portion of the Western Drainage as well as smaller (seasonal) slough channels and drainage ditches.

The climate is Mediterranean with precipitation most abundant in the winter months, and the average annual rainfall is approximately 48.5 inches. Approximately two thirds of the year, the site is influenced by coastal fog.

The site corresponds to portions of the USGS 7.5 Minute Ferndale and Cannibal Island quadrangles in the 02N and 03N Townships and 02N Range. The coordinates for the Centerville Road access route are 40.576407N, -124.333866W.

1.2 Project Study Boundary (PSB)

Prior to conducting field work, the PSB was discussed and determined in conjunction with the project partners. The PSB was established to focus delineation efforts and vegetation mapping on areas of the site where project features such as site modifications, project alternatives, mitigation, staging, and access could be considered. The uplands delineation effort targeted areas that were topographically higher and thus might be confirmed/documented as uplands (i.e., historic levees, roads, and visually higher and sloped areas) to identify possible mitigation opportunities, spoils disposal options, and temporary staging and stockpile areas for proposed various restoration activities. The delineation did not focus on evaluation/mapping of upland dune complex along the western portion of the parcels.

The PSB consists of level to undulating areas influenced by surface and subsurface hydrology, salinity and past and current land use and modifications. Elevations on site range from -4.0 feet in the tidal channels to approximately 20 feet (NAVD88) in the foredunes. Historical land use for the site includes grazing for dairy through the use of diked levees on historic tidal lands. Many of these wetland pastures are still actively used for grazing.

1.3 Upland and Wetland Delineation

In October, 2013, GHD staff conducted a delineation of uplands on the EREP in preparation for a proposed Ecosystem Enhancement Project. GHD staff delineated the uplands of the RR&T Properties in June and September of 2015. GHD staff revised all delineations in 2021 and completed upland delineation in April 2022 in the right-of-way along Centerville Road.

The upland delineation procedure was completed pursuant to the U.S. Army Corps of Engineers (USACE) 1987 Manual; and the Regional Supplement to the USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coastal Regions (2010); and California Coastal Commission (Commission) guidance for wetland delineations (based on a one and three-parameter definitions). Current and historic land use practices in the vicinity of the Project Area consist of active agricultural management. Portions of the Project Area are noted to be potential “Problematic Areas” as the wetlands are considered seasonal (USACE 2010). The Project Area is further complicated due to the seasonal nature of surface and/or groundwater and the observed absence of hydrology within 12 inches of the soil surface in the fall months.

The delineation in this report includes a discussion of site conditions, sampling methodology, sampling results, and conclusions as well as a map delineating proposed upland and wetland boundaries within the PSB for both the EREP and the RR&T parcels (**Attachment A; Figure 2**). A jurisdictional determination (JD) from the USACE (and Commission if deemed appropriate) should be requested to seek concurrence with results reported herein in preparation for anticipated permitting requirements of the proposed project.

1.4 Vegetation Community Mapping

In April and June of 2014, GHD staff conducted special status plant surveys in the EREP PSB. GHD staff performed protocol-level rare plant surveys on the RR&T Properties in May and June, 2015. From April through August 2021, GHD staff resurveyed the entire PSB including both the EREP and the RR&T Properties. Vegetation communities and rare plants were remapped in 2021 (**Attachment A; Figures 3-4**) to document vegetation community shifts resulting from the storm surges of 2016 and 2021.

Areas of the site with the highest potential to be affected by proposed restoration activities were prioritized for vegetation characterization and mapping. Detailed surveys and mapping were not performed where the potential for ground disturbing work was determined to be low. Managed pastures were not formally surveyed and were mapped based on a limited reconnaissance site visit and photo-interpretation of aerial imagery. The western portion of the PSB and Russ Creek riparian area on the eastern edge were described and mapped in more detail because these areas were proposed for potential ground-disturbing work.

The results of these field efforts will provide a basis to avoid, minimize, and/or mitigate potential impacts associated with project-related activities and guide future management goals and decisions.

2. Regulatory Setting

2.1 Federally Protected Plant Species

Special status plant species under federal jurisdiction include those listed as endangered, threatened, or as candidate species by the Fish and Wildlife Service (USFWS) under the Federal Endangered Species Act (FESA).

2.2 State Protected Plant Species

Special status plant species under California Department of Fish and Wildlife (CDFW) jurisdiction include the following:

- Endangered, Threatened, or Candidate plant species listed under the California Endangered Species Act (CESA),
- Plants listed as Rare under California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.) and,

- California Rare Plant Ranking (CRPR) rare plants on the California Native Plant Society's (CNPS) Lists 1 and 2.

Plant species on CNPS Lists 1 and 2 are considered eligible for state listing as Endangered or Threatened pursuant to the California Fish and Game Code, and CDFW has oversite of these special status plant species as a trustee agency. Such species are considered during the CEQA process because they meet the definition of Threatened or Endangered under Sections 2062 and 2067 of the California Fish and Game Code. Plants on CNPS Lists 3 and 4 do not have formal protection under CEQA but may merit consideration in certain circumstances. CDFW publishes and periodically updates lists of special status species which include all taxa of concern that are tracked by CDFW. Additionally, locally significant plants (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances) are considered special status plant species (CDFW 2018).

2.3 Sensitive Natural Communities

Natural vegetation communities listed as Sensitive in the California Natural Diversity Database (CNDDB) and on the California Sensitive Natural Communities List are to be addressed within the CEQA review process (CDFW 2021a). Sensitive Natural Communities (SNCs) are primarily classified at the Alliance level according to A Manual of California Vegetation (Sawyer et al. 2009). Legacy SNCs are listed in CNDDB according to the Holland classification system (1986), and Holland types may be used when a current Alliance-level classification does not exist (CDFW 2021a). CDFW considers alliances with a NatureServe State Rank of S1 to S3 to be Sensitive Natural Communities, and therefore these alliances are considered during the CEQA process (CDFW 2021a).

2.4 Environmental Sensitive Habitat Areas

Environmentally Sensitive Habitat Areas (ESHAs) are defined by the Coastal Commission as follows:

> *"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.* (Pub. Resources Code, § 30107.5)

The Coastal Commission's designation of ESHA generally includes vegetation alliances listed in CDFW's California Sensitive Natural Communities List with an S1- S3 ranking. The Coastal Commission's ESHA category is broadly defined, and it also includes habitat for special-status species, wetlands, riparian areas, and other areas that provide important ecosystem functions (CCC 2013). While there is not a specific list of habitats considered to be ESHA for the State or County, the Coastal Commission through the Coastal Act and counties or municipalities through the Local Coastal Program (LCP) are the jurisdictional agencies that exert authority in identifying and protecting ESHAs in the course of project activities and permitting.

2.5 Eel River Area Local Coastal Plan

The Project Area is within the Appeal and Local Jurisdiction of the Coastal Zone, which is regulated by Humboldt County under the Eel River Area Local Coastal Plan (Eel River Area Plan [ERAP]) under the Coastal Act. The Appeal Jurisdiction is appealable to the California Coastal Commission.

The Eel River Area Plan (certified in 1982) uses the Coastal Act definition of wetlands (Ch.3, p.30), and states "No land use or development shall be permitted in areas adjacent to coastal wetlands, called Wetland Buffer Areas, which degrade the wetland or detract from the natural resource value" (Ch.3, p.31, Humboldt County 2014). The Local Coastal Plan provides specific examples of ESHA within the Eel River Area coastal zone (Ch.3, p.28):

a. Environmentally sensitive habitats within the Eel River Planning Area include:

(1) Rivers, creeks, and associated riparian habitats;

(2) Estuaries, sloughs, and wetlands;

(3) Rookeries for herons and egrets;

(4) Harbor seal pupping areas;

(5) Critical habitats for rare or endangered species listed on State or Federal lists.

3. Approach

3.1 Pre-Survey Investigations

Prior to initiating field work, the *California Natural Diversity Database* (CNDDB) [CDFW 2021b], and the CNPS *Inventory of Rare and Endangered Vascular Plants* (CNPS 2013-2021) were queried to identify the special-status plants known to occur in the project vicinity or with the potential to occur in the PSB. Relevant literature was also reviewed, including recovery plans, status reports, published articles, species lists maintained by TWC staff, and previous regulatory review documents, when available. Topographic maps and aerial photography were also consulted prior to and during the survey to determine potential habitats for target sensitive species occurrence.

The CDFW and the CNPS recommend project assessments include species with potential to occur on nine USGS quads with the project site located in the central quad. The scoping list included species with potential to occur on the USGS 7.5 Minute quadrangles in which the project is located (Ferndale), as well as six adjacent quads (Capetown, Cape Mendocino, Fields Landing, Fortuna, Taylor Peak, and Cannibal Island). For this scoping list, only seven quads were used due to the coastal location of the Project Area and lack of offshore quads to the west. The queries yielded 30 special-status plant species previously documented in the project vicinity. Of these taxa, 14 have a high to moderate probability of occurring within the PSB or are confirmed as present (Table 2).

Table 2 ***Rare plant potential to occur table***

Scientific Name	Common Name	Listing status, CRPR rank	Habitat Description	Bloom Period	Potential to Occur in PSB
Abronia umbellata var. *breviflora*	pink sand-verbena	1B.1	Coastal dunes	Jun-Oct	High
Angelica lucida	sea-watch	4.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt)	Apr-Sep	Present
Anomobryum julaceum	slender silver moss	2B.2	Broadleafed upland forest, Lower montane & North Coast coniferous forest, outcrops, usually on roadcuts	NA	None
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B.2	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	Apr-Oct	High
Carex leptalea	bristle-stalked sedge	2B.2	Bogs and fens, Meadows, seeps, marshes and swamps	Mar-Jul	Moderate
Carex lyngbyei	Lyngbye's sedge	2B.2	Marshes and swamps (brackish or freshwater)	Apr-Aug	Present
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover	1B.2	Marshes and swamps (coastal salt)	Apr-Aug	Present
Castilleja litoralis	Oregon coast paintbrush	2B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub/sandy	Jun	Low
Chloropyron maritimum ssp. *palustre*	Point Reyes bird's-beak	1B.2	Marshes and swamps (coastal salt)	Jun-Oct	High
Clarkia amoena ssp. *whitneyi*	Whitney's farewell-to-spring	1B.1	Coastal bluff scrub, Coastal scrub	Jun-Aug	Low
Erysimum menziesii	Menzies' wallflower	FE, SE, 1B.1	Coastal dunes	Mar-Sep	High
Erythronium oregonum	giant fawn lily	2B.2	Cismontane woodland, Meadows and seeps	Mar-Jun(Jul)	None
Erythronium revolutum	coast fawn lily	2B.2	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest/Mesic, streambanks	Mar-Jul(Aug)	Low
Gilia capitata ssp. *pacifica*	Pacific gilia	1B.2	Coastal bluff scrub, Chaparral (openings), Coastal prairie	Apr-Aug	Low
Gilia millefoliata	dark-eyed gilia	1B.2	Coastal strand, dunes	June-Aug	Present
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	1B.2	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie	Mar-Jun	Low
Hesperolinon adenophyllum	glandular western flax	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland/usually serpentinite	May-Aug	None

Scientific Name	Common Name	Listing status, CRPR rank	Habitat Description	Bloom Period	Potential to Occur in PSB
Lathyrus palustris	marsh pea	2B.2	Bogs, fens, Coastal prairie, Coastal scrub, Lower montane & North Coast coniferous forest, marsh, wetland	Mar-Aug	Moderate
Layia carnosa	beach layia	FT, SE, 1B.1	Coastal dunes, Coastal scrub (sandy soils)	Mar-Jul	Present
Lilium occidentale	western lily	FE, SE, 1B.1	Bogs, fens, marshes, swamps (freshwater), Coastal prairie/scrub/bluff scrub, North Coast coniferous forest	Jun-Jul	Moderate
Montia howellii	Howell's montia	2B.2	Meadows and seeps, North Coast coniferous forest, Vernal pools/vernally mesic, sometimes roadsides	Mar-May	Low
Oenothera wolfii	Wolf's evening-primrose	1B.1	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest/sandy, usually mesic	May-Oct	Low
Packera bolanderi var. *bolanderi*	seacoast ragwort	2B.2	Coastal scrub, North Coast coniferous forest/Sometimes roadsides	May-Jul (Aug)	No
Polemonium carneum	Oregon polemonium	2B.2	Coastal prairie, Coastal scrub, Lower montane coniferous forest	Apr-Sep	Low
Puccinellia pumila	dwarf alkali grass	2B.2	Marshes and swamps (coastal salt)	Jul	High
Romanzoffia tracyi	Tracy's romanzoffia	2B.3	Coastal bluff scrub, Coastal scrub/rocky	Mar-May	None
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	1B.2	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest/often roadcuts	May-Aug	None
Sidalcea oregana ssp. *eximia*	coast checkerbloom	1B.2	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Jun-Aug	Low
Sisyrinchium hitchcockii	Hitchcock's blue-eyed grass	1B.1	Cismontane woodland (openings), Valley and foothill grassland	Jun	None
Spergularia canadensis var. *occidentalis*	western sand-spurrey	2B.1	Marshes and swamps (coastal salt)	Jun-Aug	High

Status abbreviations:

FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; FD = Federally Delisted

SE = State Endangered; SD = State Delisted; ST = State Threatened.

California Rare Plant Ranks (CRPR), CNPS rankings for rare plants (CNPS 2022): 1A = Plants presumed extinct in California; 1B = Plants rare, threatened or endangered in California and elsewhere; 2 = Plants rare, threatened, or endangered in California, but more common elsewhere; 3 = Plants about which more information is needed (a review list); 4 = Plants of limited distribution (a watch list); n/a = not applicable;

Threat Code extensions and their meanings: ".1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); .3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)" (CDFW 2021b).

3.2 Mapping Methods

For the 2013-2014 delineation and surveys of the EREP, a Trimble GPS with sub meter accuracy was used. The locations of individual rare plants were not recorded, rather a polygon was drawn to encompass the area of species presence and an estimate of individuals (to the nearest 100) present and approximate percent cover (using standard cover classes of 1-5%, 5-25%, 25-50%, 50-75%, and greater than 75%) at the time of survey was recorded.

For the 2015 RR&T delineation and surveys, staff used a Tablet PC with a Pro 6H receiver which has GPS accuracy of one to three feet depending on environmental and site conditions. A total of three field days were spent mapping vegetation communities within the PSB.

Uplands were mapped in 2021 and 2022 using an Eos Arrow 100 Submeter Global Navigation Satellite System (GNSS) Receiver and an iPad running ArcGIS Collector software in the WGS84 datum.

The 2021 surveys focused on resurveying the areas that had changed due to the storm surge overwash events of 2016 and 2021. Vegetation communities were mapped using points collected in the field with an Eos Arrow 100 Submeter Global Navigation Satellite System (GNSS) Receiver and an iPad running ArcGIS Collector software in the WGS84 datum. Vegetation community boundaries were then digitized with GIS from aerial imagery based on field observations and visible vegetation signatures.

3.3 Botanical Survey Procedures

3.3.1 Vegetation Community Classification

Vegetation types for the project site were classified following California vegetation classification standards per A Manual of California Vegetation (MCV) (Sawyer et al. 2009), with updated regional information as available. Many of the alliances described herein were previously classified and described by Pickart (2006) for diked wetlands of Humboldt Bay National Wildlife Refuge where Pickart collected elevation, salinity, and soil moisture data to characterize the vegetation alliances. The results of that study are used here as a basis for groupings relating to salinity, with dominant species indicating various salinity regimes.

As described in the MCV, the basic unit of classification is called an alliance. Alliances are based on the dominant or diagnostic species of the stand, usually of the uppermost and/or dominant height stratum. A dominant species covers the greatest area. A diagnostic species is consistently found in some vegetation types but not others. Alliances reflect regional to sub-regional climates, substrates, hydrology, and disturbance regimes. Sub-units called associations are used to further refine alliances, capturing variety in species composition and structure. Vegetation types dominated by non-native plant species are referred to as semi-natural stands rather than alliances and have stand types rather than associations (Sawyer et al. 2009).

3.3.2 Rare Plant Surveys

Surveys to determine the presence of special-status plant species (listed as rare, threatened, endangered, or candidate for rare, threatened, or endangered species listing under the State or Federal Endangered Species Acts, CNPS, or species of local importance) were conducted at the appropriate blooming or active period for each species. Cara Scott (GHD Botanist) and Annie Eicher (H.T. Harvey Plant Ecologist) surveyed the EREP in 2014 for a total of 30.5 field person hours. Cara Scott also surveyed the RR&T Properties in 2015. Kelsey McDonald (GHD Botanist) and Rose Dana (GHD Botanist) revisited accessible portions of the PSB for rare plants in 2021 and documented recent changes in vegetation communities. Jane Cipra (GHD Botanist) surveyed the right-of-way along Centerville Road for rare plants in April and June of 2022.

U.S. Fish & Wildlife Service (USFWS) and/or other resources agencies and local experts were contacted to verify that botanical surveys were being conducted at an appropriate time of year to allow for climatic micro-variations and bloom periods for specific species on a year-to-year basis. Additionally, reference site(s) were viewed if possible, where target plant species are known to occur in the Project Area to verify the species was visible and blooming at the time of surveys. It was determined that a minimum of two seasonally-appropriate focused botanical surveys should be conducted, one in the spring (April or May) as well as one visit in summer (June to mid-July).

The 2014 and 2015 surveys were floristic in nature following Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities by the California Natural Resource Agency (CDFW 2009) and General Rare Plant Survey Guidelines by the Endangered Species Recovery Program (USFWS 2002). An intuitively controlled survey was conducted that sampled and identified potential habitat(s). Plants were identified to the lowest taxonomic level (genus or species) necessary for rare plant identification. Nomenclature follows The Jepson Manual (Baldwin et al. 2012). Rare plant surveys were conducted by walking the site for target species and recording extent, approximate number, and percent cover of special-status plant species observed. Effort was focused in the EREP south of the existing earthen dike where project-related impacts were possible under alternatives being considered; minimal time was spent north of the earthen dike because no project activities are anticipated there.

3.4 Upland and Wetland Delineation

All delineations of uplands and wetlands were conducted by a GHD field team consisting of two qualified technical staff for each field visit including one wetland or soil scientist and one botanist. Table 3 lists the names and titles of all staff that participated in wetland delineation in the PSB.

Table 3 GHD qualified technical staff that performed wetland delineations in the PSB.

Date	Area	Staff	Title
October 2013	EREP	Lia Webb	Soil Scientist
		Stephanie Klein	Wetland Ecologist
		Cara Scott	Botanist
		Anna Gower	Environmental Scientist
June, September 2015	RR&T Properties	Lia Webb	Soil Scientist
		Misha Schwarz	Wetland/Soil Scientist
		Cara Scott	Botanist
		Jordan Mayor	Botanist
October 2021	Entire PSB	Misha Schwarz	Wetland/Soil Scientist
		Kelsey McDonald	Botanist
		Rose Dana	Botanist
April 2022	Right-of-way along Centerville Road	Matt Tolley	Wetland/Soil Scientist
		Jane Cipra	Botanist

All GHD field efforts focused on delineation of upland extent, the predominant matrix of seasonal agricultural wetlands and transitional areas present in the Project Area due to low gradient topography and proximity to Russ Creek and the Salt River. The delineation efforts also incorporated results of previous delineation efforts at portions of the site (Mad River Biologists 2011, Morrissette 2012). With this approach of relying on previous results and focusing on apparent upland areas within a matrix of wetland and transitional areas, many (yet not all) of the areas not mapped as uplands, by default likely fall under jurisdiction of the U.S. Army Corp of Engineers (USACE) based on the three-parameter wetland definition and/or Waters of the U.S., as well as under the jurisdiction of the California Coastal Commission (Commission). The delineation efforts required a streamlined approach that targeted larger upland areas that could be considered for use as project mitigation, staging, and/or access. Upland areas were challenging to discern at the time field work was conducted due to the lack of winter wetland hydrology coupled with very low gradient topography. Smaller upland areas may be present within the larger wetland and transitional complex that dominates the site. The substantial upland dune complex on the western edge of the site was not evaluated (not mapped for either uplands or wetlands).

GHD field staff delineated upland boundaries that meet the three-parameter upland definition as well as other areas that meet the USACE definition of upland (not under USACE jurisdiction) yet may be under the Commission jurisdiction based on presence of one or two-parameter wetland indicators. The typical wetland delineation approach would be to determine one single wetland/upland boundary line that meets multi-jurisdictional requirements of both the Commission and USACE. However, due to a gradual ecotone and a low topographical gradient at this site, the field evaluation determined several areas that meet USACE upland definition, but could be considered jurisdictional by the Commission based on presence of one or two-parameters. Therefore, multiple jurisdictional lines were deemed appropriate to delineate these areas to meet separate USACE and Commission jurisdictional definitions.

The delineation followed the USACE criteria three-parameter approach from the most current USACE wetland delineation manual for the area, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coastal Regions (Version 2.0) (USACE 2010), and per California Coastal Commission wetland definition which relies on a one-parameter approach. Wetland determination data sheets from the most current version of the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast were used to document existing conditions for the field effort (USACE 2010) and are provided in **Attachment B**.

Vegetation, soil, and hydrology data were collected at sampling plots to typify areas with similar conditions of topography and vegetation communities in order to delineate the wetland/upland boundary. The defined upland boundaries are presented in figures provided in **Attachment A**; Figure 2. Upland confirmation points are provided as U#tp# naming convention where the test pits/plots are not paired in relation to a transect across wetland/upland boundary, yet were installed for confirmation of site conditions. Additional intermediate/confirmation pits/plots were installed in multiple presumed upland areas for verification of wetland/upland boundary and to confirm extrapolation of delineation boundaries based on previous test pits/plots, but are not recorded on data sheets in order to keep delineation efforts efficient (indicated with “-int” naming convention on maps).

Test pit/plots were evaluated at representative positions to allow onsite identification of upland areas. The surfaces of the fields were transected on foot to ensure no undetected changes in wetland/upland conditions existed. Typically, areas appearing to meet the criteria for wetlands were evaluated and determined individually for wetland characteristics. When possible upland areas were identified, a boundary was designated from the known wetland plot to the presumed edge of the upland. Typically, shifts in topography, soil, and/or vegetation were used to locate the wetland/upland boundary. In some places a complex mosaic of wetlands and uplands were encountered and topographic elevation was utilized in conjunction with plot observations in order to extrapolate the upland/wetland boundary from test pit locations around topographic features.

Along the levee berm west of the existing tidegate, elevation data was used to extrapolate results from vegetation transects conducted on adjacent agricultural lands in preparation for the nearby Salt River Restoration Project to determine the extent of brackish vegetation and wetland/upland boundary along the levee, which is along the 9-foot contour on the outboard/exterior. The adjacent vegetation transects on which this determination is based, included topographic survey and plots documenting extent of brackish hydrophytic vegetation in relation to elevation in the project vicinity. This project proposes to leverage this extensive past data collection as a basis for delineation of brackish wetlands along the outboard levee system. On the interior side of the levee, delineation results were extrapolated from south of the existing tidegate along the west side of existing levee, based on elevation. The area south of tidegate (Upland 1) determined wetland/upland boundary along the levee is along the 7-foot contour.

3.4.1 Soils Methodology

The definition of a hydric soil is “a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.” The USACE 1987 Manual procedures were combined with the Natural Resources Conservation Service’s (NRCS) definition of hydric soils presented in Changes in Hydric Soils of the United States and Field Indicators of Hydric Soils in the United States (USDA 2006), as well as the most recent wetland guidance document Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (USACE 2010). The regional supplement provides detailed descriptions of primary and secondary factors that help determine if wetland hydrology is present at a site. Soil data was recorded on data sheets from the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 2010; provided in **Attachment B** of this memorandum).

To evaluate the soil matrix and qualitatively describe the presence or absence of redoximorphic features, reductions and concentrations, soil pits were dug to an approximate depth of 14-18 inches. Data on soil color, texture and redoximorphic features were collected. Care was taken to observe mottling (iron concentrations), distinguish between chromas of 1 and 2, and determine the percentage of redoximorphic features in the soil. Redoximorphic features at 2% and 5% are important thresholds for identification of hydric soils for both USACE and CCC delineation purposes.

Colors were described for the entire depth of the test pit. Colors were determined on moist ped surfaces which had not been crushed. To determine the soil matrix colors, redoximorphic features colors and redoximorphic abundance, the Munsell Color Chart (Gretag Macbeth 2000) was used. Soils with low chromas were verified as being hydric or upland using indicators for Depleted Matrix (F3) and Redox Dark Surface (F6) for fine grained soils (USACE 2010).

3.4.2 Hydrology Methodology

One primary indicator or two secondary indicators are required to identify the presence of wetland hydrology. Ground water was present in the 2021 and 2022 soil pits to delineate the upland boundary, but direct evidence of ground water (soil saturation, standing water, etc.) was not present in wetland soil pits in 2013 and 2014 due to low rainfall conditions. Therefore, secondary indicators primarily used to delineate the wetland boundary in the absence of primary indicators include: Geomorphic Position (D2), FAC-Neutral Test (D5), and Drainage Pattern (B10).

3.4.3 Wetland Vegetation Survey

GHD staff identified the dominant species at each plot and species observed within a radius of five feet were listed in either the tree, shrub or herb stratum. The percent of absolute cover for each species was recorded along with their wetland indicator status as listed in the *Western Mountains, Valleys and Coasts Region-National Wetland Plant List Final Draft Ratings* (Lichvar 2013, USACE 2020). This document classifies plants based on the probability of occurring within a wetland using the categories shown in Table 4.

Table 4 Wetland vegetation indicator categories and probabilities

Code	Wetland Indicator Category	Estimated Probability of Occurrence in Wetlands
OBL	Obligate Wetland	>99% of the time
FACW	Facultative Wetland	67% to 99% of the time
FAC	Facultative	34% to 66% of the time
FACU	Facultative Upland	1% to 33% of the time
UPL	Obligate Upland	Less than 1% of the time
NI	Non-Indicators	Not assigned a rating of wetland condition and are also included in the UPL category

(Tiner 1999, Lichvar et al. 2012)

If greater than 50% of the dominant plant species at each plot are classified Obligate (OBL), Facultative/Wet (FACW), or Facultative (FAC), the vegetation is determined to be hydrophytic (wetland plants) so long as the plants are growing as hydrophytes.

3.4.4 Wetland Determination

Corps of Engineers Jurisdictional Wetland Determinations

The USACE wetland determination utilized the three parameters (soils, hydrology, and vegetation) but was limited mostly to soils and hydrology (secondary parameters) as the vegetation was relatively uniform throughout the site (except where described in Section 4.1 – Upland Mapping). An area was determined to be USACE and Commission uplands when all three wetland parameters were absent (hydric soils, wetland hydrology, and hydrophytes). If one of the three wetland parameters was not present, then the area was mapped as a USACE upland, yet identified as two-parameter upland (likely considered by Coastal Commission to be a wetland). This property is considered a “Problematic Area” as the wetlands are considered seasonal (USACE 1987 Manual, page 91).

In addition, the USACE noted in the wetland delineation manual that “on a sub-regional basis, questions of indicator status of FAC species may use the following opinion: When FAC species occur as dominants along with other dominants that are not FAC (either wetter or drier than FAC), the FAC species can be considered neutral, and the vegetation decision can be based on the number of dominant species wetter than FAC as compared to the number of species drier than FAC. When a tie occurs or all the dominant species are FAC, the non-dominant species should be considered. The area has hydrophytic vegetation when more than 50 percent of all considered species are wetter than FAC. When either all species are FAC or the number of species wetter than FAC equals the number of species drier than FAC, the wetland determination will be based on the soil and hydrology parameters” (USACE 1987 Manual, page 18).

Commission Jurisdictional Wetland Determination

Section 30121 of the California Coastal Act (1976) has a broad definition for a wetland:

> “Wetland means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater, marshes, open or closed brackish water marshes, swamps, mudflats, or fens.”

However, the Commission Administrative Regulations (Title 14 CCR Section 13577 (b)) provides a more explicit definition:

> “Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitat.”

<u>1994 California Coastal Commission Procedural Guidance</u>

The 1994 California Coastal Commission Procedural Guidance for the Review of Wetland Projects in California’s Coastal Zone provides the following information regarding wetland classification system:

Although the U.S. Fish and Wildlife Service (USFWS) classification system is complex, it does provide an objective method for identifying virtually most wetland landscapes. Relative to the USACE, the USFWS definition is generally regarded as being more inclusive in the classification and subsequent delineation of a wetland. This is because the USFWS classification system defines a wetland by the presence “of the proper hydrology and either the presence of hydric soils or hydrophytic vegetation, except in non-soil areas, such as rocky intertidal areas, where only the presence of proper hydrology is required.”

<u>Cowardin Wetland Definition</u>

According to Cowardin 1979 the definition of a wetland is as follows:

"In general terms, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. The single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil.

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of the classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season each year."

Based on the above definitions as well as the 1994 guidance, the Commission relies on a one-parameter approach for the determination of a wetland and utilizes the 1979 Cowardin wetland definition/classification and the Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013). If an area is determined to have one of the three wetland parameters (hydric soils, wetland hydrology, or the predominance of hydrophytes) it is confirmed to be a Commission wetland. However, at this project site, vegetation is not a strong indicator of the wetland/upland boundary as the vegetation present on most of the site has been managed by continued farming and disking for agricultural purposes, and is heavily influenced by the maritime climate. The site includes soils with high available water (silts) which can have a perching effect during rain/stormwater events, and has soils with near iso-mesic temperature regimes. Agricultural management of the vegetation present on this land is the dominating factor influencing the dominant vegetation type at this site (not strongly correlated with the natural community and/or environmental selection) and more recently wave overwash.

Some listed FAC species, such as perennial ryegrass (*Festuca perennis*), have been seeded on the property; and therefore, are not growing as hydrophytes in all cases. Vegetation classified as OBL, FACW, FAC, FACU, or UP can lose strong predictive power at managed or disturbed sites. It is likely that the continued intensive management at this site promotes FAC plant species to be dominant, yet not necessarily growing in hydric conditions (not functioning as hydrophytes), in which case these species are existing as phreatophytes. A hydrophyte is defined as "a plant that grows partly or totally submerged in water" and a phreatophyte is defined as "a deep-rooted plant that obtains its water from the water table or the layer of soil directly above it" (Miriam-Webster Online Dictionary).

From a statistical perspective, when facultative wetland plants dominate an area, they are just as likely to occur in uplands or wetlands (34-66% chance) and therefore lose their predictive value. Field inspection to determine the presence of hydric soil conditions and/or wetland hydrology can alleviate potential technical misinterpretation as to actual hydric/wetland conditions. If the FAC plant species are not growing as hydrophytes (and no other parameters are present, i.e. hydric soil and/or hydrology), then the area should therefore not be considered a wetland based on various descriptive verbage/definitions of wetlands, including language originating from the Commission and USACE.

4. Results

4.1 Upland Mapping

Table 5 quantifies a summary of upland areas mapped at the project site to date by various consultants (GHD and Mad River Biologists). The "Change" column reflects the loss of uplands due to overwash events since 2015.

Table 5 Summary of Upland Results and change over time

Category	2015 Acres	2021 Acres	2022 Acres	Change
USACE Two-Parameter Uplands				
Upland 5	0.2	0		-0.2
Upland 6	0.1	0		-0.1
Upland 13	1.28	0		-1.28
Mad River Biologists (MRB) One-parameter wetland / Two-parameter Upland	9.83	9.80		-0.03
Centerville Rd One-parameter wetland / Two-parameter Upland			0.02	
SUBTOTAL 2-Par Uplands	**11.41**	**9.80**		**-1.61**
USACE/CCC Uplands				
Upland 1	3.34	3.31		-0.03
Upland 2	0.40	0.40		0
Upland 3	2.47	0		-2.47
Upland 4	0.64	0		-0.64
Upland 7	0.48	0		-0.48
Upland 8	0	0		0
Upland 9	0.62	0		-0.62
Upland 10	0.13	0		-0.13
Upland 14	0.04	0.04		0
Upland 15	3.75	3.75		0
RR&T Upland 1	3.27	0		-3.27
RR&T Upland 2	0.70	0.01		-0.69
RR&T Upland 3	0.46	0		-0.46
RR&T Upland 4	0.23	0		-0.23
RR&T Upland 5	0.34	0		-0.34
Centerville Road right-of-way (2022)			0.66	
SUBTOTAL USACE/CCC Uplands	**16.87**	**7.51**		**-9.36**
MRB Uplands [2009]	**39.29**	**37.42**		**-1.88**
TOTAL MAPPED UPLANDS 2015-21	**67.57**	**54.73**		**-12.85**
TOTAL MAPPED UPLANDS 2015-22			**55.39**	
Unmapped Area (upland wetland mix)[1]	**1,031.59**	**1,044.43**	**1,044.59**	
PSB Delineation Area TOTAL	**1,099.16**	**1,099.16**	**1,099.98**	

Current and historic land use practices in the vicinity of the site have consisted of active agricultural management primarily for grazing of dairy cows, hay production, and some areas have been disked and planted with agricultural pasture species. Many portions of the Project Area are noted to be potential Problematic Areas (USACE 1987, page 91) due to the altered nature of the site. Cattle currently being grazed on the site may complicate identification of some plant species, can alter the vegetation composition, and often results in surface soil compaction that can in turn create ephemeral surface ponding (from episaturation) that is not related to groundwater conditions (endosaturation). The wetland/upland determination is further complicated due to the seasonal nature of surface and/or groundwater and absence of hydrology within 12 inches of the soil surface in the fall months. Historically, in average winter rainfall, portions of the site have been reported as being temporarily flooded after storm events, particularly in lower lying portions of the site, yet hydrology parameters were not observed in many locations during the fall delineation efforts due to flashy nature of hydrology and active use of the site.

Wetlands observed at the site are palustrine emergent seasonal wetlands (NWI code PEM1Cd, National Wetlands Inventory 1987; Cowardin 1979; FGDC 2013) and two-parameter USACE upland areas that are potentially considered jurisdictional (degraded/seasonal) according to Commission definitions. The upland areas are predominantly perennial grassland series within the open agricultural bottoms. The upland areas observed at the site consist predominantly of ruderal non-native vegetation (*Agrostis stolonifera-Festuca arundinacea* Semi-Natural Herbaceous Stands). The upland/wetland delineation field results are presented in **Attachment A; Figure 2**. General descriptions of vegetation, soils, and hydrology site conditions observed are presented below, followed by more specific description of the upland areas mapped at the site.

Within the PSB, dominant species within wetlands along the upland/wetlands edges consist of creeping bentgrass (*Agrostis stolonifera*, FAC), perennial ryegrass (*Festuca perennis*, FAC), birds-foot trefoil (*Lotus corniculatus*, FAC), clover species (*Trifolium* sp., FAC), velvet grass (*Holcus lanatus*, FAC), and silverweed (*Argentia anserina*, OBL) and these species are also present in upland plots yet in conjunction with other plant species in most cases. In some low-lying portions of the site including broad pasture areas as well as along roadsides and some levees, current or historic brackish inputs allow for dominant species assemblage to include non-native cordgrass (*Spartina densiflora*, NL) and fat hen (*Atriplex prostrata*, FAC) as well as native brackish species such as pickleweed (*Sarcocornia pacifica*, OBL), salt grass (*Distichlis spicata*, FACW), and occasionally tufted hairgrass (*Deschampsia caespitosa*, FACW).

Upland areas included many of the FAC species listed above as dominant in the wetland and transitional areas, as well as presence of some dominant upland species which were used in the field to key in on the wetland/upland boundary, including sweet vernal grass (*Anthoxanthum odoratum*, FACU), yarrow (*Achillea millefolium*, FACU), and English plantain (*Plantago lanceolata*, FACU). As previously mentioned, in addition, upland sample plots included some dominant herbaceous species that are FAC or wetter such as velvet grass (*Holcus lanatus*, FAC), bentgrass (*Agrostis stolonifera*, FAC), and bird’s-foot trefoil (*Lotus corniculatus*, FAC).

The absence of wetland soil and hydrology indicators in upland areas corroborates the assumption that plants within some portions of the property that are listed as FAC are not actually growing as hydrophytes. This assumption is based on the definition that plants identified as FAC are just as likely to be found in both wetland and upland areas. The upland areas that did not have hydric soil or hydrology; yet with vegetation that fell on the cusp are an example of this condition (U1T2). From a statistical perspective, when facultative wetland plants dominate an area, they are just as likely to occur in uplands or wetlands (34-66% chance) and therefore lose their predictive value. Field inspection to determine the presence of hydric soil conditions and wetland hydrology can alleviate potential technical misinterpretation as to actual hydric/wetland conditions. If the FAC plant species are not growing as hydrophytes (as no other wetland parameters are present, i.e. hydric soil nor wetland hydrology), then the area would therefore not be considered a wetland based on various descriptive verbage/definitions of wetlands, including language originating from the Commission and USACE.

The Prevalence Index (PI) was calculated for areas where both soil and hydrology parameters (including topographic position) pointed toward an area being defined as upland, yet the vegetation was dominated by facultative (FAC) species. Where the additional evaluation using the PI determined a value greater than 3.0, the areas were mapped as three-parameter upland. If upon consideration of PI the vegetation still was determined to have a predominance of hydrophytic vegetation, this area was mapped as a two-parameter upland per Coastal Commission except in the following situations:

1) The PI values were very close to 3.0 and rounding up would have brought the PI to 3.0. Although this value is not greater than 3.0, it still does not officially pass the PI for upland vegetation.

2) Dominant species within an area were all FAC consisting of one to three FAC pasture species. While the PI is less than 3.0, the area does not include any dominant (> 20% absolute cover) wetter than FAC.

3) An area is topographically high and has absence of hydric soils and hydrology, therefore even if vegetation did not pass PI in these cases, the determination was made that these plants were not growing as hydrophytes due to topographic position, in conjunction with absence of wetland hydrology or hydric soils.

4.1.1 Soil

In general, upland soils associated with transects did not meet hydric soil indicators due to either high matrix chroma and/or absence of redoximorphic features. The high chroma soils often had mixed color soil due to source material from levee construction, mixing and historic drainage and slough modifications at the site. Where redoximorphic features were observed, in some cases the contrast was faint and therefore did not meet wetland indicators, and/or the layer was not thick enough or close enough to the surface to meet hydric soil indicators. In some cases, redoximorphic features consisted of a thin band originating at the surface and therefore can be attributed to surface compaction from cattle. Where lower chromas were present, soils did not exhibit redoximorphic features, or the redoximorphic layer did not meet depth and/or thickness requirements to qualify for wetland indicator(s).

4.1.2 Hydrology

The field work was conducted in the fall 2013 and summer 2015, both during an unusually dry period prior to onset of wet season conditions. Field work in 2021 was conducted in May and July, and field work in 2022 was conducted in April. In 2013 and 2015, primary indicators that might be utilized as indicators of seasonal wetland hydrology during a normal year were absent. Two secondary wetland hydrology indicators, FAC neutral test (D5) and Geomorphic Position (D2), were observed and were the basis of most wetland hydrology indicator determination.

The absence of wetland hydrology indicators and hydric soil indicators confirmed the assumption that plants within some portions of the property that are listed as FAC are not actually growing as hydrophytes if the area lacks wetland hydrology and hydric soils. This assumption is based on the fact that plants identified as FAC are just as likely to be found in both wetland and upland areas.

4.2 Vegetation Communities and Rare Plants.

4.2.1 Overview

From the 2014 botanical survey on the EREP, 137 vascular taxa were identified within the Project Area: 133 herbs, one shrub, two trees, zero ferns, and one fern ally (**Attachment C**). From the 2015 botanical survey on the RR&T Properties, 57 vascular taxa were identified within the Project Area: 55 herbs, one tree, and one fern (**Attachment C**). From the 2022 survey of Centerville Road, 84 vascular taxa were identified in the Project Area: 71 herbs, five shrubs, three trees, and four ferns, and one fern ally (**Attachment C**).

A little under half (49%) of all taxa observed (196 species) in all surveys are introduced species which is double that of the state average (Baldwin et al. 2012) and likely due to past and present agricultural practices. These 97 non-native taxa range from rare to extremely abundant and widespread such as bent grass (*Agrostis stolonifera*) and velvet grass (*Holcus lanatus*). This has resulted in the establishment of several vegetation alliances that are semi-natural stands with introduced species as the dominants such as *Agrostis stolonifera* Semi-Natural Herbaceous Alliance and *Lolium perenne* (now *Festuca perennis*) Semi-Natural Herbaceous Stand (Sawyer 2009).

During the 2014 botanical survey of the EREP, areas within the main slough channel were noted to have scattered bunches of eelgrass (*Zostera marina*) in patches of 0-5%, and 5-15% coverage, located behind the existing onsite tidegate, and as shown in **Attachment A; Figure 3**. The National Marine Fisheries Service has designated eelgrass as Essential Fish Habitat (EFH) and a Habitat of Particular Concern under the Magnuson-Stevens Fishery Conservation and Management Act in 1996. These areas were generally mapped to show the range of coverages and extent, and trend of eel grass abundance decreasing further south from the tidegate. This area was not extensively surveyed since project activities were uncertain within the slough. Follow up species-specific surveys would be conducted if deemed appropriate in preparation for the proposed project.

4.2.2 Special-status Plants

In the 2014 survey of the EREP, seven special status plant species were observed and mapped during the protocol level survey, one of which is a federally and state listed species (Table 6). These rare plants were remapped in 2021(**Attachment A; Figure 4**). No special-status plant species were observed on the RR&T Properties or along Centerville Road.

Table 6 Special-status plants observed in the EREP in 2014

Scientific Name	Common Name	Listing Status	Approximate Number of Individuals	Approximate Absolute Coverage Range (%)
Angelica lucida	sea-watch	CRPR 4.2	4	5-10%
Carex lyngbyei	Lyngbye's sedge	CRPR 2B.2	> 5,000	50-75%
Castilleja ambigua ssp. *humboldtiensis*	Humboldt Bay's owl-clover	CRPR 1B.2	3,000	15-20%
Gillia millefoliata	dark eyed gilia	CRPR 1B.2	50	5-10%
Layia carnosa	beach layia	FT, SE, CRPR 1B.1	480	5-10%
Spergularia canadensis var. occidentalis	western sand spurrey	CRPR 2B.1	10	1-5%
Zostera maritima	Eelgrass	NMFS	unknown	unknown
FT = Federally Threatened, SE = California State Endangered Note: California Rare Plant Ranking (CRPR) lists 1A, 1B and 2 and are considered eligible for state listing as Endangered or Threatened pursuant to the California Fish and Game Code. NMFS = National Marine Fisheries Service: It is NMFS' policy to recommend no net loss of eelgrass habitat function in California.				

4.2.3 Vegetation Communities

The distribution of vegetation types in the PSB is influenced by hydrology, salinity, and past and current land use and modifications. The northern portion of the EREP receives tidal input via side channels of the Salt River and also some input directly from the Eel River via a small channel. The area supports a complex of tidal salt and brackish marshes consisting largely of the *Spartina densiflora* Herbaceous Alliance and a "*Sarcocornia* complex" in which the *Sarcocornia pacifica* (Pickleweed) Herbaceous Alliance is the dominant alliance type and other vegetation types are not clearly discernible. Further investigation is needed to fully describe and map the vegetation types in this complex.

The RR&T Properties are former tidelands which have been diked for agricultural use and remain actively managed for grazing. The southern portion of the EREP and the RR&T Properties have experienced significant overwash events in 2016 and 2021 that have introduced large amounts of salt water into the freshwater pastures, converting the vegetation to a brackish pasture community. As these pastures become subjected to more tidal influence, it is expected the vegetation communities will shift to resemble those wetlands north of the dike with increasing *Sarcocornia pacifica* (pickleweed) and *Distichlis spicata* (salt grass).

The 2014 and 2015 botanical surveys identified and mapped 20 alliances within the PSB (Table 7); however, after the increased tidal influence from the tidal overwash events, many of these alliances in the pastures and marshes shifted in species composition to more brackish communities.

Table 7 Summary of vegetation alliances mapped in 2014 and 2015 in the PSB.

2014-2015 Alliances
Abronia latifolia – Ambrosia chamissonis Herbaceous Alliance (dune mat [upland])
Abronia latifolia-Ambrosia chamissonis Herbaceous Alliance (dune mat alliance), *Juncus breweri* association (Brewer's rush swales)
Agrostis stolonifera Semi-Natural Herbaceous Stands (creeping bent grass flats) with *Distichlis spicata* Association
Alnus rubra Forest Alliance (red alder forests) with *Salix hookeriana* (coastal willow dune thickets)
Ammophila arenaria Semi-Natural Herbaceous Stands (European beach grass swards)
Argentina egedii (a.k.a. *Potentilla anserina* ssp. *pacifica*) Herbaceous Alliance (Pacific silverweed marshes)
Atriplex prostrata-Cotula coronopifolia Semi-Natural Herbaceous Stands (fields of fat hen and brass buttons)
Baccharis pilularis Shrubland Alliance (coyote brush scrub)
Bolboschoenus maritimus Herbaceous Alliance (salt marsh bulrush marshes)
Carex lyngbyei Provisional Herbaceous Alliance
Deschampsia caespitosa Herbaceous Alliance (tufted hairgrass grass meadows)
Distichlis spicata Herbaceous Alliance (salt grass flats)
Eleocharis macrostachya Herbaceous Alliance (pale spike rush marshes)
Holcus lanatus-Anthoxanthum odoratum Semi-Natural Herbaceous Stands (common velvet grass-sweet vernal grass meadows)
Juncus effusus Herbaceous Alliance (soft rush marshes)
Juncus lescurii Herbaceous Alliance (salt rush swales)
Lolium perenne (currently named *Festuca perennis*) Semi-Natural Herbaceous Stands (perennial rye grass fields)
Salix hookeriana Shrubland Alliance (coastal dune willow thickets)
Sarcocornia pacifica Herbaceous Alliance (pickleweed mats)
Spartina densiflora Semi-Natural Herbaceous Stands (denseflower cordgrass marshes)

The vegetation mapping effort in 2021 did not identify or map alliance level communities, but instead classified large areas as 13 different general habitat types (Table 8). Previously classified associations are not discussed further below with the exception of the dune mat and dune swales which are Sensitive Natural Communities.

Table 8 Habitat types and indicator vegetation mapped in 2021. Native species are in bold.

2021 Habitat	Acres	Characteristic species
Brackish Marsh	106.5	***Argentina egedii* (a.k.a. *Potentilla anserina* ssp. *pacifica*), *Bolboschoenus maritimus, Distichlis spicata, Schoenoplectus pungens***, *Atriplex prostrata, Polypogon sp., Parapholis incurva*
Dunes	123.5	*Ammophila arenaria,* ***Abronia latifolia, Ambrosia chamissonis***
Dune Swales	45.6	***Abronia latifolia, Ambrosia chamissonis, Juncus breweri***
Open Sand	169.4	NA
Open Water	87.3	NA
Pasture – Brackish	298.0	***Distichlis spicata***, *Cotula coronopifolia*, *Agrostis stolonifera*, *Festuca perennis, Festuca arundinacea, Trifolium fragiferum*
Pasture - Freshwater	433.5	*Agrostis stolonifera*, *Festuca perennis*, *Festuca arundinacea*, *Trifolium fragiferum*
Pasture - Upland	37.4	*Holcus lanatus, Anthoxanthum odoratum*

2021 Habitat	Acres	Characteristic species
Riparian Forest	1.1	***Alnus rubra, Salix hookeriana***
Riparian Scrub	26.0	***Baccharis pilularis, Salix hookeriana***
Ruderal / Developed	13.9	NA
Tidal wetlands – full tidal influence	164.3	***Sarcocornia pacifica, Distichlis spicata, Bolboschoenus maritimus, Spergularia marina, Carex lyngbyei, Deschampsia caespitosa****, Spartina densiflora, Atriplex prostrata,*
Muted Tidal wetlands	294.8	***Argentina egedii* (a.k.a*. Potentilla anserina ssp. pacifica), Eleocharis macrostachya, Juncus effusus, Scirpus microcarpus***

Brackish Marsh

Brackish marsh occurs in the center of the PSB, west of ruderal upland levees and adjacent to pickleweed marshes, and in wet depressions having residual soil salinity. Characteristic species of this habitat type include *Argentina egedii (a.k.a. Potentilla anserina ssp. pacifica), Bolboschoenus maritimus, Distichlis spicata, Schoenoplectus pungens, Atriplex prostrata, Polypogon sp., and Parapholis incurva.*

Argentina egedii (Pacific silverweed) occurs as a dominant species within perennial seeps of brackish wetlands.

Bolboschoenus maritimus (saltmarsh bulrush), a perennial herb commonly found in tidal brackish to saline coastal marshes, grows on slough channel margins and in areas of standing water along the southern edge of the EREP. Areas with salt marsh bulrush include perennial, wet areas adjacent to pickleweed mats.

Distichlis spicata (saltgrass*)* is a halophytic perennial plant of salt marshes, coastal dunes, and moist alkaline areas (Sawyer et al. 2009). Salt grass flats occur in small patches along the channel banks and saline wet depressions. Salt grass flats in the PSB have been severely invaded by *Agrostis stolonifera*, which has altered this native plant community. *Distichlis spicata* is dominant in areas with higher salinity and flooding.

Dunes – Nearshore Ridges

The PSB includes a dune system on the sand spit south of the mouth of the Eel River and extending south for roughly two thirds of the length of the Project Area toward Centerville Beach. Toward the north end of the PSB the dunes are low and broad, and they generally become higher and narrower to the south. Since 2016, large areas of these dunes have been washed away along the coast in the southernmost 1.7 miles of the PSB and are shown as Open Sand on **Attachment A; Figure 3**.

The foredune ridge and low-lying beach wash area of Angel's Camp in the western portion of the RR&T, and the majority of the foredune ridges in the EREP are dominated by the invasive *Ammophila arenaria* (European beach grass), a Cal-IPC ranked clumping perennial grass of high priority. Native species such as *Abronia latifolia*, *Calystegia soldanella*, *Tanacetum bipinnatum* and *Erigeron glaucus* are present albeit in low percentages.

An area at the north end of the EREP contains a stand of *Ammophila arenaria* with scattered coastal shrubs, including the native shrub *Baccharis pilularis* (coyote brush) and a shrubby lupine which appears to be a hybrid between the native *Lupinus rivularis* and the invasive *L. arboreus*.

Abronia latifolia – Ambrosia chamissonis Alliance (dune mat)

Dune mat is a community of low-growing herbaceous native plant species found on the protected inner dunes immediately east of the leading edge of the beach. Dune mat plants are low-growing and adapted to shifting sands and a harsh, windy environment and form an alliance recognized by A Manual of California Vegetation (Sawyer et al. 2009). This vegetation alliance is threatened by non-native grasses, iceplant, and lupines that shade and stabilize the sand. This alliance is also particularly threatened by storm surge overwash which has removed entire sand dunes from the PSB.

The dune mat alliance has 10 classified associations in A Manual of California Vegetation (Sawyer et al. 2009) but has been classified in Humboldt County into 14 different proposed associations (Pickart and Solomescsh unpublished data). One of these proposed associations is the *Juncus breweri* association which is discussed under dune swales below. The majority of dune mat associations are upland and would be considered an SNC and likely an ESHA within the Coastal Zone; however, none of the upland dune mat was specifically mapped in 2021 and may be difficult to map due to intermixing of *Ammophila arenaria* and open sand.

Within the area mapped as Dunes, there is a 4.7 acre area that has been mapped as both *Ammophila arenaria* and rare plant habitat for *Layia carnosa* (**Attachment A; Figure 4-4**). In this area, *Ammophila* distribution is patchy and *Layia* is intermixed. This area may also be assumed to be dune mat alliance, but additional surveying and mapping would be required to determine the acreages and boundaries of native vegetation.

Dune Swales

Behind foredune ridges are lower, protected herbaceous dune swales dominated by *Juncus breweri*. These "dry swales" have been described for the South Spit of Humboldt Bay (Pickart 2005) and for the North Spit of Humboldt Bay (Pickart 2006), and proposed as the *J. breweri* association of the *Abronia latifolia-Ambrosia chamissonis* Alliance (a.k.a. dune mat) in a recent floristic classification of Humboldt County dunes (Pickart and Solomescsh unpublished data). In the PSB a few associated species typically characteristic of dune mat were present in *Juncus breweri* swales and include: *Abronia latifolia, Ambrosia chamissonis, Calystegia soldanella,* and *Cardionema ramosissimum.*

Lower, wetter swales were vegetated primarily by *Schoenoplectus pungens*, with *Potentilla anserina* ssp*. pacifica,* and *Agrostis stolonifera*. This species composition differs from wet dune swales described for the North Spit of Humboldt Bay, which are characterized by *Carex obnupta* (Pickart and Solomescsh unpublished data). Although this association has been described as a "dry swale," this community was mapped as a 1-parameter wetland and was not classified as an SNC within the PSB.

Pasture

Historic tidelands in the PSB have been diked for agricultural use and remain actively managed for grazing. The grazed fields flood seasonally and in general have poorly drained soils. A small area of upland pasture occurs in the southeast portion of the EREP, but the majority of pasture is either freshwater or brackish wetland and in some locations support marsh plant species. Areas with residually high soil salinity and/or muted tidal seepage are brackish. The vegetation communities and salinities of these pastures are changing as tidal influence increases from winter overwash events.

Pasture - Brackish

Extensive stands of Agrostis stolonifera are prominent in the grazed areas of the EREP (both freshwater and brackish) and in the western portion of the RR&T Properties. In brackish pasture, *Agrostis stolonifera* is commonly found with *Distichlis spicata* and *Cotula coronopifolia*.

Agrostis stolonifera, a perennial herb not native to California, has invaded native vegetation types throughout the state, especially mesic ones (Sawyer et al. 2009). It has a Cal-IPC Inventory rank of Limited, meaning the ecological impact of this species is considered minor on a state-wide level (Cal-IPC 2013). The Humboldt Weed Management Area (HWMA) rates this species as High Priority, based on its widespread invasion of diked wetlands and ability to alter native plant communities. This aggressive competitor has a wide environmental tolerance, a long growing season, and the ability to spread vegetatively. Once established, *Agrostis stolonifera* causes changes to soil and water characteristics, such as forming a thick thatch layer that buffers it from high salinities in underlying soils, and alters native plant communities (Pickart 2006). In the EREP, this non-native community type is very aggressive and is frequently out competing the salt grass flats and pickleweed mats, both native halophyte communities.

Pasture – Freshwater

Freshwater pasture is found in areas intermediary between upland and brackish wetland in the south of the EREP and the east of the RR&T properties. Characteristic species of freshwater pastures include *Agrostis stolonifera, Festuca perennis, Trifolium fragiferum*, and *Festuca arundinacea*.

Pasture - Upland

Characteristic species of upland pastures are *Holcus lanatus* and *Anthoxanthum odoratum*. This introduced perennial grassland is found in moist pastures and wetlands at the driest moisture levels and lowest salinities. Upland pasture was mapped in the southeast corner of the EREP (**Attachment A; Figure 3**).

Riparian Forest

Alnus rubra Forest Alliance (red alder forest) with Salix hookeriana (coastal dune willow)

Alnus rubra, a common native tree shrub of coastal and inland areas of California, was observed in an upland Russ Creek riparian area intergrading with coastal dune willow, *Salix hookeriana*. The understory of this vegetation type was sparse; yet contains native plant species such as *Polystichum munitum* and non-natives like *Trifoilum repens*, *Malva nicaeensis,* and ruderal grasses.

Riparian Scrub

Willow swamps and riparian scrub occur on channel banks near the Salt River at the north end of the EREP, where the elevation is higher and there is a greater freshwater influence than in the adjacent marshlands.

Baccharis pilularis Shrubland Alliance (coyote brush scrub)

A small stand of *Baccharis pilularis* ssp. *consanguinea*, a common native shrub of coastal and inland areas of California, occurs at the north end of the EREP intergrading with various non-natives. Coyote brush scrub occurs in association with willow swamps bordering the Salt River, at the upper margin of tidal marsh, bordering slough channels, and sporadically on levees.

Salix hookeriana Shrubland Alliance

A small stand of *Salix hookeriana*, a coastal willow often found in floodplains, creeks, rivers and dune hollows, occurs at the north end of the EREP. Associated wetland herbaceous species include *Argentina egedii* and *Juncus effusus*.

Within the EREP, willow swamps also occur on channel banks near the Salt River, where the elevation is higher and there is a greater freshwater influence than in the adjacent marshlands. The willows are evident in the aerial imagery but were not visited in the field. *Salix hookeriana* is the only willow that has been reported occurring on the EREP (TWC unpublished data). Willows have also been planted along freshwater ditch margins in the southeast part of the preserve.

Ruderal / Developed

The PSB is interspersed with old levee and berm systems constructed to control seasonal flooding. The vegetation associated with these levees and berms is ruderal with a species composition of several non-native and invasive species including *Cirsium vulgare, Cirsium arvense, Holcus lanatus, Festuca perennis, Ranunculus repens, Agrostis stolonifera, Trifolium repens,* and *Trifolium fragerium*. Additionally, a few native species occurr on the levees, including *Symphyotrichum chilense*, *Achillea millefolium, Grindelia stricta var. stricta* and *Baccharis pilularis* ssp. *consanguinea*. A small stand of *Grindelia stricta* was observed at the upper margin of tidal marsh along the north-western levee at the northern end of the EREP.

Tidal Wetlands

Tidal wetlands in the PSB are bisected by an existing earthen dike that runs from a tidegate on the Cutoff Slough southwest to the dunes (**Attachment A; Figure 3**). Tidal wetlands north of this dike are under full tidal influence from the Eel River Estuary while wetlands south of the dike have a muted tidal influence.

The northern portion of the EREP still receives tidal input via side channels of the Salt River and also some input directly from the Eel River via a small channel. The area supports a complex of tidal salt and brackish marshes. The EREP was described and mapped based on limited reconnaissance of readily accessible areas on the west side, aerial photo-interpretation, and available regional mapping of the invasive cordgrass *Spartina densiflora* (Grazul and Rowland 2011). Dense stands of *Spartina densiflora*, easily discernible in aerial imagery, were mapped as the *Spartina densiflora* Herbaceous Alliance. The remaining areas of tidal marsh were mapped as a "*Sarcocornia* complex" in which the *Sarcocornia pacifica* (Pickleweed) Herbaceous Alliance is the dominant alliance type and other vegetation types are not clearly discernible. Further investigation is needed to fully describe and map the vegetation types in this complex.

Tidal Wetlands – Full tidal influence

Sarcocornia pacifica (synonym: *Salicornia depressa*[1], pickleweed mat) under full tidal influence in the EREP (north of the earthen dike) is dominant or co-dominant with a variety of associated species, including *Spartina densiflora, Distichlis spicata, Jaumea carnosa, Plantago maritima, Carex lyngbyei, Triglochin maritima, Triglochin striata*, and *Isolepis cernua*. The tidal wetlands include areas of potential rare plant habitat.

Deschampsia caespitosa and *Carex lyngbyei* are two marsh species typically considered indicative of brackish conditions. Both species are common and locally abundant in tidal marshes at the EREP. *Deschampsia caespitosa* often occurs as a co-dominant or sub-dominant with *Sarcocornia pacifica.* A *Deschampsia caespitosa* Herbaceous Alliance is recognized in MCV and discussed below.

Carex lyngbyei is locally abundant as a dominant species in full tidal wetlands, generally bordering slough channels, and also occurs in association with *Sarcocornia pacifica* and other species away from channels (**Attachment A; Figures 4, 4-1 – 4-5**). Where dense, there are few other species, or it is intermixed with the invasive *Spartina densiflora*. In other locations, *C. lyngbyei* grows in association with *Jaumea carnosa, Distichlis spicata, Plantago maritima, Sarcocornia pacifica, Triglochin maritima,* and *Deschampsia caespitosa*.

The occurrence of *Carex lyngbyei* stands at the upper edge of salt marsh and near the mouths of tidal creeks has been noted in general descriptions for regional tidal coastal marshes (Schlosser and Eicher 2012). The species is typically associated with brackish conditions, and stands are more prominent in the Eel River estuary than in Humboldt Bay marshes.

Carex lyngbyei has as CNPS Rank of 2.2, fairly endangered in California, but more common elsewhere (CNPS 2022). *Carex lyngbyei* is locally abundant in intertidal coastal marshes along the coasts of Alaska, Washington, and Oregon. In California, the species extends as far south as Bolinas Lagoon. In California, *Carex lyngbyei* is possibly threatened by grazing, non-native plants, and habitat disturbance (CNPS 2022) At EREP, the main threat to existing stands is encroachment by the invasive cordgrass *Spartina*. Control measures for *Spartina* in the EREP will need to follow mitigation measures to protect *Carex lyngbyei* per the PEIR for the regional *Spartina* eradication plan (H. T. Harvey & Associates 2013).

Spartina densiflora stands are located in the northern tidal wetlands of the EREP and are characterized by over 50% cover of *Spartina densiflora.* In these stands, *Spartina densiflora* forms monocultures with few associated species. It should be noted that *Spartina densiflora* also occurs at lower density throughout much of the remaining Full Tidal Wetlands (**Attachment A; Figure 3**).

Spartina densiflora is an invasive plant identified by the California Invasive Plant Council (Cal-IPC) with a high alert rating. *Spartina densiflora* has invaded an estimated 90% of salt marshes throughout Humboldt Bay and the Eel River estuary since its inadvertent introduction to the region in the 1870s. *Spartina densiflora* invasion

[1]Ball, P.W., 2013. *Salicornia*, in Jepson Flora Project (eds.) *Jepson eFlora*, http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=42666, accessed on Jul 29 2015

reduces biodiversity by displacing native plant species and altering habitat for fish and wildlife species, and it alters ecological processes such as biogeochemical cycling and sediment dynamics. A regional eradication program is underway to control *Spartina densiflora* in Humboldt County, as part of a larger effort along the West Coast of North America (H. T. Harvey & Associates 2013)

On the EREP, dense stands of *Spartina densiflora* are found bordering slough channels and open water areas where salinity is high. The largest concentration of dense *Spartina* is located at the furthest southern extent of the Full Tidal Wetlands, west of the earthen dike (**Attachment A; Figure 3**). Dense *Spartina* stands also occur in the northern part of the site, near the main channel of the Eel River. A few small, narrow stands border Cutoff Slough behind the large tidegate and additional plants occur as scattered individuals. Restrictions to tidal input limit the degree of *Spartina densiflora* invasion.

Tufted hair grass, *Deschampsia caespitosa*, is a perennial grass often found in sand dunes, coastal terraces and seasonally flooded areas with moderate salinity (Sawyer et al. 2009). In the tidal marshes of the EREP, *Deschampsia caespitosa* dominates some areas, but more often occurs as a co-dominant with *Sarcocornia pacifica*, *Grindelia stricta* var. *stricta*, and *Distichlis spicata.*

Tidal wetlands – Muted tidal influence

Tidal wetlands in the PSB are bisected by an existing earthen dike that runs from a tidegate on the Cutoff Slough southwest to the dunes (**Attachment A; Figure 3**). Tidal wetlands north of this dike are under full tidal influence from the Eel River Estuary while wetlands south of the dike have a muted tidal influence. The tidal wetlands south of the dike include a wide variety of vegetation types that intergrade into freshwater and brackish pasture, freshwater and brackish marsh, and full tidal wetlands. These vegetation communities are rapidly shifting due to the changes in tidal regimes from wave overwash events.

In muted tidal wetlands *Sarcocornia pacifica* occurs in wet areas with residually high soil salinity, such as along slough channel banks and in wet saline depressions. Bordering Cutoff Slough, the pickleweed mat occurs along the channel banks adjacent to *Bolboschoenus maritimus* growing on the water's edge. Small patchy areas were found at the toe of levees on the western and eastern edges of Western Drainage and around the Russ Creek washout area.

The *Sarcocornia pacifica* stands on the RR&T Properties are young and mostly monotypic in comparison to other salt marsh stands in the vicinity due to the new wave incursions over the dunes within the last 20 years. On higher ground with less frequent tidal inundation in the EREP, *Grindelia stricta* var. stricta often is a co-dominant with *Sarcocornia*.

Species that are characteristic of the muted tidal wetlands include: *Sarcocornia pacifica, Agrostis stolonifera*, *Distichlis spicata, Potentilla anserina* ssp. *pacifica, Eleocharis macrostachya, Scirpus microcarpus, and Juncus effusus.*

These vegetation communities are already undergoing changes due to the increased salinity from wave overwash are expected to shift further with increased cover in *Sarcocornia pacifica, Distichlis spicata, Bolboshoenus maritimus* as tidal influence increases.

4.2.4 Sensitive Natural Communities

In the 2016 surveys vegetation communities were documented using the rapid assessment method to classify them at the alliance level and evaluate as potential Sensitive Natural Communities (SNCs). The Project Area contains eight vegetation communities with a NatureServe State Rank of S1 to S3 which are considered SNCs by the CDFW (Table 8). Of these eight communities, seven are dominated by wetland indicator species and were mapped as Coastal Commission 1-parameter wetlands and USACE 3-parameter wetlands (in blue below). The only upland SNC in the PSB is dune mat (*Abronia latifolia – Ambrosia chamissonis* alliance). All other vegetation communities listed in Table 7 above did not meet the criteria for SNCs.

Table 9 Vegetation alliances classified as Sensitive Natural Communities with California state ranks S1-3. Rows in blue are also three-parameter wetlands.

Common Name	Scientific Name	Classification	Global Rank	State Rank	Wetland
Lyngbye's sedge swathes	*Carex lyngbyei*	Provisional alliance	GNR	S1	1-Par.
Pacific silverweed marshes	*Argentina egedii*	Alliance	G4	S1	1-Par.
Salt marsh bulrush marshes	*Bolboschoenus maritimus*	Alliance	G4	S3	1-Par.
Dune mat	*Abronia latifolia – Ambrosia chamissonis*	Alliance	G3	S3	Upland
Salt rush swales	*Juncus lescurii*	Alliance	G3	S2?	1-Par.
Pickleweed mats	*Sarcocornia pacifica (Salicornia depressa)*	Alliance	G4	S3	1-Par.
Coastal tufted hair grass – Meadow barley – California oatgrass meadow	*Deschampsia cespitosa – Hordeum brachyantherum – Danthonia californica*	Alliance	GNR	S3	1-Par.
Coastal dune willow thickets	*Salix hookeriana*	Alliance	G4	S3	1-Par.

Dune mat (*Abronia latifolia – Ambrosia chamissonis* alliance)

Dune mat is an SNC with a state ranking of S3 (Sawyer at al. 2009, CDFW 2021a). The dune mat alliance has not been specifically mapped in the PSB, but may be included in the Dunes and Dune Swales habitats. This community intergrades with *Ammophila arenaria*, open sand, and dune swales and the boundaries may be shifting and ambiguous. This vegetation community is threatened by non-native invasives such as European beach grass which is dominant in the majority of the foredunes in the PSB. Dune mat is also threatened in the PSB by overwash storm surge events which have removed the entire foredune substrate.

Dune mat and other dune habitats including open sand and European beach grass swards may also be considered Environmentally Sensitive Habitat Areas (ESHA) by the Coastal Commission under Section 30240 (CCC 2013).

5. Conclusions

5.1 Upland and Wetland Evaluation

Based on all upland/ wetland evaluations conducted in the PSB from 2015 to 2022, 8.17 acres of three-parameter uplands were mapped that meet USACE and Coastal Commission definitions and are non-jurisdictional. Additionally, 9.82 acres of two-parameter uplands were mapped by GHD that meet the USACE definition of upland, but may be considered jurisdictional wetlands by the Coastal Commission due to presence of one wetland parameter (hydrophytic vegetation). To date an additional 37.42 acres of uplands have been mapped by other investigators on the project site (Mad River Biologists 2011; Morrisette 2012).

Over the course the study period from 2009 (MRB) to 2021 (GHD), 10.96 acres of upland were lost, largely due to tidal inundation from the winter storm overwash events in 2016 and 2021. An additional 1.88 acres of uplands originally delineated by MRB in 2009 were lost near the north barn (soil pit shown on Appendix A; Figure 2-1), either due to changing hydrology or re-evaluation.

The uplands mapped at the site by GHD, MRB, and Morrisette, consist of levees, roads, developed areas, stockpiled material uplands, as well as natural topographically higher areas. The identified upland areas are within a matrix of predominantly palustrine agricultural wetlands, transitional areas, brackish marsh, and slough channels. Additional upland areas exist on the site that were not mapped as part of the current effort, including the large upland dune complex to the west and likely some additional upland micro-topographic areas within the predominant wetland and transitional matrix.

5.2 Special-status Plants

The 2014 survey EREP identified seven special-status plants present in the Project Area, one of which is a federally and state-listed plant species: beach layia (*Layia carnosa*) FT, SE, CRPR 1B.1 (**Attachment A; Figure 4**). These species were all relocated and confirmed in the 2021 survey. No special-status plants were observed on the RR&T Properties or along Centerville Road.

5.3 Special Terms and Conditions

5.3.1 Purpose of this Report

To achieve the delineation objectives stated in this report, conclusions are based on the information available during the periods of the investigation in 2013, 2015, 2021 and 2022. This report does not authorize individuals to develop, fill or alter the wetlands delineated. Verification of the delineation by jurisdictional agencies, including the USACE and the California Coastal Commission may be necessary prior to the use of this report for site development purposes. Permits to affect wetlands must be obtained from the involved government agencies. If permits are obtained to develop the delineated wetlands after agency review, and with written verification, the delineation may or may not be given an expiration period (depending on which form or jurisdictional approve is obtain). If filling is used under permitted authority, care should be given to maintain a sufficient quantity of fill to prevent a reestablishment of wetlands. Land use practices and regulations can change thereby affecting current conditions and delineation results.

This report was prepared for the exclusive use of the HCRCD. GHD is not liable for any action arising out of the reliance of any third party on the information contained within this report.

5.3.2 Scope and Limitations

This report: has been prepared by GHD for the HCRCD and may only be used and relied on by the HCRCD for the purpose agreed between GHD and the HCRCD. GHD otherwise disclaims responsibility to any person other than the HCRCD arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered, information reviewed at the date of preparation of the report, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points. Site conditions may change after the date of this Report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

6. References

Ball, P.W., 2013. Salicornia, in Jepson Flora Project (eds.) Jepson eFlora, http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=42666, accessed on Jul 29 2015

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley

California Coastal Commission (CCC), California Coastal Act. 1976. http://www.coastal.ca.gov/coastact.pdf.

California Coastal Commission (CCC). 2013. LCP Update Guide, Section 4. Environmentally Sensitive Habitats and Other Natural Resources. San Francisco, CA: State of California—Natural Resources Agency.

California Department of Fish and Wildlife. 2009. Guidelines for Assessing the Effects of Proposed Development on Rare, Threatened, and Endangered Plants and Plant Communities. Sacramento, CA.

California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Sacramento, CA.

California Department of Fish and Wildlife (CDFW). 2021a. California Department of Fish and Wildlife website. Accessed November 2021. Available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/List.

California Department of Fish and Wildlife (CDFW). 2021b. California Natural Diversity Database (CNDDB). USGS 7.5 Minute Quadrangles. State of California, Natural Resources Agency, Department of Fish and Wildlife, Biogeographic Data Branch, Sacramento, California, USA. https://www.wildlife.ca.gov/Data/CNDDB (Accessed 2013-2021)

California Invasive Plant Council (Cal-IPC). 2013. Inventory of non-native invasive plants. https://www.cal-ipc.org/plants/inventory/about-the-inventory/ (Accessed 2013).

California Native Plant Society (CNPS). 2013-2021. Inventory of Rare and Endangered Plants (online edition, v8-01a). California Native Plant Society (CNPS). Sacramento, CA. Accessed: 2013-2021.

Cowardin, United States Fish and Wildlife Service. 1979. Classification of Wetlands and Deepwater Habitats of the United States, FWS/OBS 79/31.

Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC. http://fws.gov/wetlands/Documents/Wetlands-and-Deepwater-Habitats-Classification-chart.pdf

GHD, Inc. 2013. Eel River Estuary Preserve: Habitat and vegetation mapping. December 2013.

GHD, Inc. 2014. Eel River Estuary Preserve (EREP) Ecosystem Enhancement Project: Delineation of uplands. July 2014.

GHD, Inc. 2014. Special-Status Species Evaluation and Special-Status Plant and Animal Surveys for Eel River Estuary Preserve (EREP), Ferndale, California: Special-status plant and animal survey. October 10, 2014.

GHD, Inc. 2015. Russ Ranch and Timber: Delineation of uplands. September 2015.

GHD, Inc. 2015. Special-Status Plant Survey for Russ Ranch and Timber component of the Eel River Estuary Preserve Ecosystem Enhancement Project: Rare plant survey. August 6, 2015.

GHD, Inc. 2018. Coastal Dune Vulnerability and Adaptation Study; Eel River Shoreline Trends. June 25, 2018.

Google Earth. 2019. Most recent public aerial imagery of the PSB. Accessed April 19, 2022.

Gretag Macbeth. 2000. Munsell Soil Color Charts.

H. T. Harvey & Associates and GHD. 2013. Final Programmatic Environmental Impact Report for the Humboldt Bay Regional Invasive Spartina Control Plan. California State Coastal Conservancy, Oakland, CA.

Lichvar, R.W., N.C. Melvin, M.L. Butterwick, and W.N. KIrchner. 2012. National Wetland Plant List Indicator Rating Definitions. United States Army Corps of Engineers. https://wetland-plants.sec.usace.army.mil/nwpl_static/data/DOC/NWPL/pubs/2012b_Lichvar_et_al.pdf

Lichvar, R.W. 2013. The National Wetland Plant List: 2013 Wetland Ratings. Phytoneuron 2013-49: 1-241.

Mad River Biologists. 2009. Delineation of Wetland and Waters of the US for Connick Ranch: Delineation of wetlands. August 5, 2009.

Mad River Biologists. 2011. Eel River Estuary Preserve Biological Evaluation and Wetland Delineation for Proposed Bridge Construction and Road Improvement Project. October 12, 2011.

Morrissette, S. 2012. Eel River Estuary Preserve Biological Evaluation and Wetland Delineation for Russ Creek Bridge Replacement Project.

Pickart, A. 2005. A preliminary description of the Table Bluff unit wetland vegetation, Humboldt Bay National Wildlife Refuge 18

Pickart, A. 2006. Vegetation of diked herbaceous wetlands of Humboldt Bay National Wildlife Refuge: classification, description, and ecology. Arcata, CA, U.S. Fish and Wildlife Service, Humboldt Bay National Wildlife Refuge: 93.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans. 2009. A Manual of California Vegetation, 2nd Edition. California Native Plant Society. Sacramento, CA.

Tiner, R. W. 1999. Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping. Lewis Publishers, CRC Press, Boca Raton, FL, USA.

United States Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region. J. S. Wakeley, R. W. Lichvar, and C. V. Noble, eds. Army Engineer Research and Development Center, United States Army Corps of Engineers (USACE).

United States Army Corps of Engineers. 1987. Wetlands Delineation Manual, Tech. Rep 4-87-11987 United States Department of the Army Corps of Engineers (USACE).

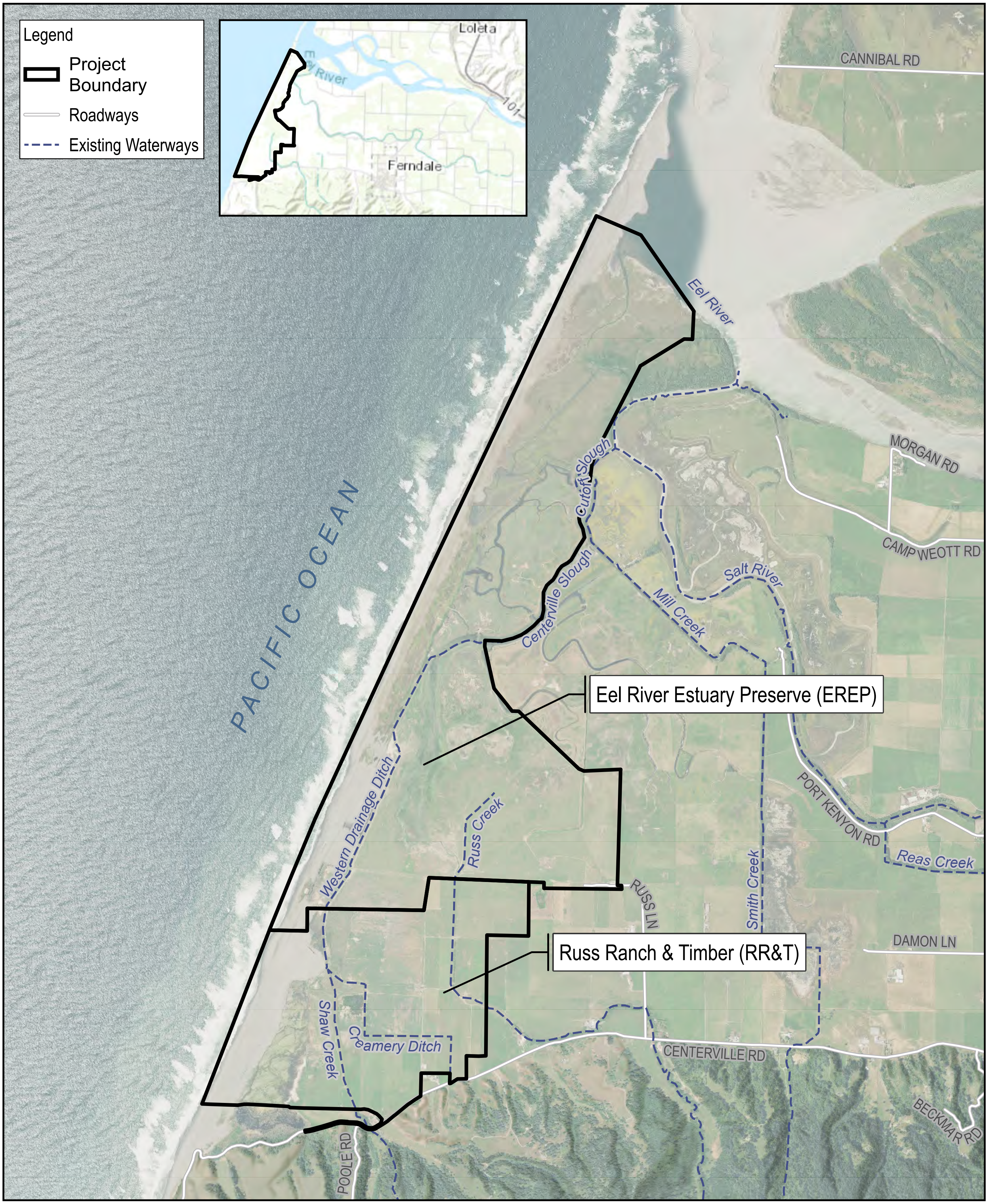
United States Army Corps of Engineers. 2020. National Wetland Plant List, version 3.5. Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH. http://wetland-plants.usace.army.mil/

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Field indicators of hydric soils in the United States, version 6.0. G.W. Hurt and L.M. Vasilas (editors). In cooperation with the National Technical Committee for Hydric Soils.

Attachments

Attachment A

Figures



Paper Size ANSI A

0 1,000 2,000 3,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

Humboldt County Resource Conservation District
Russ Creek and Centerville Slough Restoration Project

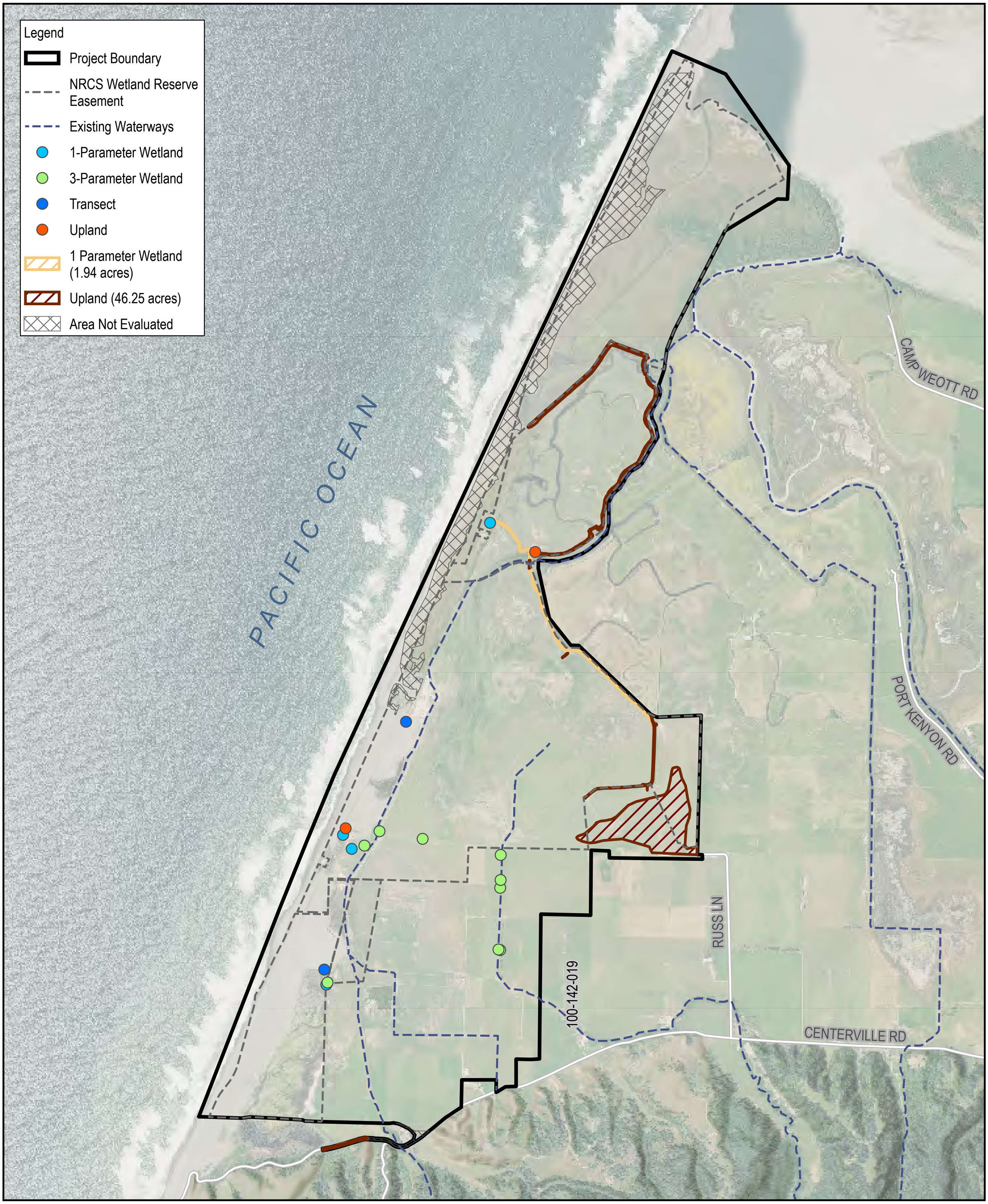
Project No. **11187323**
Revision No. **-**
Date **Apr 2022**

Project Study Boundary and Vicinity

FIGURE 1

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_001_ProjectBoundary_RevA
Print date: 20 Apr 2022 - 15:52

Data source: Project Boundary, GHD 4/14/22; Waterways NHD and GHD, 2022; Humboldt County roads, 3/11/2021; NAIP 2020; World Topographic Map: Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS; World Topographic Map: Bureau of Land Management, Esri, HERE, Garmin, USGS, METI/NASA, EPA, USDA; World Hillshade: Esri, NASA, NGA, USGS, FEMA; World Hillshade: Esri, NASA, NGA, USGS. Created by: jlopez4



Paper Size ANSI A

0 500 1,000 1,500 2,000 2,500

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

Humboldt County Resource Conservation District
Russ Creek and Centerville Slough Restoration Project

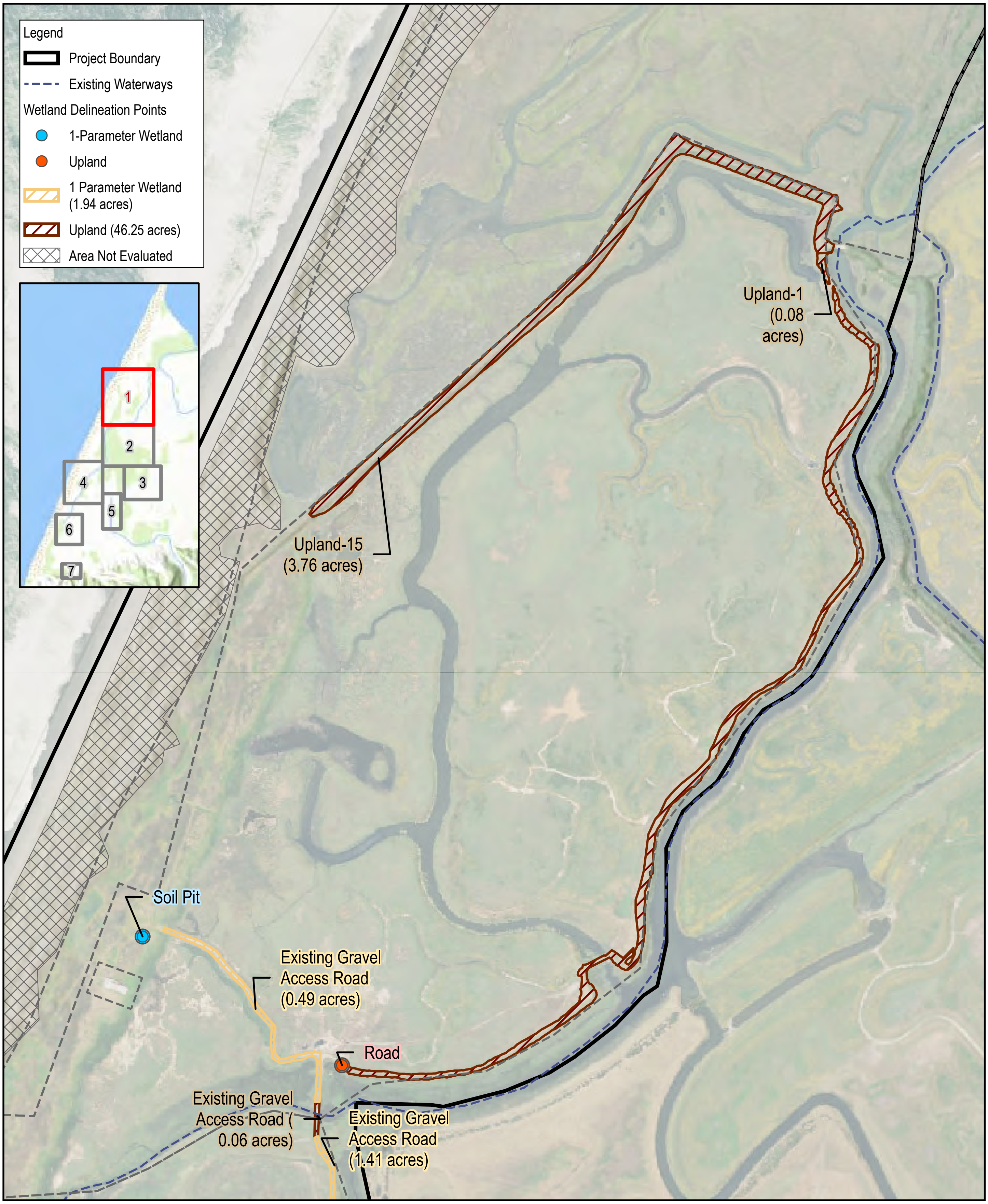
Upland Delineation Overview

Project No. **11187323**
Revision No. **-**
Date **June 2022**

FIGURE 2

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_RevB
Print date: 16 Jun 2022 - 09:59

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS, FEMA. Created by: jclark2



Paper Size ANSI A

0 160 320 480 640

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

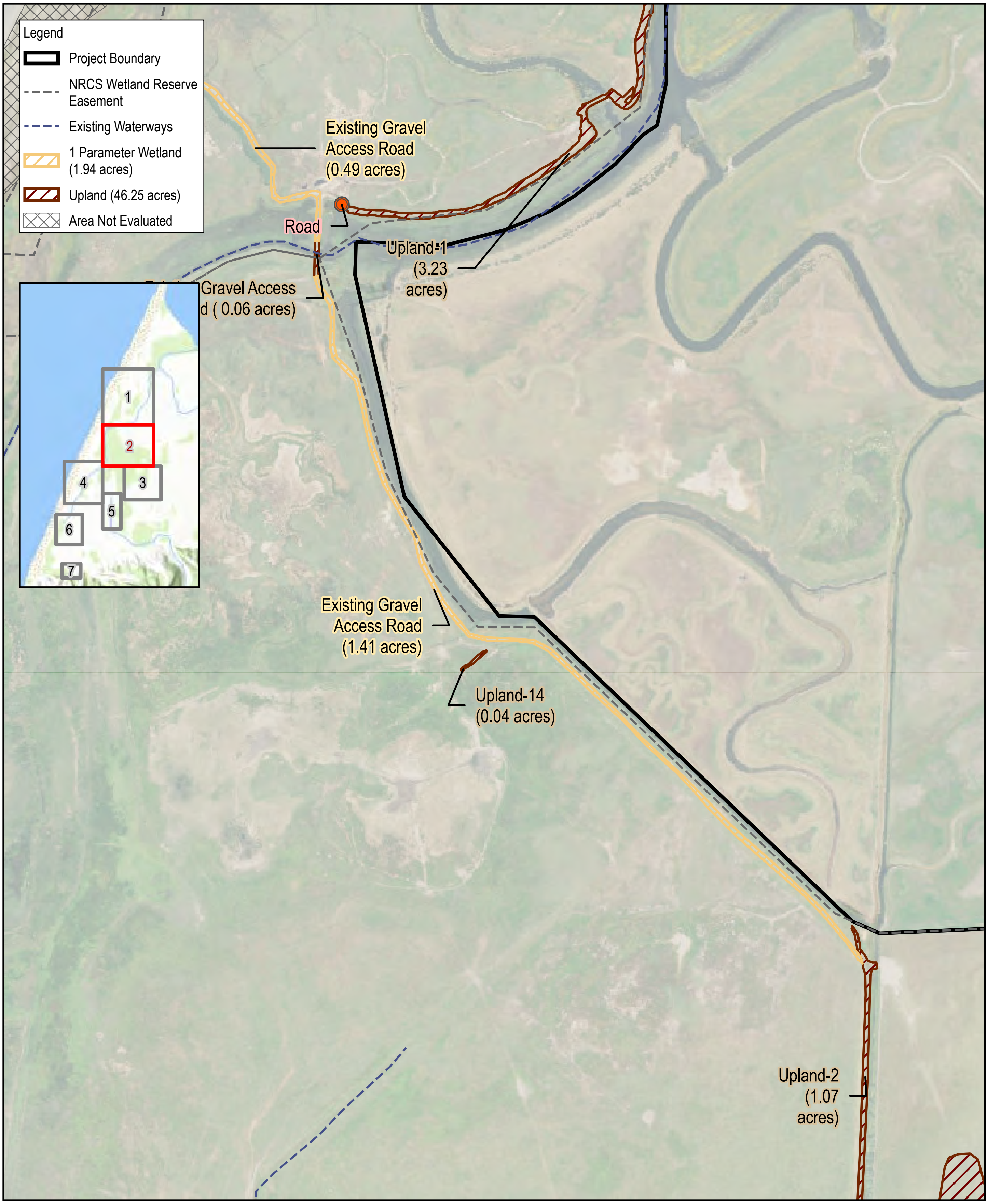
Project No. **11187323**
Revision No. **-**
Date **June 2022**

Upland Delineation

FIGURE 2-1

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_MB_RevC
Print date: 16 Jun 2022 - 16:43

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS, FEMA; World Hillshade: Esri, NASA, NGA, USGS. Created by: jclark2



Paper Size ANSI A

0 160 320 480 640

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

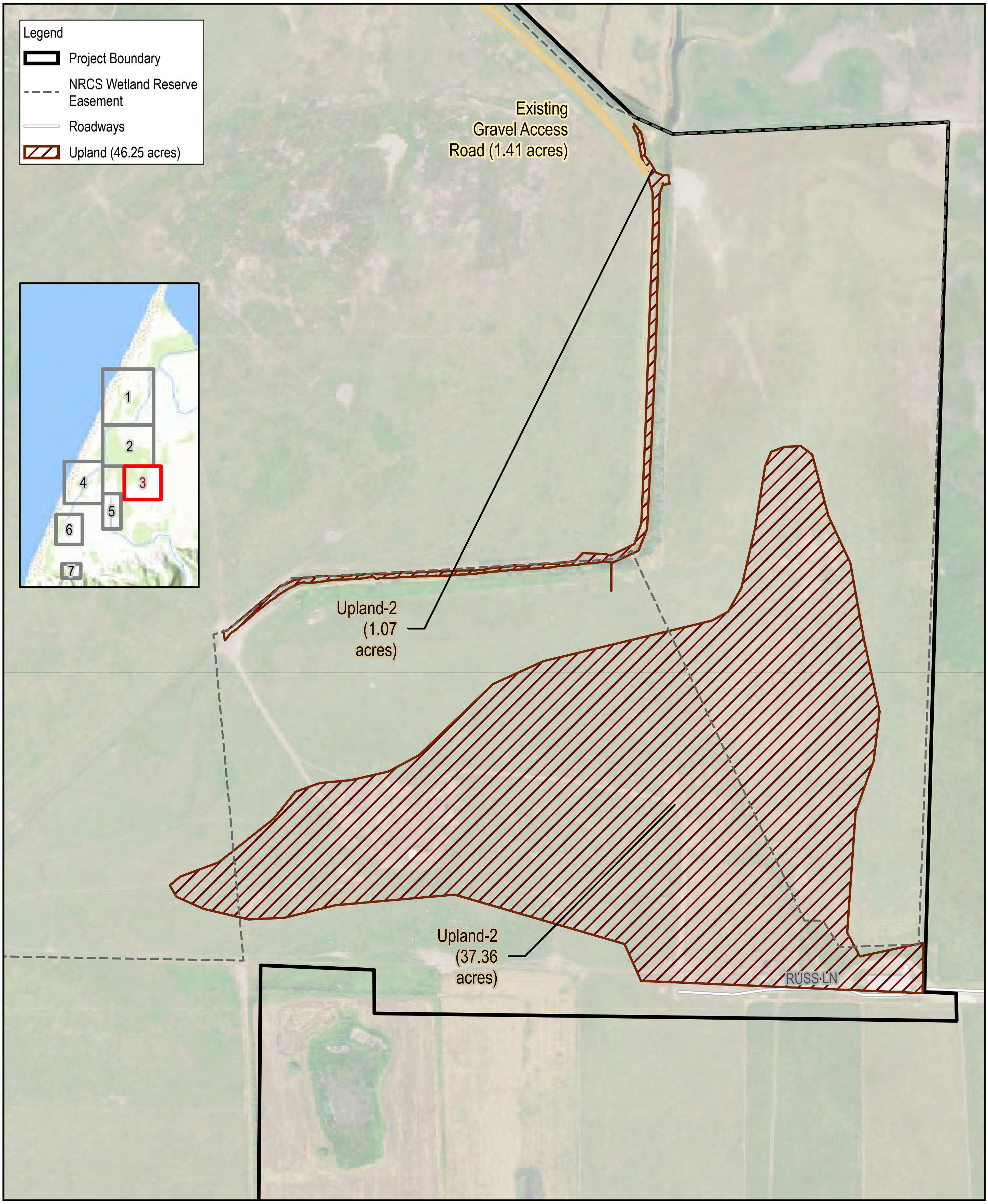
Project No. **11187323**
Revision No. **-**
Date **June 2022**

Upland Delineation

FIGURE 2-2

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_MB_RevC
Print date: 16 Jun 2022 - 16:44

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS, FEMA; World Hillshade: Esri, NASA, NGA, USGS. Created by: jclark2



Paper Size ANSI A

0 110 220 330 440

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

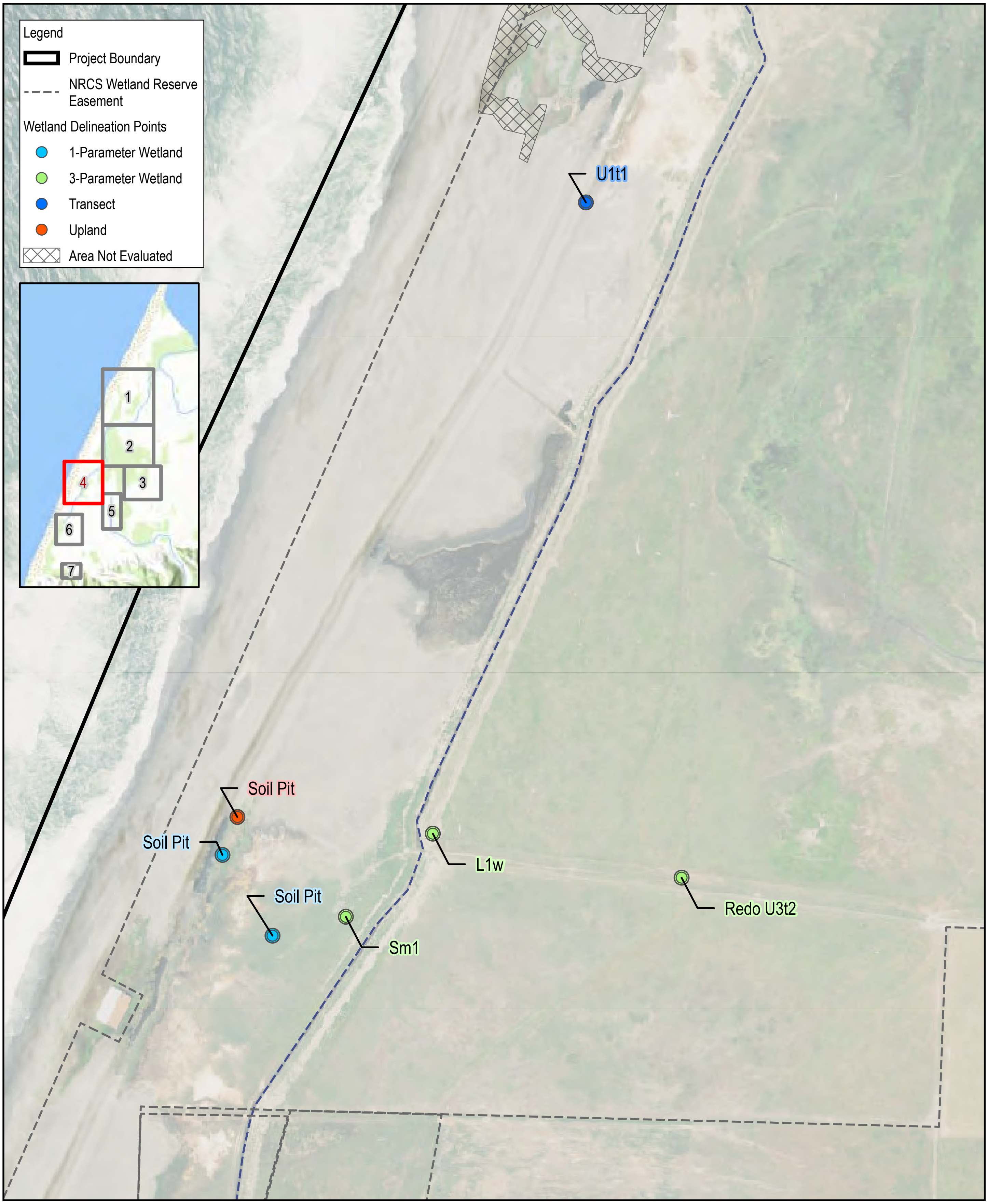
Project No. **11187323**
Revision No. **-**
Date **June 2022**

Upland Delineation

FIGURE 2-3

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_MB_RevC
Print date: 16 Jun 2022 - 16:44

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Created by: jclark2



Paper Size ANSI A

0 125 250 375 500

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

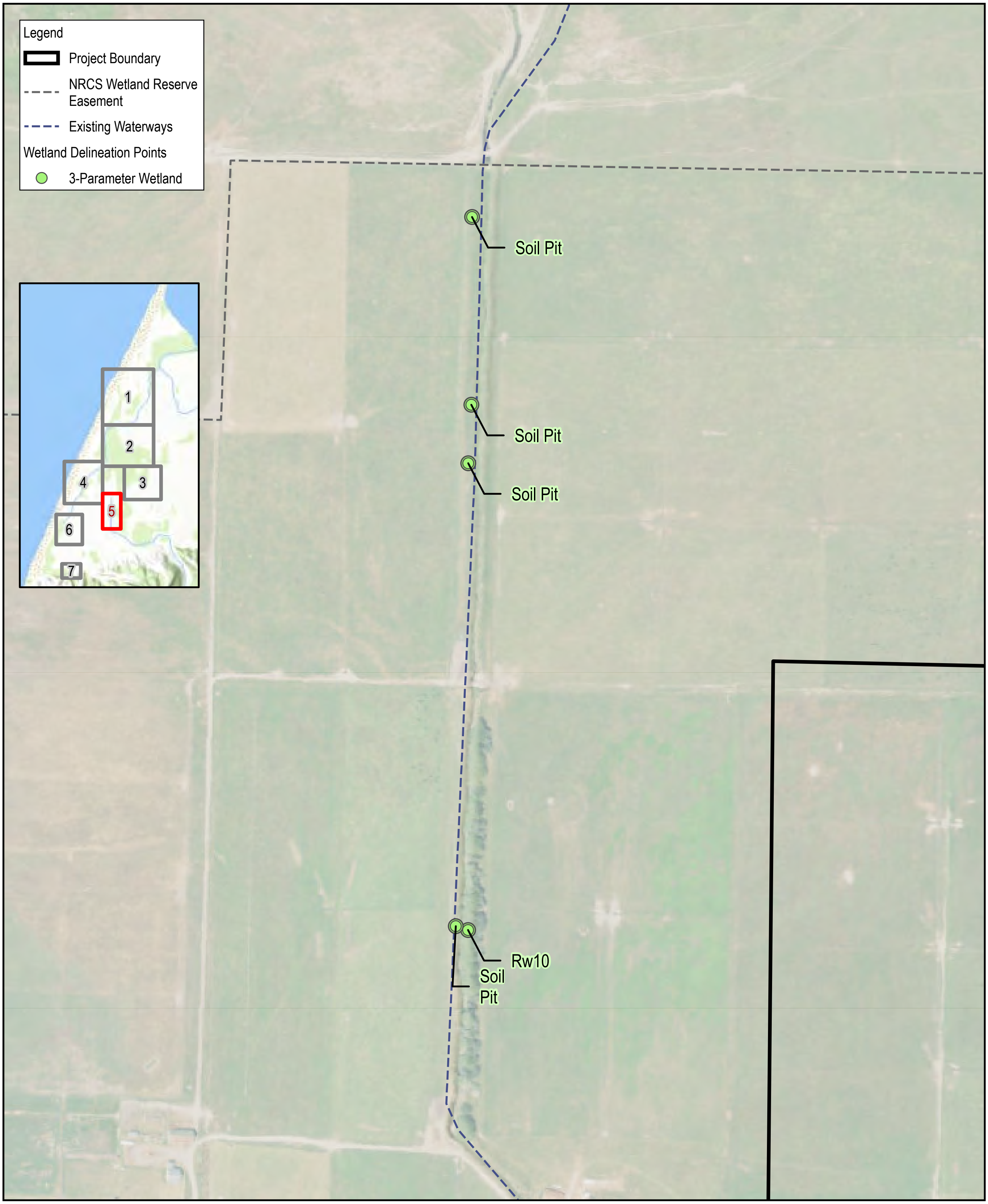
Project No. **11187323**
Revision No. **-**
Date **June 2022**

Upland Delineation

FIGURE 2-4

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_MB_RevC
Print date: 16 Jun 2022 - 16:44

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Created by: jclark2



Paper Size ANSI A

0 90 180 270 360

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

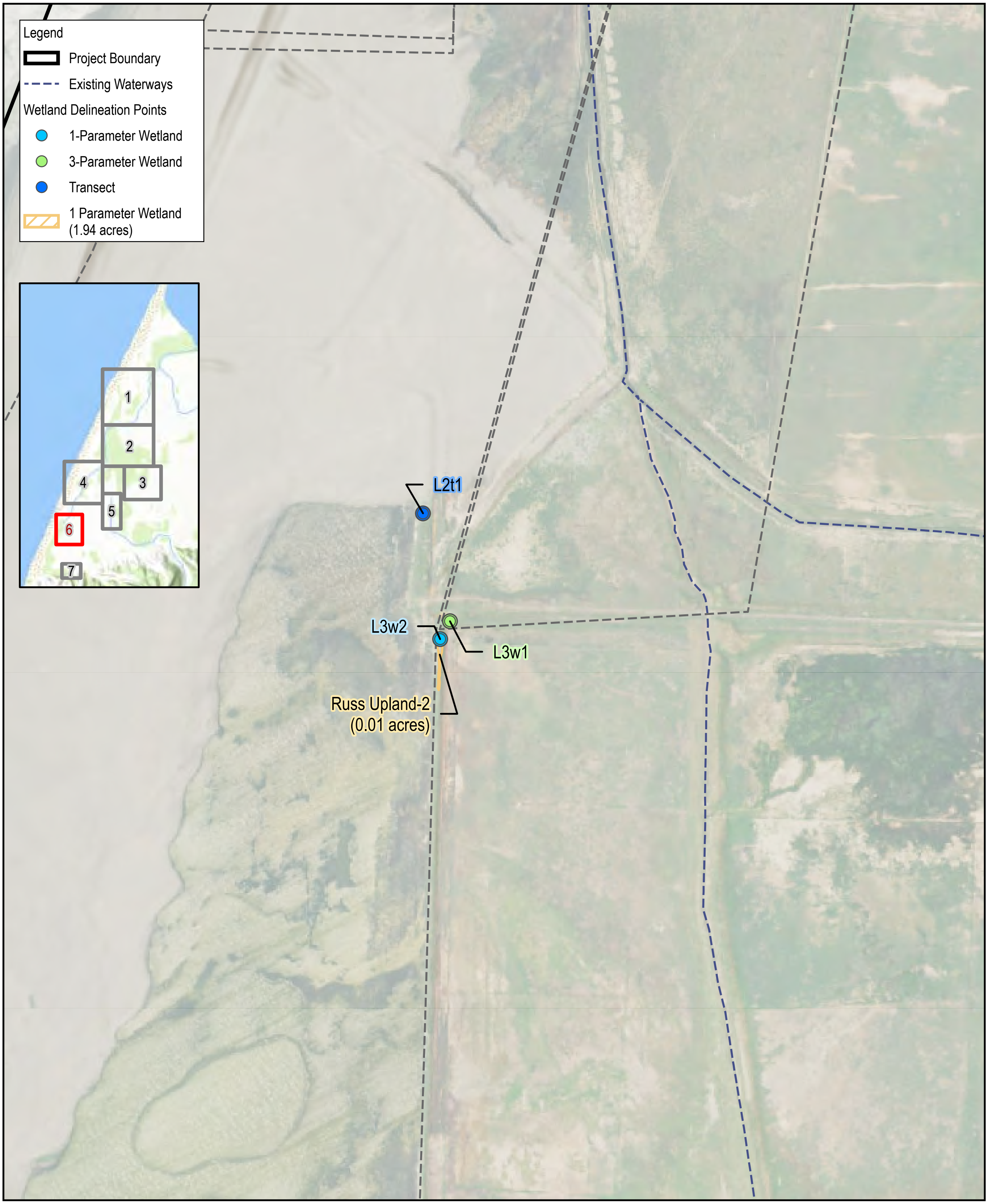
Project No. **11187323**
Revision No. **-**
Date **June 2022**

Upland Delineation

FIGURE 2-5

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_MB_RevC
Print date: 16 Jun 2022 - 16:44

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Created by: jclark2



Paper Size ANSI A

0 80 160 240 320

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

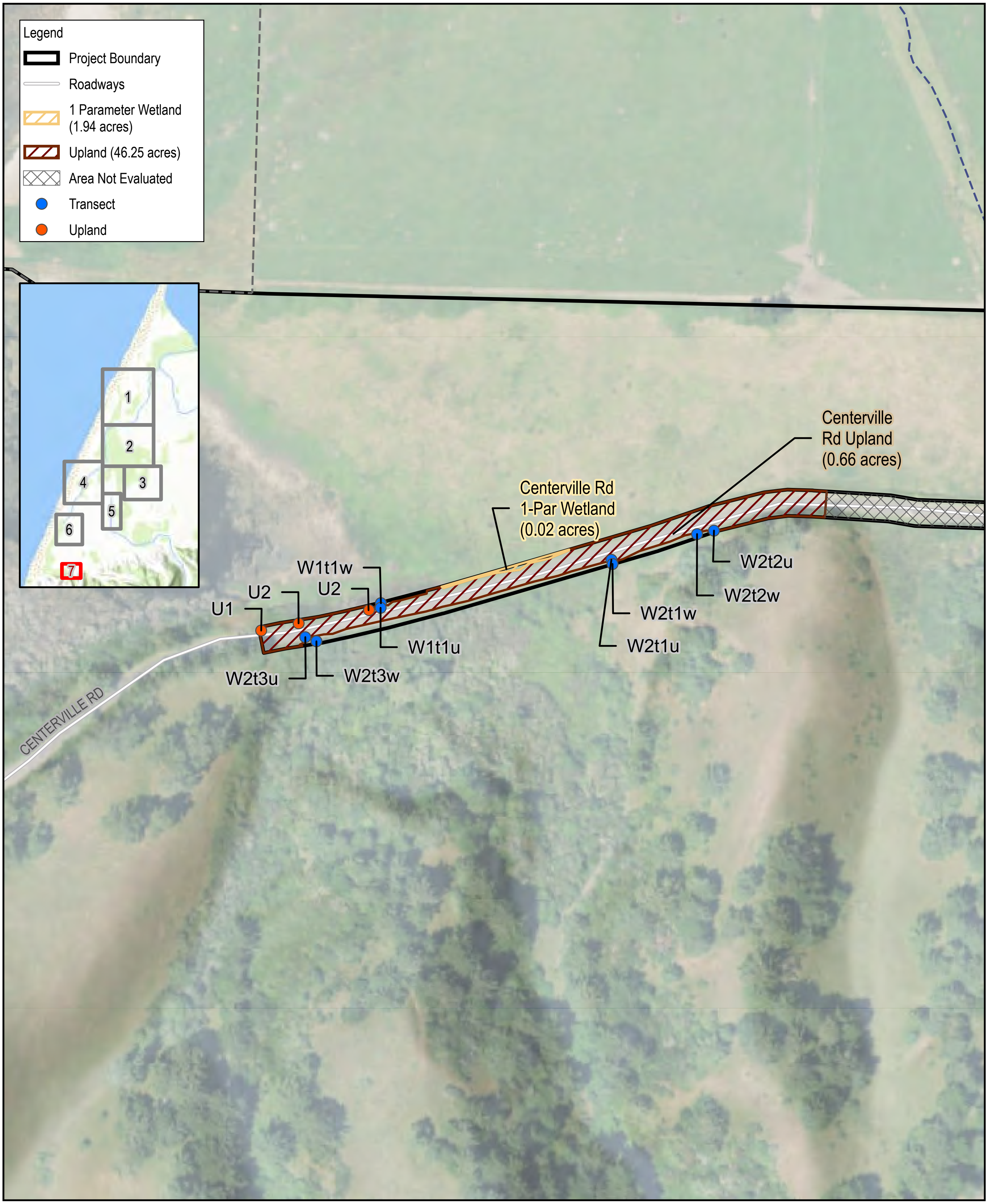
Project No. **11187323**
Revision No. **-**
Date **June 2022**

Upland Delineation

FIGURE 2-6

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_MB_RevC
Print date: 16 Jun 2022 - 16:44

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Created by: jclark2



Paper Size ANSI A

0 50 100 150 200

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

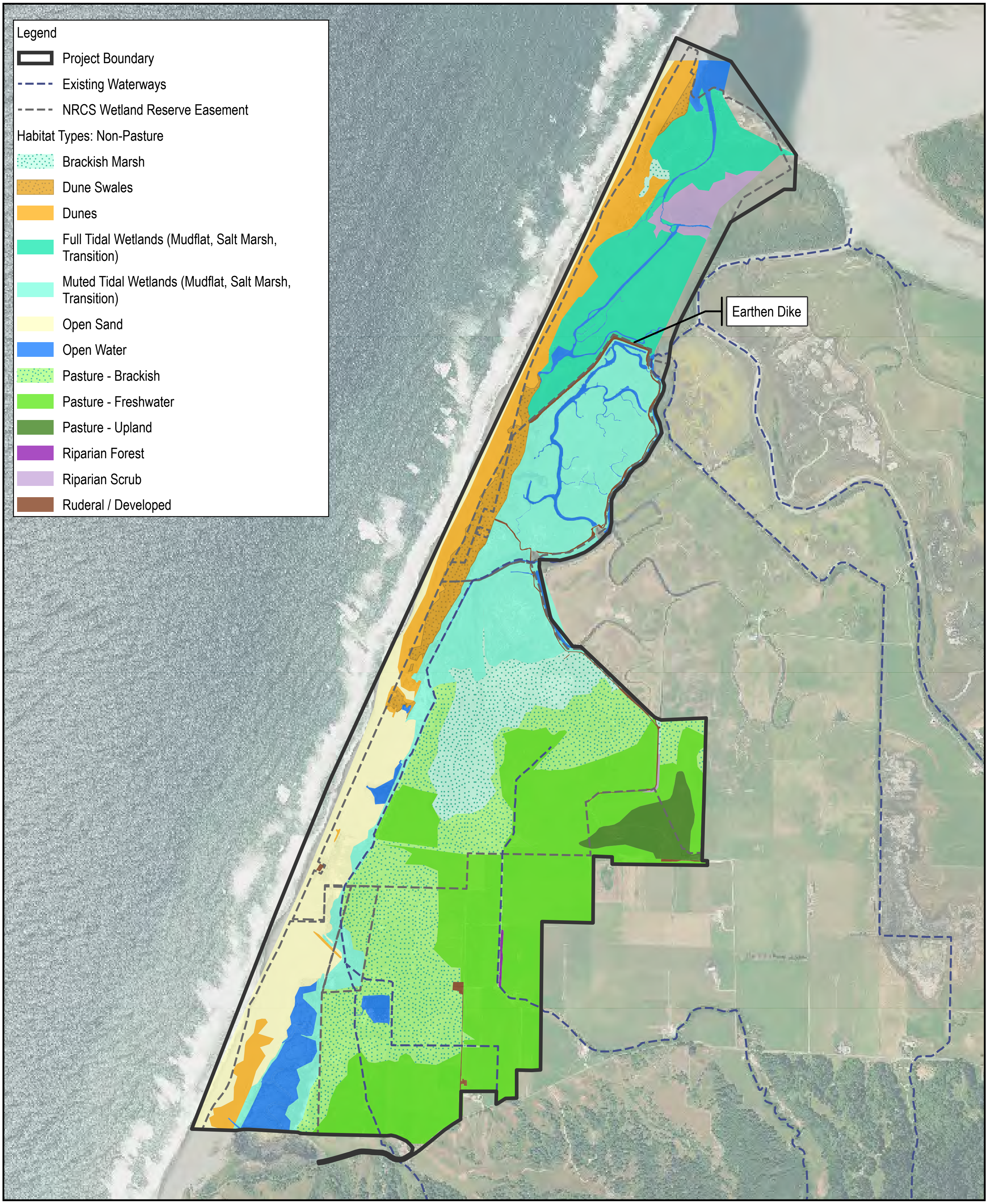
Project No. **11187323**
Revision No. **-**
Date **June 2022**

Upland Delineation

FIGURE 2-7

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_002_Upland_Delineation_MB_RevC
Print date: 16 Jun 2022 - 16:44

Data source: Project boundary, April 13, 2022; Upland mapping, GHD, 2022; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community. Created by: jclark2



Paper Size ANSI A

0 500 1,000 1,500 2,000 2,500

Feet

N

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

GHD

Humboldt County Resource Conservation District
Russ Creek and Centerville Slough Restoration Project

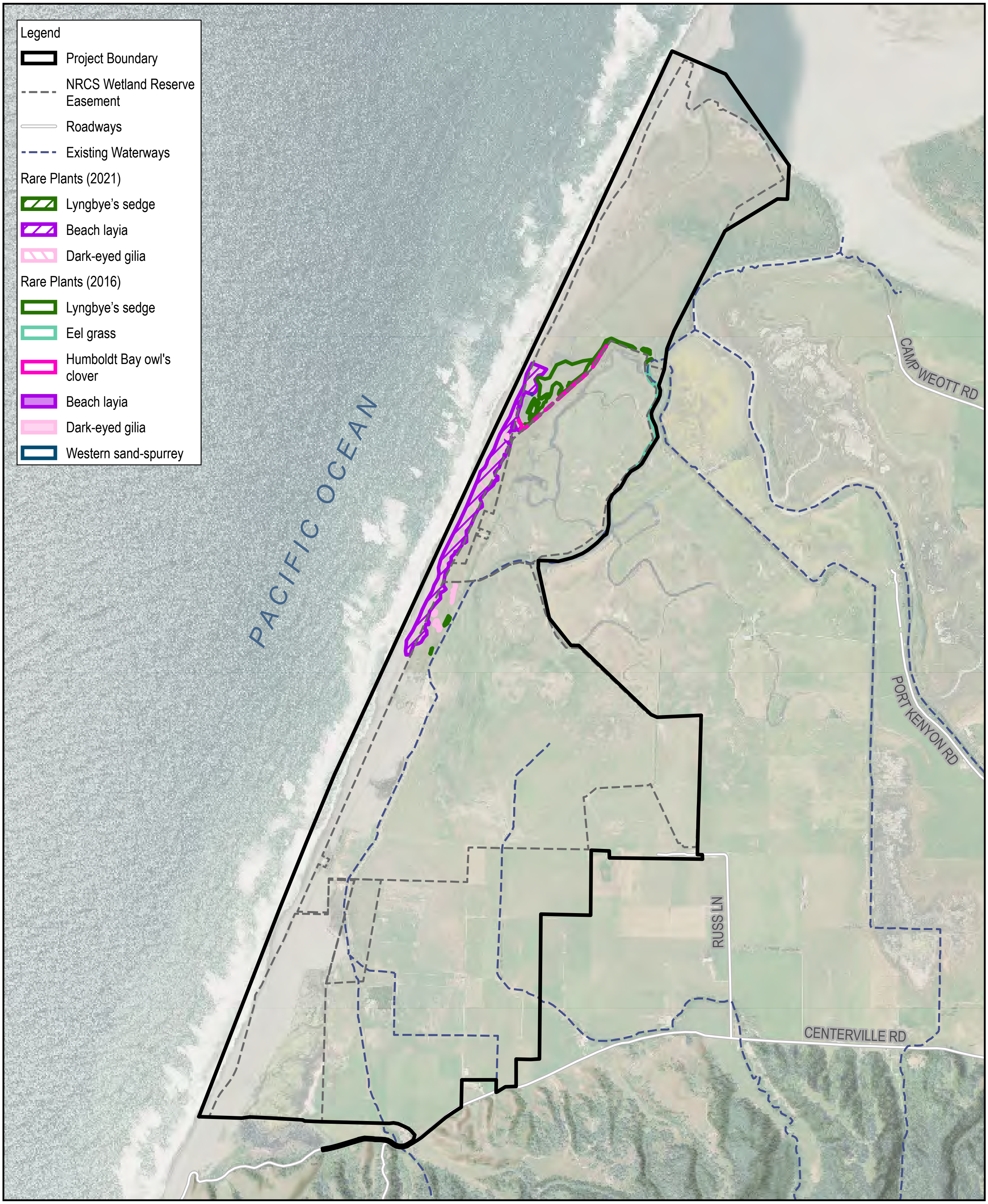
Habitat Classification Overview

Project No. **11187323**
Revision No. **-**
Date **May 2022**

FIGURE 3

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_003_Habitat_Overview_RevD
Print date: 09 May 2022 - 11:07

Data source: GHD Habitat, April 8, 2022; Project boundary, 4/13/2022; NAIP 2020, . Created by: jclark2



Paper Size ANSI A

0 500 1,000 1,500 2,000 2,500

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

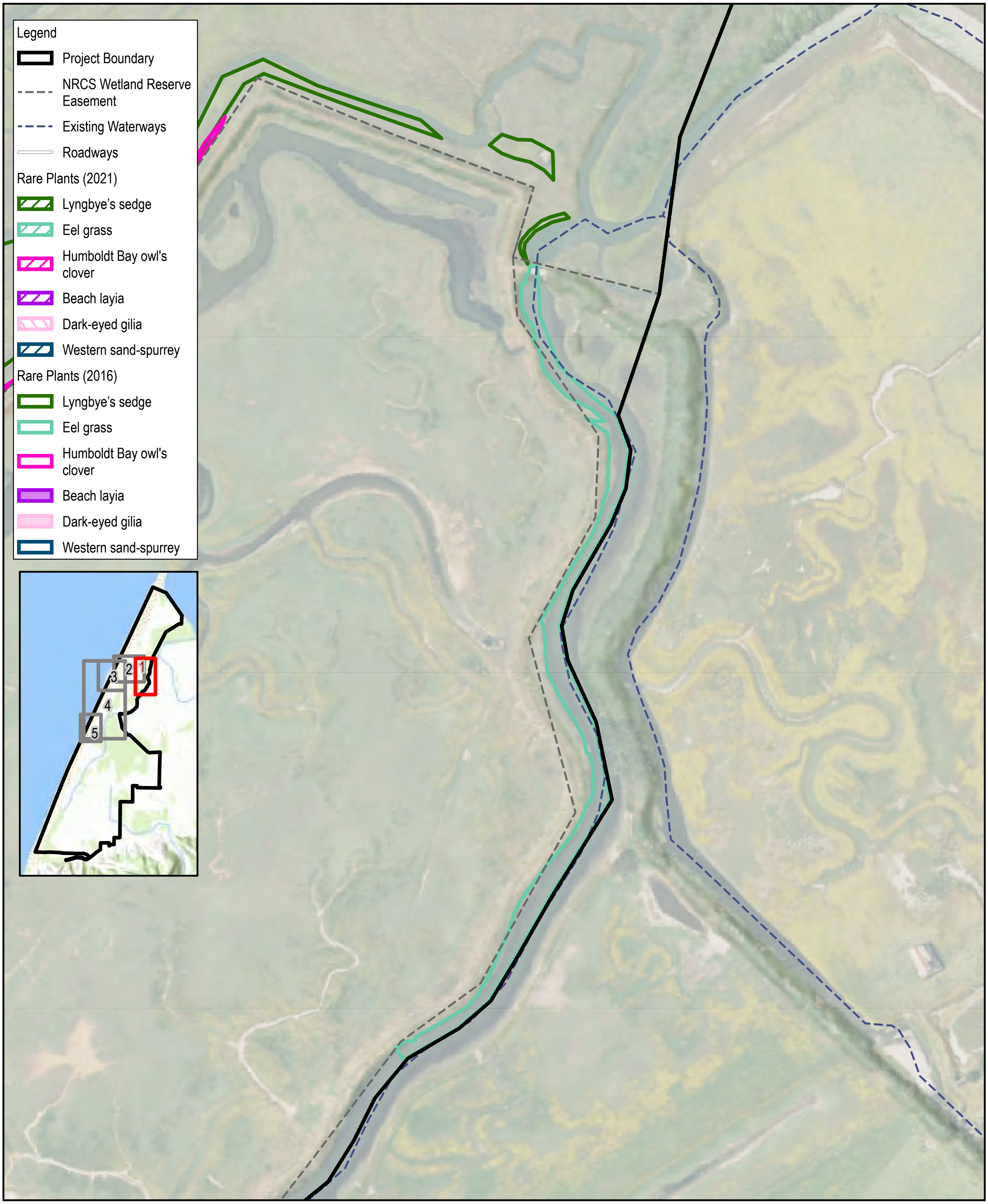
Rare Plants Reconnaissance Overview (Combined 2015-16 and 2021 Data)

Project No. **11187323**
Revision No. **-**
Date **April 2022**

FIGURE 4

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_004_RarePlantRecon
Print date: 15 Apr 2022 - 21:46

Data source: Project boundary, GHD, April 13, 2022; Rare plant, GHD, 2016; Rare plants, GHD, 2021; NAIP 2020, World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS, FEMA. Created by: jclark2



Paper Size ANSI A

0 90 180 270 360

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

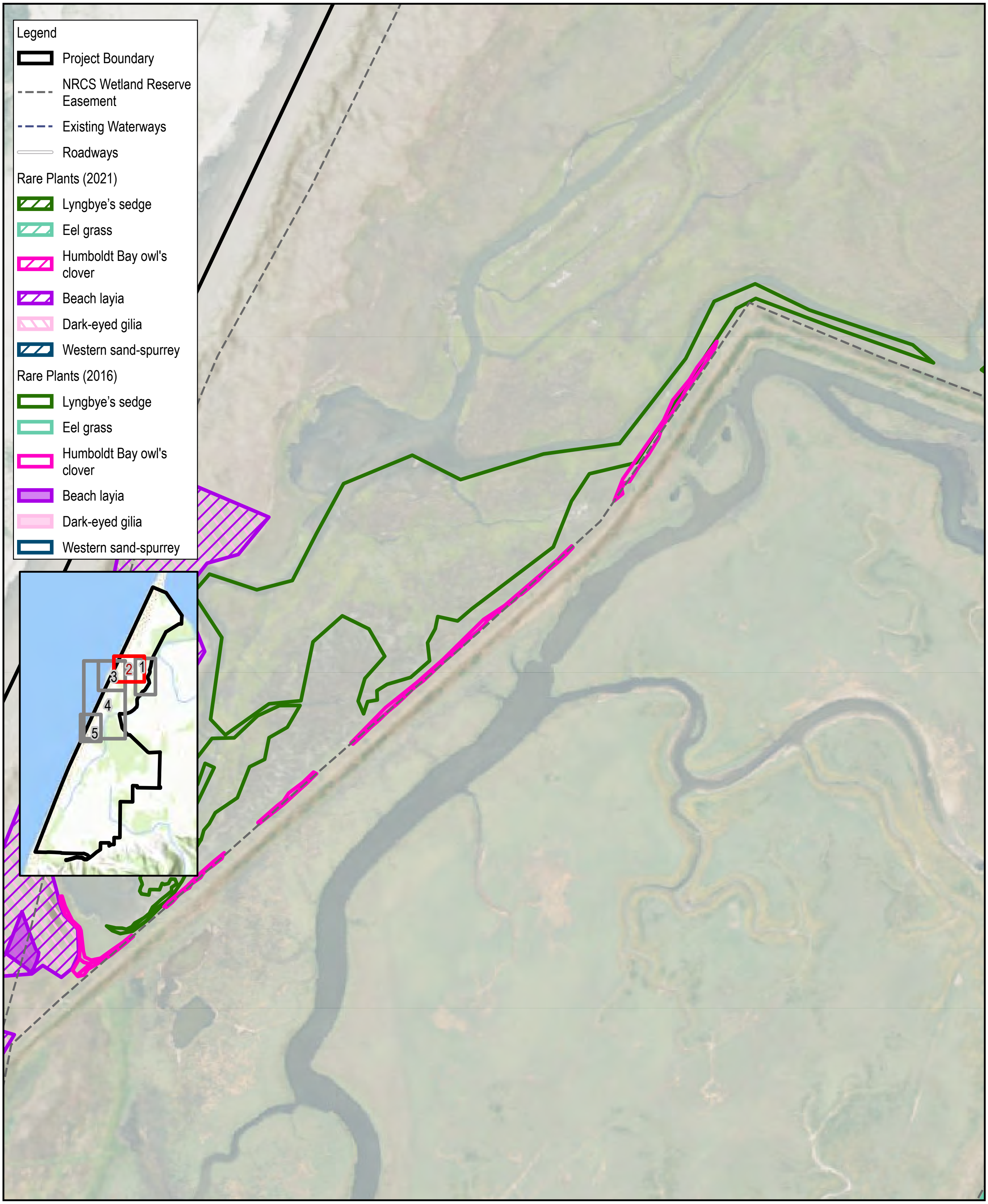
Rare Plants Reconnaissance
(Combined 2015-16 and 2021 Data)

Project No. **11187323**
Revision No. **-**
Date **April 2022**

FIGURE 4-1

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_004_RarePlantRecon_MB
Print date: 15 Apr 2022 - 22:00

Data source: Project boundary, GHD, April 13, 2022; Rare plant, GHD, 2016; Rare plants, GHD, 2021; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user



Paper Size ANSI A

0 90 180 270 360

Feet

N

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

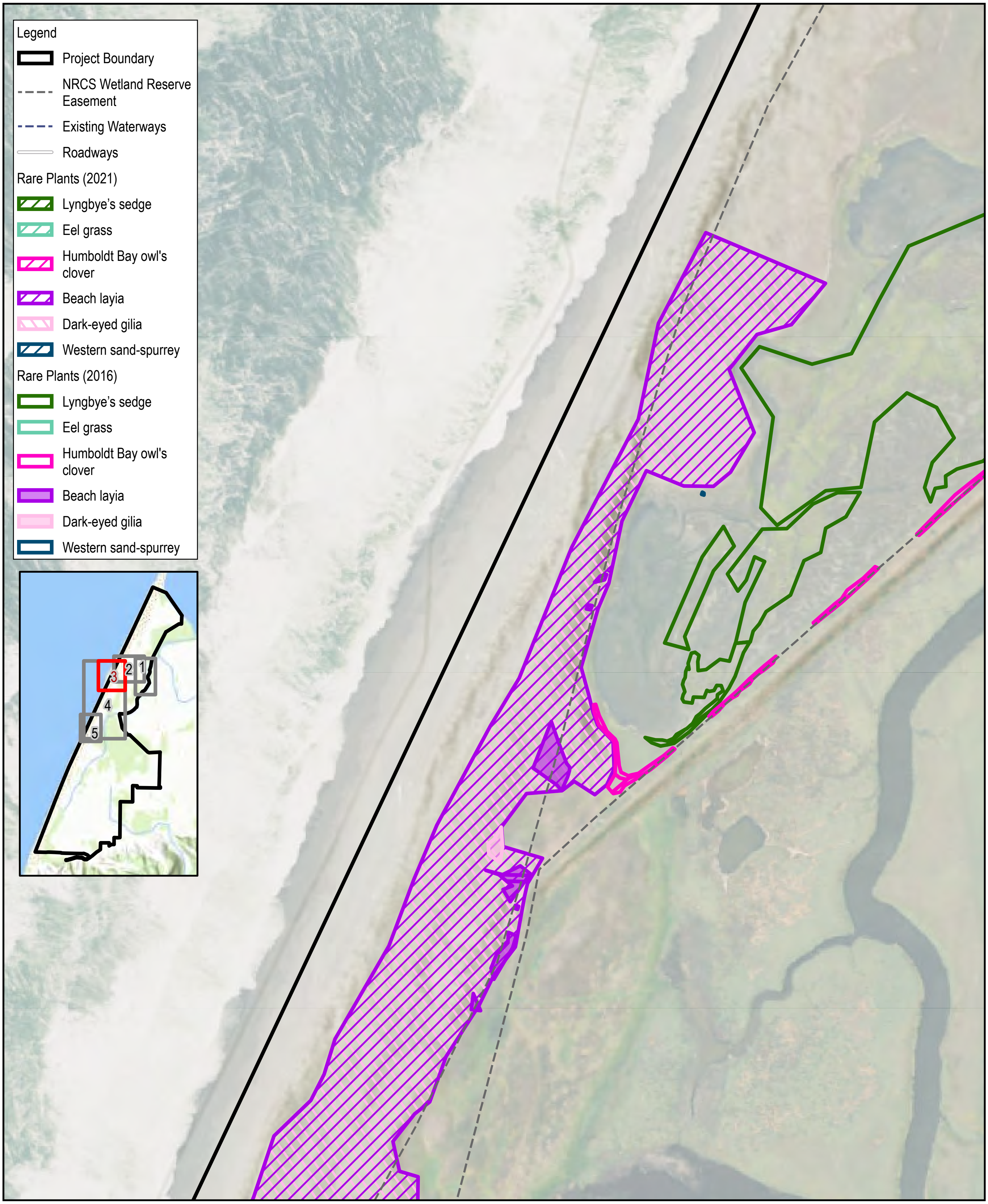
Rare Plants Reconnaissance
(Combined 2015-16 and 2021 Data)

Project No. **11187323**
Revision No. **-**
Date **April 2022**

FIGURE 4-2

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_004_RarePlantRecon_MB
Print date: 15 Apr 2022 - 22:00

Data source: Project boundary, GHD, April 13, 2022; Rare plant, GHD, 2016; Rare plants, GHD, 2021; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user



Paper Size ANSI A

0 80 160 240 320

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

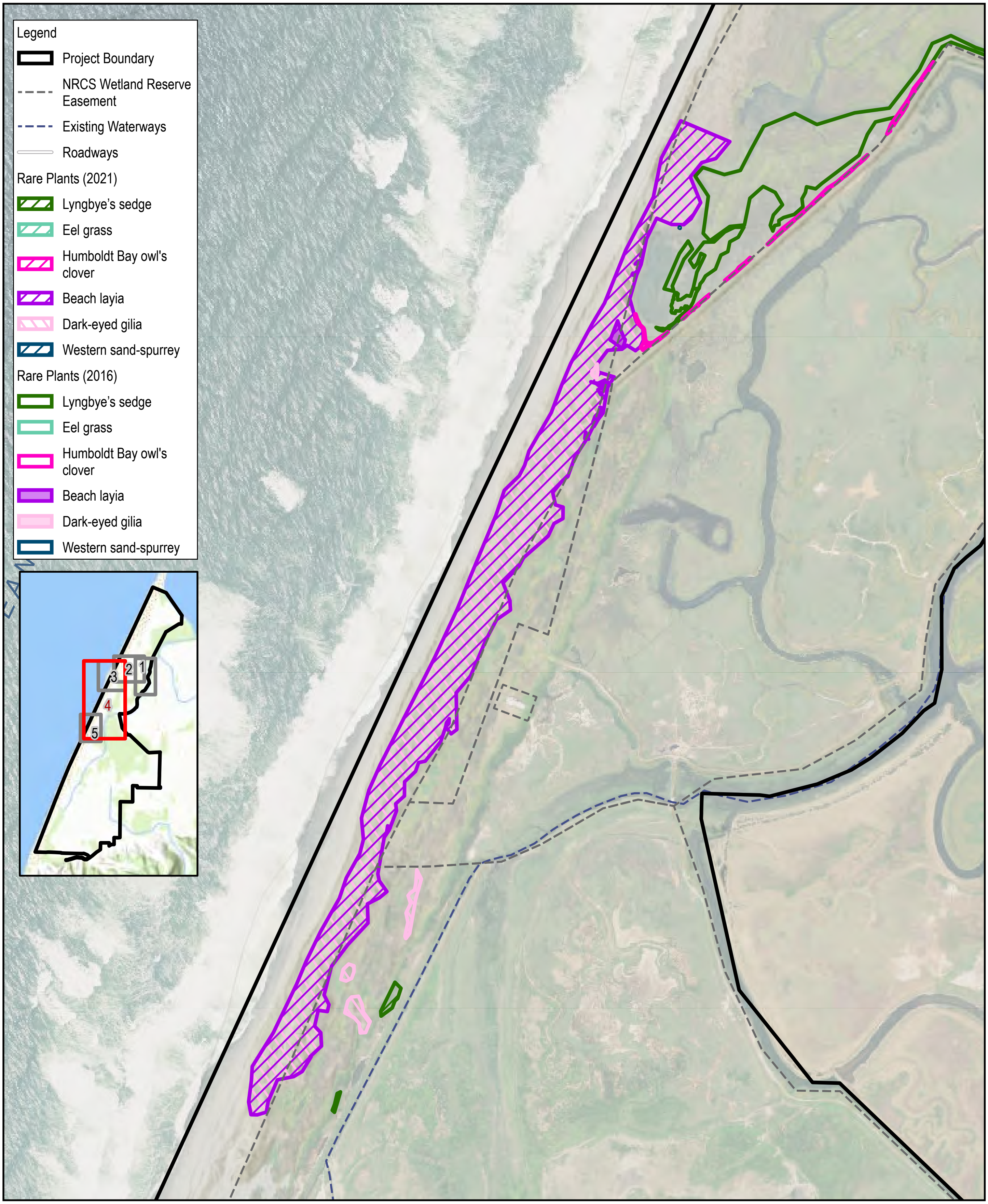
Rare Plants Reconnaissance (Combined 2015-16 and 2021 Data)

Project No. **11187323**
Revision No. **-**
Date **April 2022**

FIGURE 4-3

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_004_RarePlantRecon_MB
Print date: 15 Apr 2022 - 22:00

Data source: Project boundary, GHD, April 13, 2022; Rare plant, GHD, 2016; Rare plants, GHD, 2021; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user



Paper Size ANSI A

0 210 420 630 840

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

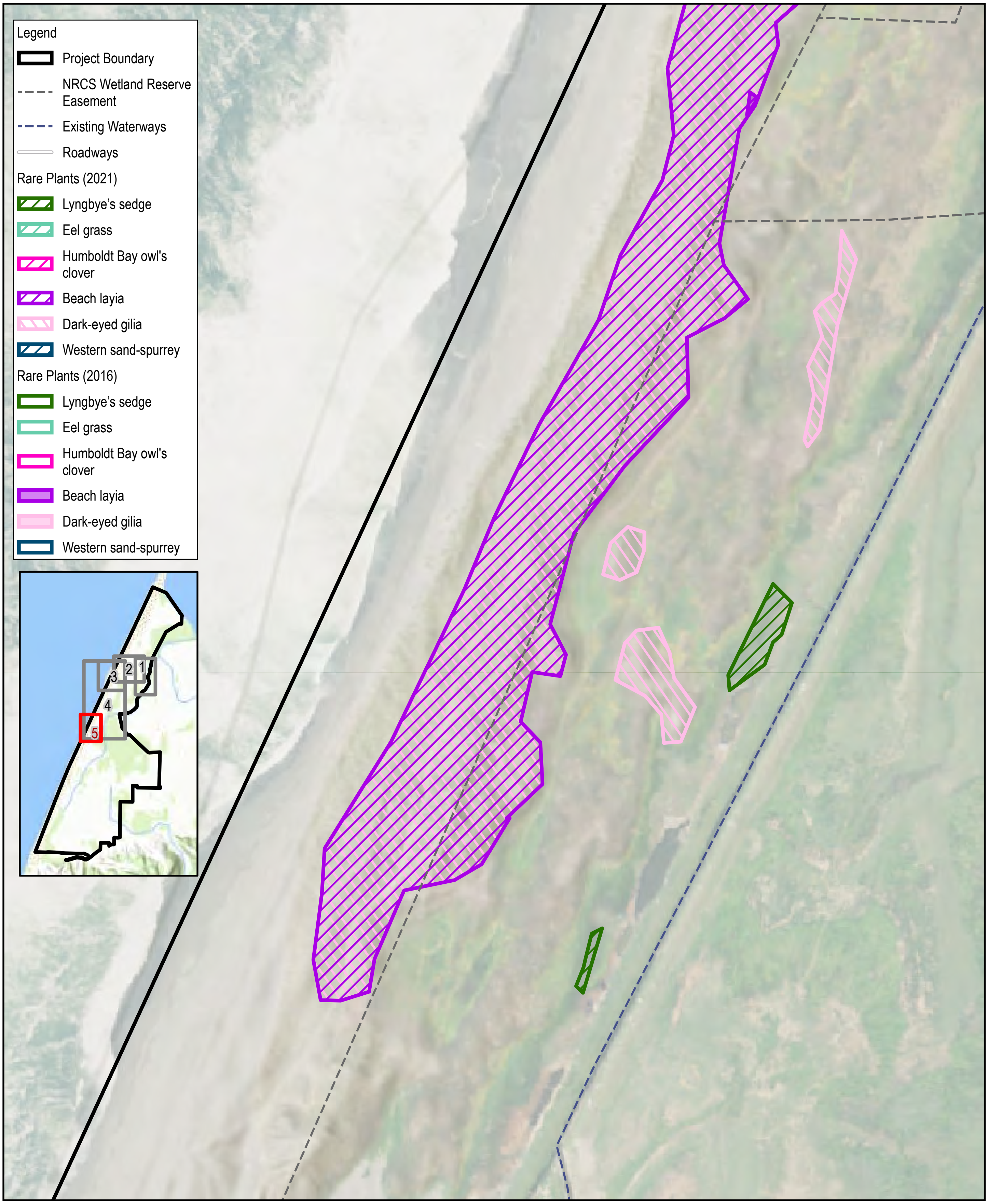
Rare Plants Reconnaissance
(Combined 2015-16 and 2021 Data)

Project No. **11187323**
Revision No. **-**
Date **April 2022**

FIGURE 4-4

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_004_RarePlantRecon_MB
Print date: 15 Apr 2022 - 22:00

Data source: Project boundary, GHD, April 13, 2022; Rare plant, GHD, 2016; Rare plants, GHD, 2021; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS, FEMA; World Hillshade: Esri, NASA, NGA, USGS. Created by: jclark2



Paper Size ANSI A

0 60 120 180 240

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

NRCS-HCRCD
Russ Creek and Centerville Slough Restoration

Project No. **11187323**
Revision No. **-**
Date **April 2022**

Rare Plants Reconnaissance (Combined 2015-16 and 2021 Data)

FIGURE 4-5

N:\US\Eureka\Projects\111\11187323 HCRCD USDA-NRCS ACEP-WRE\08-GIS\Maps\Deliverables\11187323_BotVegReport_RevA.aprx - 11187323_004_RarePlantRecon_MB
Print date: 15 Apr 2022 - 22:00

Data source: Project boundary, GHD, April 13, 2022; Rare plant, GHD, 2016; Rare plants, GHD, 2021; NAIP 2020, World Topographic Map: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, USDA; World Topo Base: This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseAlignment of boundaries is a presentation of the features provided by our data vendors and does not imply endorsement by Esri or any governing authority.Important Note: This item is in beta and is not intended for use in production applications.; World Topographic Map: Esri Community Maps Contributors, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, US Census Bureau, USDA; World Hillshade: Esri, NASA, NGA, USGS; World Hillshade: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user

Attachment B

Wetland Delineation Datasheets

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

Project/Site: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: 10/15/13

Applicant/Owner: TWC State: CA Sampling Point: UT72-U

Investigator(s): CS/AG Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee/road Local relief (concave, convex, none): linear/linear Slope (%): 10

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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 ___ No X	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 1m²)			
1. Agrostis St.	35	✓	FAC
2. Distichlis sp.	30	✓	FACW
3. Lotus co.	10	N	FAC
4. Salicornia sp.	20	✓	OBL
5. Aster ch.	5	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	Ø	= Total Cover	
% Bare Ground in Herb Stratum Ø			

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	20	x 1 = 20
FACW species	30	x 2 = 60
FAC species	50	x 3 = 150
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column Totals:	100 (A)	230 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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:
*vege not growing as hydrophyte due to high position topographically on levee/road, high chroma soils (does not meet indicators)

SOIL

Sampling Point: U1T2-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y3/3	98	2.5Y4/4	2	C	M	silt loam	(1)
3-9	2.5Y3/3	100	—	—	—	—	"	(2)
9-18	2.5Y3/3	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:
(1) chroma too high to meet indicators, and redox only in surface does not meet thickness
(2) anamolies in matrix color due to source material from levee building, some areas of mixed color. Wood chips observed.

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)
- X FAC-Neutral Test (D5) 2/2
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): >18"

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:

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

Project/Site: Connick Ranch City/County: Humboldt Sampling Date: 10/15/13

Applicant/Owner: TWC State: CA Sampling Point: U1T2-W

Investigator(s): Cam Scott Section, Township, Range: ______

Landform (hillslope, terrace, etc.): mixed wetland/floodplain Local relief (concave, convex, none): concave/linear Slope (%): 5%

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? No Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 1 m²)			
1. Distichlis sp.	30	✓	FACW
2. Salicornia pa.	10	✓	OBL
3. Aanshi ? sp.	20	✓	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60%	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 40

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	10	x 1 = 10
FACW species	30	x 2 = 60
FAC species	20	x 3 = 100
FACU species	Ø	x 4 = Ø
UPL species	Ø	x 5 = Ø
Column Totals:	60 (A)	130 (B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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: UIT2-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	85	2.5Y 4/4	15	C	M	Silt loam	firm/compacted

[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)
- X 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)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5) 2/2
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): >18"

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: CONNICK RANCH City/County: FERNDALE/HUMBOLDT Sampling Date: 10/15/13

Applicant/Owner: TNC State: CA Sampling Point: V1T3-U

Investigator(s): C. SCOTT / A. GOWER Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ~~FLOOD PLAIN~~ LEVEE/ROAD Local relief (concave, convex, none): ~~CONCAVE~~ LINEAR/ LINEAR Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 X*
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: * vege not growing as hydrophytes

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: ___)			
1. Polygonum pa.	5	N	UPL
2. Salicornia pa.	20	Y	OBL
3. Achillea mi.	10	N	FACU
4. Lotus corni.	20	Y	FAC
5. Agrostis sto.	35	Y	FAC
6. Distichlis sp.	25	Y	FACW
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: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	20	x 1 = 20
FACW species	25	x 2 = 50
FAC species	55	x 3 = 165
FACU species	~~10~~ 10	x 4 = 40
UPL species	5	x 5 = 25 (25)
Column Totals:	100 (A)	300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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: TP = 3' from wet boundary
* vege not growing as hydrophytes, elevated on levee/road and does not meet soil or hydrology indicators

SOIL

Sampling Point: U1T3-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 4/3	100	—	0	—	—	silt 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)
- __ 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:
anomalies in matrix color in clumps due to material source in levee building. wood chips present.

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)
- X FAC-Neutral Test (D5) 2/2
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): >14"

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:
top of man made levee topographically (high point)

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

Project/Site: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: 10/16/13

Applicant/Owner: TNC State: CA Sampling Point: UIT3-W

Investigator(s): LW/AG Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave/linear Slope (%): 1

Subregion (LRR): ______ Lat: ______ Long. ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? N (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:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ______)			
1. Agrostis st. ✓	45	Y	FAC
2. Salicornia pa. ✓	20	Y	OBL
3. Cirsium vu.	5	N	FACU
4. Achillea mi.	5	N	FACU
5. Hypochaeris ra.	10	N	FACU
6. Rumex cr. ✓	5	N	FAC
7. Plantago la.	10	N	FACU
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	Ø = Total Cover		
% Bare Ground in Herb Stratum Ø			

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	20	x 1 = 20
FACW species	Ø	x 2 = Ø
FAC species	50	x 3 = 150
FACU species	30	x 4 = 120
UPL species	Ø	x 5 = Ø
Column Totals:	100 (A)	290 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 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: UIT3-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/2	90	10YR 4/4	10	C	M	SILT 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)
- X 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:
REDOX CONCENTRATIONS OBSERVED FROM SURFACE TO DEPTH = F6 = REDOX IN DARK SURFACE (~~MATRIX~~ VALUE = 3; CHROMA VALUE = 2) REDOX CONCENTRATIONS AT APPROX ~~4"~~ 6" AND ~~AT [illegible]~~ EXTENDED TO DEPTH

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)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5) 1/1
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0-18"
Water Table Present?	Yes ____	No X	Depth (inches): 0-18"
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): 0-18"

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Assume wet season hydro due to strong redox in flat pasture on fringe of obvious wetland

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

Project/Site: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: 10/15/13

Applicant/Owner: TWC State: CA Sampling Point: U/TS-U

Investigator(s): AG/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee/road Local relief (concave, convex, none): linear/linear Slope (%): 15

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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 ___ No X		

Remarks:
* Vege does not pass PI

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ___)			
1. Holcus lanatus	45	Y	FAC
2. Agrostis stolon	35	Y	FAC
3. Plantago lanc	15	N	FACU
4. Rumex occ	5	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	Ø = Total Cover		
% Bare Ground in Herb Stratum Ø			

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	0	x 1 = 0
FACW species	5	x 2 = 10
FAC species	80	x 3 = 240
FACU species	15	x 4 = 60
UPL species	0	x 5 = 0
Column Totals:	100 (A)	310 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

NO 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: * Vegetation dominated by FAC species w/only 1 subdominant FACW species present at low percent (5%). Vege not growing as hydrophytes corroborated by absence of hydric soils or hydrology, and higher topographic position [TP = 4' from wet boundary]

SOIL

Sampling Point: UITS-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100	—	0	—	—	Silt loam	
12-18	10YR 3/2	100	—	0	—	—	"	

[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:
wood chips + anomalies in matrix color in clumps due to material source used to construct berm

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): >18"
Water Table Present? Yes ___ No ↓ Depth (inches): ↓
Saturation Present? (includes capillary fringe) Yes ___ No ↓ Depth (inches): ↓

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region UIT5-W

Project/Site: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: ~~UIT5-W~~ @5

Applicant/Owner: TWC State: CA Sampling Point: 10/15/2013

Investigator(s): A. Gower / C. Scott Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): Concave / linear Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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: ∅

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: ______)			
1. Bromus lanatus	40	Y	FAC
2. Achillea mille	15	N	FACU
3. Plantago lanc	15	N	FACU
4. Agrostis stolon	25	Y	FAC
5. Rumex cr.	5	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
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	0	x 1 = 0
FACW species	5	x 2 = 10
FAC species	65	x 3 = 195
FACU species	30	x 4 = 120
UPL species	0	x 5 = 0
Column Totals:	100 (A)	325 (B)

Prevalence Index = B/A = 3.25

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 ~~X~~

Remarks: ~~Vegetation dominated by facultative species with only 1 subdominant FACW species present. Vegetation not growing as hydrophytes corroborated with absence of hydric soils, hydro and topographic position~~

TP=1' from wet boundary

SOIL

Sampling Point: UITS-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/2	85	2.5Y4/4	15	C	M	Silt 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)
NO Depleted Matrix (F3)
X 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)
__ 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): >18"
Water Table Present? Yes ____ No ↓ Depth (inches): ↓
Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ↓

Wetland Hydrology Present? Yes X* No ____

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

Remarks:
*Assume hydro in winter due to strong/consistent redox throughout soil horizon

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

Project/Site: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: 10/15/13

Applicant/Owner: TNC State: CA Sampling Point: U1T7-U

Investigator(s): AG/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee/road Local relief (concave, convex, none): linear/linear Slope (%): 15

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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 ___ No X		

Remarks: * does not pass PI for vege

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: ___)			
1. Holcus lanatus	45	Y	FAC
2. Plantago lanc.	15	N	FACU
3. Lotus corn.	10	N	FAC
4. Agrostis stol.	30	Y	FAC
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	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	85	x 3 = 255
FACU species	15	x 4 = 60
UPL species	0	x 5 = 0
Column Totals:	100 (A)	315 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

NO 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: * Vegetation dominated by FAC species not growing as hydrophytes (higher topographic position, absence of wetland soil indicators). Does not pass PI

 TP = 5' from wet boundary

SOIL

Sampling Point: UT7-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/3	100	-	0	-	-	silt loam	firm
712	too compacted							

[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: wood chips + anomalies present in matrix color but in clumps (not consistent), due to source (historic) material to build berm

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): 0-12

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

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

Wetland Hydrology Present? Yes ___ No X

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: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: UIT 7-W

Applicant/Owner: TWC State: CA Sampling Point: 10/15/2013

Investigator(s): AG/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave/linear Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: * vege does not pass PI, because along levee, elevation was used to draw boundary, this plot technically 2 parameter wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ___)			
1. Agrostis sto.	80	Y	FAC
2. Plantago lance.	15	N	FACU
3. Rumex cr.	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	Ø	x 1 = Ø
FACW species	Ø	x 2 = Ø
FAC species	85	x 3 = 255
FACU species	15	x 4 = 60
UPL species		x 5 =
Column Totals:	100 (A)	315 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
NO 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: TP = 1' from wet boundary * vege does not pass PI

SOIL

Sampling Point: UT7-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/2	90	2.5Y4/4	10	C	M	silt loam	firm

[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)
- X 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)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- no FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): > 18"
Water Table Present?	Yes ___	No ↓	Depth (inches): ↓
Saturation Present? (includes capillary fringe)	Yes ___	No ↓	Depth (inches): ↓

Wetland Hydrology Present? Yes X* No ___

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

Remarks:
*Assume winter hydro based on topographic position, strong wetland indicators in soil and soil is relatively undisturbed.

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

Project/Site: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: U1 T9-U

Applicant/Owner: TWC State: CA Sampling Point: 10/15/13

Investigator(s): AG/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee/road Local relief (concave, convex, none): linear/linear Slope (%): 15

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X
Is the Sampled Area within a Wetland?	Yes ___	No X

Remarks: TP=2' from wet boundary on abrupt levee veg does not pass PI

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: ______)			
1. Holcus lanatus	65	Y	FAC
2. Agrostis stol.	15	N	FAC
3. Trifolium ario	5	N	FAC
4. Plantago lanc	10	N	FACU
5. Taraxacum off.	5	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	Ø	x 1 = Ø
FACW species	Ø	x 2 = Ø
FAC species	85	x 3 = 255
FACU species	15	x 4 = 60
UPL species	Ø	x 5 = Ø
Column Totals:	100 (A)	315 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

NO 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 *

Remarks: * Holcus is only dominant species (FAC), not strongly hydrophytic and not growing as hydrophyte. Area is on side of levee and lacks hydro or soils indicators. Soil chroma is clearly 3/2 w/ Ø redox.

TP=2' from wet boundary

SOIL

Sampling Point: UIT9-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR4/3	98	2.5Y4/4	2	C	M	silt 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)
- NO 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 wetland soil indicators as matrix chroma not reduced (>2). Variation in soil color may be due to imported materials during levee construction

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): >18"

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:

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

Project/Site: CONNICK RANCH City/County: FERNDALE, HUMBOLDT Sampling Date: 10/15/2013

Applicant/Owner: TWC State: CA Sampling Point: U1T9-W

Investigator(s): A. GOWER & C. SCOTT Section, Township, Range: ______

Landform (hillslope, terrace, etc.): FLOOD PLAIN Local relief (concave, convex, none): CONCAVE/LINEAR Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation NO, Soil NO, or Hydrology NO 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 X*
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ___)			
1. Agrostis st.	65	Y	FAC
2. Plantago la.	10	N	FACU
3. Holcus la.	20	Y	FAC
4. Rumex cr.	5	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

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	Ø	x 1 = Ø
FACW species	Ø	x 2 = Ø
FAC species	90	x 3 = 270
FACU species	10	x 4 = 40
UPL species		x 5 =
Column Totals	100 (A)	310 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

NO 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:
TP = 5' from wet boundary

*does not meet PI

SOIL

Sampling Point: UIT 9-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/2	85	2.5Y4/4	15	C	M	silt loam	firm, roots present in top 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)
- NO Depleted Matrix (F3)
- X 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)
- __ 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)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- NO FAC-Neutral Test (D5) 0/0
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ~~7~~ 10"

Water Table Present? Yes ____ No ↓ Depth (inches): "

Saturation Present? (includes capillary fringe) Yes ____ No ↓ Depth (inches): "

Wetland Hydrology Present? Yes X* No ____

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

Remarks:
*Assume winter hydro based on topo, strong redox + soil indicators in relatively undisturbed location

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

Project/Site: CONNICK RANCH City/County: FERNDALE / HUMBOLDT Sampling Date: 10/16/13

Applicant/Owner: TNC State: CA Sampling Point: V1T11-U

Investigator(s): A. GOWER & L. WEBB Section, Township, Range: ______

Landform (hillslope, terrace, etc.): LEVEE/ROAD Local relief (concave, convex, none): CONCAVE/LINEAR Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ___)			
1. Rumex cr.	10	N	FAC
2. Holcus la.	65	Y	FAC
3. Plantago la.	5	N	FACU
4. Taraxacum of.	5	N	FACU
5. Centaurea pu	15	N	NL
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	75	x 3 = 225
FACU species	10	x 4 = 40
UPL species	15	x 5 = 75
Column Totals:	100 (A)	340 (B)

Prevalence Index = B/A = 3.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
NO 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:
TP = 13' from wet boundary, dug multiple holes on low ∠ slope
PI > 3

SOIL

Sampling Point: U1T11-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/3	100	—	0	—	—	silt 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)
- ___ 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:

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)
- NO FAC-Neutral Test (D5) 0/0
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): >18"

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:

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

Project/Site: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: 10/15/2013
Applicant/Owner: TWC State: ______ Sampling Point: VIT 11-02
Investigator(s): A. GOWER & C. SCOTT / LW Section, Township, Range: ______
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave/linear Slope (%): 2
Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name: ______ NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ______
Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? N (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 X	Is the Sampled Area within a Wetland?	Yes ______ No X
Hydric Soil Present? Yes ~~X~~ No X		
Wetland Hydrology Present? Yes ~~X~~ No X		

Remarks: Assumed wetland hydro

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	ϕ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	ϕ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Agrostis st.	75	Y	FAC
2. Holcus la.	20	Y	FAC
3. Plantago la	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	ϕ = Total Cover		
% Bare Ground in Herb Stratum ϕ			

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	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	95	x 3 = 285
FACU species	5	x 4 = 20
UPL species	0	x 5 = 0
Column Totals:	100 (A)	305 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
NO 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 X

Remarks: TP = 6' from wet boundary (low angle slope)

SOIL

Sampling Point: UTII-U2

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
0-18	10YR3/2	90	10YR3/3	10	C	M	Silt loam	faint redox does not meet F6

[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)
- N Depleted Matrix (F3)
- N 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:

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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- NO FAC-Neutral Test (D5) 0/0
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): >18''
Water Table Present?	Yes ___	No ↓	Depth (inches): ↓
Saturation Present? (includes capillary fringe)	Yes ___	No ↓	Depth (inches): ↓

Wetland Hydrology Present? Yes ___ No X

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: Connick Ranch City/County: Ferndale/Humboldt Sampling Date: 10/16/13

Applicant/Owner: TWC State: CA Sampling Point: WIT13-U

Investigator(s): FG/LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): flood plain/levee road Local relief (concave, convex, none): concave linear Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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 ___ No X		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ___)			
1. Holcus la.	80	Y	FAC
2. Rumex cr	5	N	FAC
3. Cirsium vu.	15	N	FACU
4. Agrostis st.	5	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	90	x 3 = 270
FACU species	15	x 4 = 60
UPL species	0	x 5 = 0
Column Totals:	105 (A)	330 (B)

Prevalence Index = B/A = 3.14

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- NO 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 ☆

Remarks:
☆ located at toe of levee road, on small bench. Above obvious break in topo + vege in lower lying wetland area. Vege not growing as hydrophytes b/c dominated by 1 FAC species PI >3.0

SOIL

Sampling Point: UIT13-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100	—	-	-	—	Silt loam	
10-18	10YR 3/2	95	10YR 4/4	5	C	M	Silt 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)
- ___ 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:

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)
- NO FAC-Neutral Test (D5) 0/0
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): 0-18"

Water Table Present? Yes ___ No X Depth (inches): 0-18"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 0-18"

Wetland Hydrology Present? Yes ___ No X

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: Connick Ranch City/County: Ferndale / Humboldt Sampling Date: 10/16/13

Applicant/Owner: TNC State: CA Sampling Point: WIT13-W

Investigator(s): AG / LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave / linear Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? N (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:

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: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Holcus la	65	Y	FAC
2. Agrostis st	20	Y	FAC
3. Plantago la	5	N	FACU
4. Grass uto	10	N	unknown
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum Ø

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: TP N 4' from wetland boundary

SOIL

Sampling Point: U1T13-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					SILT LOAM	
8-18	10YR 3/2	90	10YR 4/4	10	C	M	SILT 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)
- X 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: REDOX CONCENTRATIONS OBSERVED IN SOIL MATRIX OF MUNSELL VALUE=3 & CHROMA=2 @ APPROX 10% FROM 8" TO DEPTH=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)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- NO FAC-Neutral Test (D5) 0/0
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0-18"
Water Table Present?	Yes ____	No X	Depth (inches): 0-18"
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): 0-18"

Wetland Hydrology Present? **Yes** X **No** ______

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

Remarks: ASSUME WINTER HYDROLOGY DUE TO GEOMORPHIC LOCATION AND STRONG SOIL INDICATORS

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

Project/Site: Connick City/County: Ferndale/Humboldt Sampling Date: 10/16/13

Applicant/Owner: TWC State: CA Sampling Point: UTT5-4

Investigator(s): LW /AG Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee /road Local relief (concave, convex, none): concave/linear Slope (%): 10

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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 ___ No X		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: ___)			
1. Holcus la.	75	Y	FAC
2. Agrostis st.	5	N	FAC
3. Plantago la.	10	N	FACU
4. Rumex cr.	10	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	80	x 3 = 240
FACU species	20	x 4 = 80
UPL species	0	x 5 = 0
Column Totals:	100 (A)	320 (B)

Prevalence Index = B/A = 3.2

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: Vege not growing as hydrophytes, dominated by single FAC species on sideslope of levee/road. Corroborated by absence of soil hydric indicators. [illegible] >3.0 (2' from wetland boundary)

SOIL

Sampling Point: U1T15-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100	—	—	—	—	Silt loam	
10-18	10YR 3/2	98	10YR 4/4	2	C	M	Silt loam	distinct redox yet does not meet thickness/depth for F6

[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:

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)
- NO FAC-Neutral Test (D5) 0/0
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): 0-18"

Water Table Present? Yes ______ No X Depth (inches): 0-18"

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): 0-18"

Wetland Hydrology Present? Yes ______ **No** X

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: Connick City/County: Ferndale/Humboldt Sampling Date: 10/16/13

Applicant/Owner: TWC State: CA Sampling Point: UTT5-W

Investigator(s): LW/AG Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave/linear Slope (%): 1

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? N (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*
Hydric Soil Present?	Yes X	No ______
Wetland Hydrology Present?	Yes X	No ______

Is the Sampled Area within a Wetland? Yes X No ______

Remarks: * does not pass PI

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ______)			
1. Agrostis st.	98	Y	FAC
2. Plantago la.	2	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	98	x 3 = 294
FACU species	2	x 4 = 8
UPL species	0	x 5 = 0
Column Totals:	100 (A)	302 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

NO 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: TP is 2' from wet boundary veg does not pass PI

SOIL

Sampling Point: W1T15-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100	—	—	—	—	SILT LOAM	
8-18	10YR 3/2	90	10YR 4/4	10	C	M	SILT LOAM	distinct redox

[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)
- X 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:

- REDOX CONCENTRATIONS STARTED AT 8" BGS AND EXTENDED TO DEPTH OF PIT. FOUR INCHES OCCUR W/I UPPER 12 INCHES. THEREFORE F6. MATRIX VALUE = MUNSELL 3; CHROMA = 2.

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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- NO FAC-Neutral Test (D5) 0/0
- ___ 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 X* No ___

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

Remarks:

* ASSUMED WINTER HYDROLOGY DUE TO GEOMORPHIC POSITION AND STRONG SOIL INDICATORS.

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

Project/Site: Connick Ranch City/County: Ferndale Sampling Date: 10-17-13

Applicant/Owner: TWC State: ______ Sampling Point: U1T20-U

Investigator(s): LW/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee road edge Local relief (concave, convex, none): convex/linear Slope (%): 10

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? No Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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 ___ No X		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ___)			
1. Agrostis st.	30	Y	FAC
2. Holcus la.	30	Y	FAC
3. Cirsium vu.	10	N	FACU
4. Plantago la	5	N	FACU
5. Achillea m.	10	N	FACU
6. Rumex cr.	5	N	FACW
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	Ø = 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: 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	Ø	x 1 =
FACW species	5	x 2 = 10
FAC species	60	x 3 = 180
FACU species	25	x 4 = 100
UPL species	Ø	x 5 =
Column Totals:	90 (A)	290 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

NO 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: Dominant spec. are all FAC species. Does not pass P.I. FACW are represented at 5% of the total species present

TP = 0.5' from wet boundary

SOIL

Sampling Point: U1T20-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	2.5Y3/2	100	—	—	—	—	silt loam	
13-18	2.5Y4/2		10YR3/4	5	C	M/PL	silt loam	oxidized channels

[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)
- X 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:

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:

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

Project/Site: Connick Ranch City/County: Ferndale / Humboldt Sampling Date: 10-17-13

Applicant/Owner: TWC State: CA Sampling Point: U1T20-W

Investigator(s): LW/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Slough terrace Local relief (concave, convex, none): edge/level Slope (%): 1-2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: ______)			
1. Agrostis st.	30	Y	FAC
2. Holcus la	30	Y	FAC
3. Cirsium vu	10	N	FACU
4. Plantago la	5	N	FACU
5. Achillea mi.	10	N	FACU
6. Rumex cr	5	N	FACW
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover	0		

% Bare Ground in Herb Stratum 0

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	0	x 1 =
FACW species	5	x 2 = 10
FAC species	60	x 3 = 180
FACU species	25	x 4 = 100
UPL species	0	x 5 =
Column Totals:	100 (A)	290 (B)

Prevalence Index = B/A = 2.9

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 X No ___

Remarks: Dominant species

TP = 3' from wetland boundary

SOIL

Sampling Point: U1T20-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y 3/2	100	—	—	—	—	silt loam	
7-18	10YR 3/2	95	10YR 3/4	5	C	M	"	(small pockets fine sandy loam) Redox distinct

[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)
- X 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)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ND FAC-Neutral Test (D5) 0/0
- ___ 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:
* Assume wetland winter hydrology based on vertical + horizontal proximity to slough channel

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

Project/Site: Connick Ranch City/County: Ferndale / HUM Sampling Date: 10-25-13

Applicant/Owner: TWC State: CA Sampling Point: UZ T1-U

Investigator(s): LW / CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? NO (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 ______ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ______)			
1. Festuca sc.	30	Y	FAC
2. Cirsium vu.	10		FACU
3. Taeniathrum ca.	25	Y	UPL
4. Trifolium fr	15		FACU
5. Argentina anS.	10		OBL
6. Phalaris mi	5		UPL
7. Rumex c–	5		FAC
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	Ø = Total Cover		
% Bare Ground in Herb Stratum Ø			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	10	x 1 = 10
FACW species	Ø	x 2 = Ø
FAC species	35	x 3 = 105
FACU species	25	x 4 = 100
UPL species	30	x 5 = 150
Column Totals:	100 (A)	365 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

NO 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:

TP = 3' from wetland boundary PI > 3.0 @ 3.65

SOIL

Sampling Point: UZT1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y4/2	97	10YR3/4	2	C	M	SiLt	1% 2.5Y4/1
4-12	2.5Y4/2	100	–	–	–	–	Silt	– –
12-20	2.5Y4/2	95	–	–	–	–	SiLt	pockets of mixed soil w/ redox C+D similar to surface

[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:
soil is mixed due to alterations from channel maintenance (historic). May meet F3 but surface redox due to compaction + altered surface 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 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:
Topographic high point above channel

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

Project/Site: Connick Ranch City/County: Ferndale/HUM Sampling Date: 10-25-13

Applicant/Owner: TWC State: CA Sampling Point: D2T1-W

Investigator(s): LW/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Slough side slope Local relief (concave, convex, none): ______ Slope (%): 5

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: ______)			
1. Argentina an.	25	Y	OBL
2. Trifolium en.	20	Y	FAC
3. Agrostis st.	25	Y	FAC
4. Rumex cr.	5		FAC
5. Trifolium re.	5		FAC
6. Cirsium vu.	5		FACU
7. Festuca ar	10		FAC
8. Holcus la	5		FAC
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover	0		
% Bare Ground in Herb Stratum	0		

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
- ✓ 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:
TP = 4' from wetland boundary

SOIL

Sampling Point: U2T1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100	–	–	–	–	silt	
3-7	2.5Y3/3	98	10YR3/4	2				
7-20	2.5Y3/2	95	10YR3/4	5	C	M		

[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)
- X 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)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5) 1/1
- ___ 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: Connick Ranch City/County: Ferndale / HUM Sampling Date: 10-18-13

Applicant/Owner: TWC State: ____ Sampling Point: U3T2-U

Investigator(s): AB/CS Section, Township, Range: ____

Landform (hillslope, terrace, etc.): tree edge/ramp Local relief (concave, convex, none): Convex/linear Slope (%): Ø

Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: ____ NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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 ____ No X		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Polygonum ar.	30	Y	NL
2. Cirsium ar.	10		FAC
3. Rumex cr.	15		FAC
4. Festuca pe.	30	Y	FAC
5. Hypochaeris ra.	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	55	x 3 = 165
FACU species	5	x 4 = 20
UPL species	30	x 5 = 150
Column Totals:	90 (A)	335 (B)

Prevalence Index = B/A = 3.72

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- NO 2 - Dominance Test is >50%
- NO 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: TP = 12' from boundary. Formerly TT11

SOIL

Sampling Point: U3T2-U

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	98	7.5Y 4/6	2	C	M	Sandy loam	0-5" does not meet indicators
5-18	2.5Y 3/2	70	see note	–	–	–	Sand.	30% clumps from surface mixed in (10YR 3/2 w/ 2% 7.5Y 4/6) (does not meet indicators)

[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)
- X 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:
2% of redox concentrations in matrix w/ soil value of 3 w/ a chroma of 2 from upper surface to 5

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): 0-18"

Water Table Present? Yes ___ No X Depth (inches): 0-18

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 0-18'

Wetland Hydrology Present? Yes ___ No X

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: Connick Ranch City/County: Ferndale / Hum Sampling Date: 10-19-13

Applicant/Owner: TWC State: CA Sampling Point: 13TP-W

Investigator(s): LW / CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain/terrace Local relief (concave, convex, none): linear / linear Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___
Is the Sampled Area within a Wetland?	Yes X	No ___

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: ______)			
1. Agrostis sp. [Argentina an.]	35	Y	OBL
2. Agrostis st.	25	Y	FAC
3. Rumex cr.	10		FAC
4. Festuca ar.	10		FAC
5. Holcus lk.	20	Y	FAC
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover	0		

% Bare Ground in Herb Stratum 0

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
- ✓ 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: TP = 12' from boundary.

SOIL

Sampling Point: U3T2-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/2	100	—	0	—	—	Silt loam	
2-18	2.5Y4/1	90	10YR3/4	10	C	M	silt	

[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)
- ___ 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)
- X FAC-Neutral Test (D5) 1/1
- ___ 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:
hydro assumed

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

Project/Site: Connick Ranch City/County: Ferndale / HUM Sampling Date: 10-18-13

Applicant/Owner: TWC State: CA Sampling Point: 03T4-U

Investigator(s): AG / CS / LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee Local relief (concave, convex, none): linear/linear Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ___)			
1. Polygonum ar.	20	Y	NL
2. Festuca pe.	35	Y	FAC
3. Trifolium er.	10		FAC
4. Cirsium ar.	5		FAC
5. Rumex cr.	10		FAC
6. Lotus co.	15		FAC
7. Trifolium re.	2.5		FAC
8. Cirsium ar.	2.5		FAC
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	80	x 3 = 240
FACU species	0	x 4 = 0
UPL species	20	x 5 = 100
Column Totals:	100 (A)	340 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

NO 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:

PI > 3.0 @ 3.4

Formerly TT9

SOIL

Sampling Point: 1BT4-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y3/2	95	10YR3/6	5	C	M	sand	very compacted
8-18	2.5Y3/2	100	—	0	—	—	sand	looser than surface

[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 ____ No X

Remarks: *meets S5 but only in surface, likely due to surface compacting +/or source material (located on top of levee). Remnant redox.

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 X

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: Connick Ranch City/County: Ferndale/HUM Sampling Date: 10-28-
Applicant/Owner: TWC State: CA Sampling Point: 03 T4-W
Investigator(s): LW/CS Section, Township, Range: ____
Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope (%): <5%
Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: ____ NWI classification: ____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ____)			
1. Argentina ar.	50	Y	OBL
2. Rumex cr.	5		FACW
3. Agrostis st.	20	Y	FAC
4. Holcus la.	10		FAC
5. Festuca ar.	15		FAC
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover			
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover	Ø		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (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 X No ____

Remarks:
TP = 3 feet from wetland boundary

SOIL

Sampling Point: U3T4-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR3/2	90	7.5YR4/6	10	C	M	Silt 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)
- X 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)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5) 1/1
- ___ 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: Connick Ranch City/County: Ferndale / HUM Sampling Date: 10-31-03

Applicant/Owner: TWC State: CA Sampling Point: U4 TP1

Investigator(s): LW / CS Section, Township, Range: ____

Landform (hillslope, terrace, etc.): dredge spoils Local relief (concave, convex, none): convex Slope (%): 30%

Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: ____ NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		

Herb Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Distichlis sp.	25	Y	FACW
2. Ammophila ar.	15	Y	FACU
3. Calystegia so.	10	Y	NL
4. Camissonia ch.	5		NL
5. Rumex cr.	5		FAC
6. Festuca ru	5		FAC
7. Ambrosia ch.	10	Y	NL
8.			
9.			
10.			
11.			
	75 = Total Cover		

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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:

SOIL

Sampling Point: U4TP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y3/1	100	—	0	—	—	sand	mixed w/ spoils
1-18	2.5Y4/2	90	10YR3/6	10			silty clay loam	(mixed w/ 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)
- ___ 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 ___ No X

Remarks: * = Appearance of relict redox features are remnant in material sourced from slough channel

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:
near 11/11/11 test pit C2 by JBL
reclassify as upland, all the way to edge of slough
(see JBL grey polygon)

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

Project/Site: Connick Ranch City/County: Ferndale/HUM Sampling Date: 10-31-13

Applicant/Owner: TWC State: ______ Sampling Point: U5 TP1

Investigator(s): LW/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): dredge spoils Local relief (concave, convex, none): convex Slope (%): <5

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___ Hydric Soil Present? Yes ___ No X Wetland Hydrology Present? Yes ___ No X	**Is the Sampled Area within a Wetland?** Yes ___ No X

Remarks: vege not growing as hydrophytes ~~2~~ 2 parameter upland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ______)			
1. Sarcocornia pa	70	Y	OBL
2. Atriplex pr.	15	N	FAC
3. Rumex cr.	5	N	FAC
4. Distichlis sp.	10	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover	Ø		
% Bare Ground in Herb Stratum Ø			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	70	x 1 = 70
FACW species	10	x 2 = 20
FAC species	20	x 3 = 60
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	100 (A)	150 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 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: USTP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100	—	0	—	—	clay loam	
3-8	10YR4/3	70	10YR4/6	10	C	m	"	highly mixed (20%)
8-18+	10YR 3/2	100	—	0	—	—	"	

[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:
wood mixed throughout 3-8"
variation in soil does not meet hydric indicator b/c chroma high, and sourced from slough/mixed

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)
- X FAC-Neutral Test (D5) 1/1
- ___ 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:
near 11/2/11 N6 JBL (Dec 13, 2011)
topographic high on historic dredge spoils

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

Project/Site: Connick Ranch City/County: Ferndale/HUM Sampling Date: 10-31-13

Applicant/Owner: TWC State: CA Sampling Point: U6 TP1

Investigator(s): LW / CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): historic spoils from dredging Local relief (concave, convex, none): convex Slope (%): 1%

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes 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 ______
Hydric Soil Present?	Yes ______	No X
Wetland Hydrology Present?	Yes ______	No X

Is the Sampled Area within a Wetland? Yes ______ No X

2 parameter upland

Remarks:

2 parameter upland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ______)			
1. Festuca pe.	20	Y	FAC
2. Plantago su.	2.5		FACW
3. Rumex cr.	2.5		FAC
4. Hordeum ma.	15		FAC
5. Agrostis st.	25	Y	FAC
6. Distichlis sp.	20	Y	FACW
7. Hypochaeris ra.	2.5		FACU
8. Cirsium vu.	2.5		FACU
9. Lotus co.	10		FAC
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum Ø

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	0	x 1 = 0
FACW species	22.5	x 2 = 45
FAC species	72.5	x 3 = 217.5
FACU species	5	x 4 = 20
UPL species		x 5 =
Column Totals:	100 (A)	282.5 (B)

Prevalence Index = B/A = 2.825

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 X No ______

Remarks:

SOIL

Sampling Point: U6 TP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y 3/2	70	2.5Y 4/4	10	C	M	silty clay loam	20% mixed of other material + variegated

[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)
- X 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:
Historic dredge spoils, topographic high, soil redox apparent are remnant from source from slough

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)
- X FAC-Neutral Test (D5) 1/1
- ___ 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:

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

Project/Site: Connick Ranch City/County: Ferndale/HUM Sampling Date: 10-31-13

Applicant/Owner: TWC State: CA Sampling Point: U7TP2

Investigator(s): LW/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): Convex Slope (%): <5%

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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 ___ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ___)			
1. Festuca pe.	20	Y	FAC
2. Arctotheca ca.	15	Y	NL
3. Distichlis sp.	10		FACW
4. Spergularia ma.	15	Y	FAC
5. Rumex cr.	10		FAC
6. Cirsium vu.	5		FACU
7. Plantago sp.	5		FACW
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 20

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	0	x 1 = 0
FACW species	15	x 2 = 30
FAC species	45	x 3 = 135
FACU species	5	x 4 = 20
UPL species	15	x 5 = 75
Column Totals:	80 (A)	260 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

NO 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:
FAC species not acting as hydrophyte PI > 3.0 @ 3.25

SOIL

Sampling Point: U7 TP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/2	100	—	0	—	—	Sandy loam	
4-8	5Y 4/2	70	10YR 4/6	10	C	M	silt clay loam	w/ 20% sand in profile
4-20	5Y 3/2	100	—	0	—	—	loamy 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)
- __ 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 ____ No X

Remarks:
*Does not meet hydric indicators because redox in 4-8" layer is mixed soil w/ 20% sand from dredge deposits. Does not meet ~~S6~~ S6 b/c matrix value too high, * meets F3, but not formed in situ, redox relic from source material from slough channel
*Also, redox not continuous throughout 4-8" layer

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 X

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

Remarks:
near JBL (12/13/2011) C3

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

Project/Site: Connick Ranch City/County: Ferndale/HUM Sampling Date: 10-31-13

Applicant/Owner: TWC State: CA Sampling Point: U8 TP1

Investigator(s): LW/CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): slough Local relief (concave, convex, none): none Slope (%): Ø

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ___)			
1. Festuca pe	25	Y	FAC
2. Rumex cr.	15	Y	FAC
3. Hypochaeris ra	15	Y	FACU
4. Lotus co.	15	Y	FAC
5. Polygonum av	10		NL
6. Plantago sp.	5		FACW
7. Argentina ar	5		OBL
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	5	x 1 = 5
FACW species	5	x 2 = 10
FAC species	55	x 3 = 165
FACU species	15	x 4 = 60
UPL species	10	x 5 = 50
Column Totals:	90 (A)	290 (B)

Prevalence Index = B/A = 3.2

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 *

Remarks:
* = based on P.I > 3.0 and upland topography

SOIL

Sampling Point: U8TP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR3/2	100	—	0	—	—	silt loam	
1-12	2.5Y4/1	55	10YR3/3	45	C	M	"	→ highly mixed +
12-18	2.5Y3/2	100	—	0	—	—	silt	variegated

[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 indicators because < 60% is reduced matrix. Material placed from historic dredging of slough (possibly)

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:
location near N7 by JBL (12/13/11)

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

Project/Site: Connick Ranch City/County: Ferndale / Hum Sampling Date: 10-18-13
Applicant/Owner: TNC State: CA Sampling Point: U9 TP1
Investigator(s): AG / CS Section, Township, Range: ______
Landform (hillslope, terrace, etc.): levee edge Local relief (concave, convex, none): linear/linear Slope (%): Ø
Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name: ______ NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___ No X		

Remarks: *soil features remnant from source material

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: ___)			
1. Agrostis st.	30	Y	FAC
2. Cirsium vu.	20	Y	FACU
3. Trifolium re	10		FAC
4. Festuca pe.	25	Y	FAC
5. Rumex cr.	5		FAC
6. Lotus co.	10		FAC
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	Ø	= Total Cover	
% Bare Ground in Herb Stratum Ø			

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	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	80	x 3 = 240
FACU species	20	x 4 = 80
UPL species	0	x 5 = 0
Column Totals:	100 (A)	320 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
NO 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: Formerly TT1 does not pass P.I.

SOIL

Sampling Point: U9TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (U9TP1)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	5Y5/1	95	7.5YR 4/6	5	C	M	SILT 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:
DEPLETED MATRIX VALUE OF MUNSELL 5 & CHROMA OF 1 FROM SURFACE TO DEPTH OF PIT = F3, but likely remnant from source material based on topo + contour/elevation + absence of strongly hydrophytic vege

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)
- NO FAC-Neutral Test (D5) 0/0
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): 0-18"

Water Table Present? Yes ___ No X Depth (inches): 0-18"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 0-18"

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
higher topo position

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

Project/Site: EREP City/County: Ferndale, Humboldt Sampling Date: 11/1/13

Applicant/Owner: TWC State: CA Sampling Point: U13TP1

Investigator(s): SK, LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? NO (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: vegetation not growing as hydrophytes mapped as 2 parameter upland

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: ______)			
1. Juncus breweri	40	✓	FACW
2. Distichlis spicata	20	✓	FACW
3. Holcus lanatus	10		FAC
4. Plantago lanceolata	10		FACU
5. Rumex crispus	10		FACW
6. Agrostis stolonifera	5		FAC
7. Cynosurus	5		—
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1. —			
2.			
= Total Cover			
% Bare Ground in Herb Stratum Ø			

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	70	x 2 = 140
FAC species	~~10~~ 15	x 3 = 45
FACU species	10	x 4 = 40
UPL species	5	x 5 = 25
Column Totals:	100 (A)	250 (B)

Prevalence Index = B/A = 2.5

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 ______

Remarks:

SOIL

Sampling Point: U13TP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/2	100	—	0	—	—	loam	
4-11	10YR3/2	100	—	0	—	—	Sandy loam	
11-18	2.5Y3/2	100	—	0	—	—	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)
- ___ 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:

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:

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

Project/Site: ERE P City/County: Ferndale, Humboldt Sampling Date: 11/1/13

Applicant/Owner: TWC State: CA Sampling Point: U14TP1

Investigator(s): SE, LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee Local relief (concave, convex, none): Convex Slope (%): 10%

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______	No X	Is the Sampled Area within a Wetland?	Yes ______ No X
Hydric Soil Present?	Yes ______	No X		
Wetland Hydrology Present?	Yes ______	No X		

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Herb Stratum (Plot size: ______)			
1. Festuca Perenne	15 ~~40~~	N	FAC
2. Trifolium repens	10	N	FAC
3. Agrostis Stolonifera	~~10~~ 5	N	FAC
4. Cirsium vulgare	20	Y	FACU
5. Holcus lanatus	30	Y	FAC
6. Plantago lanceolata	15 ~~20~~	~~Y~~ N	FACU
7. Hypochaeris radiata	5	N	
8.			
9.			
10.			
11.			
	100 = 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: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	60	x 3 = 180
FACU species	35	x 4 = 140
UPL species	5	x 5 = 25
Column Totals:	100 (A)	345 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

- __ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- NO 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:
FAC species not acting as hydrophyte PI > 3.0 @ 3.45 topographically higher

SOIL

Sampling Point: U14TP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y3/2	99	10YR3/4	1	C	M	Silty clay loam	
6-18	2.5Y4/1	55	10YR3/3	45	C	M	"	does not meet depth/thickness

[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 F3 b/c it would need thickness/depth of 6" w/in 10" of 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)
- ___ 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:
topographic high point ~2-3' above surrounding pasture (on levee)

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

Project/Site: Connick Ranch City/County: Ferndale, HUM Sampling Date: 10-18-13

Applicant/Owner: TWC State: ______ Sampling Point: TT2

Investigator(s): AG / CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): Ø

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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 ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ______)			
1. Cirsium vu.	10		FACU
2. Festuca pe	15	Y	FAC
3. Agrostis st.	30	Y	FAC
4. Potentilla an.	20	Y	OBL
5. Lotus co.	15	Y	FAC
6. Plantago la.	2.5		FACU
7. Hypochaeris ra.	2.5		FACU
8. Rumex cr.	2.5		FAC
9. Trifolium re.	2.5		FAC
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	Ø = Total Cover		
% Bare Ground in Herb Stratum Ø			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	20	x 1 = 20
FACW species	0	x 2 = 0
FAC species	65	x 3 = 195
FACU species	15	x 4 = 60
UPL species	0	x 5 = 0
Column Totals:	100 (A)	275 (B)

Prevalence Index = B/A = 2.75

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 *

Remarks: * Argentina anserina (OBL) present in a small amts.

SOIL

Sampling Point: TT-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y 4/1	90	7.5YR 4/6	10	C	M	SILT LOAM	FIRM SILT

[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:
DEPLETED MATRIX → SOIL VALUE = MUNSELL 4 w/ A CHROMA OF 1 FROM SURFACE TO DEPTH OF PIT = F3

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)
_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): 0-18"
Water Table Present? Yes ___ No _X_ Depth (inches): 0-18"
Saturation Present? (includes capillary fringe) Yes ___ No _X_ Depth (inches): 0-18"

Wetland Hydrology Present? Yes _X_ No ___

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

Remarks:
STRONG REDOX CONCENTRATIONS, TOPOGRAPHIC POSITION AND LAND OWNER INFORMATION SUGGESTS AREA MEETS WETLAND HYDROLOGY IN THE WINTER.

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

Project/Site: Connick Ranch City/County: Ferndale / HUM Sampling Date: 10-18-13

Applicant/Owner: TWC State: CA Sampling Point: TT3

Investigator(s): AG / CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave / linear Slope (%): 5

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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 ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ____)			
1.			
2. Rumex cr.	10		FAC
3. Cirsium vu.	2.5		FACU
4. Lotus co.	10		FAC
5. Trifolium re.	15		FAC
6. Festuca pe.	10		FAC
7. Agrostis st.	30	Y	FAC
8. Argentina an.	2.5		OBL
9. ~~Arrhenatherum el~~			
10. Distichlis sp.	20	Y	FACW
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

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	2.5	x 1 =	2.5
FACW species	20	x 2 =	40
FAC species	75	x 3 =	225
FACU species	2.5	x 4 =	10
UPL species	0	x 5 =	0
Column Totals:	100 (A)		277.5 (B)

Prevalence Index = B/A = 2.775

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 X No ____

Remarks: * = small amounts of Argentina anserina Pacific cinquefoil present a edge of levee.

SOIL

Sampling Point: TT-3

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	2.5Y4/1	92	7.5YR4/6	8	C	M	SILT LOAM	prominent redox

[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:
DEPLETED MATRIX → SOIL VALUE = MUNSELL 4 w/ A CHROMA OF 1 FROM SURFACE (BELOW ROOTS) TO DEPTH OF PIT = F3

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)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): 0-18"

Water Table Present? Yes ___ No X Depth (inches): 0-18"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 0-18"

Wetland Hydrology Present? Yes X No ___

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

Remarks:
+ STRONG REDOX CONCENTRATIONS, TOPOGRAPHIC POSITION AND LAND OWNER INFORMATION SUGGESTS AREA MEETS WETLAND HYDROLOGY IN WINTER.

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

Project/Site: Connick Ranch City/County: Ferndale / HUM Sampling Date: 10-18-13

Applicant/Owner: TWC State: CA Sampling Point: TT-6

Investigator(s): AG / CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): berm next to slough Local relief (concave, convex, none): none Slope (%): Ø

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: ______)			
1. Festuca ar.	35	Y	FAC
2. Argentina an.	15		OBL
3. Trifolium enio.	2.5		FAC
4. Agrostis st.	20	Y	FAC
5. Lotus co.	15		FAC
6. Ranunculus re.	5		FAC
7. Cirsium vu.	2.5		FACU
8. Holcus la.	5		FAC
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum Ø

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	15	x 1 = 15
FACW species	0	x 2 = 0
FAC species	82.5	x 3 = 247.5
FACU species	2.5	x 4 = 10
UPL species	0	x 5 = 0
Column Totals:	100 (A)	272.5 (B)

Prevalence Index = B/A = 2.725

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 X No ____

Remarks:

SOIL

Sampling Point: TT-6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	5Y 5/1	90	7.5YR 4/6	10	C	M	SILT 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: DEPLETED MATRIX: MATRIX ~~HUE~~ VALUE = MUNSELL 5; CHROMA = 1 FROM SURFACE TO DEPTH.

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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- N FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): 0-18"

Water Table Present? Yes ___ No X Depth (inches): 0-18"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 0-18"

Wetland Hydrology Present? Yes X* No ___

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

Remarks: * STRONG REDOX CONCENTRATIONS, TOPOGRAPHIC LOCATIONS AND LAND OWNER PROVIDED INFORMATION SUGGEST WETLAND HYDROLOGY IN THE WINTER.

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

Project/Site: #ERLEP City/County: Ferndale, Hum Sampling Date: 6-2-15
Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: DT1-U1
Investigator(s): CS & LW Section, Township, Range: ____
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: ____ NWI classification: ____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Dactylis glom	20	D	FACU
2. Ranunculus repens	15		FAC
3. Cirsium vulgare	5		FACU
4. Rumex transitorius	5		FACW
5. Festuca perenn	25	D	FAC
6. Poa compressa	20	D	FACU
7. Trifol. repens	10		FAC
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	5	x 2 = 10
FAC species	50	x 3 = 150
FACU species	45	x 4 = 180
UPL species	0	x 5 = 0
Column Totals:	100 (A)	23 (B)

Prevalence Index = B/A = 3.40

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:

SOIL

Sampling Point: UTI-U1

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	10YR3/2	100	—	0	—	—	silt loam	
2-4	2.5Y4/2	95	10YR3/3	5	C	M	"	faint redox
4-9	10YR3/2	98	10YR3/3	2	C	M	"	faint redox
9-16	10YR3/2	95	10YR3/4	5	C	M		distinct redox

[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:
9-16" does not meet F6 b/c not thick enough w/ 12" of surface
4-9" does not meet F6 b/c faint
2-4 does not meet F6 b/c high value, + not F3 b/c faint

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:
dry season, Lush vegetation and no signs of ponding or cattle hoof marks.
Near toe of berm along Russ Cr. soil may be surface manipulated/mixed thus layering w/ faint redox

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

Project/Site: Ru EREP City/County: Ferndale Hum Sampling Date: 6-2-15

Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: U1T1-U2

Investigator(s): CS & LW Section, Township, Range: ____

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): convex Slope (%): < 5

Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: ____ NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	0		

Sapling/Shrub Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		

Herb Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Arctotheca calendula	20	D	NL
2. Festuca perenne	20	D	FAC
3. Rumex x transitorius	15		FACW
4. Festuca arundinacea	20	D	NL
5. Trif. repens	10		FAC
6. Malva nicaensis	5		NL
7.			
8.			
9.			
10.			
11.			
= Total Cover	90		

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	45	x 5 =	225
Column Totals:	90 (A)		345 (B)

Prevalence Index = B/A = 3.83

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:

SOIL

Sampling Point: U1T1-U2

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	10YR3/2	100	—	0	—	—	silt loam	—
5-8	2.5Y3/2	95	10YR3/3	5	C	m	silt loam	faint redox
8-16	2.5Y4/2	98	10YR3/3	2	C	m	"	faint redox

[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 F6 b/c 8-16" layer redox is faint. Does not meet F3 b/c 5-8" layer is not thick enough + redox are faint.

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:
Mid topo on berm along Russ Cr.

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

Project/Site: Russ Ranch & Timber City/County: Ferndale HUM Sampling Date: 6-2-15

Applicant/Owner: Jay Russ ERCP State: CA Sampling Point: 01 T1 - U3

Investigator(s): CS & LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): convex Slope (%): <5

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: ___)			
1. Rumex transitorius	10		FACW
2. Dactylis glom	20	D	FACU
3. Ranunculus repens	10		FAC
4. Trifolium repens	10		FAC
5. Festuca perenne	25	D	FAC
6. Poa compressa	5		FACU
7. Holcus lanatus	20	D	FAC
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	0		

% Bare Ground in Herb Stratum 0

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	0	x 1 = 0
FACW species	10	x 2 = 20
FAC species	65	x 3 = 195
FACU species	25	x 4 = 100
UPL species	0	x 5 = 0
Column Totals:	100 (A)	315 (B)

Prevalence Index = B/A = 3.15

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:

not growing as hydrophytes

SOIL

Sampling Point: UIT/-U3

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
0-18	2.5Y4/2	98	10YR3/3	2	C	M	loamy sand	faint redox (spotty/discontinuous)

[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 b/c faint redox (not enough contrast). Also redox are spotty/discontinuous, possibly from surface compaction

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:

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

Project/Site: R ERLEP City/County: Ferndale HUM Sampling Date: 6-2-15
Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: VIT1-W1
Investigator(s): CS & LW Section, Township, Range: ______
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: ___)			
1. Trifolium repens	15		FAC
2. Festuca perenne	60	D	FAC
3. Ranunculus repens	10		FAC
4. Rumex transitorius	5		FACW
5. Poa compressa	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	0		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	5	x 2 = 10
FAC species	85	x 3 = 255
FACU species	10	x 4 = 40
UPL species	–	x 5 = –
Column Totals:	100 (A)	305 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

X 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 X No ___

Remarks:
~~vegetation not growing as hydrophytes~~

SOIL

Sampling Point: UTT-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/2	100	—	0	—	—	silt loam	—
7-16	2.5Y 3/2	95	7.5YR 3/3	5	C	M	silt	root linings 10YR 3/3 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)
- 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:
Facultative vegetation dominates, not strongly hydrophytic
~~hydrology wetland indicators not observed~~

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

Project/Site: R ERFP City/County: Ferndale HUM Sampling Date: 6-2-15

Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: DIT2-01

Investigator(s): CS & LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): convex Slope (%): <5

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		

Sapling/Shrub Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		

Herb Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. Festuca arundin	25	D	NL
2. Ranunc repens	15		FAC
3. Trif repens	20	D	FAC
4. Rumex transitorius	5		FACW
5. Holcus lanat	5		FAC
6. Poa compressa	5		FACU
7. Dactylis glom	5		FACU
8. Festuca peren	20	D	FAC
9.			
10.			
11.			
= Total Cover	100		

Woody Vine Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

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	0	x 1 = 0
FACW species	5	x 2 = 10
FAC species	95	x 3 = 285
FACU species	10	x 4 = 40
UPL species	25	x 5 = 125
Column Totals:	135 (A)	460 (B)

Prevalence Index = B/A = 3.4

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:

vegetation not growing as hydrophytes, Facultative species dominant

SOIL

Sampling Point: UIT2-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100	–	0	–	–	loam	
5-10	2.5Y 3/3	99	10YR 3/4	1	C	M	loamy sand	faint redox
10-16	5Y 4/2	98	10YR 3/4	2	C	m	Sandy 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)
__ 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 b/c not enough contrast and <2%
does not meet F6 @ 10" b/c would have to start at 8" (not thick enough)

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:

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

Project/Site: R ERLP   City/County: Ferndale HUM   Sampling Date: 6-2-15

Applicant/Owner: Russ Ranch & Timber   State: CA   Sampling Point: U1 T2-W

Investigator(s): ________   Section, Township, Range: ________

Landform (hillslope, terrace, etc.): floodplain   Local relief (concave, convex, none): convex   Slope (%): <5

Subregion (LRR): ________   Lat: ________   Long: ________   Datum: ________

Soil Map Unit Name: ________   NWI classification: ________

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO   Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO   (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 ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland?   CC (Soil, Veg) Yes X   USACE No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ____)			
1. Holcus lanatus	40	D	FAC
2. Trifolium repens	15		FAC
3. Festuca perenne	20	D	FAC
4. Poa compressa	10		FACU
5. Ranunculus repens	15		FAC
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

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	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	90	x 3 = 270
FACU species	10	x 4 = 40
UPL species	0	x 5 = 0
Column Totals:	100 (A)	310 (B)

Prevalence Index = B/A = 3.10

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 X No ___

Remarks:

SOIL

Sampling Point: U1T2-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
							Silt loam	
5-16	5Y3/2	95	10YR3/3	5	C	M		

[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 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)
- ___ 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: Vegetation dominant is all FAC (not strongly wetland
Near toe of berm
Densely vegetated, not signs of hydrology indicators

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

Project/Site: ERREP City/County: Ferndale HUM Sampling Date: 6-2-15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U1T3-U

Investigator(s): CS + LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): convex Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? NO (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
Hydric Soil Present?	Yes ______	No X
Wetland Hydrology Present?	Yes ______	No X

Is the Sampled Area within a Wetland? Yes ______ No X

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ______)			
1. Festuca perenne	30	D	FAC
2. Dactylis glom.	35	D	FACU
3. Poa compressa	20	D	FACU
4. Bromus hord.	5		FACU
5. Geranium dissect	5		NL
6. Ranunculus repens	10		FAC
7. Rumex crispus	5		FACW
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	0 = Total Cover		
% Bare Ground in Herb Stratum 0			

Remarks:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (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

SOIL

Sampling Point: UIT3-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y3/3	98	10YR3/3	2	C	M	loam	faint (in pockets)
7-16	2.5Y3/3	95	10YR3/4 / 5Y4/2	5	C/R	M	loamy sand	soil mixed / layered

[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:
Chroma too high and contrast too low to meet F6 (0-6")
does not meet S5 b/c not w/in 6" of 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)
- ___ 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:

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

Project/Site: R ERLEP City/County: Ferndale HUM Sampling Date: 6-2-15

Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: VIT3-W

Investigator(s): CS & LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ☆ No X

☆Yes- CCC definition (soils)

NO=USACE

Remarks:

one parameter wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ___)			
1. Poa compressa	25	D	FACU
2. Rumex salicifolius transitans	5		FACW
3. Brom hord	10		FACU
4. Ranun repens	10		FAC
5. Festuca perenne	20	D	FAC
6. Dactylis glom	20	D	FACU
7. Cirsium vulgare	5		FACU
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

SOIL

Sampling Point: UIT3-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y3/2	100	—	0	—	—	loam	
7-15	5Y4/2	95	10YR3/3	5	C	M	"	

[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 X No ____

Remarks:
Soil features could be remnant, lots of soil texture mixing b/w silt + fine sand (= loam)

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:

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

Project/Site: R ERE P City/County: Ferndale Hum Sampling Date: 6-2-15

Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: UT4-U

Investigator(s): CS & LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ___)			
1. Trifolium repens	20	D	FAC
2. Holcus lanatus	20	D	FAC
3. Festuca perenne	20	D	FAC
4. Foeniculum vulgare	5		U
5. Poa compressa	15		FACW
6. Dactylis glom.	15		FACW
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0 = 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	0	x 1 =
FACW species	30	x 2 = 60
FAC species	60	x 3 = 90
FACU species	0	x 4 =
UPL species	5	x 5 = 25
Column Totals:	100 (A)	175 (B)

Prevalence Index = B/A = 1.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

N 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 A

Remarks:

A Vegetation not acting as hydrophytes / seeded in

SOIL

Sampling Point: WT4-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 3/2	99	2.5Y 4/4	1	C	M	Sandy loam	pockets of
6-18	2.5Y 3/3	100	—	0	—	—	loamy sand	color variation

[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:

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:

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

Project/Site: R EREP City/County: Ferndale HUM Sampling Date: 10-2-15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U1T4-W

Investigator(s): CS + LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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?	CC (soils) Yes X (USACE) No X
Hydric Soil Present? Yes X No ____		
Wetland Hydrology Present? Yes ____ No X		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Poa compressa	25	D	FACU
2. Dactylis glom.	20	D	FACU
3. Ranunc. repens	10		FAC
4. Trifol. repens	20	D	FAC
5. Festuca peren	20	D	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum 5			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	50	x 3 = 150
FACU species	45	x 4 = 180
UPL species	0	x 5 = 0
Column Totals:	95 (A)	330 (B)

Prevalence Index = B/A = 3.47

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:

Vegetation not growing as hydrophyte PI = 3.4

SOIL

Sampling Point: UT4-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y3/1	95	10YR3/3	5	C	M	Silt loam	distinct
4-16	5Y4/2	95	10YR3/4	5	C	M	"	prominent

[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)
- [x] 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)
- [ ] 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:
dense vegetation, although lower beyond toe of berm, there are not primary or secondary hydrology parameters apparent. Assume only soils (vege is upland)

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

Project/Site: R ERLEP City/County: Fendale HUM Sampling Date: 6-2-15

Applicant/Owner: RWJJ Ranch + Timber State: CA Sampling Point: UITS-U

Investigator(s): CS FLW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): linear/linear Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: ___)			
1. Poa compressa	40	D	FACU
2. Festuca perenne	35	D	FAC
3. Rumex ~~salicifolius~~ trans.	10		FACW
4. Trifolium repens	10		FAC
5. Ranunculus repens	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	0		

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	10	x 2 = 20
FAC species	50	x 3 = 150
FACU species	40	x 4 = 16
UPL species	0	x 5 =
Column Totals:	100 (A)	330 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

NO 2 - Dominance Test is >50%

NO 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:

Vegetation not acting as hydrophytes

SOIL

Sampling Point: UT5-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y3/2	100	—	0	—	—	Silt	
2-11	2.5Y3/2	98	10YR3/3	2	C	M	Silt loam	faint
11-16	2.5Y4/1	98	10YR3/3	2	C	M	"	

[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 F3 b/c does not start in <10" bgs.

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:

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

Project/Site: R EREP City/County: Ferndale HUM Sampling Date: 6-2-15

Applicant/Owner: Ross Ranch + Timber State: CA Sampling Point: W15 70 w?

Investigator(s): CS + LW Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): ______ Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (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 ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ______)			
1. Dactylis glom	25	D	FACU
2. Festuca perenne	25	D	FAC
3. Trifolium repens	20	D	FAC
4. Poa compressa	15		FACU
5. Alopecurus saccatus	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	____ = 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: 66 (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 X No ____

Remarks:

veg acting as hydrophytic

SOIL

Sampling Point: UIT5-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 3/1	100	-	0	-	-	Silt loam	low chroma due to A+OM
2-16	5Y 4/2	98	2.5Y 4/4	2	C	M	"	

[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 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)
- ___ 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:

densely vegetated, ø hydrology indicators

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

Project/Site: Russ EREP City/County: Ferndale Hum Sampling Date: 6/3/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U1 T6-U

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): ______ Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology NO 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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

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: ____)			
1. Festuca perennis	30	D	FAC
2. Poa compresa (bulbous nodes)	35	D	FACU
3. Holcus lanatus (velvet grass)	15		FAC
4. Trifolium repens	15		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	95		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover	100		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	60	x 3 = 180
FACU species	35	x 4 = 140
UPL species	–	x 5 = –
Column Totals:	95 (A)	320 (B)

Prevalence Index = B/A = 3.37

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:

Vegetation not acting as hydrophytes

SOIL

Sampling Point: UIT6-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y3/2	100	–	0	–	–	Silt loam	
4-18	2.5Y3/2	88	10YR3/3	10	C	M	"	10YR4/4 2% C/M
								10% faint, 2% distinct

[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 F6 b/c distinct redox are ∠5%, and other redox @ 10% are faint

does not meet F3 b/c not depleted matrix (value ∠4)

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:

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

Project/Site: ERRP City/County: Ferndale / Humboldt Sampling Date: 6/8/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U1T6-W

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): ______ Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology no 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 ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? CC (soils hydro) USACE Yes X No X

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: ___)			
1. Ranunculus repens	15	D	FAC
2. Trifolium repens	15	D	FAC
3. Poa compressa	25	D	FACU
4. Alopecurus saccatus	10		FAC
5. Festuca perennis	30	D	FAC
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	95		
Woody Vine Stratum (Plot size: ___)			
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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	70	x 3 =	210
FACU species	25	x 4 =	100
UPL species	0	x 5 =	
Column Totals:	95 (A)		310 (B)

Prevalence Index = B/A = 3.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

N 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:

veg. not acting as hydrophyte

SOIL

Sampling Point: UIT6-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/2	100	—	0	—	—	Silt loam	
2-5	5Y4/2	90	2.5Y 3/3	10	C	M	Sandy loam (VFS)	faint redox
5-18	5Y4/1	85	10YR3/3	15	C	M	Silt loam	prominent redox ox rhyzo @7"

[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: EREP City/County: Ferndale / Humboldt Sampling Date: 6/3/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: VIT7-U

Investigator(s): Jordan Mayor Section, Township, Range: ____

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): ____ Slope (%): 4

Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: ____ NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology NO 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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

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: ____)			
1. Holcus lanatus	75	D	FAC
2. Festuca peren	15		FAC
3. Poa compressa	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (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	90	x 3 = 270
FACU species	10	x 4 = 40
UPL species		x 5 =
Column Totals:	100 (A)	310 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- N 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:

☆ veg. not growing as hydrophytes, dominated by single FAC species

SOIL

Sampling Point: UIT7-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y3/2						silt loam	
8-11	2.5Y3/2	98	10YR3/3	2	C	M	"	faint redox
11-18	2.5Y3/2	95	7.5YR3/3	5	C	M	"	distinct redox

[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:

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:

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

Project/Site: EREP City/County: Fendale, Humboldt Sampling Date: 6/3/15

Applicant/Owner: Russ Ranch Timber State: CA Sampling Point: U1T7-W

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): ______ Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology NO 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:
PEM1 A f

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: ___)			
1. Poa compressa	30	D	FACU
2. Festuca perennis	30	D	FAC
3. Rumex ~~salicifolius~~ trans	5		FACW
4. Trifolium repens	10		FAC
5. Ranunculus repens	15	D	FAC
6. Holcus lanatus	5		FAC
7. Cirsium vulgare	5		FACU
8.			
9.			
10.			
11.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 5

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	0	x 1 =
FACW species	5	x 2 = 10
FAC species	85	x 3 = 255
FACU species	5	x 4 = 20
UPL species	—	x 5 =
Column Totals:	95 (A)	285 (B)

Prevalence Index = B/A = 3.0

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 ___

Remarks:
veg. acting as hydrophytes

SOIL

Sampling Point: UIT 7-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y3/2	100	—	0	—	—	Silt loam	
3-7	2.5Y3/2	90	10YR3/3	10	C	M	"	faint redox
7-18	5Y4/1	90	10YR3/3	10	C	M	"	ox rhizo 10YR3/3 prominent redox

[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: ERED City/County: Ferndale / Humboldt Sampling Date: 6/4/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U2T1 - U

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee Local relief (concave, convex, none): convex / linear Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? N Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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 ___	No X	

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: ___)			
1. Bromus hordeaceus	25	D	FACU
2. Rumex ~~salicifolius~~ crispus	10		FACW
3. Festuca perinnis	35	D	FAC
4. Sonchus asper	15		NL
5. Hordeum murinum	4		FAC
6. Cirsium vulgare	10		FACW
7. Geranium dissectum	1		NL
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: /)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	10	x 2 = 20
FAC species	39	x 3 = 117
FACU species	35	x 4 = 140
UPL species	16	x 5 = 80
Column Totals:	100 (A)	357 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

N 2 - Dominance Test is >50%

N 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 ✓

Remarks:

SOIL

Sampling Point: UZT1-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y3/2	100	—	0	—	—	loam	
3-12	2.5Y3/2	95	10YR3/3	5	C	M	silt loam	faint redox
12-18	2.5Y3/2	100	—	0	—	—	Sandy 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)
___ 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:

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:

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

Project/Site: ERED City/County: Ferndale / Humboldt Sampling Date: 6/4/15

Applicant/Owner: Russ Bach + Timber State: CA Sampling Point: U2T1-W

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee Local relief (concave, convex, none): concave/linear Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology no significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ______

Are Vegetation ______, Soil ______, or Hydrology no naturally problematic? N (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: ______)			
1. Potentilla anserina	55	D	OBL
2. Sonchus asper	15		NL
3. Geranium dissectum	10		NL
4. Cirsium vulgare	5		FACU
5. Festuca perennis	5		FAC
6. Holcus lanatus	5		FAC
7. Poa compressa	5		FACU
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: /)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	55	x 1 = 55
FACW species	0	x 2 =
FAC species	10	x 3 = 30
FACU species	10	x 4 = 40
UPL species	25	x 5 = 125
Column Totals:	100 (A)	250 (B)

Prevalence Index = B/A = 2.5

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 ______

Remarks:

veg. acting as hydrophytes

SOIL

Sampling Point: U2T1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y3/2	98	10YR3/4	2	C	m	silt loam	distinct redox
3-18	2.5Y4/1	95	10YR 4/4	5	C	m	11	promint redox

[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 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)
___ 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:
assumed hydrology due to topography (toe of slope adjacent to salt marsh edge/fringe), strong hydric soils, and hydrophytic vege dominance

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

Project/Site: EREP City/County: Ferndale/Humboldt Sampling Date: 6/4/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U2T2-U

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): end of levee Local relief (concave, convex, none): convex/linear Slope (%): 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology NO 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 ✓
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? Yes ___ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

Stratum / Species	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ______)			
1. Festuca perennis	65	D	FAC
2. Trifolium repens	5		FAC
3. Holcus lanatus	15		FAC
4. Potentilla anserina	5		OBL
5. Poa compressa	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	5	x 1 = 5
FACW species	0	x 2 = 0
FAC species	85	x 3 = 255
FACU species	10	x 4 = 40
UPL species	–	x 5 =
Column Totals:	100 (A)	300 (B)

Prevalence Index = B/A = 3.0

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:
*veg. not growing as hydrophytes, right on edge for PI, dominated by 1 Fac. species that is planted

SOIL

Sampling Point: U2T2-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100	—	0	—	—	loam	
4-8	10YR3/2	98	7.5YR3/3	2	C	M	silt loam	faint redox
8-16	10YR2/2	98	10YR3/3	2	C	M	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)
- ___ 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 F6 b/c faint redox and <5%.

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:

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

Project/Site: EREP City/County: Ferndale / Humboldt Sampling Date: 6/4/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U2T2-W

Investigator(s): Jordan Mayer Section, Township, Range: ____

Landform (hillslope, terrace, etc.): levee transition to field Local relief (concave, convex, none): concave / linear Slope (%): 0

Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: ____ NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology NO 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: ____)			
1. Festuca perennis	35	D	FAC
2. Ranunculus repens	15		FAC
3. Poa compressa	10		FACU
4. Rumex ~~stiticus~~ trans.	15		FACW
5. Holcus lanatus	20	D	FAC
6. Trifolium repens	5		FAC
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

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	0	x 1 =
FACW species	15	x 2 = 30
FAC species	75	x 3 = 225
FACU species	10	x 4 = 40
UPL species	–	x 5 =
Column Totals:	100 (A)	295 (B)

Prevalence Index = B/A = 2.95

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 ____

Remarks:

Veg. acting as a hydrophyte

SOIL

Sampling Point: U2T2-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y3/2	100	—	0	—	—	loam	
3-6	2.5Y3/2	98	10YR3/3	2	C	M	"	faint redox
6-18	5Y4/2	95	10YR3/6	5	C	M	"	prominent redox

[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)
- ___ 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:

*assume subsurface hydrology due to strong soil redox 6-18" bgs. Surface is well vegetated w/ no visible signs of surface hydro

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

Project/Site: EREP City/County: Ferndale / Humboldt Sampling Date: 6/3/15

Applicant/Owner: Russ Ranch - Timber State: CA Sampling Point: UP-1

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): road berm Local relief (concave, convex, none): convex/linear Slope (%): 1

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology NO 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 ____ No X		

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: ____)			
1. Juncus c.f. patens	10		FACW
2. Trifolium wormskioldii	35	D	FACW
3. Spergularia macrotheca	2		FAC
4. Festuca macrostachys	35	D	NL
5. Festuca perennis	5		FAC
6. Holcus lanatus	5		FAC
7. Medicago polymorpha	8		FACU
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	35	x 2 = 70
FAC species	12	x 3 = 36
FACU species	8	x 4 = 32
UPL species	35	x 5 = 175
Column Totals:	90 (A)	313 (B)

Prevalence Index = B/A = 3.48

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 ✓

Remarks:

SOIL

Sampling Point: UP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y4/2	100	—	0	—	—	loam	
5-10	2.5Y4/2	60	—	40	→	→	loam	clods of 2.5Y 4/4 silt loam w/2% 10YR3/5
10-16	2.5Y3/2	90	10YR3/3	10	C	M	silt loam	faint redox

[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:
5-10" soil mixed in texture + color w/ clods of non insitu soil (~40%)

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:
top of road berm, upland topo/vege/soils indicates not likely wetland hydrology.

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

Project/Site: EREP City/County: Ferndale / Humboldt Sampling Date: 6/3/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: UP-2

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): road berm Local relief (concave, convex, none): Convex / linear Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology no 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 ✓
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? 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: ___)			
1. Anthoxanthum odoratum	15	D	FACU
2. Hypochaeris radicata	10		FACU
3. Bellis perinnis	15	D	NL
4. Cirsium vulgare	15	D	FACU
5. Juncus effusus	20	D	FACW
6. Medicago polymorpha	5		FACU
7. Trifolium repens	10		FAC
8. Festuca perinnis	10		FAC
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	20	x 2 = 40
FAC species	20	x 3 = 60
FACU species	45	x 4 = 180
UPL species	15	x 5 = 75
Column Totals:	100 (A)	355 (B)

Prevalence Index = B/A = 3.55

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 ✓

Remarks:

SOIL

Sampling Point: UP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y4/1	95	10YR3/3	5	C	M	silt loam	distinct redox
1-3	2.5Y3/2	100	—	0	—	—	loam (VFS)	
3-18	2.5Y4/2	98	10YR3/3	2	C	M		2% 2.5Y4/1 R/M faint redox

[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:

3-18" does not meet F3 b/c faint redox concentrations

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:

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

Project/Site: ERED City/County: Ferndale / Humboldt Sampling Date: 6/4/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: UP-3

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): ______ Slope (%): 1

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology no 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 ✓
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? Yes X (C.C. (soils)) No X (ACE (plants))

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: /)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juncus c.f. patens	20	D	FACW
2. Trifolium repens	23	D	FAC
3. Geranium dissectum	5		NL
4. Holcus lanatus	25	D	FAC
5. Bromus microstachys	20	D	NL
6. Bellis perennis	2		NL
7. Hypochaeris radicata	5		FACU
8.			
9.			
10.			
11.			
= Total Cover	100		

Woody Vine Stratum (Plot size: /)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	20	x 2 = 40
FAC species	48	x 3 = 144
FACU species	5	x 4 = 20
UPL species	27	x 5 = 135
Column Totals:	100 (A)	339 (B)

Prevalence Index = B/A = 3.39

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 ✓

Remarks:

SOIL

Sampling Point: UP 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/2	100	–	0	–	–	loam	
2-7	5Y4/2	90	10YR3/4	10	–	–	silt	prominent redox
7-18	5Y4/1	90	2.5Y3/3	5	C	M	(distinct) sand mixed w/ silt 50/50	
sand	2.5Y3/3	5	–	–	–			

[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:
7-18" mixed, not in situ due to sand clods 50% with high chroma

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:

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

Project/Site: ELED City/County: Ferndale / Humboldt Sampling Date: 6/4/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: UP-4

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): convex/linear Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ND significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ______

Are Vegetation ______, Soil ______, or Hydrology ND 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
Hydric Soil Present?	Yes ______	No X
Wetland Hydrology Present?	Yes ______	No X

Is the Sampled Area within a Wetland? Yes ______ No X

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: ______)			
1. Holcus lanatus	30	D	FAC
2. Bromus hordeaceus	30	D	FACU
3. Festuca perinnis	15		FAC
4. Trifolium repens	15		FAC
5. Poa campestris	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	0	x 2 =
FAC species	60	x 3 = 180
FACU species	40	x 4 = 160
UPL species	–	x 5 =
Column Totals:	100 (A)	340 (B)

Prevalence Index = B/A = 3.4

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:

veg. not acting as hydrophytes

SOIL

Sampling Point: UP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/2	100	—	0	—	—	loam	
2-8	10YR3/2	98	7.5YR3/3	2	C	M	silt loam	faint redox
8-18	2.5Y3/2	93	10YR3/3	5	C	M	"	faint redox w/ 5Y5/1 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:

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: topo high, elevated from pasture, does not appear to flood in adjacent well vegetated pasture

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

Project/Site: EREP City/County: Ferndale / Humboldt Sampling Date: 6/3/15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: WP-1

Investigator(s): Jordan Mayor Section, Township, Range: ______

Landform (hillslope, terrace, etc.): berm along ditch Local relief (concave, convex, none): ______ Slope (%): 0

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology No 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 ___
Hydric Soil Present?	Yes ✓	No ___
Wetland Hydrology Present?	Yes ✓	No ___

Is the Sampled Area within a Wetland? 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: ______)			
1. Potentilla (Argentina) anserina	55	D	OBL
2. Eleocharis palustris	15		OBL
3. Rumex ~~salicifolius~~ trans.	10		FACW
4. Poa compressa	5		FACU
5. Festuca perin	5		FAC
6. Holcus lanatus	10		FAC
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	70	x 1 = 70
FACW species	10	x 2 = 20
FAC species	15	x 3 = 45
FACU species	5	x 4 = 20
UPL species	–	x 5 = –
Column Totals:	100 (A)	155 (B)

Prevalence Index = B/A = 1.55

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 ___

Remarks:

veg. acting as a hydrophyte

SOIL

Sampling Point: WP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	5Y4/1	90	10YR3/3	10	C	M	silt loam	distinct redox

[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)
- ___ 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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	14
Saturation Present? (includes capillary fringe)	X		12

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: R FREP City/County: Ferndale, HUM Sampling Date: 9-17-15

Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: V3T1-U

Investigator(s): MS + CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Floodplain. Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______	No X
Hydric Soil Present?	Yes ______	No X
Wetland Hydrology Present?	Yes ______	No X

Is the Sampled Area within a Wetland? Yes ______ No X

Remarks:

test pit ≈ 4 feet from boundary

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ______)			
1. Hordeum marinum.	60	D	FAC
2. Cynosurus echinatus	20	D	NL
3. Cirsium vulgare.	20	D	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

4 feet

SOIL

9/17/15 Sampling Point: U3T1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 4/2	100					Silt Loam	
6-14	2.5Y 4/2	80	7.5YR 4/6	20	C	M	Silt 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)
- ___ 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: Soil in upland position on spoil pile. No aquic moisture regime (based on Topographic position). Reduce remenant from dredge area.

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: Upland area of spoil pile. Assumed no wetlands hydrology base on Topographic position.

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

Project/Site: R ERED. City/County: Ferndale, Hum Sampling Date: 9-17-15

Applicant/Owner: RRT State: CA Sampling Point: 03T1-W

Investigator(s): MS + CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain. Local relief (concave, convex, none): concave ± Slope (%): ≤ 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks:

test pit ≈ 3 feet from bundary

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	Ø		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	Ø		
Herb Stratum (Plot size: ___)			
1. Salicornia pacifica	30	D	OBL
2. Hordeum marinum.	20	D	FAC
3. Festuca perennis.	~~15~~ 20	D	FAC
4. Lotus corniculatus.	5		FAC
5. Festuca [illegible]	10		FACU
6. Cirsium vulgare	15		FACU
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	Ø		

% Bare Ground in Herb Stratum Ø

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
- ✓ 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

9/17/15 Sampling Point: U3T1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y4/2	100	Ø				Siltloam	
3-16	2.5Y4/2	80	7.5YR4/4	20	C	M	Siltloam	

[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)
- ___ 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)**
- X 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: Assumed Wetlands hydrology

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

Project/Site: R ERER City/County: Ferndale, HUM Sampling Date: 9-17-15
Applicant/Owner: Russ Ranch + Timber State: CA Sampling Point: U3T2-U
Investigator(s): MS + CS Section, Township, Range: ______
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): ______ Slope (%): ______
Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name: ______ NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ______
Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? NO (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 ______
Hydric Soil Present?	Yes ______	No X
Wetland Hydrology Present?	Yes ______	No X

Is the Sampled Area within a Wetland? Yes ______ No X

Remarks:
test pit is ~ 2 feet from boundary

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		

Sapling/Shrub Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Festuca perennis	25	D	FAC
2. Distichlis spicata	45	D	FACW
3. Salicornia pacifica	20	D	OBL
4. Holcus lanatus	10		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	Ø = 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: 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	______	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:
Vegetation not growing as hydrophytes on upland berms.

SOIL

Sampling Point: U3 T2-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y3/2	100	—	—	—	—	Silt Loam	
3-16	2.5Y3/2	90	7.5YR 4/6	10	C	M		

[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:

Same Condition as U3T1-U

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)
- X 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: upland portion of spoil pile. Assumed ~~No~~ Wetlands Hydrology

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

Project/Site: R ERLP City/County: Ferndale, HUM Sampling Date: ______

Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: U3T2-W

Investigator(s): MS & CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___
Is the Sampled Area within a Wetland?	Yes X	No ___

Remarks:
test pit ≈ 4 feet from boundary

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: ___)			
1. Lotus corniculatus	15		FACW
2. Triglochin striata	10		OBL
3. Cynosurus echinatus	20	D	NL
4. Distichlis spicata	25	D	FACW
5. Festuca perennis	20	D	FAC
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	90		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover	0		
% 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: 66 (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 X No ___

Remarks:

SOIL

Sampling Point: U3T2-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 4/2	80	7.5YR 4/6	20	C	M	Silt 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:

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)
- X Geomorphic Position (D2) Low
- ___ Shallow Aquitard (D3)
- X 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: Base on soils and Topographic position

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

Project/Site: R ERZP City/County: Ferndale, HUM Sampling Date: 9-17-15

Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: U3 T3-U

Investigator(s): MS & CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): < 2

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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 X
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	0		

Sapling/Shrub Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover	0		

Herb Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. Holcus lanatus	65	D	FAC
2. Agrostis stolonifera	20	D	FAC
3. Elymus sp	10		FAC
4. Rumex transitorius	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		

Woody Vine Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover	0		

% Bare Ground in Herb Stratum 0

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
- ___ 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:
* Vegetation not growing as hydrophytes on spoils berm

SOIL

9/17/15 Sampling Point: U3T3-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	100	—	—	—	—	Silt Loam	
3-15	2.5Y4/2	80	7.5YR4/6	20	C	M	Silt 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)
__ 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: No aquic moisture regime based on topographic position - Thus not a hydric soil. Redox remnant from dredge area.

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: Upland position on spoil pile. Does not meet wetlands hydrology

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

Project/Site: R EXEP City/County: Ferndale, HUM Sampling Date: 9-17-15

Applicant/Owner: Russ Ranch & Timber State: CA Sampling Point: U3 T3-W

Investigator(s): MS + CS Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): —

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (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:

test pit ~ 3 feet from boundary

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: ______)			
1. Agrostis stolonifera	40	D	FAC
2. Distichlis spicata	40	D	FACW
3. Salicornia pacifica	10		OBL
4. Atriplex prostrata	5		FAC
5. Elymus sp.	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	0	= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (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 X No ___

Remarks:

SOIL

Sampling Point: U3 T3-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 4/2	95	7.5YR 4/4	5	C	M	Silt Loam	
3-14	2.5Y 4/2	80	7.5YR 4/6	20	C	M	Silt 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:

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)
- X 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: Wetlands hydrology

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

Project/Site: WRE City/County: Centerville Sampling Date: 5/19/21

Applicant/Owner: ______ State: ______ Sampling Point: UT1-1

Investigator(s): K. McDonald, M. Schwarz Section, Township, Range: ______

Landform (hillslope, terrace, etc.): sand berm Local relief (concave, convex, none): convex Slope (%): 10

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: Artificial sand berm, formerly adjacent to channel

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: 1m)			
1. Cakile maritima	35	Y	FACU
2. Distichlis spicata	25	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	______ = Total Cover		
% Bare Ground in Herb Stratum 40			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (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
N 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 ✓

Remarks: 5ft from boundary

SOIL

5/19/21 WRE MBS Sampling Point: U1-T1 U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 3/2	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)
- ___ 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:

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:

Plot on Low Dune Ridge

Upland plot ≈ 5' from wetland/upland Boundary

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

Project/Site: LRF City/County: ________ Sampling Date: 5/19/21
Applicant/Owner: ________ State: ________ Sampling Point: U1T1W
Investigator(s): ________ Section, Township, Range: ________
Landform (hillslope, terrace, etc.): sand berm Local relief (concave, convex, none): convex Slope (%): 10
Subregion (LRR): ________ Lat: ________ Long: ________ Datum: ________
Soil Map Unit Name: ________ NWI classification: ________
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____
Is the Sampled Area within a Wetland?	Yes ✓	No ____

Remarks: Lower boundary of old berm

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ________)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ________)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Distichlis spicata	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	30		
Woody Vine Stratum (Plot size: ________)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 70

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (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
- ✓ 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 ____

Remarks:

SOIL

5/19/21 WBE MBS

Sampling Point: U1-T1W

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
0-3	2.5Y 3/2	100	–	–	–	–	Sand/Coarse Sand	1
3-12	2.5Y 3/2	90	10YR 4/4	10	C	M	" " "	1
12-16	Gley 1 2.5/N	100	–	–	–	–	Silt Loam	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 ___

Remarks:

1 Recently deposited from wave overwash

2 Original marsh soil (overtopped w/ wave overwash sand)

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 14 Depth (inches): ______

Water Table Present? Yes ✗ No 14 Depth (inches): ______

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

Wetland Hydrology Present? Yes P No ___

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

Remarks:

Assume water table w/in 12" of surface >14 days)

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

Project/Site: WRE City/County: ______ Sampling Date: 5/6/21

Applicant/Owner: ______ State: ______ Sampling Point: L4W

Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee Local relief (concave, convex, none): convex Slope (%): 5

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 ______
Hydric Soil Present?	Yes ✓	No ______
Wetland Hydrology Present?	Yes ______	No ______

Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks: Top of levee - Strong redox and OBL plants present

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Cotula coronopifolia	15	Y	OBL
2. Matricaria discoidea	6		
3. Spergularia marina	15	Y	OBL
4. Distichlis spicata	1		FACW
5. Atriplex prostrata	2		FAC
6. Lepidium didymum	15	Y	Not Listed
7. Festuca arundinacea	5		FAC
8. Juncus bufonius	2		FACW
9.			
10.			
11.			
= Total Cover	61		
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: 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	______	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 ______

Remarks: Passes fac-neutral

SOIL 5-6-2021 WRE

Sampling Point: LEVEE 1 - we

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	2.5YR3/1	85	7.5YR4/6	14%			LOAMY SAND	to SAND
			2.5YR3/4	1%			〃	
9-14	2.5YR3/1	70%	7.5YR4/6	20%			〃	
9-14			2.5YR3/4	10%			〃	

[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)
- X Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X 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)
- X 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:

Artificially bermed up, potentially from wetland.

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)
- X 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)
- X 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:

On top of berm, man made, unknown Age.

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

Project/Site: WRE City/County: ______ Sampling Date: 5/6/21
Applicant/Owner: ______ State: ______ Sampling Point: L2T1-W
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: ______
Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): Convex Slope (%): 5
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: Previous upland now dominated by saltmarsh plants

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: 1 m²)			
1. Atriplex prostrata	12	Y	FAC
2. Salicornia pacifica	3		
3. Potentilla anserina	10		
4. Schoenoplectus pungens	12	Y	OBL
5. Cotula coronopifolia	1		
6. Distichlis spicata	15	Y	FACW
7.			
8.			
9.			
10.			
11.			
= Total Cover	53		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 47

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
- ✓ 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 ______

Remarks: Passes FAC-Neutral

SOIL 5-5-2021 WRE Southern edge Sampling Point: LZT1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3.5	2.5Y 3/1	99%	7.5YR4/6	1%	C	PL	SAND	
3.5-5.5	2.5Y 3/1	90%	7.5YR3/4	10%	C	PL+M	SILT LOAM	
5.5-14	2.5Y 3/1	80	7.5YR3/4	25%	C	PL+M	SILT 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)
- X 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)
- X 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)
- X 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: WRE City/County: ______ Sampling Date: 5/6/21
Applicant/Owner: ______ State: ______ Sampling Point: L2T1U
Investigator(s): Kelsey McDonald, Rose Davis Section, Township, Range: ______
Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): Convex Slope (%): 10
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 ✓
Hydric Soil Present?	Yes ____	No ✓
Wetland Hydrology Present?	Yes ____	No ✓

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: Previous upland road, now part of saltmarsh-sand transition

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. Distichlis spicata	20	Y	FACW
2. Cakile maritima	5		UPL
3. Potentilla anserina	1		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	26		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 74

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (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 ____

Remarks:

SOIL 05-06-2021 WRE Southern edge Sampling Point: L2T1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/1	100					SAND	encroaching beach
12-13	7.5YR 2.5/1	85	5YR 4/6	15%			PEET -	Previous surface layer
14-18								BLACK decaying OM
13-20	2.5Y 3/1	90	7.5YR 4/6	10				

[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 ____

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)
- __ 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:

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

Project/Site: LRE City/County: Ferndale Sampling Date: 5/6/21

Applicant/Owner: Wildlands Conservancy State: CA Sampling Point: SM-1

Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: ______

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 0-1

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: Overwash dominated by saltgrass - Characterizing saltmarsh. Layer of sand overlain on previous saltmarsh veg surface, strong redox.

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. Distichlis spicata	35	Y	FACW
2. Atriplex prostrata	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 55 sand

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
- ✓ 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 ____

Remarks:

SOIL 05-06-2021 CORE Sampling Point: SM 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
0-3	10YR 3/1	100					SAND	BEACH
3-4	10YR 2/2	100					ORGANIC	
4-8	2.5Y 3/1	85	2.5YR 3/6	15	C	PL	FINESAND CLAYLOAM	
8-13	2.5Y 3/1	75	7.5YR 4/6	25	C	PL+M	LOAMYSAND	
13-20	2.5Y 3/1	65	7.5YR 4/6	35	C	M	SILTYCLAY	

[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)
- X Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) (except MLRA 1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- X Redox Dark Surface (F6) BARELY
- __ 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:

Salt marsh to beach conversion

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)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X 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 X No ____ Depth (inches): 11"

Wetland Hydrology Present? Yes ____ No ____

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

Remarks: WATER TABLE @ 15" DEPTH - NOT W/IN 12"

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

Project/Site: WRE City/County: ______ Sampling Date: 5/6/21

Applicant/Owner: ______ State: ______ Sampling Point: L3W8

Investigator(s): Kelsey McDonald, Rose Davis Section, Township, Range: ______

Landform (hillslope, terrace, etc.): levee Local relief (concave, convex, none): convex Slope (%): 5

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 ✓		
Hydric Soil Present? Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes 1-par? No ____
Wetland Hydrology Present? Yes ____ No ✓		

Remarks: Top of levee - highest point, previously upland
2-par wetland - Redox present

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. Raphanus sativus	25	Y	UPL
2. Bromus hordeaceus	25	Y	FACU
3. Festuca arundinacea	10		FAC
4. Festuca bromoides	20	Y	FAC
5. Rumex crispus	2		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	82 = 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: 1 (A)

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

Remarks:

STOP!! wrong data diff. sheet!

SOIL 05-06-2021 WRE Levee 3

Sampling Point: L3W2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y3/2	99	7.5YR4/6	1			LOAMY SAND	
3-7	2.5Y3/2	100%	7.5YR4/6	0			LOAMY SAND	
7-14	2.5y3/2	92%	7.5YR4/6	8%			LOAM to silty 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)
- X 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:

Problematic! WETLAND

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) NU
- ___ 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 X

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

Remarks:

On levee. Raphanus L3W2 (Front side is different!)

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

Project/Site: WRF City/County: ______ Sampling Date: 5/6/21
Applicant/Owner: ______ State: ______ Sampling Point: L3 WV
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: ______
Landform (hillslope, terrace, etc.): levee Local relief (concave, convex, none): convex Slope (%): 5
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: High spot on levee

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m²)			
1. Poa pratensis	10		
2. Atriplex prostrata	2		
3. Festuca arundinacea	65	Y	FAC
4. Cerastium glomeratum	2		
5. Spergularia marina	<1		
6. Juncus bufonius	<1		
7. Sonchus asper	3		
8. Hordium marianum	5		
9. Trifolium repens	3		
10. Lepidium didymum	1		
11.			
= Total Cover	92		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
= Total Cover			
% Bare Ground in Herb Stratum 8			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)
Total Number of Dominant Species Across All Strata: ______ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (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 ______

Remarks:

L3-LW

SOIL 05-06-2021 WRE Levee 3 Sampling Point: L3-W1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5YR 3/2	95	7.5YR 4/6	5	C	PL	LOAM	
3-5	2.5YR 3/2	90	7.5YR 4/6	10	C	PL+M	SILTY CLAY LOAM	
5-14	2.5YR 3/2	75	7.5YR 4/6	20	C	PL+M	SILT LOAM / 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)
- X 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)
- X 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)
- X 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 X

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

Remarks:

on levee. slightly out of the brass buttons

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

Project/Site: LJRE City/County: Ferndale Sampling Date: 7/23/21

Applicant/Owner: ______ State: CA Sampling Point: U3-T2 (cdc)

Investigator(s): K. McDonald, M. Schwarz Section, Township, Range: ______

Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): Convex Slope (%): 2

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 ______		
Hydric Soil Present? Yes ______ No ______	Is the Sampled Area within a Wetland?	Yes ______ No ______
Wetland Hydrology Present? Yes ______ No ______		

Remarks: In location of 2015 U2T3 on levee top. Now appears to be wet

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. Rumex crispus	20	Y	FAC
2. Festuca perennis	40	Y	FAC
3. Festuca arundinacea	2		FAC
4. Festuca myuros	15		FACU
5. Lotus corniculatus	8		FAC
6. Plantago lanceolata	5		FACU
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
	______ = 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: 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	0	x 1 =
FACW species	0	x 2 =
FAC species	70	x 3 = 210
FACU species	20	x 4 = 80
UPL species	0	x 5 =
Column Totals:	90 (A)	290 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

N 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 ______

Remarks: does not pass FAC-neutral

SOIL WRE 7/23/21 MJ Sampling Point: Redo UB-47

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	2.5Y 3/2	70	7.5YR 4/6	30	C	M	Siltloam	
5-16	2.5Y 3/2	80	10YR 4/6	20	C	M	Sandy 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)
- ___ 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)
- ___ 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 X ① No ___

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

Remarks: ① Alex Blessing - Area inundated after overwash for > 14 consecutive days

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

Project/Site: WRE City/County: Ferndale Sampling Date: 7/23/21

Applicant/Owner: ______ State: CA Sampling Point: RW10

Investigator(s): K. McDonald M. Schwarz Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: PFO

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 ____
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Within tree-lined edge of Russ Creek – Alder dominant

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	60	Y	FAC
2. Salix hookeriana	10		FACW
3.			
4.			
= Total Cover	70		

Sapling/Shrub Stratum (Plot size: -)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
5.			
= Total Cover			

Herb Stratum (Plot size: 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Agrostis stolonifera	50	Y	FAC
2. Holcus lanatus	15		FAC
3. Ranunculus repens	15		FAC
4. Festuca perennis	2		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	82		

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 8

Remarks:

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
- Y 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 ____

SOIL 7/21/21 MBS Russ Sampling Point: RW-10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5YR3/2	80	10YR 4/6	20	C	M	Silt	
5-12	2.5YR3/2	92	10YR 4/6	8	C	m	Silt	

[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)
- X 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)
- ___ 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: Assumed Based on Redox

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

Project/Site: WRE 11187323 City/County: Centerville/Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: WIT1-U

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______	No ✓
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks:

Low cover due to mowed grass, litter,

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: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus ursinus	20	yes	FACU
2. Scirpus microcarpos	15	yes	OBL
3. Daucus carota	2		FACU
4. Festuca arundinacea	10	yes	FAC
5. Holcus lanatus	5	yes	FAC
6. Equisetum telmateia	1		FACW
7. Cardamine hirsuta	1		FACU
8. Oenanthe sarmentosa	2		OBL
9. Achillea millefolia	2		FACU
10. Cerastrium glomeratum	1		FACU
11.			
= Total Cover	49		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	7	x 1 = 7
FACW species	1	x 2 = 2
FAC species	16	x 3 = 48
FACU species	24	x 4 = 96
UPL species		x 5 =
Column Totals:	49 (A)	153 (B)

Prevalence Index = B/A = 3.12

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 ✓

Remarks:

SOIL

Sampling Point W1T1 - U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 5/1	100	NA	NA	NA	NA	GRAVELLY LOAM	ENG FILL
5-10	2.5Y 4/1	↓	↓	↓	↓	↓	MED GRAV	ENG FILL / LIMI:
10-14	2.5Y 2.5/1	↓	↓	↓	↓	↓	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)
- ___ 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 N

Remarks:

NO REDOX

FAILED A-A TEST

DID NOT MEET ANY HYDRIC SOIL INDICATO-

COMPOSITE ENGINEERED FILL IS PRIMARY MATRIX OF MATERIAL.

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:

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

Project/Site: WRE City/County: Centerville, Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: W1-T1-W

Investigator(s): Jane Cipra, Matt Tollen Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ______
Hydric Soil Present?	Yes ✓	No ______
Wetland Hydrology Present?	Yes ✓	No ______

Is the Sampled Area within a Wetland? 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: ______)			
1. Oenanthe sarmentosa	35	yes	OBL
2. Scirpus microcarpis	20	yes	OBL
3. Festuca arundinacea	15		FAC
4. Holcus lanatus	20	yes	FAC
5. Rubus ursinus	5		FACU
6. Equisetum telmateia	1		FACW
7. Sonchus asper	3		FACU
8. Galium aperine	1		FACU
9.			
10.			
11.			
	100 = 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: 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
- ___ 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 ______

Remarks:

SOIL

Sampling Point WIT1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
1-6	7.5Y/ 3/1	90	7.5yr 4/4	10	C	M	gravelly loam	
6-14"	7.5y 3/2	75%	7.5yr 3/4	25	C	M	loam	moist

[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: NA

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ___

Remarks:

PASSES AR DI TEST

MATRIX VALUE OF 3 or less + chroma of 2 or less AND +5% DISTINCT REDOX FEATURES.

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): 8"

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: WRE City/County: Centerville/Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: W2T1-U

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______	No ✓
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? 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: ______)			
1. Holcus lanatus	75	yes	FAC
2. Juncus effusus	1		FACW
3. Equisetum telmateia	2		FACW
4. Anthoxanthum odorata	1		FACU
5. Rubus ursinus	15		FACU
6. Achillea millefolia	1		FACU
7. Scirpus microcarpus	1		OBL
8.			
9.			
10.			
11.			
= Total Cover	96		
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: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	1	x 1 = 1
FACW species	3	x 2 = 6
FAC species	75	x 3 = 225
FACU species	17	x 4 = 68
UPL species		x 5 =
Column Totals:	96 (A)	300 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

N 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 ✓

Remarks:

SOIL

Sampling Point W2T1 - U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 7/1	100	NA				Loam / small gravel	
6-12	2.5Y 5/1	100	NA				Engineered Fill	
12-14	2.5Y 5/1	85	7.5Y 4/1	15			Eng loam Fill w/ redox	

[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: NA

Depth (inches): NA

Hydric Soil Present? Yes ___ No ✓

Remarks:

Failed A-A test. Misc. engineered fill, including asphalt deposit - no visible redox @ depths up to 12". Redox @ 12-14".

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:

Upland T1 pit.

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

Project/Site: WRE City/County: Centerville/Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: W2T1 - W

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ______
Hydric Soil Present?	Yes ✓	No ______
Wetland Hydrology Present?	Yes ✓	No ______

Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks:
A lot of cover is dead Juncus.

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: ______)			
1. Vicia nigricans	3		FACU
2. Oenanthe sarmentosa	15	yes	OBL
3. Juncus effusus	2		FACW
4. Equisetum telmateia	1		FACW
5. Scirpus microcarpus	5	yes	OBL
6. Rubus ursinus	30	yes	FACU
7.			
8.			
9.			
10.			
11.			
= Total Cover	56		
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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	20	x 1 = 20
FACW species	3	x 2 = 6
FAC species		x 3 =
FACU species	33	x 4 = 132
UPL species		x 5 =
Column Totals:	56 (A)	158 (B)

Prevalence Index = B/A = 2.82

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 ______

Remarks:

SOIL

Sampling Point W2T1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 3/1	90	7.5YR 5/6	10	C	M	Loam	
6-12	2.5Y 3/2	80	7.5YR 6/6	20	C	M	Gravelly Loam	Moisture Mottles
12-14	Gley1 5/N	70	7.5YR 6/8	30	C	M	Clayey 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)
- [x] 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: None

Depth (inches): NA

Hydric Soil Present? Yes ✓ No ____

Remarks:

PASSED A-A TEST AND MEETS F6 HYDRIC INDICATOR

MATRIX VALUE OF 3 OR LESS + CHROMA OF 2 OR LESS + 5% REDOX FEATURES

HYDROLOGY

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] 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)
- [x] 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): 2

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

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

Project/Site: WRE City/County: Centerville/Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: W2T2-U

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______ No ✓	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: ______)			
1. Holcus lanatus	70		FAC
2. Festuca arundinacea	10		FAC
3. Ranunculus repens	2		FAC
4. Rumex acetosella	2		FACU
5. Vicia sativa	1		UPL
6. Achillea millefolia	1		FACU
7. Equisetum telmateia	2		FACW
8.			
9.			
10.			
11.			
= Total Cover	88		
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: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (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	2	x 2 = 4
FAC species	82	x 3 = 246
FACU species	3	x 4 = 12
UPL species	1	x 5 = 5
Column Totals:	(A)	(B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- N 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 ✓

Remarks:

SOIL

Sampling Point W2T2U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 2/1	100	NA	NA	NA	-	Loam	[illegible]
6-10	2.5Y 3/1	100%	NA	NA	NA	-	Gravelly	Loam + [illegible]
11-14	2.5Y 5/1	80	7.5YR 5/6	20	C	M	VG 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)
- ___ 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 ✓

Remarks:

Redox Below 10" sgs. No evidence of wetland soils.

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:

Upln.

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

Project/Site: WRE City/County: Centerville/Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: W2T2-W

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓ No ______	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: ______)			
1. Scirpus microcarpus	10	yes	OBL
2. Holcus lanatus	30	yes	FAC
3. Rubus ursinus	5		FACU
4. Cardamine hirsuta	1		FACU
5. Equisetum telmateia	1		FACW
6. Stachys rigida	1		FACW
7.			
8.			
9.			
10.			
11.			
= Total Cover	48		
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	10	x 1 = 10
FACW species	2	x 2 = 4
FAC species	30	x 3 = 90
FACU species	6	x 4 = 24
UPL species		x 5 =
Column Totals:	48 (A)	128 (B)

Prevalence Index = B/A = 2.66

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 ______

Remarks:

SOIL

Sampling Point W2T2 W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	7.5YR 3/1	95	7.5YR 6/6	5	C	M	loam	
9-12	Gley 1 2.5/N	85	7.5YR 4/6	15	C	M	gravelly loam	increase moisture

[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: NA

Depth (inches): N

Hydric Soil Present? Yes _✓_ No ___

Remarks

Abundance of redox.

High chroma

Passed A-4 test

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:

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

Project/Site: WRE City/County: Centerville/Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: W2T3-U

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long.: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______ No ✓	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: ______)			
1. Holcus lanatus	40	yes	FAC
2. Achillea millefoliata	18	yes	FACU
3. Ranunculus repens	8		FAC
4. Daucus carota	1		FACU
5. Rubus ursinus	1		FACU
6. Anthoxanthum odoratum	5		FACU
7. Poa annua	2		FAC
8. Vicia sativa	1		UPL
9. Cerastrium glomeratum	1		FACU
10. Scirpus microcarpus	1		OBL
11. Juncus effusus	1		FACW
= Total Cover	79		
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: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	1	x 1 = 1
FACW species	1	x 2 = 2
FAC species	50	x 3 = 150
FACU species	26	x 4 = 104
UPL species	1	x 5 = 5
Column Totals:	79 (A)	262 (B)

Prevalence Index = B/A = 3.3

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 ✓

Remarks:

SOIL

Sampling Point W2 T3 - U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5Y 5/1	100	NA	NA	NA	NA	Gravelly loam / ENG Fill	
6-12	2.5Y 4/1	100	NA	↓	↓		Very gravelly loam / ENG Fill	

[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 ✓

Remarks

No signs of redox

Engineered gravel fill w/ organic top layer

No reaction to A.A. DI Test.

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) 10"

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks

Meets definition of upland soil.

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

Project/Site: WRE City/County: Centerville/Humboldt Sampling Date: 4/28/22

Applicant/Owner: HRCD State: CA Sampling Point: W2T3-W

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ____

Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope (%): ____

Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: ____ NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓ No ____	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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1. Salix hookeriana	20	yes	FACW
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: ____)			
1. Stachys rigida	8	yes	FACW
2. Equisetum telmateia	5		FACW
3. Scirpus microcarpus	3		OBL
4. Athyrium felix-femina	15	yes	FAC
5. Rubus ursinus	8	yes	FACU
6. Oenanthe sarmentosa	4		OBL
7. Cardamine hirsuta	1		FACU
8.			
9.			
10.			
11.			
	44	= 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: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	7	x 1 =	7
FACW species	33	x 2 =	66
FAC species	16	x 3 =	48
FACU species	8	x 4 =	32
UPL species		x 5 =	
Column Totals:	64 (A)		153 (B)

Prevalence Index = B/A = 2.39

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 ____

Remarks:

SOIL

Sampling Point: W2 T3-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/2	100	NA	—	—	—	Silt loam	
4-10	2.5Y 4/1	95	7.5YR 5/6	5	C	M	gravelly loam	
10-12"	2.5Y 4/2	90	7.5YR 4/4	10	C	M	sandy 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)
- __ 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: NA

Depth (inches): —

Hydric Soil Present? Yes ✓ No __

Remarks: Redox @ 4" bgs
PASSED A-A DI test

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): 7

Saturation Present? (includes capillary fringe) Yes ✓ No __ Depth (inches): 5

Wetland Hydrology Present? Yes ✓ No __

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

Remarks: Meets hydrologic nature / indicator

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

Project/Site: WRE City/County: Centerville / Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: U1

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______	No ✓
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks:

Extra upland plot

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: ______)			
1. Holcus lanatus	60	yes	FAC
2. Raphanus sativus	25	yes	UPL
3. Equisetum telmateia	1		FACW
4. Rubus ursinus	1		FACU
5. Stachys rigida	1		FACW
6. Trifolium repens	5		FAC
7. Bromus diandrus	1		
8. Festuca bromoides	2		
9. Poa annua	1		
10. Trifolium dubium	1		
11. Claytonia perfoliata	1		
= Total Cover	99		
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: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	65	x 3 = 195
FACU species		x 4 =
UPL species	25	x 5 = 125
Column Totals:	99 (A)	320 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

N 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 ✓

Remarks:

SOIL

Sampling Point: U1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4"	2.5Y 3/1	100	NA				Gravelly Loam	High organic comp.
4-10"	2.5Y 4/2	100	NA				Med gravelly	Road fill
10"-14"	2.5Y 2/1	100	NA				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)
- ___ 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 ✓

Remarks:

Upland soils conditions, no evidence of redox

Matrix comprised of top soil (0-4") and engineered fill (4-10") and native TS (10-14")

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:

None

Remarks:

Upland soils

Failed FAC wet test

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

Project/Site: WRE City/County: Centerville/Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: CA Sampling Point: U2

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______	No ✓
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks:
Extra upland plot

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: ______)			
1. Festuca arundinacea	10		FAC
2. Iris pseudacorus	10		OBL
3. Scirpus microcarpus	2		OBL
4. Rubus ursinus	100	yes	FACU
5. Equisetum telmateia	2		FACW
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: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (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
- N 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 ✓

Remarks:

SOIL

Sampling Point: U2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8"	2.5-1 3/2	100%	NA				Gravelly Loam	Engineered Fill
8-14"	2.5 4/1	90 %	7.5-1 4/4	10%	C	M	Loam	Moisture 4

[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: N.A.

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

Engineered Fill w/ moisture @ 10" bgs

No redox observed, failed A-A DI test. Redox @ 8-10" bgs

Upland soils ass. w/ begin of drainage ditch collected @ fence edge

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): 10"

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

Upland soils assoc with beginning of drainage ditch

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

Project/Site: WRE City/County: Centerville / Humboldt Sampling Date: 4/27/22

Applicant/Owner: HRCD State: ______ Sampling Point: U3

Investigator(s): Jane Cipra, Matt Tolley Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ______	No ✓
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks:
Extra upland plot

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: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			

Herb Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1. Holcus lanatus	45	yes	FAC
2. Festuca myuros	1		FACU
3. Scirpus microcarpus	5		OBL
4. Rubus ursinus	20	yes	FACU
5. Sonchus asper	1		FACU
6. Rumex acetosella	1		FACU
7. Equisetum telmateia	1		FACW
8. Galium aparine	1		FACU
9.			
10.			
11.			
= Total Cover	75		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	5	x 1 = 5
FACW species	1	x 2 = 2
FAC species	45	x 3 = 135
FACU species	24	x 4 = 96
UPL species		x 5 =
Column Totals:	75 (A)	238 (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

N 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 ✓

Remarks:

Attachment C

Plant Species Observed

Table C.1 All plant species observed in the PSB 2013-2022. Survey areas are Centerville Road (C. Rd), the Russ Ranch & Timber Properties (RR&T), and the Eel River Estuary Preserve (EREP).

Scientific Name	Common Name	Special Status	Native	Survey Area			Lifeform
Abronia latifolia	sand-verbena		Native			EREP	Herb
Achillea millefolium	yarrow		Native	C. Rd	RR&T	EREP	Herb
Acmispon parviflorus	lotus		Native			EREP	Herb
Agrostis stolonifera	creeping bentgrass		Non-native			EREP	Herb
Aira caryophyllea	silver European hairgrass		Non-native	C. Rd		EREP	Herb
Alnus rubra	red alder		Native		RR&T	EREP	Tree
Alopecurus aequalis	short-awn foxtail		Native		RR&T	EREP	Herb
Alopecurus saccatus	Pacific foxtail		Native		RR&T	EREP	Herb
Ambrosia chamissonis	beach bur-sage		Native			EREP	Herb
Ammophila arenaria	European beach grass		Non-native			EREP	Herb
Anagallis arvensis	scarlet pimpernel		Non-native		RR&T	EREP	Herb
Angelica lucida	sea watch	CRPR 4.2	Native			EREP	Herb
Anthoxanthum odoratum	sweet vernal grass		Non-native	C. Rd		EREP	Herb
Aquilegia formosa	western columbine		Native	C. Rd			Herb
Arctotheca calendula	cape weed		Non-native		RR&T	EREP	Herb
Artemisia pycnocephala	coastal sagewort		Native			EREP	Herb
Athyrium felix-femina	lady fern		Native	C. Rd			Fern
Atriplex prostrata	fat-hen		Non-native		RR&T	EREP	Herb
Avena sativa	cultivated oat		Non-native	C. Rd		EREP	Herb
Baccharis pilularis ssp. *consanguinea*	coyote brush		Native	C. Rd		EREP	Shrub
Bellis perennis	English daisy		Non-native		RR&T	EREP	Herb
Bolboschoenus maritimus ssp. *paludosus*	saltmarsh bulrush		Native			EREP	Herb
Briza maxima	rattlesnake grass		Non-native	C. Rd	RR&T		Herb
Briza minor	lesser quaking grass		Non-native	C. Rd			Herb
Bromus diandrus	ripgut grass		Native	C. Rd		EREP	Herb
Bromus hordeaceus	soft chess		Native	C. Rd	RR&T	EREP	Herb
Bromus macrostachys	Mediterranean brome		Non-native		RR&T		Herb
Cakile maritima	sea rocket		Non-native			EREP	Herb
Calandrinia ciliata	red maids		Native			EREP	Herb

Scientific Name	Common Name	Special Status	Native	Survey Area			Lifeform
Callitriche heterophylla	water-starwort		Native			EREP	Herb
Calystegia soldanella	beach morning-glory		Native			EREP	Herb
Camissoniopsis cheiranthifolia	beach evening-primrose		Native			EREP	Herb
Cardamine hirsuta	hairy bittercress		Non-native	C. Rd			Herb
Cardionema ramosissimum	sandmat		Native			EREP	Herb
Carex lyngbyei	Lyngby's sedge	CRPR 2B.2	Native			EREP	Herb
Carex obnupta	slough sedge		Native			EREP	Herb
Carex pansa	sanddune sdege		Native			EREP	Herb
Castilleja ambigua* ssp. *humboldtiensis	Humboldt Bay owl's-clover	CRPR 1B.2	Native			EREP	Herb
Cerastium fontanum ssp. *vulgare*	mouse-ear chickweed		Non-native			EREP	Herb
Cerastrium glomeratum	mouse-ear chickweed		Non-native	C. Rd			Herb
Circium arvense	Canada thistle		Non-native		RR&T	EREP	Herb
Cirsium vulgare	bull thistle		Non-native	C. Rd	RR&T	EREP	Herb
Claytonia perfoliata	miner's lettuce		Native	C. Rd		EREP	Herb
Claytonia rubra ssp. *depressa*	claytonia		Native			EREP	Herb
Conium maculatum	poison hemlock		Non-native	C. Rd	RR&T	EREP	Herb
Cotula coronopifolia	brass-buttons		Non-native		RR&T	EREP	Herb
Crassula connata	sand pygmyweed		Non-native	C. Rd			Herb
Cuscuta spp.	dodder		Native		RR&T	EREP	Herb
Cynosurus echinatus	bristly dogtail grass		Non-native			EREP	Herb
Cyperus eragrostis	tall flatsedge		Native			EREP	Herb
Dactylis glomerata	orchard grass		Non-native	C. Rd	RR&T	EREP	Herb
Danthonia sp.	oat grass		Non-native	C. Rd			Herb
Daucus carota	Queen Anne's lace		Non-native	C. Rd		EREP	Herb
Deschampsia caespitosa	tufted hairgrass		Native			EREP	Herb
Digitalis purpurea	foxglove		Non-native	C. Rd			Herb
Distichlis spicata	salt grass		Native		RR&T	EREP	Herb
Echinochloa crus-pavonis var. *crus-pavonis*	gulf cockspur grass		Non-native			EREP	Herb

Scientific Name	Common Name	Special Status	Native	Survey Area			Lifeform
Eleocharis macrostachya (palustris)	spikerush		Native	C. Rd	RR&T	EREP	Herb
Elymus sp.	wild rye		Native		RR&T		Herb
Epilobium ciliatum	fringed willowherb		Non-native	C. Rd			Herb
Equisetum telmateia var. *braunii*	giant horsetail		Native	C. Rd		EREP	Fern ally
Erigeron glaucus	seaside daisy		Native		RR&T	EREP	Herb
Eriogonum latifolium	seaside wild buckwheat		Native			EREP	Herb
Erodium cicutarium	redstem filaree		Non-native			EREP	Herb
Festuca arundinacea	tall fescue		Non-native	C. Rd	RR&T	EREP	Herb
Festuca bromoides	brome fescue		Non-native	C. Rd			Herb
Festuca microstachys	Pacific fescue		Native		RR&T		Herb
Festuca myuros	rattail sixweeks grass		Non-native	C. Rd		EREP	Herb
Festuca octoflora	six week fescue		Non-native	C. Rd			Herb
Festuca perennis	rye grass		Non-native	C. Rd	RR&T	EREP	Herb
Festuca rubra	red fescue		Native			EREP	Herb
Foeniculum vulgare	fennel		Non-native			EREP	Herb
Fragaria vesca	wood strawberry		Native			EREP	Herb
Frangula purshiana	Cascara sagrada		Native	C. Rd			Tree
Galium aparine	cleavers		Non-native	C. Rd			Herb
Gaultheria shallon	salal		Native	C. Rd			Shrub
Geranium dissectum	cut-leaved cranesbill		Non-native	C. Rd	RR&T	EREP	Herb
Geranium molle	dove’s-foot cranesbill		Non-native			EREP	Herb
Gilia millefoliata	dark-eyed gilia	CRPR 1B.2	Native			EREP	Herb
Glehnia littoralis* ssp. *leiocarpa	American glehnia	CRPR 4.2	Native			EREP	Herb
Grindelia stricta var. *platyphylla*	gumplant		Native			EREP	Herb
Helminthotheca echioides	bristly ox-tongue		Non-native			EREP	Herb
Helxia soleirolii	baby's tears		Non-native	C. Rd			Herb
Hirschfeldia incana	short pod mustard		Non-native		RR&T	EREP	Herb
Holcus lanatus	common velvet grass		Non-native	C. Rd	RR&T	EREP	Herb
Hordeum brachyyantherum ssp. *brachyantherum*	California meadow barley		Native			EREP	Herb

Scientific Name	Common Name	Special Status	Native	Survey Area			Lifeform
Hordeum marinum ssp. *gussoneanum*	barley		Non-native		RR&T	EREP	Herb
Hydrocotyle ranunculoides	marsh pennywort		Native			EREP	Herb
Hypochaeris radicata	rough cat's-ear		Non-native	C. Rd	RR&T	EREP	Herb
Iris pseudacorus	bearded iris		Non-native	C. Rd			Herb
Isolepis cernua	low bulrush		Native	C. Rd			Herb
Jaumea carnosa	jaumea		Native			EREP	Herb
Juncus bolanderi	Bolander's rush		Native	C. Rd	RR&T	EREP	Herb
Juncus breweri	Brewer's rush		Native			EREP	Herb
Juncus bufonius var. *bufonius*	toad rush		Native	C. Rd	RR&T	EREP	Herb
Juncus bufonius var. *occidentalis*	western toad rush		Native	C. Rd			Herb
Juncus effusus	common rush		Native	C. Rd	RR&T		Herb
Juncus lescurii	San Francisco rush		Native			EREP	Herb
Juncus occidentalis	western rush		Native	C. Rd			Herb
Juncus patens	rush		Native		RR&T	EREP	Herb
Juncus tenuis	path rush		Native	C. Rd			Herb
Lathyrus littoralis	wild pea		Native			EREP	Herb
Layia carnosa	beach layia	FT, SE, CRPR 1B.1	Native			EREP	Herb
Lemna sp.	duckweed		Non-native		RR&T		Herb
Leontodon saxatilis	lesser hawkbit		Non-native	C. Rd			Herb
Lepidium virginicum	Virginia pepperweed		Non-native			EREP	Herb
Linum bienne	flax		Non-native		RR&T		Herb
Lonicera involucrata	twinberry		Native	C. Rd			Shrub
Lotus corniculatus	birdfoot trefoil		Non-native	C. Rd	RR&T	EREP	Herb
Lotus pedunculatis	big trefoil		Non-native	C. Rd			Herb
Lupinus albifrons	lupine		Native			EREP	Herb
Lupinus polyphyllus	bigleaf lupine		Non-native	C. Rd			Herb
Lupinus rivularis X arboreus	hybrid lupine		Non-native			EREP	Herb
Lysichiton americanus	skunk cabbage		Native	C. Rd			Herb
Malva nicaeensis	bull mallow		Non-native		RR&T	EREP	Herb
Marah oregana	wild cucumber		Native	C. Rd			Herb

Scientific Name	Common Name	Special Status	Native	Survey Area			Lifeform
Matricaria discoidea	pineapple weed		Non-native			EREP	Herb
Medicago lupulina	black medick		Non-native			EREP	Herb
Medicago polymorpha	burclover		Non-native		RR&T		Herb
Medicago sativa	alfalfa		Non-native	C. Rd			Herb
Mentha pulegium	pennyroyal		Non-native		RR&T	EREP	Herb
Mentha spicata	spearmint		Non-native	C. Rd			Herb
Mimulus guttatus	monkeyflower		Native			EREP	Herb
Morella californica	California wax myrtle		Native	C. Rd			Tree
Nuttallanthus texanus	blue toadflax		Native			EREP	Herb
Oenanthe sarmentosa	water parsley		Native	C. Rd	RR&T		Herb
Parapholis incurva	sickle grass		Non-native			EREP	Herb
Parentucellia viscosa	yellow bartsia		Non-native	C. Rd			Herb
Phalaris aquatica	Harding grass		Non-native			EREP	Herb
Plantago lanceolata	English plantain		Non-native	C. Rd	RR&T	EREP	Herb
Plantago major	common plantain		Non-native			EREP	Herb
Plantago maritima	sea plantain		Native			EREP	Herb
Plantago subnuda	plantain		Native			EREP	Herb
Poa annua	annual bluegrass		Non-native	C. Rd		EREP	Herb
Poa compressa	Canada bluegrass		Non-native		RR&T		Herb
Poa pratensis	Kentucky bluegrass		Non-native	C. Rd			Herb
Polycarpa tetraphyllum	fourleaf allseed		Non-native	C. Rd			Herb
Polygonum aviculare ssp. *depressum*	common knotgrass		Non-native			EREP	Herb
Polygonum paronychia	beach knotweed		Native			EREP	Herb
Polypodium calirhiza	California polypody		Native	C. Rd			Fern
Polypogon maritimus	Mediterranean beard grass		Non-native			EREP	Herb
Polystichum munitum	Western sword fern		Native	C. Rd			Fern
Polystichum munitum	Western sword fern		Native		RR&T		Fern
Portulaca oleracea	purslane		Non-native			EREP	Herb
Potentilla anserina ssp. *pacifica*	Pacific silverweed		Native	C. Rd	RR&T	EREP	Herb

Scientific Name	Common Name	Special Status	Native	Survey Area			Lifeform
Pseudognaphalium stramineum	cudweed		Native			EREP	Herb
Pteridium aquilinum	brackenfern		Native	C. Rd			Fern
Ranunculus muricatus	rough-fruited buttercup		Native			EREP	Herb
Ranunculus repens	creeping buttercup		Non-native	C. Rd	RR&T	EREP	Herb
Raphanus sativus	wild radish		Non-native	C. Rd	RR&T	EREP	Herb
Rosa californica	California wild rose		Native	C. Rd			Shrub
Rubus armenicus	Himalayan blackberry		Non-native	C. Rd			Shrub
Rubus parviflorus	thimbleberry		Native	C. Rd			Herb
Rubus ursinus	California blackberry		Native	C. Rd		EREP	Herb
Rumex acetosella	sheep sorrel		Non-native	C. Rd	RR&T	EREP	Herb
Rumex conglomeratus	dock		Non-native			EREP	Herb
Rumex crispus	curly dock		Non-native			EREP	Herb
Rumex salicifolius	willow dock		Native	C. Rd			Herb
Rumex transitorius (salicifolius)	Pacific willow dock		Non-native		RR&T		Herb
Ruppia maritima	ditch-grass		Native			EREP	Herb
Sagina maritima	sea pearlwort		Non-native	C. Rd			Herb
Salicornia depressa (Sarcocornia pacifica)	pickleweed		Native		RR&T	EREP	Herb
Salix hookeriana	coastal willow		Native	C. Rd		EREP	Tree
Schoenoplectus pungens var. *longispicatus*	common three-square bulrush		Native			EREP	Herb
Scirpus microcarpus	panicled bulrush		Native	C. Rd			Herb
Senecio glomeratus	fireweed		Non-native			EREP	Herb
Senecio sylvaticus	woodland ragwort		Non-native			EREP	Herb
Silene gallica	catchfly		Non-native			EREP	Herb
Silybum marianum	milk thistle		Non-native			EREP	Herb
Sisyrinchium californicum	golden blue-eyed grass		Native	C. Rd			Herb
Sonchus asper ssp. *asper*	prickly sow thistle		Non-native	C. Rd	RR&T	EREP	Herb
Spartina densiflora	cord grass		Non-native			EREP	Herb
Spergularia canadensis var. occidentalis	western sand-spurrey	CRPR 2B.1	Native			EREP	Herb

Scientific Name	Common Name	Special Status	Native	Survey Area			Lifeform
Spergularia macrotheca var. *macrotheca*	sticky sand-spurrey		Native		RR&T	EREP	Herb
Spergularia rubra	sand-spurrey		Non-native			EREP	Herb
Stachys rigida	rough hedgenettle		Native	C. Rd			Herb
Stellaria crispa	chickweed		Native		RR&T	EREP	Herb
Stellaria nitens	shining chickweed		Native			EREP	Herb
Symphoriotrichum chilensis	Pacific aster		Native			EREP	Herb
Tanacetum bipinnatum	dune tansy		Native			EREP	Herb
Taraxacum officinale	common dandelion		Non-native			EREP	Herb
Trifolium dubium	clover		Non-native	C. Rd		EREP	Herb
Trifolium fragiferum	strawberry clover		Non-native			EREP	Herb
Trifolium pratense	red clover		Non-native			EREP	Herb
Trifolium repens	white clover		Non-native	C. Rd	RR&T	EREP	Herb
Trifolium wormskioldii	cows clover		Native		RR&T	EREP	Herb
Triglochin maritima	common arrow-grass		Native			EREP	Herb
Triglochin striata	streaked arrow-grass		Native		RR&T		Herb
Urtica dioica	stinging nettle		Native		RR&T		Herb
Veronica americana	American brookline		Native			EREP	Herb
Vicia hirsuta	hairy vetch		Non-native	C. Rd			Herb
Vicia nigricans	giant vicia		Non-native	C. Rd			Herb
Vicia sativa	common vetch		Non-native	C. Rd	RR&T		Herb
Vicia tetrasperma	smooth vetch		Non-native	C. Rd			Herb
Vicia villosa ssp. *villosa*	hairy vetch		Non-native			EREP	Herb
Zostera maritima	eelgrass	NMFS	Native			EREP	Herb

Status abbreviations:
FT = Federal Threatened; SE = State Endangered
NMFS = The National Marine Fisheries Service has designated eelgrass as Essential Fish Habitat (EFH) and a Habitat of Particular Concern under the Magnuson-Stevens Fishery Conservation and Management Act in 1996.
California Rare Plant Ranks (CRPR), CNPS rankings for rare plants (CNPS 2022): 1B = Plants rare, threatened or endangered in California and elsewhere; 2 = Plants rare, threatened, or endangered in California, but more common elsewhere; 3 = Plants about which more information is needed (a review list); 4 = Plants of limited distribution (a watch list).

Threat Code extensions and their meanings: ".1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); (CDFW 2021b).

Appendix D

Monitoring and Maintenance Plan

Russ Creek & Centerville Slough Restoration Project

Monitoring and Maintenance Plan

Humboldt County Resource Conservation District

24 May 2023

→ **The Power of Commitment**

GHD Inc. 380
718 Third Street, PO Box 1010
Eureka, CA 95502, USA
T 707-267-2246 | **E** Jeremy.svehla@ghd.com | **ghd.com**

Contents

Table index

Appendices

1. Introduction

This Monitoring and Maintenance Plan (Plan) has been developed for the Russ Creek and Centerville Slough Restoration Project (Project). The Project includes goals and objectives related to protection of agricultural land and habitat restoration. Monitoring and maintenance following construction of the project is anticipated to be required to meet the long-term Project goals. This Plan was developed to cover specific aspects of managing natural resources and working lands within the Project Area. The Plan is limited in scope to the specific aspects discussed. While every attempt is made to be comprehensive in scope, every possible condition or need cannot be foreseen. Monitoring and maintenance actions described in this Plan will be covered in the CEQA document as well as other regulatory permits obtained for the Project. However, new, expanded, or unforeseen impacts to regulated habitats, waters, or wetlands may require modifications to permits or new permits in the future. The monitoring and maintenance activities defined in this Plan are intended to commence upon completion of Project construction and would continue for the minimum life of the Project, typically 20-25 years. Monitoring and maintenance activities may also be required by the Natural Resources Conservation Services (NRCS) Agricultural Conservation Easement Program - Wetland Reserve Easement (ACEP-WRE) beyond the term of the grant funding agencies.

1.1 Responsible Parties

The Project Area as defined in the CEQA document includes the Eel River Estuary Preserve (EREP) owned by The Wildlands Conservancy (TWC) and various parcels privately owned by Russ Ranch and Timber, L.L.C (RR&T), Linda S Russ Revocable Trust, and a small segment of existing berm located on the O’Rourke Foundation (ORF) and the segment of Russ Lane on Harville Ranch L.L.C. for which TWC has an access easement over. The Wildlands Conservancy will oversee implementation of the Plan on the EREP and RR&T will oversee implementation of the Plan on RR&T. Based on needs and available resources, each landowner may choose to collaborate with various partners to assist with the monitoring and maintenance such as the NRCS, HCRCD, U.S. Fish & Wildlife Services (USFWS), consultants, volunteers, and other specialists.

An NRCS Agricultural Conservation Easement Program - Wetland Reserve Easement (ACEP-WRE) exists over the entire Project Area on RR&T and a majority of the Project Area on EREP. The easement allows for periodic maintenance activities to be planned and implemented under a Compatible Use Authorization (CUA) between the NRCS and landowners. All monitoring and maintenance activities described in this Plan will be completed in accordance with the NRCS CUA process. As large portions of the Project Area would remain in use for agricultural purposes, management activities related to the agricultural lands will also be consistent with The Wildlands Conservancy’s Grazing Management Plan (NRCS 2019). The Grazing Management Plan may need to be updated following Project implementation to reflect the grazing area and should be compatible with the existing drainage easement that may also need to be amended once the Project is implemented.

NRCS has a unique monitoring responsibility on the Project Area lands protected by its perpetual conservation easements. All ACEP-WRE easements are required by policy to be monitored annually in accordance with the Common Provisions Manual (440-CPM-527-P). Prior to the end of each federal fiscal year, monitoring information collected must be entered into NRCS’ easement business tool, and a copy of the completed annual monitoring worksheet must be retained for the duration of the easement enrolment according to federal records management requirements. NRCS monitors the easements it administers to ensure that the integrity of the easements are being maintained, ensure that the goals and objectives for which the easements were purchased are being met, identify management or maintenance actions needed, and maintain a relationship with the landowner and, where applicable, other conservation partners. Monitoring ensures the terms and conditions of the easement deeds are being met and program objectives are being achieved in accordance with statutory and regulatory authorities and requirements. Additionally, the annual completion and reporting of the outcomes of monitoring allows the easement condition status to be determined in the easement business tool and reported as appropriate in the agency’s annual accountability reporting.

Coordination and communication related to monitoring and maintenance activities described herein shall ensure that future actions are well coordinated among all parties and safely orchestrated, including activities specific to stockpiling and staging.

1.2 Drainage Easement

A formal drainage easement recorded on October 2008 exists on EREP and ORF, with TWC and Lytel (ORF) Foundation as grantors and Russ properties as grantees. The drainage easement allows the grantees (various Russ property owners, collectively "Russ") to enter and perform certain drainage maintenance functions on the EREP and ORF property, to the extent that these are legally permissible. Key actions include removal of sand and sediment from the Western Drainage Ditch when it becomes clogged, and maintenance of the Cut-Off Slough tide gate and perimeter dike in order to facilitate drainage when conditions in the Eel River estuary permit and as environmental regulations allow. Under the drainage easement, the grantees cannot increase the width of the ditch as it presently exists. While the drainage easement is specific to these three parties, the elements included in the drainage easement (tide gates, dikes and channels) are critical for providing drainage that support agricultural uses on multiple adjacent properties. The Project components proposed on EREP are in part intended to improve aquatic habitat access while not impacting drainage on adjoining properties. Once finalization of the design and prior to construction, it is understood the drainage easement will be amended to accommodate the reconfiguration of the Project components. The actions defined in this Plan are intended to be compatible with the drainage easement.

2. Overview of Project Components and Long-Term Management Needs

This Plan was developed to support post-construction ongoing management and maintenance activities that may be necessary to assure the long-term hydraulic and ecological functions of the Project and operational needs to protect land. The property owners and NRCS will regularly monitor the Project Area response relative to the restoration design intent. NRCS monitoring is primarily focused on easement compliance and will include a review of restoration objectives, management plans, vegetation, hydrology and any needs for additional enhancements. Maintenance activities will be prioritized and implemented based on the monitoring outcomes. Additional monitoring activities are to be determined but would generally include observations of physical character to determine whether the Project has been successful. The impacts associated with the anticipated operational and maintenance activities would be infrequent and short-term in nature. In addition, they are anticipated to be no greater than the traditional maintenance historically performed on these lands under existing conditions and far less than the impacts associated with Project construction as described in the CEQA document.

2.1 Description of Project Components and Potential Maintenance Needs

This section summarizes the functions and potential maintenance needs for the primary project components. Following construction, long-term maintenance will be required to ensure the Project design functions as intended. Maintenance needs will be primarily limited to the setback berm, drainage infrastructure (channels, ditches, and tide gates), back dunes and vegetation management.

2.1.1 Russ Lane Maintenance

Russ Lane maintenance will be needed as a result of increased visitation levels. Maintenance of Russ Lane, including but not limited to periodic resurfacing, pothole treatment, turnout maintenance, and roadway shoulder maintenance, associated with increased visitation will be led by TWC under a future maintenance agreement between TWC and the Russ family. The maintenance agreement will detail the procedure for operations and a maintenance schedule.

2.1.2 Setback Berm

An approximate four-mile-long agricultural protection and access setback berm would be located on the eastern side of the Centerville Slough marsh network to prevent the adjacent agricultural lands from tidal inundation and wave overwash. The set-back berm top would have a gravel surface to provide site access. The setback berm is designed to operate without extensive maintenance. Monitoring will consist of qualitative monitoring including visual inspections performed annually and after major storm and high tide events by an individual qualified to perform these inspections. Monitoring will look for evidence of obvious flooding and erosion or erosion resulting from wind generated waves. Maintenance of the setback berm would be triggered by observations of the physical character of the berm each year and following extreme storm events. If necessary, the setback berm would be mowed annually to discourage growth of woody vegetation and invasive plant species. Repair from erosion or burrowing animals would occur on an as-needed basis. Grading and/or re-graveling portions of the setback berm would occur following extreme storm events, if damage occurs, or once approximately every 10-15 years.

2.1.3 Tidal Wetlands (Channels, Habitat Ridges and Lagoons)

The Project area west of the setback berm will include a realigned and expanded Centerville Slough along former tidal channels. The re-established Centerville Slough connection to Eel River will increase the tidal prism within the Project Area. The Centerville Slough channel will be approximately four miles in length with an increasing depth and width in the northerly direction which will increase tidal exchange to restored tidal wetlands via dendritic inter-tidal channels. The increased tidal prism would increase sediment transport throughout the system and provide habitat variability and increased complexity, promoting sediment accretion in subsided areas through a network of inter-tidal lagoons and habitat ridges. The lagoons would passively evolve into inter-tidal salt marshes with sediment accretion from the Eel River and Russ Creek over time. The tidal wetland system of channels, ridges and lagoons have been designed in equilibrium with the restored tidal prism.

Debris and/or sediment accumulation within the tidal channels may occur overtime and could reduce tidal circulation within the tidal wetlands. Conversely, scour or erosion of the channels and ridges could also occur and thereby increase tidal prism. Under either scenario, if a change in tidal circulation and/or sediment transport from the original design intent occurs based on visual observations of water levels and vegetation composition, debris removal, and/ or re-contouring of the tidal channels, ridges or lagoons may be needed to achieve the desired function. Sediment placement on tidal wetlands would occur if wetland function would be unimpacted and the purpose of the reuse is to promote habitat restoration and/or sea level rise resiliency for habitat diversity purposes.

2.1.4 Tide Gates, Culverts and Perimeter Drainage Ditches

The Project proposes new culverts through the new set-back berm all equipped with flood gates. The culverts would vary in size and be equipped with side and/or top hinge gates. The gates would prevent tidal and river flood inundation landward and would open when the inboard water levels are higher relative to outboard which would typically occur daily, providing aquatic organism passage and drainage from adjacent agricultural land. Additionally, the six existing tide gates on the Cut-off Slough tide gate structure will be replaced as part of the Project.

The new gated culverts and perimeter drainage ditch on the outboard (east side) of the setback berm would be monitored regularly and following extreme storms to ensure proper functioning. The culvert and ditch elevations will be compared to the elevations on the Record Drawings. If needed, debris and sediment would be removed from culverts and/or ditches consistent with the Drainage Easement and CUA process to maintain the design function. Sediment removed would be reused throughout the Project Area as part of ongoing agricultural operations or placed in subsided tidal lagoons to increase pace of salt marsh accretion. Sediment reuse on wetland areas would only occur if wetland function would be unimpacted and the purpose of the reuse is to promote habitat restoration and/or sea level rise resiliency for habitat diversity purposes.

2.1.5 Russ Creek and Riparian Corridor

Approximately 1,500 linear feet of Russ Creek extending north of the RR&T-TWC property boundary to the new tide gate would be widened and deepened to meet the hydraulic and habitat objectives. A riparian corridor would be established adjacent to the restored Russ Creek channel. If needed, debris and sediment would be removed from the channel. Maintenance activities would also include vegetation management, i.e., selective thinning, flash grazing, invasive removal, and potential re-vegetation consistent with the Project goals. Sediment removed would be reused throughout the Project Area as part of ongoing agricultural operations or placed in subsided tidal lagoons to increase pace of salt marsh accretion. Sediment reuse on wetland areas would only occur if wetland function would be unimpacted and the purpose of the reuse is to promote habitat restoration and/or sea level rise resiliency for habitat diversity purposes.

2.1.6 Back Dune Berms

The Project will include passive and active techniques to prevent further dune loss and migration of existing dunes into Centerville Slough. This would occur through the construction of approximately 8,000 feet of back dune berms to reduce wave over-wash, direct drainage, and capture sand to passively build up the foredune. The functionality of the dunes will be subject to coastal storm surge and transient dune processes. As such, maintaining the dune geometry to the as-built condition may not be feasible. To the extent practical and subject to available funding, the constructed back dunes and sand fencing would be reconfigured as needed and following extreme storm event to minimize future dune breaches and wave over-wash events. Native dune species would be planted along with construction of sand fencing to capture sand to prevent migration inland on an as needed basis following ongoing removal of European beach grass in the back dune creation areas.

2.1.7 Vegetation Management

Vegetation management would include the as needed removal of invasive vegetation and re-planting of native species. Through the Regional Eradication Program, Dense-flowered Cordgrass (Spartina) is currently being treated in the Outer Marsh using top mowing and grinding techniques. Additional removal is anticipated in the Outer Marsh as part of the Project in addition to long-term follow-up treatment/maintenance. The methods utilized to control Dense-flowered cordgrass would utilize series of treatments implemented over time based on seasonality, weather, tides, labor availability, and other factors. Proposed treatment methods would generally be consistent with those outlined in the Humboldt Bay Regional Spartina Eradication Plan (H.T. Harvey and GHD 2013). Vegetation management would occur on an as-needed basis and pending available funding.

3. Monitoring

Given the current Project partnerships and anticipated regulatory requirements, this Plan has defined three types of post-construction monitoring including 1) Regulatory, 2) Performance, and 3) Maintenance. Post-construction regulatory monitoring will be required under Project permits, primarily associated with documentation of wetland re-establishment. Performance monitoring would be conducted by NRCS in accordance with existing statute, regulation, and policy. Data will be collected using the Annual Monitoring Worksheet (form NRCS-CPA-1251) to ensure the proper implementation of planned conservation practices, components, measures, and activities and to evaluate the efficacy of the Project design as a whole or specific subcomponents thereof. Maintenance monitoring would occur to ensure the long-term operation of the Project is successful, consistent with the overall goals of the Project. Each of the three types of monitoring are further described below.

3.1 Regulatory Monitoring

Anticipated regulatory monitoring will be required to ensure wetland creation targets were achieved, consistent with the project permit conditions. Costs for associated with regulatory monitoring would be estimated as part of the construction budget. Regulatory monitoring typically occurs for a period of up to five years post-construction. Regulatory monitoring will focus on the success of the agricultural wetland creation area (approximately 19 acres) on TWC necessary to achieve a no-net loss of wetlands from the new berm footprint. The post-construction regulatory monitoring period will likely be a minimum of five years and will be determined in final permits from jurisdictional resource agencies. Regulatory monitoring would be completed by TWC in collaboration with project partners and grant funders.

3.2 Performance Monitoring

Performance monitoring will be completed annually by NRCS to monitor the condition of easement lands and the Project Area. Performance monitoring is intended to observe, document and track the outcomes of the Project site restoration and its long term stewardship. Monitoring results will be used to inform Project performance and efficacy. Performance monitoring activities will include onsite monitoring and review of conservation planning documents, and the following activities:

- Annual verification of legal ownership of the easement lands within the Project Area. Allowable verification methods include but are not limited to onsite visits, phone calls, emails, letters, or by obtaining a copy of a public record for an ownership change.
- Annual review of Stewardship Lands Imagery (SLI). SLI is defined as direct digital, high-resolution, 15cm spatial resolution ground sample distance, 4 band data that is acquired by NRCS yearly to detect qualitative changes in hydrology, vegetation, and to detect unauthorized uses such as grading, encroachment, roads, structures, parked equipment, dumping, or other unauthorized uses.
- Annual onsite monitoring requiring the review of Project planning and other conservation documents (e.g., conservation easement deed, restoration and management plans, compatible use authorizations, or other long-term agreements), an inspection of the most recent SLI (as outlined above) of the property, contact with the current landowner, and an onsite inspection. NRCS will notify the landowner prior to the onsite inspection of the easement area and provide the landowner an opportunity to participate.
- Review the prior year Annual Monitoring Worksheet, conservation assistance notes, and correspondence since the last monitoring event.
- Obtain information and input from other NRCS staff or partners that have been on the Project site or in contact with the landowner since the last monitoring event.

When completing onsite monitoring, NRCS will:

- Walk the entire easement perimeter to check for boundary issues, such as encroachments or trespassing.
- Verify boundary signage. Note if signs are missing or need replacing.

- Walk the interior of the easement property, focusing on visually assessing habitat types, restoration infrastructure, or other areas of concern or interest.
- Determine if installed conservation practices are being properly operated and maintained (e.g., in accordance with NRCS job sheets, O & M plans, implementation requirements, etc.). Inspect all conservation practices, such as water control structures or other restoration infrastructure to determine if management, repairs, or replacement are needed.
- Determine if planned restoration objectives are being met through a visual assessment, including if:
    - Acceptable hydrology is present.
    - Acceptable vegetation is present.
    - Threatened or endangered species are present, proximal to the site, or if suitable habitat exists. Identify if habitat elements are being provided for these species to the extent possible.
    - Noxious plant or pest species problems exist that need to be addressed.
    - Habitat enhancements, management, or maintenance activities are necessary to improve the Project site and ensure its successful restoration and stewardship.
- Determine if the objectives of conservation planning documents for the Project are being met (e.g., restoration plans, management and grazing plans, compatible use authorizations, etc.).
- Determine if easement maintenance activities are required by NRCS.
- Determine if easement maintenance activities are required by the landowner.
- Confirm compliance with any existing compatible use authorization or other long-term agreements, as applicable.
- Review easement, restoration, and landowner objectives to determine if other compatible use agreements or long-term agreements, as applicable, are needed to meet management objectives.
- Ensure all fencing within or directly adjacent to the easement is operable and wildlife friendly.
- Document findings through photo monitoring and GPS locations of monitoring items included on the Annual Monitoring Worksheet.

3.3 Maintenance Monitoring

Maintenance monitoring will assess change in the above-described Project components and will be used to inform the timing and extent of maintenance actions. Maintenance monitoring will be completed by NRCS as part of its annual monitoring and site inspection. Maintenance monitoring by the landowners is considered voluntary and will be completed by the property owners or their designated agents on a minimum frequency of once per year and/or following major storm events. Although voluntary, it is fully expected that the landowners will take an active role in maintenance monitoring as part of their ongoing land stewardship and to protect their interest in the integrity and success of the Project. Maintenance monitoring is intended to support decision making and justification to conduct maintenance actions. The monitoring and maintenance activities defined in this Plan would commence upon completion of Project construction and would continue for a minimum project life, typically 20-25 years, or as required by the NRCS WRE program and drainage easement. Described below are the proposed maintenance monitoring methods and frequencies with corresponding maintenance triggers and actions.

4. Maintenance Monitoring, Triggers and Actions

This section defines the maintenance monitoring (type and frequency), triggers, and corresponding actions that support achievement of the Project goals. The maintenance monitoring is focused primarily on visual observations to assess and document physically observable trends. Some observations may result in need to increase monitoring frequency, while others may result in the need to take action. This will be determined through the evaluation of visual triggers. Maintenance triggers define the specific point or a range of values where monitoring data indicate that the Project may be developing along an unexpected or unfavorable trajectory and where maintenance actions are necessary to ensure that the Project goals are achieved.

Once a maintenance trigger is activated, there are a range of possible maintenance options. For example, 1) it may be determined that no maintenance action is indicated or that additional (or modified) monitoring may be required to make a decision on whether or not maintenance action is required, 2) monitoring results indicate that a maintenance action is required, or 3) careful consideration of monitoring results (likely over several years) indicate that the original goal was unrealistic or unattainable and that the goal may need to be modified. In the case of the latter this is considered a last resort and would require careful consideration and consensus by the property owners, NRCS, HCRCD, and parties to the drainage easement.

Once maintenance needs are identified, potential actions identified in Table 1 will be implemented. Parameters required for potential maintenance actions are included in Appendix A (Table A-1) and include location, work window, work duration, anticipated frequency, equipment and methods to be used, quantities and materials, and impact avoidance measures. Impact avoidance measures are consistent with mitigation measures included in the CEQA Environmental Impact Report (EIR) prepared for the Project and anticipated regulatory requirements under the Project's permits.

Potential maintenance actions listed in Table 1 are not intended to be an exhaustive list. Rather, they represent a likely range of options given the current knowledge of the system and anticipated maintenance actions. Actual actions may deviate from this list given unforeseen monitoring results and/or site performance. Additionally, the details on the timing and degree of each of these actions are equally dependent upon the monitoring results. Final decisions of a course of action will be made annually with the property owners and parties to the drainage easement. If the proposed actions are not defined in this Plan, consultation with the regulatory agencies and NRCS to ensure compliance with existing permits is recommended.

Table 1 Summary of Potential Maintenance Actions Resulting from Maintenance Monitoring

Project Component	Monitoring Method & Frequency	Maintenance Trigger	Potential Maintenance Actions [1] (Subject to NRCS Easement and Drainage Easement)
Setback Berm	Visual inspection annually and following extreme events to observe evidence of obvious flooding, erosion, settling or cracking to ensure that erosion from any flooding or wind generated waves are not compromising berm stability	Evidence of berm erosion, cracking, slumping, or animal borrowing holes. Woody vegetation establishment	Repair eroded sections and employ erosion control measures (protecting bare soil, stabilizing banks, dissipating concentrated flows) Raise or lower height of berms Maintain or repair access ramps and road surface atop berm Mow, graze or remove woody / weedy vegetation
Tidal Wetlands (Channels, Habitat Ridges, Lagoons)	Visual inspection annually and following extreme events supplemented as needed with topo/bathy survey cross-sections and longitudinal profiles to observe change in channel geometry, marsh plain elevation, tidal ridge geometry and vegetation cover	Channel geometry has been reduced or enlarged compared to as-built conditions Erosion of tidal ridge Increase or decrease in tidal circulation relative to design conditions Vegetation composition varies from analogous estuarine habitats	Follow up assessment of rates/causes of erosion or sedimentation, evaluation of effects relating to structure and function of tidal wetland Remove sediment / debris jams Apply erosion control fabrics, coconut fiber rolls, or other BMPs to redirect or reduce the energy of flows over erosion area. Regrade tidal channels, ridges and lagoons to improve tidal wetland function
Tide Gates, Culverts and Perimeter Drainage Ditch	Visual inspection annually and following extreme events to observe evidence of obvious changes compromising function from design intent or as-built conditions	Culverts and drainage ditches are plugged, damaged or are not conveying flow as designed	Remove debris / sediment in drainage ditch to as-built conditions Excavate plugged culverts, or replace or enlarge culverts as needed Replace or repair damaged tide gates / structures Implement site specific erosion control BMPs to protect culvert functions while minimizing channel and wetland habitat benefits
Russ Creek and Riparian Corridor	Visual inspection annually and following extreme events supplemented as needed with topographic cross-sections and longitudinal profiles to observe change in channel geometry, vegetation cover relative to as-built conditions	Reduction in channel capacity, or observed sedimentation relative to as-built conditions Streambank erosion Vegetation hinders sediment transport capability or hydraulic conveyance	Assess channel geometry for adequate slope, cross-sectional area for maintaining channel conditions Selected sediment removal from channel to achieve desired / design conditions Implement site specific erosion control BMPs to repair eroded sections and employ erosion control measures Thin or remove vegetation

Project Component	Monitoring Method & Frequency	Maintenance Trigger	Potential Maintenance Actions [1] (Subject to NRCS Easement and Drainage Easement)
Back Dune Berms	Visual inspection annually and following extreme events to observe change in dune geometry, vegetation cover and sand fence conditions relative to as-built conditions	Dune fencing buried / damaged Dune is flattened or breached Native dune plants fail to establish	Install additional sand fence to replace existing or increase height of dune Replant native dune plants for sand trapping and habitat benefit Evaluate goals and need. If dune rebuilding is still needed, rebuild dune before overwash area becomes attractive Snowy Plover habitat. Reconstruct dune using mechanical means
Vegetation Management	Visual observations of vegetation composition relative to past year and trends	Invasive vegetation dominates restoration area and spread threatens critical native habitat	Continue monitoring Weed management/and or invasive species control Continued/increased frequency of monitoring until infestation is under control Replant with desired vegetation
[1] – See Table A-1 for specific maintenance actions and corresponding impact avoidance measures			

4.1 Emergency Repairs

Unique circumstances may arise that require emergency maintenance actions. The threshold for determining if these actions should occur includes these questions:

- Does the delay threaten human life or safety?
- Does the delay threaten property or risk other imminent liabilities?
- Would the delay trigger endangered species or other environmental enforcement actions?
- Emergency actions are also those actions that meet the CEQA definition of emergency:

  Section 21060.3. EMERGENCY

  "Emergency" means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. "Emergency" includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage.

CEQA Emergency Project Exemptions (Section 15269)

The following emergency projects are exempt from the requirements of CEQA.

a) *Projects to maintain, repair, restore, demolish, or replace property or facilities damaged or destroyed as a result of a disaster in a disaster-stricken area in which a state of emergency has been proclaimed by the Governor pursuant to the California Emergency Services Act, commencing with Section 8550 of the Government Code. This includes projects that will remove, destroy, or significantly alter an historical resource when that resource represents an imminent threat to the public of bodily harm or of damage to adjacent property or when the project has received a determination by the State Office of Historic Preservation pursuant to Section 5028(b) of Public Resources Code*

b) *Emergency repairs to publicly or privately owned service facilities necessary to maintain service essential to the public health, safety or welfare.*

c) *Specific actions necessary to prevent or mitigate an emergency. This does not include long-term projects undertaken for the purpose of preventing or mitigating a situation that has a low probability of occurrence in the short-term but this exclusion does not apply (i) if the anticipated period of time to conduct an environmental review of such a long-term project would create a risk to public health, safety or welfare, or (ii) if activities (such as fire or catastrophic risk mitigation or modifications to improve facility integrity) are proposed for existing facilities in response to an emergency at a similar existing facility.*

d) *Projects undertaken, carried out, or approved by a public agency to maintain, repair, or restore an existing highway damaged by fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide, provided that the project is within the existing right of way of that highway and is initiated within one year of the damage occurring. This exemption does not apply to highways designated as official state scenic highways, nor any project undertaken, carried out, or approved by a public agency to expand or widen a highway damaged by fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide.*

e) *Seismic work on highways and bridges pursuant to Section 180.2 of the Streets and Highways Code, Section 180 et Seq.*

The U.S. Army Corps of Engineers (USACE), which has jurisdiction within the channel, defines an emergency separately from CEQA and states:

An emergency situation is present where there is a clear, sudden, unexpected, and imminent threat to life or property demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property or essential public services (i.e., a situation that could potentially result in an unacceptable hazard to life or a significant loss of property if corrective action requiring a permit is not undertaken immediately).

Emergency actions / repairs shall be implemented on an as-needed basis using the best judgement of the property owners. If repair of maintenance activities are needed in response to an emergency or to avoid an emergency, regulatory agencies should be contacted as soon possible for emergency permit authorization steps.

5. Reporting and Documentation

Reporting and documentation for each of the three types of post-construction monitoring is summarized below.

5.1.1 Regulatory

As described above, monitoring of the agricultural wetland creation area on TWC is anticipated. Documentation will include methods and a summary of results submitted to the regulatory agencies for a minimum of 5 years.

5.1.2 Performance

Outcomes from performance monitoring will be documented by NRCS in accordance to the Annual Monitoring Worksheet (form NRCS-CPA-1251). Reporting associated with performance monitoring will be shared with property owners and any other party identified in the specific funding agreement, if any.

5.1.3 Maintenance

Maintenance monitoring and associated maintenance actions would be documented by the property owners or their agents by December 31 of each year. If maintenance activities are performed, documentation will include pre- and post-maintenance photographs with captions, identify the location(s) of maintenance actions, and describe the maintenance action taken, referencing potential maintenance actions included in Appendix A, Table A-1. Reporting will include documentation of conformity with criteria in Appendix A, Table A-1, including work window, work duration, description of equipment and methods, materials used, and avoidance measures implemented. Documentation of maintenance and associated maintenance actions will be retained by property owners for record keeping and shared with jurisdictional agencies to the extent required under Project permits.

Appendices

Appendix A

Potential Maintenance Actions and Impact Avoidance Measures

Table A-1 Potential Maintenance Actions and Impact Avoidance Measures

	POTENTIAL MAINTENANCE ACTIONS[1]	LOCATION	WORK WINDOW[2]	WORK DURATION	ANTICIPATED FREQUENCY[4]	DESCRIPTION OF EQUIPMENT / METHODS	DESCRIPTION OF QUANTITIES[3] / MATERIAL	IMPACT AVOIDANCE MEASURE[5] AND BEST MANAGEMENT PRACTICES[6]
1	Implement site specific erosion control BMPs such as soil bioengineering and vegetative revetments	Project-wide	June 1 – October 15	0-120 days	Frequent	Heavy equipment and hand crews	0-10 Acres of Erosion Control BMPs using vegetation, soil bioengineering	FEIR MMRP BMP: a, b, k
2	Repair eroded sections and employ erosion control measures (protecting bare soil, stabilizing banks, armoring, geotechnical bank protection, dissipating concentrated flows)	Project-wide	June 1- October 15	0-120 days	Moderate	Heavy equipment and hand crews	0-1,000 CY of Rock Fill 0-10,000 CY of Grading/Excavation	FEIR MMRP BMP: k, l
3	Remove obstructions if deemed necessary to maintain habitat and hydrologic function	Project-wide	June 1 – October 15	0-60 days	Frequent	Heavy equipment and hand crews	0-50 obstructions including debris jams, drift wood, sediment plugs (0-10,000 CY)	FEIR MMRP BMP: c, d, k
4	Sediment excavation to improve channel function	In channel, Project-wide	June 1 – October 15	0-120 days	Moderate	Heavy equipment for excavation	0-25,000 CY of Sediment and 2,000 LF of sediment Removal	FEIR MMRP BMP: d, f, k
5	Additional berm / tidal ridge breaches and/or lowering	Project-wide	June 1 – October 15	0-60 days	Infrequent	Heavy equipment for grading and excavation	0-5,000 CY of Excavation	FEIR MMRP BMP: k
6	Fill subsided lagoons to elevate tidal wetlands	Tidal Wetlands	June 1 – October 15	0-120 days	Infrequent	Heavy equipment for grading	0-100,000 CY of Sediment	FEIR MMRP BMP: d, f, g, k
7	Excavate plugged culverts and conduct maintenance on tide gates Replace or enlarge culverts and tides gates as needed	Within 100 feet of existing culverts	June 1 – October 15	0-30 days	Moderate	Heavy equipment and hand crews	0-10 Culverts 0-1,000 CY Excavation/Grading/Crossing 0-500 CY Rock Fill/Crossing	FEIR MMRP BMP: d, f, g, k
8	Excavation of tidal channels and/or re-fill or plugged drainage ditches to improve hydrologic connectivity	Project-wide	June 1- October 15	0-90 days	Infrequent	Heavy equipment and hand crews	0-5,000 LF of tidal channels/ditches 0-10,000 LF of berm outboard ditch	FEIR MMRP BMP: d, g, k
9	Raise height of berms without expanding footprint and/or filling wetlands	Existing berm locations only	June 1- October 15	0-120 days	Infrequent	Heavy equipment for grading	0-9,000 LF of Berm	FEIR MMRP BMP: k, l
10	Maintain or repair (as-built) access ramps, access roads and road atop berms	Existing berm locations and other access road ramps	June 1- October 15	0-60 days	Moderate	Heavy equipment for grading and repairs	0-1,000 CY of Road Base 0-1,000 CY of Grading	FEIR MMRP BMP: d, k, l
11	Provide additional revegetation with native plants	Project-wide	Year-round	0-60 days	Moderate	Hand tools and possibly small augering devices/light equipment	0-1,000 plants	FEIR MMRP BMP: k
12	Apply/place excavated sediment on Agricultural Lands	Agricultural Lands	April 1- Nov. 30	0-120 days	Moderate	Heavy/farm equipment	0-100,000 CY of Sediment	BMP: d
13	Raise/Re-configure back dunes	Over-wash areas	Year round with exception of active nesting season	0-30 days	Moderate	Heavy equipment and hand crews	0-10 Acres	FEIR MMRP BMP: m, n
14	Install Sand Fencing	Over-wash areas	Year round with exception of active nesting season	0-30 days	Moderate	Heavy equipment and hand crews	0-10 Acres	FEIR MMRP BMP: m, n
15	Mow, trim, thin or remove vegetation and/or invasive vegetation as necessary to maintain function per project design plans	For maintenance access and maintenance of Russ Creek channel	Year-round, with the exception of the bird breeding and nesting season between 1 March and 1 July.	0-120 days	Frequent	Herbicides, flash grazing, hand pruning tools and possibly chainsaws and brush cutter/mowing or other light equipment	0-10 Acres Trees no larger than 6” dbh	FEIR MMRP BMP: c, I, k, m
		Removal of non-native species Project-Wide	Year-round	0-120 days	Frequent		0-500 Acres	

[1] Potential Maintenance Actions subject to NRCS Easement and consistency with drainage easement.
[2] Work window subject the agency requirements and expanded if necessary for "Emergency" conditions.
[3] Quantities given and a maximum, not-to-exceed value for any given year. Quantities beyond what is specified here would require additional regulatory review/approval.
[4] Anticipated Frequency categories include: Frequent (every 1-2 years), Moderate (every 2-5 years), Infrequent (every 5-15 years), and Rare (15+ years, or not at all)
[5] See FEIR MMRP
[6] BMP Notes
a - Utilize onsite native soil to the extent practical
b – Design techniques and standards shall be similar to those in project plans
c – Chip debris and utilize for onsite mulch to the extent practical
d - Dispose in uplands
e – Under the direction of a qualified biologist
f – Avoid removal of mature (>10 year) riparian vegetation
g – Avoid permanent placement of fill in wetlands
h – Removal of vegetation will be limited to excavation areas
i - Per local invasive removal plans (e.g. Spartina Eradication Plan)
j – Shall not block public access
k – Conduct pre-construction surveys performed by a qualified biologist
l - Upon completion of ground disturbance activities and prior to the onset of the rainy season, all bare soil areas shall be seeded in compliance with native seed mix.
m- Survey results must indicate that no nesting habitat for any bird species is present in the area
n – Pre-construction rare plant surveys shall be conducted in suitable rare plant habitat

Appendix E

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

Humboldt County Resource Conservation District (HCRCD) - Russ Creek and Centerville Slough Restoration Project

SCH No. 2022040559

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Aesthetics			
N/A			
Agriculture and Forestry Resources			
N/A			
Air Quality			
Mitigation Measure AQ-1: Dust Control Measures During Construction The contractor shall implement the following BMPs during construction; the BMPs shall be included as notes on final construction plans: – All exposed surfaces (e.g., parking areas, staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered in areas of active construction or as necessary in conjecture with other dust suppression methods (such as gravel application) to appropriately control dust. The County or NCUAQMD may require additional treatment in periods of high wind or other circumstances causing visible dust to be generated by the construction site. – All vehicle speeds on unpaved roads shall be limited to 15 mph, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures. – All haul trucks transporting soil, sand, or other loose material off-site on public roads shall clean all side boards and headboards of material and be adequately wetted and covered. – Use of mud rumbler mats will be required to reduce off-site tracking of mud and dirt. All visible mud or dirt track-out onto adjacent paved public roads shall be removed using wet power vacuum street sweepers at least once per day, as necessary. The use of dry power sweeping is prohibited. – All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.	HCRCD and HCRCD's contractor	Reporting actions – Verify requirements are included in final plans and specifications Schedule – Pre and during construction, check jobsite compliance as necessary	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
– Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage shall be provided for construction workers at all access points. – All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. – Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The NCUAQMD's phone number shall also be visible to ensure compliance with applicable regulations.			
Biological Resources			
Mitigation Measure BIO-1: Avoidance, Minimization, and Mitigation for Tidewater Goby To mitigate for direct and indirect impacts on Tidewater Goby, the following avoidance and minimization measures will be incorporated into the Project: – Construction activities will be phased and conducted in a sequence that minimizes impacts to Tidewater Goby. Construction also will be limited to dry-season work windows (June 15 through October 15) to reduce the amount of goby habitat affected and minimize the impact on water quality. Although dry-season work windows may coincide with spawning and larval development, the footprint of available Goby habitat may be smaller because summer conditions typically are drier, reducing the area in which Tidewater Goby may be present. In addition, conducting work during the dry season will minimize the impact on water quality from sediment generated by construction activities and from spills that could occur during construction and maintenance of the Project (e.g., oil, fuel, hydraulic fluid). – Phase Project construction so Tidewater Goby can be relocated to sites in the Project Area but away from areas targeted for restoration. During excavation, Tidewater Goby may be crushed by equipment or debris or may be removed from channels or marshes unintentionally by equipment. Mortality can be minimized by capturing and relocating Tidewater Goby out of construction areas. Relocating Tidewater Goby from areas targeted for restoration to habitat outside of the immediate restoration area before construction begins is intended to protect individual fish; however, improper capture and handling may result in injury or mortality. In addition, Tidewater Goby that need to be relocated should be taken to areas that have suitable habitat (e.g., where Tidewater Goby are known to thrive). Therefore, the capture and handling of Tidewater Goby will be conducted by qualified biologists, and suitable habitats for relocation will be identified before construction begins. – Where dewatering needs to occur, all pump intakes will be screened with 1.6 mm (1/16 inch) screen, and only qualified biologists will conduct Goby rescue during dewatering.	HCRCD and HCRCD's biologist and contractor	Reporting actions –Verify completion and documentation of fish relocation, if necessary; verify protection measures are implemented Schedule – During construction	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Mitigation Measure BIO-2: Conduct Pre-construction Avian Surveys for Nesting Passerine Birds and Avian Species of Special Concern To mitigate for direct and indirect impacts on nesting birds, the following avoidance and minimization measures will be incorporated into the Project: Clearing of shrubs or other vegetation, if necessary for construction or maintenance, shall be conducted during the fall and/or winter months from August 16 to March 14, outside of the active nesting season for migratory bird species (i.e., March 15 to August 15) if feasible. No trees will be removed for this Project. If vegetation removal or ground disturbance cannot be confined to the non-breeding season, the applicant shall have a qualified biologist conduct preconstruction surveys within the impact area for ground disturbance, vegetation removal and/or maintenance activities, to check for nesting activity of migratory, raptors, and special-status bird species. The biologist shall conduct the preconstruction surveys within the 7-day period prior to vegetation removal and ground-disturbing activities. If ground disturbance and vegetation removal work lapses for 15 days or longer during the breeding season, a qualified biologist shall conduct a supplemental avian preconstruction survey before Project work may be reinitiated. If active nests are detected within the construction or maintenance (operation) footprint or within 500 feet of construction activities, the applicant shall flag the buffers that are supporting breeding and will not begin ground disturbing work or vegetation removal inside the buffers until the nests have fledged. Construction activities shall avoid nest sites until the biologist determines that the young have fledged, or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented if deemed appropriate in coordination with CDFW. In general, the buffer for common species would be a minimum of three feet, the buffer for sensitive species would be 300 feet, and the buffer for raptors would be 500 feet.	HCRCD and HCRCD's biologist and contractor	Reporting actions – Verify completion and documentation of surveys; verify disturbance buffers and protection measures are implemented Schedule – Pre-construction and during construction if needed	
Mitigation Measure BIO-3: Avoid, Minimize, and Mitigate for Potential Impacts to Western Snowy Plover To mitigate for direct and indirect impacts on Snowy Plover, the following avoidance and minimization measures will be incorporated into the Project: Construction and maintenance activities associated with the construction of Back Dune Berms would be conducted between September 1 and March 1, outside of the plover nesting season. The area of impact, defined as permanent or semi-permanent change in elevation or conversion to > 30 percent vegetation cover, would also occur outside of USFWS-designated critical habitat for Snowy Plover. This would result in no net loss nor temporal loss of suitable Western Snowy Plover breeding habitat.	HCRCD and HCRCD's biologist and contractor	Reporting actions – Verify that protection and avoidance measures are in final specifications; verify protection measures are implemented Schedule – Pre-construction and during construction if needed	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Mitigation Measure BIO-4: Mitigate for Potential Impacts to Northern Red-legged Frog and Western Pond Turtle Although direct impacts to Northern Red-legged Frog breeding habitat are not anticipated because the duckponds will remain in freshwater conditions, measures for this species are included because individual frogs may disperse for considerable distances and could enter construction areas. A qualified biologist will perform a pre-construction survey for the Northern Red-legged Frog, and Western Pond Turtle within seven days prior to commencement of ground disturbance. The survey shall be limited to within 50 feet of suitable habitat within the Project footprint. Suitable habitat would be determined by the qualified biologist. The qualified biologist would inspect any work areas containing fresh surface water (not including puddles resulting from rainfall) to ensure tadpoles or frogs are not present. If they are present, the qualified biologist would implement a rescue and relocation operation to move any tadpoles or frogs to a safe location in nearby suitable habitat. In the event that a Northern Red-legged Frog or Western Pond Turtle is observed in an active construction zone, the contractor shall halt construction activities in the area and the frog and/or turtle shall be moved to a safe location in similar habitat outside of the construction zone. Construction within areas of standing fresh water shall be limited to the period of the year between July 1 and October 30 to avoid disturbance to breeding frogs unless a qualified biologist evaluates the areas of standing water and determines they are not suitable habitat, or the absence of eggs and tadpoles is confirmed.	HCRCD and HCRCD's biologist and contractor	Reporting actions – Completion and documentation of surveys, if necessary; verify protection measures are implemented Schedule – Pre-construction and during construction	
Mitigation Measure BIO-5: Mitigate for Potential Impacts to Salmonid Species To mitigate for direct and indirect impacts on salmonid species, the following avoidance and minimization measures will be incorporated into the Project: The in-water construction and maintenance work window will be limited to June 15th through October 15th to avoid or minimize impacts to juvenile salmonids. Before potential de-watering activities begin in creeks or channels within the Project Area, the qualified Biologist shall ensure that native aquatic vertebrates and larger invertebrates, if feasible, are relocated out of the construction footprint into a flowing channel segment by a qualified fisheries biologist. In deeper or larger areas, water levels shall first be lowered to manageable levels using methods to ensure no impacts to fisheries and other special status aquatic species. A qualified fisheries biologist or aquatic ecologist shall then perform appropriate seining or other trapping procedures to a point at which the biologist is assured that almost all individuals within the construction area have been caught. These individuals shall be kept in buckets with aerators to ensure survival. They shall then be relocated to an appropriate flowing channel segment or other appropriate habitat	HCRCD and HCRCD's biologist and contractor	Reporting actions –Verify completion and documentation of fish relocation, if necessary; verify protection measures are implemented Schedule – During construction	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
as identified by the qualified Biologist in consultation with NOAA Fisheries and CDFW. Federally threatened salmonid species that occur within the Project Area include natal or non-natal Coho Salmon, Steelhead, and Chinook Salmon.			
Mitigation Measure BIO-6: Mitigate Impacts to Sensitive-Listed Plant Species The following mitigation is addressed collectively for all special status plant species. Significant impacts to special-status plant species present or likely to be present in the Project Area shall be avoided or minimized by complying with the following requirements for all special status plant species: – Pre-construction and maintenance surveys: Potential habitat for special-status plant species shall be surveyed in appropriate seasons prior to temporary road construction, excavation/dredging, fill, drainage, or flooding activities associated with Project construction and maintenance. Surveys shall be performed by a qualified field botanist. Populations shall be mapped and flagged if the population is located adjacent to or within construction areas and avoidance is feasible. – The locations of any special status plant populations to be avoided shall be clearly identified in the contract documents (plans and specifications).	HCRCD and HCRCD's biologist and contractor	Reporting actions – Completion and documentation of surveys, verify requirements are in final specifications; verify applicable mitigation and monitoring is implemented Schedule – Pre-construction, during construction, and post-construction	
Mitigation Measure BIO-7: Mitigate Impacts to Beach Layia The following measures shall be implemented to mitigate impacts to the federally listed beach layia during construction and operation/ongoing maintenance of the Project, primarily associated with the temporary haul route to be placed between the back dune and the Outer Marsh. – A pre-construction survey shall be conducted between March 1 and July 31, prior to the beginning of ground disturbing work to verify the extent of known beach layia occurrences and to identify new occurrences in the area of the proposed temporary haul route. The route shall be placed a minimum of 10 feet from any beach layia occurrences to the extent feasible. At the beginning of construction, flagging or exclusion fencing shall be installed around all known occurrences of beach layia within 20 feet of construction limits. Locations of fencing shall be identified and flagged by a qualified biologist and installed while the biologist is present. The fencing shall be inspected weekly for the duration of construction to ensure that the fencing remains installed properly. Direct impacts to beach layia shall be avoided. – If any new or existing occurrences of beach layia cannot be avoided by the placement of the temporary haul route, then mitigation will be employed that includes one or more of the following mechanisms: seed collection from the Project Area and/or nearby known occurrences so that seeds can be dispersed into the area of the temporary haul route post-construction or replacement plants can be grown out at a nursery and replaced at a stable portion of the Project Area (2:1 planting ratio), plant relocation, and/or preparation	HCRCD and HCRCD's biologist and contractor	Reporting actions – Completion and documentation of surveys; verify requirements are in final specifications; verify mitigation and monitoring is implemented Schedule – Pre-construction, during construction, and post-construction	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
of a sensitive species management plan (SSMP) that provides further details about the above options in cooperation with USFWS as to which mechanism(s) are preferred option(s) at the time of impact. The triggering mechanism for seed banking would be if this plant species is identified within the footprint of the proposed temporary haul route and cannot be avoided. If an SSMP is deemed appropriate by jurisdictional agencies, the report would lay out specific timing and details of seed collection, mitigation site identification (within the Project Area), substrate preparation, monitoring and maintenance. If replanting is employed, a 2:1 planting ratio includes built in overplanting in order to meet success criteria and no net loss.			
Mitigation Measure BIO-8: Mitigate Impacts to Sensitive Listed Habitats Through Avoidance and Re-establishment Intact Dune Mat vegetation will be protected during construction primarily by pre-construction surveys and avoidance. A qualified biologist will survey sandy habitats in and around ground disturbance and staging areas for intact Dune Mat vegetation. Dune Mat vegetation will be flagged and avoided by all vehicles and personnel. If high quality Dune Mat cannot be avoided, it will be mitigated at a ratio of no less than 1:1 in a suitable location.	HCRCD and HCRCD's biologist and contractor	Reporting actions – Completion and documentation of surveys Schedule – Pre-construction	
Mitigation Measure BIO-9: Mitigate Impacts to Sensitive Listed Habitats Through Control of Invasive Species In order to reduce the likelihood of dense-flowered cordgrass (Spartina) colonizing restored tidal marsh, existing populations in and adjacent to (north of the tide gates) the Project footprint shall be controlled prior to construction using manual, mechanical, and/or approved chemical methods, and in compliance with appropriate methods analyzed and disclosed in the Regional Invasive Spartina Management Plan and the associated EIR (HTH 2013b). During the operation period of the Project, removal of cordgrass would be conducted under the authority of the Regional Invasive Spartina Management Plan and the associated PEIR. All vehicles and equipment would be required to be cleaned and weed-free before entering the Project Area.	HCRCD and HCRCD's biologist and contractor	Reporting actions – Verify requirements are in final specifications Schedule – During construction	
Mitigation Measure BIO-10: Mitigate Temporary and Short-term Impacts to Wetlands Through Construction Minimization and Avoidance Measures – At least 0.85 acre of uplands will be seeded with hydrophytic vegetation (FAC, FACW, OBL ratings according to the WMVC wetland plant list) to create one-parameter wetlands in the Project Area. Up to 0.41 acre will be seeded around the margin of the upland pasture and up to 0.44 acre will be seeded on the east side of the new levee (Figure 3.4-5). Straw mulch will be placed on seeded areas.	HCRCD and HCRCD's biologist and contractor	Reporting actions – Verify requirements are in final specifications; verify completion and documentation of training; verify applicable compensatory mitigation is	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
– The locations of sensitive habitats including wetlands to be avoided shall be clearly identified in the contract documents (plans and specifications). – Before clearing and grubbing commences, disturbance areas shall be flagged to clearly define the limits of the work area. These areas shall be clearly identified on the contract documents (plans and specifications). – Selected contractors shall sign a document stating that they have read, understand, and agree to the required resource avoidance measures, and shall have construction/maintenance crews participate in a training session on sensitive resources. – A qualified biologist shall be on-site to observe activities, as appropriate, when construction or maintenance in or adjacent to sensitive habitat including wetlands occurs. Site disturbance shall be minimized to the greatest extent feasible by using existing disturbed areas for access roads and staging areas and concentrating the area of disturbance associated with restoration actions within the minimum space(s) necessary to complete the Project. Where feasible, temporary measures for access or construction, such as the use of temporary tracks or pads, shall be used to minimize impacts. Revegetation activities shall take place at seasonally appropriate times based on habitat types, and as soon as feasible following habitat disturbance, to restore disturbed areas to pre-Project conditions or better.		implemented; check jobsite compliance as necessary Schedule – Pre-construction, during construction, and post-construction	
Cultural Resources			
Mitigation Measure CR-1: Protocols for Inadvertent Discovery of Cultural Resources If cultural or historic-era resources (for example: chipped or ground stone, historic debris, building foundations, or bone) are encountered during construction activities, work shall be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (Title 14 CCR 15064.5 (f)). Project representatives shall be immediately notified and work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendations for further action. The qualified archaeologist shall evaluate the discovery and, in consultation with the landowner and lead agency, develop a plan for treatment of the resources that is deemed appropriate and feasible. Such treatment may include avoidance, curation, documentation, excavation, preservation in place, or other appropriate measures. If the archaeological resources are Native American, representatives of the appropriate culturally affiliated tribe shall also be enlisted to help evaluate the find and suggest appropriate treatment.	HCRCD and HCRCD's archaeologist and contractor	Reporting actions – Verify requirements are in final specifications; documentation of inadvertent discoveries, if any Schedule – During construction	
Mitigation Measure CR-2: Protocols for Inadvertent Discovery of Human Remains If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected	HCRCD and HCRCD's archaeologist and contractor	Reporting actions – Verify inclusion of language in final plans and specifications;	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
to overlie adjacent to human remains (Public Resources Code, Section 7050.5). Project representatives shall be immediately notified. The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.		documentation of inadvertent discoveries, if any Schedule – Pre and during construction	
Energy			
N/A			
Geology and Soils			
Mitigation Measure GEO-1: Implement Recommendations in the Geotechnical Report The Humboldt County Resource Conservation District shall ensure that the Project is designed to comply with the recommendations in the Project's geotechnical report (LACO 2022) to ensure seismic stability, implementation of recommendation specific to grading and excavation, erosion control protections, and adherence to the California Building Code (CBC). The geotechnical recommendations are proposed to be incorporated in the final plans and specifications and implemented during construction. Professional inspection by a qualified engineer or geologist of foundation and excavation, earthwork and other geotechnical aspects of site development shall be performed during construction in accordance with the current version of the CBC.	HCRCD and Engineer of Record	Reporting actions – Verify requirements are included in final plans and specifications Schedule – Pre-construction	
Mitigation Measure Spartina PEIR WQ-6: Designate Ingress/Egress Routes Temporary ground disturbance associated with site ingress/egress, staging, stockpiling, and equipment storage areas could occur in areas outside and adjoining work areas. Where areas adjacent to staging and stockpile areas are erosion prone, the extent of staging and stockpile shall be minimized by flagging their boundaries. An erosion/sediment control plan shall be developed for erosion prone areas outside the work area where greater than 0.25 acre (0.1 hectare) of ground disturbance may occur as a result of ingress/egress, access roads, staging and stockpile areas. The erosion/sediment control plan shall be developed by a qualified professional and identify BMPs for controlling soil erosion and discharge for Project-related contaminants. The erosion/sediment control plan shall be prepared prior to any ground disturbing activities	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Develop erosion and sediment control plan; check jobsite compliance as necessary Schedule – Pre and during construction	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
and implemented during construction (H.T. Harvey & Associates and GHD 2013, page 128).			
Mitigation Measure GEO-2: Protect Paleontological Resources during Construction Activities If fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities within 50 feet (15 meters) of the find shall be stopped. The HCRCD and property owners shall be immediately notified, and a professional paleontologist shall be retained to evaluate the potential resource, assess the nature and importance of the find, and document the discovery as needed. Based on the scientific value or uniqueness of the find, the HCRCD may allow work to continue after the paleontologist has recorded the find or may recommend salvage and recovery of the material if it is determined that the find should, but cannot, be avoided. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices. The HCRCD will work with a qualified paleontologist to determine the appropriate final disposition for any fossils found onsite. The final disposition of any paleontological resources recovered on state lands under the jurisdiction of the State Lands Commission must be approved by the State Lands Commission.	HCRCD and HCRCD's construction contractor	Reporting actions – Document inadvertent discovery, if any, and notify State Lands Commission as needed Schedule – During construction	
Greenhouse Gas Emissions			
N/A			
Hazards and Hazardous Materials			
Mitigation Measure Spartina PEIR HHM-1: Worker Injury from Accidents Associated with Use of Manual and Mechanical Equipment A health and safety plan shall be developed to identify and educate workers engaged in activities that involve heavy equipment associated with construction or invasive plant management activities under the Project. Appropriate safety procedures and equipment, including hearing, eye, hand and foot protection, and proper attire, shall be used by workers to minimize risks associated with use of heavy equipment. Workers shall receive safety training appropriate to their responsibilities prior to engaging in such work.	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Develop health and safety plan; verify completion and documentation of training; check jobsite compliance as necessary Schedule – Pre and during construction	
Mitigation Measure Spartina PEIR HHM-3: Worker Health Effects from Herbicide Application Appropriate health and safety procedures and equipment, as described on the herbicide or surfactant label, including personal protective equipment (PPE) as required, shall be used by workers to minimize risks associated with herbicide application methods. Mixing	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Check jobsite compliance as necessary Schedule – During construction	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
and applying herbicide will be done in accordance with label directions and shall be conducted or supervised by certified or licensed herbicide applicators.			
Mitigation Measure Spartina PEIR HHM-4: Avoid Health Effects to the Public and Environment from Herbicide For areas targeted for application of herbicide that are within 500 feet (152 meters) of human sensitive receptors (i.e., houses, schools, hospitals), prepare and implement a herbicide drift management plan to reduce the possibility of chemical drift into populated areas. The Plan shall include the elements listed below. To minimize risks to the public, mitigation measures for herbicide application methods related to timing of herbicide use, area of treatment, and public notification, shall be implemented by entities engaging in treatment activities as identified below: – Herbicide will be applied in accordance with the manufacturer's label. – CDFW will coordinate with the County Agricultural Commissioner to identify and avoid impacts to any nearby sensitive areas (e.g., schools, hospitals) that require notification prior to herbicide applications. – CDFW will identify nearby sensitive habitat and, where feasible, establish buffer zones to avoid affecting sensitive receptors. – Herbicide will be applied using the coarsest droplet size possible that maintains sufficient plant coverage while minimizing drift into adjacent areas. – Herbicide shall not be applied when winds exceed 10 miles per hour or when inversion conditions exist (consistent with the herbicide labels); or when wind could carry spray drift into inhabited areas. Refer to Section 3.3 (Air Quality) for discussion on inversions. – Public access to treatment sites will be restricted during treatment windows. – No surfactants containing nonylphenol ethoxylate will be used.	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Prepare a herbicide drift management plan; verify public notification as needed Schedule – During construction	
Hydrology and Water Quality			
Mitigation Measure HWQ-1: Manage Construction Storm Water The Project and operations shall obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the NPDES requirements, a Notice of Intent (NOI) shall be prepared and submitted to the NCRWQCB, providing notification and intent to comply with the State of California General Permit. In addition, a Project specific Water Pollution Control Plan or functional equivalent will be prepared for pollution prevention and control prior to initiating site construction activities. The Project specific Water Pollution Control Plan shall identify and specify the use of erosion sediment control		Reporting actions – Submit Notice of Intent to the NCRWQCB; prepare a Storm Water Pollution Prevention Plan (SWPPP) or Project specific Water Pollution Control Plan; stormwater monitor reporting as needed; check	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
measures for avoidance of pollutants in stormwater runoff during construction related activities, and will be designed to address water erosion control, sediment control, off-site tracking control, wind erosion control, non-stormwater management control, and waste management and materials pollution control. A sampling and monitoring program shall be included in the Project specific Water Pollution Control Plan that meets the requirements of the NCRWQCB to ensure the included measures are effective. A Qualified Storm Water Pollution Prevention Plan Practitioner shall oversee implementation of the Plan, including visual inspections, sampling and analysis, and ensuring overall compliance. The operations associated with the Monitoring and Maintenance Plan include but not limited to activities associated with sediment management and channel maintenance are not anticipated to require preparation and implementation of the Project specific Water Pollution Control Plan as per section I (C) of Order No. 2009-0009 DWQ ,which lists activities that are not covered under the general permit: (24) Routine maintenance to maintain the original line and grade, hydraulic capacity, or original purpose of the facility and (25) Disturbance to land surfaces solely related to agricultural operations such as disking, harrowing, terracing and levelling and soil preparation.		jobsite compliance as necessary Schedule – Pre and during construction	
Mitigation Measure HWQ-2: Implement Contractor Training for Protection of Water Quality All contractors performing demolition, construction, grading, operations or other work that could cause increased water pollution conditions at the site (e.g., dispersal of soils) shall receive training regarding the environmental sensitivity of the site and need to minimize impacts prior to the commencement of ground disturbing activities. Contractors also shall be trained in implementation of stormwater measures included in the Project specific Water Pollution Control Plan and other Project permits for protection of water quality. The training shall be provided by a qualified Project engineer, water quality specialist, and/or biologist.		Reporting actions – Verify completion and documentation of training Schedule – Immediately prior to construction	
Mitigation Measure HWQ-3: In-Stream Erosion and Water Quality Control Measures During Channel Excavation and Operations Where excavation occurs to widen, deepen, construct, or maintain Project channels, ditches, drainage structures, and gated culverts, in-stream erosion and turbidity control measures shall be implemented. These measures include installation and maintenance of in-stream turbidity curtains, cofferdams and silt-fence along channel banks as specified in Project designs, specifications and erosion control plans. Additionally: – Sufficient erosion control supplies will be maintained on site at all times, available for prompt use in areas susceptible to erosion during rain events; – Disturbance of existing vegetation will be minimized to only that necessary to complete the work;		Reporting actions – Verify requirements are in final specifications; verify completion; check jobsite compliance as necessary Schedule – During construction	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
– The contractor will make adequate preparations, including training and providing equipment, to contain oil and/or other hazardous materials spills; – Dewatering operations will be conducted where needed, with water disposed of appropriately (e.g., allowed to settle in an isolated area, or discharged to an upland location where it will not discharge back to surface waters); – Vehicle and equipment maintenance will be performed off-site whenever practical; and – All erosion and sediment control measures shall be maintained until disturbed areas are stabilized.			
Mitigation Measure Spartina PEIR WQ-1: Managed Herbicide Control Herbicides shall be applied directly to plants and at low or receding tide to minimize the potential application of herbicide directly on the water surface, as well as to ensure proper dry times before tidal inundation. Herbicides shall be applied by a certified applicator and in accordance with application guidelines and the manufacturer label. The Control Program shall obtain coverage under the statewide General NPDES Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States.	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Verify requirements are in final specifications Schedule – Pre and during construction	
Mitigation Measure Spartina PEIR WQ-2: Minimize Herbicide Spill Risks Herbicides shall be applied by or under the direct supervision of trained, certified or licensed applicators. Herbicide mixtures shall be prepared by, or under the direct supervision of trained, certified or licensed applicators. Storage of herbicides and surfactants on or near project sites shall be allowed only in accordance with a spill prevention and containment plan approved by the NCRWQCD; on-site mixing and filling operations shall be confined to areas appropriately bermed or otherwise protected to minimize spread or dispersion of spilled herbicide or surfactants into surface waters.	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Verify requirements are in final specifications Schedule – Pre and during construction	
Mitigation Measure Spartina PEIR WQ-3: Minimize Fuel and Petroleum Spill Risks Fueling operations or storage of petroleum products shall be maintained off-site, and a spill prevention and management plan shall be developed and implemented to contain and clean up spills. Transport vessels and vehicles, and other equipment (e.g., mowers) shall not be serviced or fueled in the field except under emergency conditions; hand-held gas-powered equipment shall be fueled in the field using precautions to minimize or avoid fuel spills within the marsh. For example, gas cans will be placed on an oil drip pan with a PIG® Oil-Only Mat Pad placed on top to prevent oil/gas contamination. Only vegetable oil-based hydraulic fluid will be used in heavy equipment and vehicles during Spartina control efforts. When feasible, biodiesel will be used instead of petroleum diesel in heavy equipment and vehicles during Spartina control efforts. Other, specific BMPs shall be specified as appropriate to comply with the Basin Plan and the other applicable Water Quality Certifications and/or NPDES requirements.	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Verify requirements are in final specifications Schedule – Pre and during construction	

Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Mitigation Measures Spartina PEIR WQ-7: Removal of Wrack Tidal flushing is anticipated to alleviate wracking throughout the Project Area. During site specific planning, tidal circulation will be visually assessed. In areas with relatively low tidal circulation, it will either be assumed that dissolved oxygen levels are depressed or monitoring will be conducted to determine if dissolved oxygen levels are depressed. In treatment areas located within or adjacent to waters known or expected to have depressed dissolved oxygen, if wrack greater than ¼ acre is generated during Project implementation, the wrack shall be removed from the treatment areas subject to tidal inundation or mulched finely and left in place.	HCRCD and HCRCD's Spartina removal contractor	Reporting actions – Verify removal of wrack in qualifying areas Schedule – During construction	
Land Use and Planning			
N/A			
Noise			
N/A			
Public Services			
N/A			
Recreation			
N/A			
Transportation			
N/A			
Tribal Cultural Resources			
See Cultural Resources			
Wildfire			
N/A			