WETLANDS DELINEATION AND HABITAT MAPPING
RAIL-WITH-TRAIL CONNECTIVITY PROJECT
CITY OF ARCATA
HUMBOLDT COUNTY, CALIFORNIA

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APPENDICES

Appendix A: Figures
- Vicinity (“Locality Map”)
- Project Study Boundary (Figures 2-1 through 2-28)
- Existing Wetlands (Figures 4-1 through 4-28)
  [Note: black and white series with survey topographic base]

Appendix B: Field Data Sheets
I. SUMMARY

On December 2 and 4, 2009, reconnaissance-level wetland and habitat mapping was conducted within the potential alignment options. On January 20th, 21st, 25th, 26th, March 7th, and April 25th, 2010, a wetland delineation was conducted within potential alignments of the proposed project from Larson Park (City of Arcata) south to Bracut (County of Humboldt). On May 28, 2010, Winzler & Kelly conducted focused site-specific and seasonally appropriate botanical survey for CNPS-listed plant species: Humboldt Bay owl’s clover (Castilleja ambigua ssp. humboldtiensis) and Lyngbye’s sedge (Carex lyngbyei). The wetland delineation determined the extent of wetlands based on one-parameter approach in areas that are within the Coastal Zone (south of 8th Street) and based on two-parameter approach in areas within the City of Arcata that are not in the Coastal Zone (see Figure Series 2). As well, the delineated wetland boundary lines are consistent with Army Corp of Engineers (COE) wetland definition (three-parameter approach), except in a few cases noted below (i.e., one-parameter riparian areas that do not qualify as three-parameter COE wetlands). The wetland delineation procedure was completed pursuant to the U.S. Army Corps of Engineers (COE) 1987 Wetland Delineation Manual; the Interim Regional Supplement to the COE Wetland Delineation Manual: Western Mountains, Valleys, and Coastal Regions (COE, 2006); and California Coastal Commission (CCC) guidance for wetland delineation (1994).

The wetland delineation field work effort included verification of habitat mapping that was conducted during the reconnaissance-level site survey. Figures presenting limits of investigation (Project Study Boundary--PSB) are provided as map series 2 (Figures 2-1 through 2-28); and field work results are provided as map series 4 (Figures 4-1 through 4-28) in Appendix A. Because of the number of figures necessary to map a project of this length, the map series are not consecutive (note map series 3 does not apply to the wetland delineation and is not contained within). Data sheets documenting conditions observed during the investigation are included in Appendix B.

II. INTRODUCTION

The area of investigation consisted of evaluation of land that is being considered for development of a trail from Larson Park (City of Arcata) south to Bracut, Humboldt County, California (Figure 1, Appendix A). The project study boundary is linear, spanning approximately 4.5 miles. The northern portion of the project is located in the City of Arcata and the southern portion south of Gannon Slough is located in the County of Humboldt jurisdiction. Portions of the area of investigation are within the Coastal Zone (south of 8th Street in Arcata). South of Samoa Boulevard at the northern boundary of the Arcata Marsh begins primary jurisdiction for California Coastal Commission. The area between northern boundary of the Arcata Marsh and 8th Street in City of Arcata is within the City Coastal Zone and appeal zone for the California Coastal Commission (governed by the City’s Local Coastal Plan—LCP, and LUDG General Plan). The area north of 8th Street in City of Arcata is not within the Coastal Zone and has City of Arcata primary jurisdiction, and governed by the current/most recent City General Plan.

One non-tidal “Water of the U.S.” was defined in the Project Study Boundary (PSB), that is Jolly Giant Creek (at Shay Park), and is mapped at the Ordinary High Water Mark (OHWM). Other “Waters of the U.S./State (Tidal)” mapped within the PSB include Butcher Slough, Gannon...
Slough, Jacoby Creek, Old Jacoby Creek, and Brainard’s Slough. Humboldt Bay is adjacent to a large portion of the proposed alignment. Jolly Giant Creek outlets to Butcher Slough. The “Waters of the U.S./State” outlet to Humboldt Bay which connects to the Pacific Ocean.

**Project Study Boundary (PSB)**

Figures 2-1 through 2-28 display the extent of the project study boundary (PSB). The PSB was developed to identify the likely limits of a potential trail alignment and for planning purposes, within which a topographic survey would be conducted and the following items would be studied: cultural/historic resources, areas of potential hazardous contamination, sensitive habitats, wetlands, and other Waters of the U.S./State. The extent of the PSB was defined during the alignment selection phase of the project to cover areas where it was anticipated the trail could feasibly be designed and constructed. The northern and southern extents and a general corridor for the project were established early in the alignment selection process, but several parallel alignment options were available through the length of the project. For instance, in some areas the trail could have been placed east of the railroad tracks, west of the railroad tracks, or along the edge of a parallel roadways. In such a scenario, the study area would need to cover the extents of all three alignment options as well as adjacent lands that could be temporarily utilized during installation or for fill in order to bring the trail up to grade. Therefore, in some locations the study area is wide or branched because many viable options were feasible, while in other locations the study area is relatively narrow because a very limited set of practical options existed. In most cases, the study area was drawn to allow for flexibility in final design of the project’s footprint. Since the study area boundary varies in width throughout its length, it is not further described here and the figure series should be referred to for the various widths of the study boundary.

It should be noted that the study area boundary was expanded in some cases during the data collection phases to capture the edge of wetlands/habitats if it appeared that data in specific areas had potential implications for the project. However, in most cases data was only collected within the predefined study area which had been drawn with the intent of capturing all areas of anticipated potential impacts. In all cases the footprint of the trail, the impact zone, and the areas of temporary impacts are completely contained within the study area. In addition, records searches were conducted beyond the edges of the study area for the cultural resource study and the Phase I (hazardous materials) corridor study.

**Project Selected Alignment**

For ease of reference, the project is divided into eight distinct segments (Segment 0 through 7) arranged from north to south. In areas of complex intersections and water crossings, the segments are broken into sub-segments. In some cases, particularly within the urban setting, for the purposes of the wetland delineation results section, sub-segments are described together where existing conditions are similar. The Segments are identified on map series 2 (Figures 2-1 through 2-28, Appendix A) that shows the Project Study Boundary (PSB), and are also indicated on the wetland results map series (Figures 4-1 through 4-28).
Segment 0—Larson Park to Sunset Avenue
At the proposed northern trail terminus, the project begins in the City of Arcata’s Larson Park. The alignment exits the southeast corner of the park, enters the railroad right-of-way (RR ROW), and travels along the west side of the railroad tracks, where it crosses Sunset Avenue.

Segment 1—Sunset to Alliance Avenue
The project then leaves the RR ROW and runs parallel to and on the north side of the railroad tracks. The project adjoins the City of Arcata’s proposed Foster Street extension project, and travels west along the south side of the Foster Street extension and along the north side of Shay Park.

Segment 2—Alliance Avenue
Near the end of the existing Foster Street, the alignment passes south of a cluster of existing barns and into revegetated former lumber mill yard within Shay Park. Midway through the old mill yard, the alignment turns slightly south into a forested area onto an existing raised berm that parallels Alliance Avenue at the western edge of Shay Park. The alignment follows the raised earthen berm between Jolly Giant Creek and Alliance Road to the railroad crossing at Alliance Road and 17th Street.

Segment 3
Segment 3.1—Below the High School
The alignment crosses the railroad tracks and Jolly Giant Creek (as the daylighted creek exits Shay Park and enters an existing culvert under Alliance Avenue). The alignment travels along the east side of Alliance Road along the toe of slope below the High School, crossing 15th Street.

Segment 3.2—L Street Connection
Near an existing paved trail which intersects Alliance Road from the east as part of an abandoned portion of L Street, the alignment would cross to the south side of Alliance Road, traverse along the edge of a vacant parcel (privately owned) near the Storage Units, to connect to the far northern end of L Street. The project re-enters the RR ROW and travels along L Street east of the railroad tracks to 12th Street.

Segment 3.3—Urban Interface Trail
The alignment enters Arcata city blocks sharing an alignment with L Street to form a proposed Urban Trail Interface. In this segment, design will focus on encouraging non-motorized transportation as the dominant use, while vehicular use is maintained as a secondary function. Trail features in this segment may include differentiated pavement coloring, barricades, trail lighting, and landscaping. After crossing 12th Street, the alignment continues along L Street within the RR ROW on the east side of the tracks and crosses 11th Street, 10th Street, and 9th Streets.

Segment 3.4—L Street (West Side)
The alignment continues on the east side of the tracks crossing 8th Street to 7th Street, the end of the Urban Trail Interface. At 7th Street, the project crosses the tracks and travels along the west side of the tracks until reaching Samoa Boulevard.
Segment 3.5—Samoa Boulevard Crossing
Within the Samoa Boulevard crossing, the alignment crosses to the west side of a western branch of the rail road tracks (abandoned), prior to crossing Samoa Boulevard. On the south side of Samoa Boulevard the trail then must angle back to join the west side of the RR ROW, and in doing so may pass over a small corner of a private industrial parcel.

Segment 4
From Samoa Boulevard, the alignment continues within the RR ROW southward along the west side of the railroad tracks.

Segment 5
Segment 5.1—Marsh North Entrance
Upon reaching the City of Arcata Marsh and Wildlife Sanctuary, the alignment leaves the RR ROW, and crosses a palustrine emergent wetland on a proposed bridge installed on piles to connect to an existing earthen berm that separates recently constructed City of Arcata freshwater wetland pond (to the west) as part of an enhancement project.

Segment 5.2—Upland Berm
The project continues along the existing upland berm that has an existing trail atop, paralleling the railroad tracks yet separated by a low area and palustrine emergent wetland until reaching South I Street.

Segment 5.3
The project crosses South I Street, deviates to the west of railroad tracks, and overlays an existing crushed gravel path (part of Arcata Marsh trail network) parallel to South I Street.

Segment 5.4
The path then turns southeast, leaving South I Street following the gravel path and continues through the Arcata Marsh and Wildlife Sanctuary until reaching the bridge at Butcher Slough just north of the City’s Wastewater Treatment Plant (WWTP).

Segment 6
Segment 6.1—Butcher Slough Crossing
The Project crosses Butcher Slough on existing or secondary bridge.

Segment 6.2
At the WWTP, the alignment becomes parallel with the railroad tracks and South G Street, to the west of the RR ROW, and continues along the crushed gravel path.

Segment 6.3
Once past the WWTP Corporation Yard entrance the alignment re-enters the RR ROW and continues to travel in southeast towards Route 101.

Segment 7
Segment 7.1
The railroad tracks and the project alignment turn south and parallel Route 101. The project continues within the RR ROW on the west side of the tracks, and crosses the tracks to the east immediately north of Gannon Slough. This location will have a connection point to the
Humboldt Bay National Wildlife Refuge that is managed by the U.S. Fish and Wildlife Service, per their request.

**Segment 7.2—Gannon Slough Crossing**
The alignment crosses over Gannon Slough on a proposed new trail bridge between Route 101 and the railroad bridge.

**Segment 7.3**
The alignment remains within RR ROW east of the railroad tracks and west of Route 101 to Jacoby Creek.

**Segment 7.4—Jacoby Creek Crossing**
Immediately north of Jacoby Creek, the alignment crosses the drainage ditch between the tracks and Route 101 to access the bike lane on the proposed Caltrans Jacoby Creek replacement bridge. Immediately south of the bridge, the alignment crosses back to the eastern side of the RR ROW.

**Segment 7.5**
The alignment continues within the RR ROW from Jacoby Creek to Old Jacoby Creek.

**Segment 7.6—Old Jacoby Creek Crossing**
The trail crosses Old Jacoby Creek on a proposed bridge to be placed atop structural piles.

**Segment 7.7**
The alignment continues southward in the RR ROW between Route 101 and the tracks.

**Segment 7.8**
The alignment continues southward in the RR ROW between Route 101 and the tracks.

**Segment 7.9**
The alignment continues southward in the RR ROW between Route 101 and the tracks. The southern end of the alignment segment is within the Bracut Industrial Park. The alignment terminates between the tracks and Route 101 at the paved entrance to the Bracut Industrial Park.

**Interim Alignment**
A project alternative that was considered within the limits of the wetland delineation is referred to as the Interim Alignment and would consist of the trail being installed on the existing railroad bed. This area was therefore included in the Project Study Boundary. If implemented, the trail would be installed within limits of existing upland railroad bed, with use of the adjacent lands only for temporary equipment access.

**Secondary Alignment**
An alternative alignment area was included as part of the wetland delineation, and consists of trail alignment on top of an existing gravel road that goes along the north edge of Arcata High School football field, meanders up the hill to the high school, around the eastside/back of a parking lot and building, and cuts across eucalyptus to return to east side of H Street at L Street extension. Although there are wetland ditches along the edge of the existing road, the intent would be to locate the trail within the limits of existing road footprint (12 feet wide), and avoid fill impacts to emergent wetland ditches.
III. PURPOSE

The purpose of this investigation was to determine the location of wetlands and habitat types in areas adjacent to the railroad and considered for development of the preferred alternative for the proposed Rail with Trail Connectivity Project. The evaluation included confirmation of the reconnaissance level habitat mapping that was conducted in December 2009.

The uplands/wetland delineation was performed in accordance with Army Corp of Engineers (COE) wetlands criteria and based on a two-parameter approach for areas outside the Coastal Zone and within the City of Arcata Limits (City and COE jurisdiction of delineation results). The wetland delineation was performed in accordance with California Coastal Commission one-parameter approach for areas within the primary or appeal zone of the Coastal Zone (with Coastal Commission, City, and COE jurisdiction). The delineation methodology and results should be presented to the various jurisdictions for concurrence.

IV. METHODOLOGY

The wetlands delineation was conducted by a Winzler & Kelly field team consisting of a Soil Scientist and a Botanist. The reconnaissance-level wetland and habitat mapping was conducted on December 2 and 4, 2009. The wetland delineation was conducted on January 20th, 21st, 25th, 26th, March 7th, and April 25th, 2010. On May 28, 2010, Gary Lester (Botanist) of Winzler & Kelly conducted site-specific and seasonally appropriate botanical survey for CNPS-listed plant species: Humboldt Bay owl’s clover (Castilleja ambigua ssp. humboldtiensis) and Lyngbye’s sedge (Carex lyngbyei). Additional survey is required for late-blooming CNPS-listed species.

Wetland Delineation

To define a wetland, the COE requires that all three parameters (vegetation, soil, and hydrology) show wetland attributes. The City of Arcata requires two-parameters to be present to qualify as a wetland area. The Coastal Commission requires one-parameter to be present in order to define the site as a wetland. The wetlands delineation followed the COE guidance from the Corps of Engineers Wetlands Delineation Manual (COE, 1987) and Draft Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (COE, 2006) within the northern portions of the project area that have City of Arcata primary jurisdiction and are not in the Coastal Zone (City and COE jurisdiction of delineation results). The wetlands delineation conformed with California Coastal Commission one-parameter approach (relying on COE manuals for reference and determination) in the southern portions of the project area that are within the Coastal Zone (City of Arcata or Coastal Commission primary jurisdiction; COE jurisdiction of delineation results). Botany/soils/hydrology data sheets used are the current standard forms provided by the COE for use (COE, 2006). Data sheets are attached (Appendix B).

Vegetation and soil data were collected at transects across the upland/wetland boundary with two plots (upland/wetland) per transect. Test plots are numbered to correlate with transects, according to order of investigation, and denoted with either a “U” to indicate upland location or “W” for wetland plots (for example, test plot T15-U indicates transect 15 at upland plot location). Intermediate plots were placed without collection of data sheets as appropriate (based on extrapolation from adjacent test plots and verification of hydrologic conditions) and are
indicated with an “-int” after the point number (i.e. T3int). Additionally, due to the large project acreage, additional confirmation test pits were collected in some areas to confirm wetland or upland conditions. The confirmation test pits do not consist of paired data sheets, do not necessarily correlate with a transect location, and are individually labeled WP# (wetland pit, with identification number) or UP# (upland pit with identification number).

The horizontal location of each point along the upland/wetland boundary (location where each transect intersects the upland/wetland boundary) were collected using a handheld GPS Trimble unit (sub-meter accuracy). To relocate the actual test pit locations (uplands and wetlands), the distance from the upland/wetland boundary line has been recorded on each plots data sheet. Due to the sub-meter accuracy of the GPS unit, it is more accurate to collect the actual plot locations relative to the upland/wetland boundary while in the field and record as a measurement on each individual data sheet under “remarks.” The location of the confirmation test pits (upland or wetland, non-paired plots) were also collected using the GPS Trimble unit. The horizontal locations of some site infrastructure features that are visible on the aerial were collected to ensure that the base map lines up accurately with the delineation results. Other site infrastructure features of interest were recorded such as noticeable pipe outlets/culverts.

**Botanical Methodology**

Vegetation data collection consisted of listing the species at each plot in each layer. All species within a radius of five feet were listed in the herb layer. The species were then classified as to whether or not they are wetlands indicators, using the standard reference for plant wetlands indicators, *National List of Plant Species that Occur in Wetlands: California (Region O)* (U.S. Department of the Interior, 1988). The standard reference document classifies plants based on the probability that they would be found in wetlands, ranging from Obligate (almost always in wetlands) [OBL], Facultative/wet (67% to 99% in wetlands) [FACW], Facultative (34% to 66% in wetlands) [FAC], Facultative/up (1% to 33% in wetlands) [FACU], to Uplands (less than 1% in wetlands) [UP]. Plants listed as non-indicator status (NI) are considered to be in the upland category. Plants not listed (NL) are included in the upland category. Plants listed as Facultative minus (FAC-) are considered to generally tend towards upland conditions and were therefore previously included in the upland category when conducting the Dominance Test. The new COE guidance document (COE, 2006) includes FAC- species in the FAC category when conducting the Dominance Test. The new COE guidance specific to the project region (COE, 2006) is in draft format but according to the COE is now the standard to be implemented for delineations that are expected to be submitted to the COE for jurisdiction determination. The Dominance Test states 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). Therefore, FAC- species have been included in the FAC category when conducting the Dominance Test.

**Soils Methodology**

The 1987 Manual’s 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* (United States Department of Agriculture [U.S.D.A.], 1995 and 2006, respectively). Soil pits were dug to an approximate depth of 18 inches. Data on soil color, texture and redoximorphic features was collected. Care
was taken to observe mottling (iron concentrations) and to distinguish between chromas of 1 and 2.

Colors were described for the entire depth of the test pit and were compared to the above parameters at a depth of 10 inches. Colors were determined on moist ped surfaces, which had not been crushed, using the Munsell Color Chart (Gretag Macbeth, 2000). Soils with low chromas were verified as being hydric or upland with Draft Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (COE, 2006) using indicators for depleted matrix (F3) for fine grained soils or Sandy Redox (S5) for sandy soils.

**Hydrology Methodology**
The delineation was performed during winter within the wet-weather season (over 19-inches of rainfall had fallen to date). Direct evidence of ground water (soil saturation, standing water, etc.) was present in all of the wetland plots during the delineation. Primary wetland hydrologic indicators were observed (A1, A2, and A3). Secondary indicators were evaluated as well, and documented in some locations, such as drainage pattern (B10) and a pass on the “FAC-Neutral Test” (D5).

**Wetland Determination**
The wetland boundary was evaluated using the COE (three-parameter), City of Arcata (two-parameter), and/or Coastal Commission (one-parameter) methodologies, based on the location in relation to the Coastal Zone boundary. The wetland determination was made with an emphasis on redoximorphic soil features and presence of wetland hydrology. For locations not in the Coastal Zone (City and COE primary jurisdiction) an area was determined to be a wetland when soil, vegetation, and hydrology met the two-parameter approach/definition. An attempt was made to also satisfy the COE three-parameter definition in these locations to eliminate confusion in mapping and permitting that might result with multiple wetland boundary lines. Within the Coastal Zone (City or Coastal Commission primary jurisdiction), areas where the existence of any one indicator were present were identified. Within the Coastal Zone, an area was determined to be uplands based on absence of all three wetland indicators (soils/botany/hydrology) based on the one-parameter approach. All wetland plots exhibited a predominance of facultative (FAC) or wetter vegetation and all upland plots exhibited predominance of facultative-up (FACU) or drier vegetation within the Coastal Zone.

Once wetland characteristics were determined for each transect, the horizontal location of the upland/wetland boundary were recorded using a handheld Trimble GPS unit with sub-meter accuracy. Flags were not placed in most areas with active land-use. The delineated boundaries can easily be relocated with the handheld Trimble GPS, therefore flagging of the boundaries was further determined to not be necessary.

Riparian vegetation that were not mapped as wetlands (i.e. lacked wetland soils and hydrology) were recorded at the drip line as riparian. In the Coastal Zone areas that have primary jurisdiction by the California Coastal Commission, the riparian areas could be considered by the Commission as one-parameter coastal wetlands despite the fact the plants are not growing as hydrophytes due to absence of wetland soils and hydrology. These areas are described as transitional habitat on
the upland edge of wetland areas and are categorized as “One-Parameter Riparian.”

**Other Waters**

The project alignment crosses six drainages, the latter five of which are tidally influenced within limits of Project Study Boundary due to proximity to Humboldt Bay: Jolly Giant Creek, Butcher Slough, Gannon Slough, Jacoby Creek, Old Jacoby Creek (tidal gate), and Brainard’s Slough (near Bracut).

**Ordinary High Water Mark (OHWM)**

Non-tidal Waters of the U.S./State were mapped/defined at the Ordinary High Water Mark (OHWM) and/or limits of adjacent freshwater emergent wetlands. The OHWM is determined by observance of scour, water-marked vegetation, drift lines, and/or drift deposit. Due to the confined nature of some of the stream channels and ditches (emergent wetland and/or non-wetland), the OHWM was often defined at or near the top-of-bank (TOB). The project crosses Jolly Giant Creek at Alliance Avenue, as well as runs parallel to and/or on top of ditches (wetland emergent and/or non-wetland), all of which are defined at the OHWM.

**Other Waters of the U.S. (Tidal)**

Under Section 10 of the Rivers and Harbors Act of 1899 for activities in navigable waters the limits of COE jurisdiction is defined at Mean High Water (MHW). In the project vicinity, Mean High Water (MHW) is on average 6.6 feet MLLW (tidal datum) / 6.0 NAVD88 (survey datum), with a calculated average conversion factor for MLLW to NAVD88 of (-)0.60 based on three NOAA benchmarks: North Spit/Humboldt Bay (Station ID 9418767, MHW = 6.1 MLLW / 5.8 NAVD), Samoa/Humboldt Bay (Station ID 9418817, MHW = 6.6 MLLW / 6.1 NAVD), and Mad River Slough (Station ID 9418865, MHW = 6.9 MLLW / 5.9 NAVD). The calculated average conversion factor of (-)0.60 from these three benchmarks is consistent with “Relation Between Datums” per N.G.S. (U.S.C & GS) datum 1929 Adj, as recommended for use by the Humboldt Bay Harbor District for areas in Humboldt Bay.

Under Section 404 of the Clean Water Act, the limits of COE jurisdiction is defined at the High Tide Line (HTL), which is a site-specific elevation related to the observed level of high tide and extent of saltmarsh habitat (pers. com., April 14, 2010, Mr. Kelley Reid, COE). Previous Army COE permit applications designate the HTL for the Arcata Marsh to be approximately 8.8 feet MLLW which equates to 8.2 feet NAVD88. Per COE guidance, mapping of “Other Waters of the U.S.” (Tidal) can vary from the estimated HTL elevation for a site, based on site-specific observations, in order to capture limits of unvegetated mud within tidal portions of creeks/sloughs. The HTL should also be adjusted so that vegetated areas (i.e. saltmarsh wetlands, or eel grass beds) are mapped separately as either wetlands/uplands or special habitat areas, depending on site specific observations, and are not included within definition of “Other Waters.” Within the Project Study Boundary (PSB), limits of vegetated saltmarsh (both below and above the 8.0 foot NAVD88 elevation) are mapped as wetlands and categorized per FWS classification system (Cowardin, 1979). All areas below 8.0 foot elevation (NAVD88 datum) are COE jurisdictional, whether classified as “Other Waters of the U.S.” (Tidal) when unvegetated, or classified as wetland—Estuarine Intertidal Emergent (Saltmarsh). The HTL was mapped as the 8.0 foot contour (NAVD88 datum) based on site-specific topographic survey that was conducted within the trail alignment and highway/railroad right-of-ways.
Habitat Mapping

Habitat mapping was conducted during the Natural Features Inventory (NFI) and was refined/confirmed for the selected alignment during the wetland delineation. The habitat mapping consisted of indicating areas of shorebird roosting, potential listed plant species habitat, and riparian areas (that were not classified as wetlands). The NFI consisted of the following biological and botanical tasks:

1) Review of the California Department of Fish and Game’s Natural Diversity Database (CNDDB) for State special-status species in the associated USGS topographic quads (see DFG, 2009a; DFG, 2009b);
2) Review of the California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants (CNPS, 2009a; CNPS, 2009b);
3) Review of list provided by the U.S. Fish and Wildlife Service and National Marine Fisheries of Federal special-status species (USFWS, 2009a; USFWS, 2009b); and,
4) Conduct reconnaissance-level wetlands and biological investigation (botanical and wildlife) investigations (results below).

A site visit was conducted to generally identify/map habitat types and significant sensitive wildlife areas within the potential trail alignment options from Larson Park at Sunset Avenue to Bracut Industrial Park on Route 101. The reconnaissance field work was conducted on December 1-2, 2009, by Winzler & Kelly scientists Mr. Gary Lester (Biologist/Botanist) and Ms. Lia Webb (Certified Professional Soil Scientist and Wetland Scientist / Plant Ecologist). Special-status species that have potential to exist at the project site (DFG, 2009a; DFG, 2009b; CNPS, 2009a; CNPS, 2009b; USFWS, 2009a; and USFWS, 2009b) based on presence of habitat were searched for during the reconnaissance level survey. These were not seasonally-appropriate surveys, which would be necessary to confirm absence of listed plant species from the project site (April/May and July, depending on species).

On May 28, 2010, Gary Lester (Botanist) of Winzler & Kelly conducted site-specific and seasonally appropriate plant survey for the following listed plant species: Humboldt Bay owl’s clover (Castilleja ambigua ssp. humboldtiensis) [CNPS List 1B.2] and Lyngbye’s sedge (Carex lyngbyei) [CNPS List 2.2]. A second site visit/survey is planned for mid-July, to evaluate the presence/absence of the following later blooming species (typical bloom period June-August): Point Reyes bird’s beak (Cordylanthus maritimus ssp. palustris) [CNPS List 1B.2] and sand spurrey (Spergularia canadensis var. occidentalis) [CNPS List 2.2 species]. Due to the unusually wet spring, and late spring, Point Reyes bird’s beak reference site (known location) was visited on June 30, 2010, and was not in bloom, indicating that seasonal-appropriate surveys would need to be conducted at a later date beyond the grant-funded contract period for the current phase of work. The May 2010 seasonally-appropriate botanical survey was focused on areas within the trail impact area and adjacent Estuarine Intertidal Emergent (Saltmarsh) wetlands that were mapped during the wetland delineation as potential habitat for the listed plant species. The areas mapped as Estuarine Emergent (Ditch) were determined during the wetland delineation to be low quality habitat and unlikely for the listed plant species to occur in the highly altered landscape. The May 2010 botanical survey was conducted at Butcher Slough crossing (Figure 4-14), the west side of the railroad track between the Arcata WWTP and Gannon Slough (Figures 4-18 and 4-19), Gannon Slough (Figure 4-20), Jacoby Creek (Figure 4-21), Old Jacoby Creek tide gate (Figure 4-22), and Brainard’s Slough (Figure 4-26). Areas were surveyed for presence/absence
of listed plant species within Estuarine Intertidal Emergent (Saltmarsh) and adjacent brackish ditch areas along site access routes, within potential trail footprint, and at water crossings within 100 feet of the planned project.

IV. RESULTS

Most of the project area consists of human-altered soils from cut and fill for road development, railroad development, berm/dike installation and manipulation, agricultural uses, urban development, wastewater treatment infrastructure, highway roadbed, and railroad fill. Few natural soil conditions were noted except in the area of Shay Park. Much of the vegetation has similarly been altered from long-term land uses, and consists of many non-native and disturbance-oriented species. The natural hydrology is assumed to have been altered in agricultural areas from historical dike construction and conversion of land to agricultural and urban uses. Site hydrology is also assumed to be historically altered from road and infrastructure installation along the highway 101 corridor, within the railroad right-of-way, and near the Arcata wastewater treatment plant (WWTP) and within the Arcata Marsh.

The wetland delineation and habitat mapping results are provided on map series 4 Wetlands (Figures 4-1 through 4-28, Appendix A). Note that per COE requirements, this map series has been produced in black and white format with survey topographic base map.

Wetland Delineation

Uplands

Disturbed sites were found throughout study area dominated by non-native vegetation with well drained soils or compacted engineered fill. Upland areas on the field map are represented by areas not identified as wetlands. Typical dominant plant species (shrub and forbs) with greater than 10% coverage for these areas are:

- bird’s foot trefoil (*Lotus corniculatus*) (FAC)
- coyote brush (*Baccharis pilularis*) [NI]
- dandelion (*Taraxacum officinale*) [FACU]
- horseweed (*Conyza canadensis*) [FAC]
- Himalayan blackberry (*Rubus discolor*) [FACW]
- perennial cat’s ear (*Hypochaeris radicata*) [NI]
- red clover (*Trifolium pratensis*) [FACU]
- soft chess (*Bromus hordeaceus*) (FACU)
- fennel (*Foeniculum vulgare*) [NI/invasive]
- sweet vernal grass (*Anthoxanthum odoratum*) [FACU]
- Queen Anne’s Lace (*Daucus carota*) [NI]
- white clover (*Trifolium repens*) [FACU]

Typical vegetation along the railroad bed along the Highway 101 corridor consisted of disturbance oriented non-native upland grassland species, such as follows:

- bristly dogtail grass (*Cynosurus echinatus*) [NI]
- black mustard (*Raphanus sativa*) [NI]
- bristly oxtongue (*Picris echioides*) [FAC]
• fennel (*Foeniculum vulgare*) [NI/invasive]
• orchard grass (*Dactylis glomerata*) [FACU]
• Queen Anne’s Lace (*Daucus carota*) [NI]
• rattlesnake grass (*Briza major*) [NI]
• soft brome (*Bromus hordeaceous*) [NI]
• white clover (*Trifolium repens*) [FACU]
• wild geranium (*Geranium dissectum*) [NI]
• yarrow (*Achillea borealis*) [NI]

**Wastewater Treatment Plant (WWTP) Ponds**

Man-made freshwater areas parallel the tracks through the Arcata Marsh. Typical vegetation within these areas consists of the following species:

• broad-leaved cattail (*Typha latifolia*) [FACW]
• hardstem bulrush (*Scripus acutus*) [FACW]
• lesser duckweed (*Lemna minor*) [FACW]
• marsh pennywort (*Hydrocotyle ranunculoides*) [FACW]
• Pacific willow (*Salix lasiolepis*) [FACW]
• poison hemlock (*Conium maculatum*)
• red willow (*Salix laevigata*) [FACW]
• teasel (*Dipsacus fullonum*) [NI]
• water parsley (*Oenanthe sarmentosa*) [FACW]

**Wetlands Classification**

The following wetland classification types (FWS, 1979) were mapped within the project study boundary (PSB), as shown on Figure Series 2 (Maps 2-01-2-28). Specific characteristics of each wetland are presented in below descriptions of each wetland, and wetland acreages based on jurisdictional area are summarized in Table 1. Table 1 also estimates/highlights Potential Impacted Wetlands/Habitats (as shown on map series 5, Figures 5-1 through 5-28, Appendix A).

**Palustrine Emergent**

Freshwater wetlands present within vegetated freshwater ditches, springs, and seeps in the City of Arcata, seasonal high groundwater, compacted areas near Shay park and other former industrial/commercial properties within urban limits of the City. As well, some ditches that act as stormwater conveyance, but which have extensive wetland vegetation, hydric soils, and hold at least seasonal water, have been classified as palustrine emergent, particularly when there are limited signs of being man-made or directly part of City street stormwater conveyance system. This wetland type includes the palustrine ditch located along the Highway 101 corridor between the railroad bed and the highway edge of pavement. Representative vegetation consists of:

• arroyo willow (*Salix lasiolepis*) [FACW]
• Baltic rush (*Juncus balticus*) [OBL]
• California blackberry (*Rubus ursinus*) [FACW]
• fringed willowherb (*Epilobium ciliatum*) [FACW]
• Himalayan blackberry (*Rubus discolor*) [FACW]
• reed canary grass (*Phalaris arundinacea*) [FACW]
• soft rush (*Juncus effuses*) [OBL]
• tufted hairgrass (*Deschampsia cespitosa*) [FACW]

**Estuarine Intertidal Emergent (Saltmarsh)**

These areas are present at the margins of Humboldt Bay, Butcher Slough, Gannon Slough, and Jacoby Creek, and are subject to tidal inundation with some fresh water influence when located within tidal parts of creek mouths/estuaries. These areas are exposed at low tides and even some high tides depending on elevation. This wetland type contains herbaceous, salt-tolerant hydrophytes forming moderate to dense cover. This habitat is usually found in sheltered margins of bays, lagoons, and estuaries. The hydric soils are subject to regular tidal inundation by salt water for at least part of each year. In the Project Study Area, these wetlands have the following typical vegetation:

- cordgrass (*Spartina densiflora*) [NL]
- marsh rosemary (*Limonium californicum*) [FACW]
- pickleweed (*Salicornia virginiana*) [OBL]
- seashore saltgrass (*Distichlis spicata*) [FACW]
- spear oracle (*Atriplex patula*)
- tufted hairgrass (*Deschampsia cespitosa*) [FACW]
- Baltic rush (*Juncus balticus*) [OBL]

*Jaumea* (*Jaumea carnosa*) and arrow-grass (*Triglochin maritima*) are also known to be present in prime saltmarsh habitat in the Humboldt Bay area, but due to the season that the wetland delineation and habitat mapping was conducted, coupled with the marginal to moderate quality saltmarsh observed, these species were not documented. Humboldt Bay owl’s-clover (*Castilleja ambigua* ssp. *humboldtiensis*), Point Reyes bird’s-beak (*Cordylanthus maritimus* ssp. *palustris*) [both CNPS List 1B.2], and Lyngbye’s sedge, are also associated with the Estuarine Intertidal Emergent (Saltmarsh) wetland community, although were not identified at the site during wetland delineation field effort (incorrect season for protocol-level surveys, see habitat results section). Sand spurrey (*Spergularia canadensis* var. *occidentalis*), a CNPS List 2.2 species, is a late bloomer, June-August (similar to bird’s beak) and presence/absence was not confirmed during habitat mapping. Sand spurrey has not been reported along the east shore of Humboldt Bay (see habitat results section).

**Estuarine Emergent (Ditch)**

These areas are isolated from direct tidal influence and are connected to the palustrine emergent ditch that runs the length of the Highway 101 corridor between the railroad bed and east towards the edge of pavement. Some portions of the palustrine ditch receive subsurface saltwater infiltration, have remnant saline conditions, or receive only occasional saltwater input during high-tide storm events. In any case, occasional areas of the ditch are classified as Estuarine Emergent wetland based on vegetation, but are considered marginal/non-habitat for the CNPS-listed saltmarsh plant species, and as such have been designated has a separate wetland habitat type, although according to FWS designation (Cowardin, 1979) this area keys out to Estuarine Emergent. Vegetation within the ditch supports some brackish species but has limited diversity, and consists of the following species:
• pickleweed (*Salicornia virginiana*) [OBL]
• seashore saltgrass (*Distichlis spicata*) [FACW]

**Ditch (Palustrine Emergent)**
These areas consist of City of Arcata stormwater conveyance ditches that in some cases are established with palustrine emergent vegetation and meet the City of Arcata definition for two-parameter wetlands. These areas are unlikely to be considered COE jurisdictional based on the man-made nature of the ditches and absence of permanent or seasonal wetland hydrology. The ditches were observed to have ephemeral water that was directly related to storm events.

**Waters of the U.S./State**
Non-tidal Waters of the U.S. (OHWM)
Non-tidal “Waters of the U.S./State” (when not delineated as wetlands) are defined by the Ordinary High Water Mark (OHWM), as observed and mapped in the field. Within the PSB, one non-tidal “Water of the U.S.” was mapped, consisting of day-lighted sections of Jolly Giant Creek within the City of Arcata.

Other Waters of the U.S. (Tidal)
Other Waters of the U.S. (Tidal) are defined at the HTL and tidal areas in the sloughs and creek mouths/estuaries that lack vegetation. Within the PSB, the HTL is approximately the 8.0 foot contour (NAVD88 datum), as described in the Methodology section of this report. The HTL was mapped on the project plot plan based on site topographical survey, and ground-truthed during the wetland delineation and GIS mapping. Areas within the HTL consist of the tidal portion of Humboldt Bay, Butcher Slough, Gannon Slough, Jacoby Creek, Brainard’s Slough, and Old Jacoby Creek, and are subject to both tidal inundation with some fresh water influence. However, they are partially exposed or submerged within the channels at low tides. The area lacks vegetation, including eel grass, saltmarsh species, etc.

**Wetlands**
Specific individual wetlands, Waters, and habitats are described below. The wetland results are separated into sections based on location within three project options considered as follows: the Selected Alignment, the Interim Alignment (alternative that analyzed trail located on the existing rail bed), and Secondary Alignment (partially utilizing lands owned by Northern Humboldt School District in order to avoid direct impacts to Jolly Giant Creek and to Shay Park). Where specific plant species observed are not presented, please refer to the typical description above of the wetland categories.
### Table 1: Existing Areas of Wetlands, Waters of the US/State, and Habitats, and Potential Impacted Areas

<table>
<thead>
<tr>
<th>Project Location</th>
<th>Jurisdiction</th>
<th>Type of Impact</th>
<th>Habitat Types</th>
<th>Wetland Types</th>
<th>Other Waters of US/State</th>
<th>California State Special Status Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>San Francisco Bay (as project areas combined)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporary Construction Impacts (5f buffer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporary Impacts Associated with Staging Areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various</td>
<td>Cubic Yards of Fill associated with Permanent Impacts</td>
<td>CY</td>
<td>0  341  3,200  73  392  550  0  23</td>
<td>NA  NA  NA  NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various</td>
<td>Permanent Impacts (Ground Disturbance)</td>
<td>SF</td>
<td>0  6,144  57,603  1,307  7,064  9,903  0  394</td>
<td>186  0  Unknown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various</td>
<td>Permanent Impacts (Structure Shading)</td>
<td>SF</td>
<td>0  1,016  0  214  368  0  186  0  Unknown</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various</td>
<td>Temporary Construction Impacts (5f buffer from permanent impacts associated with ground disturbance)</td>
<td>SF</td>
<td>0  5,320  24,077  204  7,508  2,977  87  1,223  0  0  Unknown</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various</td>
<td>Temporary Impacts Associated with Staging Areas</td>
<td>AC</td>
<td>0  0  0.12  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  Unknown</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

1. Parameter Riparian areas are uplands; Riparian areas w/ wetland hydrology/soils calculated as wetlands
2. Estuarine Emergent (ditch) are saltwater wetlands isolated from direct tidal influence by railroad prism
3. Tidal Waters of the US is everything below HTL (6.0' elevations when converted to NAVD88)
4. Existing areas = acreage within Project Study Area mapped and delineated in the field
5. Cubic Yards of Wetlands assumes an average depth of 1.5' fill in wetlands
6. Areas that will be filled in association with construction of the project
7. Areas shaded by bridge decks or other structures that have no permanent ground disturbance impacts
8. A 5-foot buffer around all Permanent Impacts (ground disturbance) in which temporary impacts are likely during construction
9. Designated areas for construction staging and stockpiling; temporary impacts may occur
10. Surveys of California Special Status Plant Species extended beyond the study area

### Abbreviations:

CC = California Coastal Commission  
COE = Army Corp of Engineers  
CZ = Coastal Zone (Coastal Commission Jurisdiction)  
SF = Square Footage  
CY = Cubic Yards  
Ac. = Acres  
NA = Not Applicable
Selected Alignment Results
Delineated wetlands, ditches, “Waters of the U.S.”, and/or “Other Waters of the U.S. (Tidal)” are presented below. For general characteristics of various mapped categories (wetlands, ditches, uplands, etc), refer to the above description of wetland classifications that includes typical dominant vegetation observed within wetland categories.

### SEGMENT 0—Larson Park to Sunset Avenue

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 1</td>
<td>Located north side of railroad bed along toe of slope below Larson Park, north of Skate Park. Connects to stormwater culvert at south end before intersections with Alliance Avenue. City of Arcata two-parameter jurisdictional. Likely Army Corp three-parameter jurisdictional based on vege/hydrology, soil primary indicators absent but meets hydrology for 2 weeks after storm event.</td>
<td>None</td>
<td>City/COE</td>
</tr>
</tbody>
</table>

### SEGMENT 1—Sunset to Alliance Avenue

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>See: NRM, 2008</td>
<td>Wetlands present within the PSB of the Selected Alignment were delineated separately for the City of Arcata (NRM, 2008) as part of the Foster Avenue Extension Project. The extension project considered impacts to wetlands of both the road bed as well as an adjacent pedestrian route and is not further presented or discussed as part of the current trail project because mapping was conducted during the Foster Avenue Extension Project. The footprint of the Selected Alignment along the Foster Avenue Extension Corridor does not extend beyond the limits of the previous investigation.</td>
<td>See: NRM, 2008</td>
<td>City/COE</td>
</tr>
</tbody>
</table>

### SEGMENT 2—Alliance Avenue

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 1</td>
<td><strong>Palustrine Emergent.</strong> Located at construction building pad on Foster Avenue. Small ponded area that meets both 2 and 3 parameter definition. Connects to stormwater culvert that drains into ditch in adjacent riparian that eventually connects to Jolly Giant creek through surface and subsurface flow (surface flow and hydric groundwater conditions or soils were not observed within the adjacent one-parameter riparian area).</td>
<td>None</td>
<td>City/COE</td>
</tr>
<tr>
<td>Wetlands 2 and 3 (Isolated)</td>
<td></td>
<td>Confirmation pits only.</td>
<td>City</td>
</tr>
<tr>
<td>Wetlands 4 and 5</td>
<td><strong>Palustrine Emergent.</strong> Located along northern side of upland berm (along east side of Alliance Avenue). The palustrine emergent wetlands are adjacent to a Jolly Giant Creek channel/branch.</td>
<td>Confirmation</td>
<td>City/COE</td>
</tr>
<tr>
<td>Water 1</td>
<td><strong>Jolly Giant Creek.</strong> “Water of the U.S.” (Non-tidal) defined at the OHWM. This Water is also within the area considered as the Interim Alignment (alternative that considers use of the existing railroad bed). Jolly Giant meanders through Shay Park and flows under Alliance Avenue in a culvert. The Water resurfaces and flows through Stonehenge (defined at Center Line with approximate OHWM of 8 to 10 feet width). Jolly Giant Creek will be avoided through the “Stonehenge” area because the established riparian area extends well beyond the OHWM and setbacks/avoidance of this</td>
<td>UP-2</td>
<td>City/COE</td>
</tr>
</tbody>
</table>
riparian was considered in selection process of Selected Alignment. Where the Water widens beyond the approximate 8-10 foot OHWM through “Stonehenge”, the Water was mapped as wider polygon to capture this variation. South of Stonehenge the Water returns to subsurface City of Arcata culverts and discharges to Butcher Slough within the Arcata Marsh.

**Ditch 2**
Located along east side of Alliance Avenue. This is a well established / vegetated, that connects to City stormwater conveyance system. The established vegetation as well as connectivity to widened palustrine emergent wetland area to the north indicates this area is likely both City and COE jurisdictional.

**SEGMENT 3.1—Below the High School Along Alliance Avenue**

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 6</td>
<td><em>Palustrine Emergent.</em> Located at the toe of slope below the high school and in some cases directly adjacent to edge of pavement along the east side of Alliance Avenue.</td>
<td>T88/T94 (and Ref: T95int-T101int)</td>
<td>City/COE</td>
</tr>
<tr>
<td>Ditch 3</td>
<td>Unvegetated. Stormwater conveyance from High School area to Alliance Avenue stormwater drain (potentially historic seep from urbanized portions of City). This predominantly unvegetated rocky channel is steep and discharges to a stormwater culvert at intersection along east side of Alliance Avenue. Due to seasonal winter wetland hydrology, this area is City two-parameter. This area does not meet COE three-parameter jurisdictional based on absence of established wetland palustrine emergent vegetation.</td>
<td>None</td>
<td>City</td>
</tr>
</tbody>
</table>

**SEGMENTS 3.2—L Street, Alliance to 12th Street (Begins Pedestrian Area)**

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 7</td>
<td><em>Palustrine Emergent.</em> This wetland is located along the west side of Alliance where the L Street corridor would be if it connected through from east to west across Alliance. This area is formed on compacted soil from the road bed and adjacent historic industrial and/or commercial use. This area meets both City and COE wetland definitions.</td>
<td>T82 (Ref: T83int through T86int)</td>
<td>City/COE</td>
</tr>
<tr>
<td>Wetland 8</td>
<td><em>Palustrine Emergent.</em> This area is located between two storage unit buildings along the east side of railroad tracks. It receives stormwater input from culvert between two other existing buildings; stormwater is blocked from discharging due to elevated railroad bed. This area classifies as a three-parameter wetland due to established wetland vegetation, wetland soils, and hydrology, and lacks obvious ditch topographic features in most locations (although directly connected to an upgradient culvert).</td>
<td>None</td>
<td>City/COE</td>
</tr>
</tbody>
</table>

**SEGMENTS 3.3—L Street, 12th to 8th Street**

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 4</td>
<td>Vegetated with FAC non-native grass species and buttercup. This area receives stormwater from City street culvert. Meets both City of Arcata and COE definition for wetland. City two-parameter boundary does not extend beyond COE boundary.</td>
<td>None</td>
<td>City/COE</td>
</tr>
<tr>
<td>Ditch 5</td>
<td><em>Palustrine Emergent.</em> Receives stormwater from City street culvert. Meets both City of Arcata and COE definition for wetland. City two-parameter boundary does not extend beyond COE boundary.</td>
<td>None</td>
<td>City/COE</td>
</tr>
<tr>
<td>SEGMENTS 3.4—L Street South of 8th Street to Samoa (Begins Coastal Zone)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ID</strong></td>
<td>Description / Location</td>
<td>Test Pit</td>
<td>Jurisdiction</td>
</tr>
<tr>
<td>Ditch 6</td>
<td>Stormwater conveyance on east side of L Street. Receives input from City stormwater culvert.</td>
<td>None</td>
<td>City/CC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEGMENT 3.5—Samoa Boulevard Crossing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ID</strong></td>
</tr>
<tr>
<td>Ditch 8, Ditch 9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEGMENT 4.0 / 5.1 / 5.2—South of Samoa to I Street</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ID</strong></td>
</tr>
<tr>
<td>Wetland 9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEGMENT 5.3—Arcata Marsh South of I Street</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area of investigation leaves the railroad alignment and follows a 25-foot wide swath centered on an existing trail through the Arcata Marsh.</strong></td>
</tr>
</tbody>
</table>

| **ID** | Description / Location | Test Pit | Jurisdiction |
| Ditch 10 | Southeast side of I Street. Low-lying partially vegetated ditch receives stormwater from I Street impervious surfaces. One and/or two-parameter boundary does not extend beyond COE boundary. | Confirmation pits of boundary. | City/COE/CC |
| Wetland 10 (Isolated) | Palustrine Emergent (Isolated). South side of I Street. This isolated marginal wetland with compacted soils associated with road bed and existing marsh trail along the WWTP bond berm to the southeast. The area has ponding water, wetland soils, FAC and wetland/grassy vegetation. One and/or two-parameter boundary does not extend beyond COE boundary. | Ref: T78int-T81int | City/CC |

<table>
<thead>
<tr>
<th>SEGMENT 5.4—Arcata Marsh I Street to Butcher Slough</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ID</strong></td>
</tr>
<tr>
<td>Wetland 11</td>
</tr>
<tr>
<td>Wetland 12</td>
</tr>
<tr>
<td>ID</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>Water 2</td>
</tr>
</tbody>
</table>

**SEGMENT 6.2—Butcher Slough to WWTP**

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 13</td>
<td>Estuarine Emergent (Saltmarsh). Receives tidal waters through a culvert on the east side of pedestrian bridge and south bank of Butcher Slough. One and/or two-parameter boundary does not extend beyond COE boundary. seashore saltgrass (Distichlis spicata) [FACW] coyote bush (Baccharis pilularis) [NI]</td>
<td>None (Ref: t65int-t68int)</td>
<td>City/COE/CC</td>
</tr>
</tbody>
</table>

**SEGSMENTS 6.3 / 7.1—WWTP to Gannon Slough**

The area of investigation consists of swath along the west side of the railroad bed along the margin of the bay.

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 14</td>
<td>Palustrine Emergent. Ditch-like in that it appears to be lined with gravel although not much topographic variation. Meets wetland hydrology and vegetation. Soil features are difficult to discern due to very gravelly component. Wetland 14 also includes a small portion of the Palustrine Emergent ditch that runs between South G Street and the railroad bed. This small portion was added to the PSB after the need was identified to provide temporary construction access to the trail alignment from the south terminus of South G Street. Along the west side of the railroad, Wetland 14 area connects to Wetland 15 and changes to Estuarine Intertidal Emergent (Saltmarsh) near the 8.0 foot HTL (confirmed during field visit). Typical vegetation is as follows: small-fruit bulrush (Scirpus microcarpus) [OBL] tufted hairgrass (Deschampsia cespitosa) [FACW] bristly oxtongue (Picris echoides) [FAC] teasel (Dipsacus sylvestris) [NI] Baltic rush (Juncus balticus) [OBL]</td>
<td>T61</td>
<td>City/COE/CC</td>
</tr>
<tr>
<td>Wetland 15</td>
<td>Estuarine Intertidal Emergent (Saltmarsh). Connects to Wetland 14 (Palustrine Emergent). Wetland areas along this stretch abut</td>
<td>T48, T3</td>
<td>City/COE/CC</td>
</tr>
</tbody>
</table>
Humboldt Bay and consist of dense, low salt marsh cover with adjacent scattered open mud with potential open wading bird foraging habitat. This area is potential habitat for listed plant species (see Habitat description/results). Representative plants are described in typical habitat description. Wetland 15 is discontinuous in some sections along the railroad bed due to culverts, access roads/intersections at HBNWR, etc, and crossings at Other Waters of the U.S. (Tidal), etc. Wetland 15 includes Saltmarsh at the shore of Gannon Slough. Adjacent riparian habitat was mapped that consisted of upland soils/hydrology (one-parameter vegetation); since the area is within the Coastal Zone, the riparian would be defined by the California Coastal Commission as a one-parameter wetland. See typical saltmarsh description for representative plant species within this area.

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Riparian (One-Parameter).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arroyo willow [few] (Salix lasiolepis) [FACW]</td>
</tr>
<tr>
<td></td>
<td>red alder (Alnus rubra) [FAC]</td>
</tr>
<tr>
<td></td>
<td>Himalayan blackberry (Rubus discolor) [FACW]</td>
</tr>
<tr>
<td></td>
<td>Pacific wax myrtle (Myrica californica) [FAC+]</td>
</tr>
<tr>
<td></td>
<td>coyote bush (Baccharis pilularis) [NI]</td>
</tr>
<tr>
<td></td>
<td>lupine (Lupinus sp.) [NI]</td>
</tr>
</tbody>
</table>

SEGMENT 7.2—Gannon Slough Crossing
Significant wetland features within the project area that lacked vegetation and were either at the bay margin or considered backwater, were mapped as Estuarine Intertidal Shore (Mud Flats). No vegetation was identified within these areas. These areas are likely below the High Tide Line which would define the area as a Water of the U.S./State. Where significant vegetation was present, areas were classified/mapped as estuarine intertidal emergent wetlands.

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water 3</td>
<td>Gannon Slough. “Other Water of the U.S. (Tidal)” and is mapped at the HTL and/or limits of unvegetated mud.</td>
<td>NA</td>
<td>City/COE/CC</td>
</tr>
</tbody>
</table>

SEGMENT 7.3 to 7.8—Gannon Slough to Bracut (Outside City of Arcata boundary)

<table>
<thead>
<tr>
<th>Location</th>
<th>Representative Vegetation</th>
<th>Transects</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 16</td>
<td>Palustrine Emergent. The area between the upland railroad bed and the edge of pavement for the area between Gannon Slough and Bracut consists of mostly non-native plant species growing in disturbed upland conditions as well as seasonally wet areas associated with a continuous ditch that was delineated along the entire stretch of the Highway 101 corridor. Vegetation consists of mowed non-native grasses along the edge of pavement. Areas that have groundwater hydrology to support predominance of hydrophytic vegetation were mapped as wetlands. Soils consisted of imported fill material from highway development. Depth to redoximorphic features and/or reduced matrix (hydric soil indicator) was generally consistent with presence of groundwater hydrology supporting hydrophytic vegetation and correlated with the mapped wetland boundary. Thus the delineated wetland line along the roadside ditch between highway 101 edge of pavement and the upland railroad bed complies with both Coastal Commission one-parameter definition as well as Army Corp three-parameter wetland definition. The mapped seasonally wet ditch is divided into two wetland classifications (FWS, 1979). Most of the ditch is classified as Palustrine Emergent</td>
<td>T8, T18</td>
<td>COE/CC</td>
</tr>
</tbody>
</table>
Non-persistent Seasonally Flooded. Several remnant patches where brackish vegetation was observed within the ditch were classified as Estuarine Emergent (Ditch), Non-persistent Irregularly Flooded with some level of tidal influence/seepage assumed. The brackish area is highly disturbed and is not deemed viable habitat for listed salt marsh plant species. Both sides of the railroad bed have scattered bunches of willow riparian (mostly contained within areas mapped as palustrine emergent wetlands). Where the riparian drip-line extends beyond the areas mapped as palustrine emergent wetland, the additional riparian area was mapped as a habitat type during the reconnaissance survey, and has been subsequently reclassified as one-parameter riparian per California Coastal Commission (although where not mapped as palustrine wetlands, the riparian area did not have presence of hydrology or hydric soils to support formation of actual wetland conditions and the over-story vegetation is presumed to not grow as hydrophytes in these areas). Representative plants associated with the emergent ditch between the Highway 101 edge of pavement and the railroad bed are

- soft rush (*Juncus effuses*) [OBL]
- California blackberry (*Rubus ursinus*) [FACW]
- fringed willowherb (*Epilobium ciliatum*) [FACW]
- field horsetail (*Equisetum vulgare*) [FAC]
- creeping bentgrass (*Agrostis stolonifera*) [FACW]
- curly dock (*Rumex crispus*) [FACW]

**Wetland 16 (continued)**

**Estuarine Emergent (Ditch)**

cordgrass (*Spartina densiflora*) [NI/FACW]
tufted hairgrass (*Deschampsia cespitosa*) [FACW]
seashore saltgrass (*Distichlis spicata*) [FACW]
Virginia glasswort (*Salicornia virginiana*) [OBL]
marsh rosemary (*Limonium californicum*) [FACW]
Baltic rush (*Juncus balticus*) [OBL]

**Habitat Type**

*One-Parameter Riparian*. Adjacent to Wetland 16.

**Water 4**

*Jacoby Creek*. “Other Water of the U.S. (Tidal)” and is mapped at the HTL and/or limits of unvegetated mud.

**Water 5**

*Old Jacoby Creek*. “Other Water of the U.S. (Tidal)”, waters are controlled by a tide gate under the highway and railroad berm.

**Water 6**

*Brainard's Slough*. “Other Water of the U.S. (Tidal)”, receives drainage from Washington and Rocky Gulches.

**Interim Alignment Results**

**Wetland B1.** This is a down-gradient portion of palustrine emergent wetland delineated as part of the City of Arcata Foster Avenue extension project (NRM, 2008).

**Riparian.** Substantial one-parameter riparian area was mapped throughout Shay Park. Where the areas met two- or three-parameter wetland definition, the area was classified as a wetland.

**Ditch B1.** North side of tracks, palustrine vegetation within a stormwater ditch from railroad bed and upgradient developed areas. This connects directly to Jolly Giant Creek channel and/or branch. City and COE jurisdictional based on seasonal wet conditions at the surface and wetland vegetation (soils qualify for hydric conditions due to persistent saturation and redoximorphic features).
Water 1. Jolly Giant Creek, see results described for Selected Alignment.

Secondary Alignment Results

Ditch C1 and Ditch C2. These are located where the existing road makes a 90-degree bend around the west end of the Arcata High School football field. These consist of FAC and FACW grass species and receive stormwater from the football field and upgradient developed areas and do not drain due to low-lying topography and established pond further to the west. The ditch on the west side of the road (Ditch C1) has more apparent ditch topography and has likely been altered in an attempt to promote drainage. Ditch C2 to the east is immediately adjacent to the football field and does not drain due to road bed to the west. Both ditches consist of wetland soils and persistent groundwater hydrology within 10-inches of the surface.

Habitat Results

Shorebird Roosting / Rocky Shoreline
Existing study results from three years of surveys conducted by Humboldt State University (wildlife department) of roosting Dunlin (Calidris alpina) document the presence of several shorebird roosting locations along the railroad alignment between Arcata and Bracut and several more beyond that towards Eureka (particularly at the intersection/corner of the levee at Bracut). The actual railroad alignment is potentially used for roosting mostly during high tides when more preferred locations are unavailable along the Bay margin. Additionally, according to Dr. Mark Colwell (pers. comm., August 8, 2009, Humboldt State University), radio tracking studies show that the same roosting location is not often repeatedly used by the same bird; thus, cumulative impacts to shorebird roosting in the Humboldt Bay region could be more of a concern than individual impacts to a single roosting location. Winzler & Kelly biologist conducted multiple field visits during high tide events to evaluate the use of the proposed trail alignment and to identify shorebird roosting locations along the railroad alignment. The biologist did not observe use of the roosting locations on the railroad alignment other than piles that are away from the railroad bed and within the intertidal zone. One rocky RSP area was mapped during the reconnaissance survey, near Bracut, where evidence of shorebird use was observed along the high tide line. This area was confirmed to be used at least on occasion by shorebirds for roosting based on observation made during wetland delineation field work of January 2010. The area consists of rocky RSP material likely placed to stabilize the toe of slope along the railroad bed. The area is on the west side of the railroad bed near the edge of water and is not currently proposed for trail alignment.

Shorebird use of the railroad alignment within the project footprint does not appear to be frequent based on high-tide site visits along the margin of the bay. The identified shorebird roosting locations will not be removed by the proposed trail alignment and is on the west side of the railroad alignment and separated from the proposed trail location. The habitat area will be acknowledged during trail installation.

Endangered Species Habitats
Areas mapped as estuarine intertidal emergent wetlands are considered potential habitat for Humboldt Bay owl’s-clover (Castilleja ambigua ssp. humboldtiensis) and Point Reyes bird’s-beak (Cordylanthus maritimus ssp. palustris) [both CNPS List 1B.2]. CNPS listed plant species
Lyngbye's sedge (*Carex lyngbyei*) [CNPS List 2.2] is also associated with the Estuarine Intertidal Emergent (Saltmarsh) wetland. Of lesser potential to occur at the site is sand spurrey (*Spergularia canadensis* var. *occidentalis*) (associated with prime saltmarsh habitat). Sand spurrey has not been reported along the east shore of Humboldt Bay. A population of Lyngbye's sedge was identified in the CalTrans DEIR along the shores of Gannon Slough.

At the Butcher Slough crossing, **Wetland 11** and **Wetland 13** are classified as Estuarine Intertidal Emergent (salt marsh) and are considered potential habitat for these species. From the WWTP south to Bracut, wetland areas along the west side of the highway (**Wetland 15**) abuts Humboldt Bay and is classified as Estuarine Intertidal Emergent (salt marsh). **Wetland 15** encompasses Saltmarsh vegetation along the margins of Gannon Slough estuary (Water of the U.S.—Tidal). The vegetated salt marsh on the west side of the tracks along the margin of the bay are considered moderate to high value habitat for these listed plant species. The mapped estuarine emergent areas (**Wetland 16**) within the ditch that runs along highway 101 on the east side of the railroad were determined during the wetland delineation to be brackish but not defined as salt marsh habitat, and thus are unlikely to be viable habitat for these listed plant species. During the habitat mapping and wetland delineation, listed plant species were searched for within **Wetlands 11, 13, 15, and 16** and no populations were observed.

On May 28, 2010, Gary Lester (Botanist) of Winzler & Kelly conducted site-specific and seasonally appropriate plant survey for the following listed plant species, Humboldt Bay owl’s clover (*Castilleja ambigua* ssp. *humboldtiensis*) and Lyngbye's sedge (*Carex lyngbyei*). The May 28, 2010, seasonally appropriate botanical survey was conducted at Butcher Slough crossing (Figure 4-14), the west side of the railroad track between the Arcata WWTP and Gannon Slough (Figures 4-18 and 4-19), Gannon Slough Crossing (Figure 4-20), Jacoby Creek crossing (Figure 4-21), Old Jacoby Creek tide gate (Figure 4-22), and Brainard’s Slough (Figure 4-26). Areas within site access route, within potential trail footprint, and at water crossings within 100 feet of the planned project were evaluated, as well as adjacent brackish ditch areas. An estimated 51,000 plants of Humboldt Bay owl’s clover were located at approximately 14 different sites from the Arcata Marsh (Figure 4-14) to Brainard’s Slough (Figure 4-26) (see results on Figures 4-18, 4-19, 4-20, 4-21 and 4-22). It was determined that it was too early for seasonal appropriate surveys of Pt. Reyes bird’s beak due to the late spring season at the time of the preparation of this report. A later site visit (mid-July) is proposed to determine presence/absence of Pt. Reyes bird’s beak and sand spurrey.

The tidal areas of Butcher Slough, Gannon Slough, Jacoby Creek, Old Jacoby Creek tide gate, and Brainard’s Slough were mapped as “Waters of the U.S.” and are considered potential habitat for several endangered fish species.
# Table 2: Potentially Occurring Special-Status Plant Species in the Project Vicinity

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
<th>Preferred Habitat</th>
<th>Potential to Occur at Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abronia umbellata ssp. breviflora</td>
<td>pink sand-verbena</td>
<td>1B.1</td>
<td>Coastal dunes; flowers July-Oct.</td>
<td><strong>Low potential</strong> to occur at site.</td>
</tr>
<tr>
<td>Carex arcta</td>
<td>northern clustered sedge</td>
<td>2.2</td>
<td>Wet areas in North Coast coniferous forests.</td>
<td><strong>Not present</strong> at site during wetland delineation and habitat mapping Dec. 2009-March 2010.</td>
</tr>
<tr>
<td>Carex lyngbyei</td>
<td>Lyngbye’s sedge</td>
<td>2.2</td>
<td>Brackish or freshwater marshes and swamps; flowers May-Aug.</td>
<td><strong>Present.</strong> Several populations mapped during May 2010 botanical survey at Gannon Slough but outside of trail alignment/footprint.</td>
</tr>
<tr>
<td>Castilleja ambigua ssp. humboldtiensis</td>
<td>Humboldt Bay owl’s clover</td>
<td>1B.2</td>
<td>Coastal salt marsh and swamps; flowers April-Aug.</td>
<td><strong>Present.</strong> A total of 14 populations mapped during May 2010 botanical survey.</td>
</tr>
<tr>
<td>Cordylanthus maritimus ssp. palustris</td>
<td>Point Reyes bird’s-beak</td>
<td>1B.2</td>
<td>Coastal salt marsh and swamps; flowers June-Oct.</td>
<td><strong>Potentially present</strong> in salt marsh to west of highway 101 and in vicinity of Butler slough.</td>
</tr>
<tr>
<td>Erysimum menziesii ssp. eurekense</td>
<td>Humboldt Bay wall flower</td>
<td>1B.1, E (Fed/State)</td>
<td>Coastal dunes. Found in prime dune-mat habitat on west side of Bay; flowers March-April.</td>
<td><strong>Low potential</strong> to occur at site.</td>
</tr>
<tr>
<td>Fissidens pauperculus</td>
<td>minute pocket moss</td>
<td>1B.2</td>
<td></td>
<td><strong>Not present</strong> no dune habitat present, not listed for Arcata south or north quads, although well known and established at Lanphere Dunes which is on the Arcata North quad.</td>
</tr>
<tr>
<td>Layia carnosa</td>
<td>beach layia</td>
<td>1B.1, E (Fed/State)</td>
<td>Coastal dunes; flowers March-July.</td>
<td><strong>Not present</strong> at site, no habitat present at site.</td>
</tr>
<tr>
<td>Lilium occidentale</td>
<td>western lily</td>
<td>1B.1, E (Fed/State)</td>
<td>Coastal bluff scrub and prairies and openings in Northcoast coniferous forests. Also, freshwater marshes and swamps; flowers June-July.</td>
<td><strong>Not present</strong> at site during 2006 surveys, no habitat present at site.</td>
</tr>
<tr>
<td>Montia howellii</td>
<td>Howell’s montia</td>
<td>2.2</td>
<td>Wet disturbed sites throughout Northcoast coniferous forests, usually located on compacted surfaces with minimal vegetation coverage; flowers March-May.</td>
<td><strong>Present.</strong> Adjacent to proposed alignment along highway 101 corridor and within Butler slough and adjacent habitat.</td>
</tr>
<tr>
<td>Northern Coastal Salt Marsh</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td><strong>Present.</strong></td>
</tr>
<tr>
<td>Sidalcea malviflora ssp. patula</td>
<td>Siskiyou checkerbloom</td>
<td>1B</td>
<td>Openings in redwood forest, coast scrub and prairie; flowers late May-June.</td>
<td><strong>Potentially present.</strong> Roadside provide potential habitat.</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Status</td>
<td>Preferred Habitat</td>
<td>Potential to Occur at Site</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------</td>
<td>--------</td>
<td>------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Sidalcea oregana ssp. eximia</strong></td>
<td>coast checkerbloom</td>
<td>1B.2</td>
<td>Openings in redwood forest, coast scrub and prairie; flowers late May-June.</td>
<td><strong>Potentially present.</strong> Roadsides provide potential habitat.</td>
</tr>
<tr>
<td><strong>Spergularia canadensis var. occidentalis</strong></td>
<td>western sand spurry</td>
<td>2.2</td>
<td>Coastal salt marshes and swamps; flowers June-Aug.</td>
<td><strong>Low to Moderate Potential</strong> to occur at site due to lack of recent occurrences, and no recent observations along margin of the Bay. Absence cannot be confirmed without seasonally-appropriate surveys.</td>
</tr>
<tr>
<td><strong>Viola palustris</strong></td>
<td>marsh violet</td>
<td>2.2</td>
<td>Coastal scrub and coastal bogs and fens; flowers March-August.</td>
<td><strong>Low potential</strong> to occur at site. Not present during wetland delineation and habitat mapping Dec. 2009-March 2010. This species has been absent from the project vicinity for years, and due to absence of even moderate quality freshwater marsh, this species is highly unlikely to occur.</td>
</tr>
</tbody>
</table>
**Riparian (One-Parameter)**
These areas are mapped as Coastal Commission jurisdictional one-parameter wetlands within the Coastal Zone (see descriptions above in Wetland results), and as a habitat type where not in the coastal zone and not accompanied by wetland hydrology or soils (for example Shay Park). The riparian area consists of tree-dominated cover that occurs parallel or adjacent to the tracks and often adjacent to palustrine emergent wetlands. Where the willows are within a mapped wetland they are mapped as three-parameter wetlands (see Wetlands results above). Where the riparian drip line extends beyond the mapped palustrine emergent wetlands, the one-parameter riparian is mapped separately as a habitat when not in the Coastal Zone (upland soils and hydrology but with riparian overstory). Potential habitat for nesting birds, including the California Species of Special Concern (limited state distribution) Black-capped Chickadee. The adjacent riparian habitat nearest Shay Park has a high potential for migratory bird use. Typical vegetation within these areas consists of the following species:

- *Alnus rubra*—red alder
- *Salix lasiolepis*—Pacific willow
- *Crataegus douglasii*—Douglas’s hawthorn
- *Myrica californica*—wax myrtle
- *Rubus ursinus*—California blackberry
- *Ranunculus repens*—creeping buttercup
- *Athyrium filix-femina*—lady fern
- *Rumex crispus*—curly dock

**VI. CONCLUSIONS**

The wetland delineation of January through March 2010 was performed on property that is proposed for trail alignment. The wetland delineation determined the extent of wetland-type vegetation (based on one-parameter, in areas that are within the Coastal Zone, and the extent of wetlands having wetland-type vegetation, hydric soils, and wetland hydrology (based two-parameter and/or three parameters) in areas not in the Coastal Zone and within City of Arcata primary jurisdiction. The Project study Boundary (PSB) was determined to consist of a total of 16 jurisdictional wetland areas (palustrine emergent, estuarine intertidal emergent saltmarsh, estuarine emergent-ditch), five (5) “Other Waters of the U.S./State (Tidal)”, one (1) “Water of the U.S./State (non-tidal)”, and 10 ditches (potentially jurisdictional). Of the 16 delineated wetlands, 13 are COE jurisdictional three-parameter wetlands, 15 are within the City of Arcata limits and are jurisdictional by the City two-parameter definition, and 8 are within the primary jurisdiction or appeal zone for the Coastal Commission and qualify based on the Commissions one-parameter definition (one-parameter riparian in the Coastal Zone was mapped as separate habitat type to meet Commissions requirements). Of the 10 mapped ditches, a total of nine (9) are City of Arcata jurisdictional, five (5) are Army Corp Jurisdictional, and four (4) are Coastal Commission jurisdictional. Of the six (6) Waters of the U.S./State mapped within the PSB, all six are Army Corp jurisdictional, three are within the City of Arcata boundaries, and five are in the Coastal Zone and within Coastal Commission jurisdiction.

One single upland/wetland line is shown for areas within the Coastal Zone that satisfies both the COE (three-parameter) and Coastal Commission (one-parameter) wetland definitions. Similarly, the delineated wetland boundary lines within City of Arcata jurisdiction and not in the Coastal Zone...
Zone, complies with both the COE (three-parameter) and City of Arcata (two-parameter) wetland definitions.

The wetland delineation results are summarized in Table 3 below and mapped on map series 4 (Figures 4-1 through 4-28, Appendix A). The field data sheets from the delineation area are included in Appendix B.

### Table 3: Summary of Wetland Results

<table>
<thead>
<tr>
<th>Type</th>
<th>City of Arcata (City)</th>
<th>Army Corp (COE)</th>
<th>Coastal Commission (CC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch</td>
<td>Ditches 1 - 6, 8 - 10</td>
<td>Ditches 1, 2, 4, 5, 10</td>
<td>6, 8, 9, 10</td>
</tr>
<tr>
<td>Wetland</td>
<td>Wetlands 1 - 15</td>
<td>Wetlands 1, 4 - 9, 11 - 16</td>
<td>Wetlands 9 - 16</td>
</tr>
<tr>
<td>Water</td>
<td>Waters 1 - 3</td>
<td>Waters 1 – 6</td>
<td>Waters 2 – 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total: 9</th>
<th>Total: 5</th>
<th>Total: 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total: 15</td>
<td>Total: 13</td>
<td>Total: 8</td>
</tr>
<tr>
<td></td>
<td>Total: 3</td>
<td>Total: 6</td>
<td>Total: 5</td>
</tr>
</tbody>
</table>

### VII. SPECIAL TERMS AND CONDITIONS

To achieve the delineation objectives stated in this report, conclusions of the delineation were based on the information available during the period of the investigation, December 2009 through March 2010. Land use practices and regulations can change thereby affecting current conditions and delineation results; therefore, this delineation is given a 5-year expiration period. This report was prepared for the exclusive use of the City of Arcata. Winzler & Kelly is not liable for any action arising out of the reliance of any third party on the information contained within this report.

This report does not authorize any individuals to develop, fill or alter the wetlands delineated, or special or sensitive habitat(s) identified. **Verification of the delineation by jurisdictional agencies is necessary prior to the use of this report for planning and development purposes. An agency stamped delineation map and jurisdictional approval letter is required to signify confirmation of delineation results.** The client/property owner is responsible to maintain all delineation flagging placed at the site by Winzler & Kelly, for ease of jurisdictional agency(s) site review. The client may elect to place semi-permanent markers and/or point labels to avoid loss of data points prior to jurisdictional approval(s). In situations where a field investigation determines that no jurisdictional wetlands occur, jurisdictional concurrence with these findings is recommended. It is recommended that a survey be conducted at the site to record exact location of each data point(s).

If filling is used under permitted authority (after agency review and written verification of said activities) care should be given to maintain sufficient quantity of fill to prevent a reestablishment of wetlands.
VIII. REFERENCES


CNPS, 2009a. Inventory of Rare and Endangered Plants (online edition, v7-09d). Arcata North Quadrangle. California Native Plant Society (CNPS). Reviewed on: October 8, 2009, [http://cnps_site.aplus.net/cgi-bin/dl/inventory.cgi/Search?search=%2B%22Arcata+North+%28672A%29+4012481%22](http://cnps_site.aplus.net/cgi-bin/dl/inventory.cgi/Search?search=%2B%22Arcata+North+%28672A%29+4012481%22)

CNPS, 2009b. Inventory of Rare and Endangered Plants (online edition, v7-09d). Arcata South Quadrangle. California Native Plant Society (CNPS). Reviewed on: October 8, 2009, [http://cnps_site.aplus.net/cgi-bin/dl/inventory.cgi/Search?search=%2B%22Arcata+South+%28672D%29+4012471%22](http://cnps_site.aplus.net/cgi-bin/dl/inventory.cgi/Search?search=%2B%22Arcata+South+%28672D%29+4012471%22)


Humboldt County, 1989. *Humboldt County General Plan, Humboldt Bay Area.*

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Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Arcata County GIS; Coastal Zone, HBNWR boundaries, and Arcata NAF - 2009 1 meter resolution.

Figure 2-1
Project Study Boundary

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Page 1 of 28
Project: City of Arcata
Rail-with-Trail Connectivity Project

Arcata High School
Sports Complex

Future Arcata
Fire Department

Greenwood Cemetery

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 - 1 meter resolution.

1 inch = 100 feet printed at 8.5x11

Figure 2-2
Project Study Boundary

Cartography: GLD
Date: 3/3/2011
Project #: 01051-09-004
Figure 2-4
Project Study Boundary

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Arcata High School

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS, Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

1 inch = 100 feet printed at 8.5x11

Cartography: GLD
Date: 3/3/2011
Project #: 01051-09-004

City Boundary
City Parks
Coastal Zone
HBNWR
Creeks
Study Area
Property Line
Alignment Study Segments

Page 4 of 28

Jolly Giant Creek
Shay Park

Page 4 of 28

0 25 50 100 Ft
Project: City of Arcata
Rail-with-Trail Connectivity Project

Study Area
Property Line
Alignment Study Segments
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Source: City of Arcata GIS - 1 ft resolution aerial, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAP 2009 1 meter resolution.

Date: 3/3/2011
Project #: 01051-09-004

0 25 50 100 Ft
1 inch = 100 feet printed at 8.5x11
Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography

Figure 2-9
Project Study Boundary

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Project #
01051-09-004

City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Study Area
Property Line
Alignment Study Segments

1 inch = 100 feet printed at 8.5x11
Arcata Marsh and Wildlife Sanctuary

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Project # 01051-09-004

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Date: 3/3/2011

Figure 2-11
Project Study Boundary

1 inch = 100 feet printed at 8.5x11

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD
Date: 3/3/2011
Project #: 01051-09-004
Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

1 inch = 100 feet printed at 8.5x11

Date: 3/3/2011

City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Study Area
Property Line
Alignment Study Segments

Page 14 of 28

Figure 2-14
Project Study Boundary

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Cartography
GLD

Date:
3/3/2011

Project #
01051-09-004
Figure 2-15
Project Study Boundary

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography
GLD
Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
633 3RD ST
EUREKA, CA 95521
P: 707-444-8388  F: 707-444-8330

City of Arcata
WWTP and Corp Yard

Butcher Slough

Segment 2A1
Segment 2A2

Driveway

Segment 3B3

South G ST

Study Area
Property Line
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

1 inch = 100 feet printed at 8.5x11

Page 15 of 28
Project: City of Arcata
Rail-with-Trail Connectivity Project

Project # 01051-09-004

633 3RD ST
EUREKA, CA 95521
P: 707-443-8326   F: 707-444-8330

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

1 inch = 100 feet printed at 8.5x11

Cartography: GLD
Date: 3/3/2011   Project #: 01051-09-004

Figure 2-17
Project Study Boundary

Study Area
Property Line
Alignment Study Segments
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Page 17 of 28
Project: City of Arcata Rail-with-Trail Connectivity Project

Segment #7.3
Segment #7.4
Segment #7.5

Study Area
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD
Date: 3/3/2011
Project #: 01051-09-004

Figure 2-21
Project Study Boundary

1 inch = 100 feet printed at 8.5x11

101

Jacob Creek

US HWY 101

633 3RD ST
EUREKA, CA 95521
P: 707-443-8326 F: 707-444-8330
<table>
<thead>
<tr>
<th>Study Area</th>
<th>City Boundary</th>
<th>City Parks</th>
<th>Coastal Zone</th>
<th>HBNWR</th>
<th>Creeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Line</td>
<td>Alignment Study Segments</td>
<td>0 25 50 100 Ft</td>
<td>1 inch = 100 feet printed at 8.5x11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2-22
Project Study Boundary

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Cartography: GLD
Date: 3/3/2011
Project #: 01051-09-004

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
Project: City of Arcata Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 - 1 meter resolution.

Cartography: GLD
Date: 3/3/2011
Project #: 01051-09-004

1 inch = 100 feet printed at 8.5x11
Project:
City of Arcata
Rail-with-Trail Connectivity Project

Project #
01051-09-004

Sources:
City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography
GLD

Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
633 3RD ST
EUREKA, CA 95501
P: 707-443-8333  F: 707-443-8330

1 inch = 100 feet printed at 8.5x11
Project: City of Arcata
Rail-with-Trail Connectivity Project

Project Study Boundary

Figure 2-25

Study Area
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD
Date: 3/3/2011
Project #: 91051-09-004

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Project: City of Arcata Rail-with-Trail Connectivity Project

Figure 2-27 Project Study Boundary

Study Area
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD
Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
613 3RD ST
EUREKA, CA 95501
P: 707-443-8335  F: 707-444-8330
Figure 2-28
Project Study Boundary

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

City of Arcata Rail-with-Trail Connectivity Project

City Boundary
Property Line
Study Area
City Parks
Coastal Zone
HBNWR
Creeks

Page 28 of 28
Page 28 of 28
Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Figure 3-1
Phase I Sites of Interest
Figure 3-2
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)
Study Area
Staging Area
Parcels
Creeks

Sources:
City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, NWHN/R boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/KCH
Date: 3/3/2011
Project #: 0150-99004

WINZLER & KELLY
833 3RD ST
EUREKA, CA 95501
P: 707-444-8338, F: 707-444-8330
Figure 3-3
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLDRCH
Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
813 3RD ST
EUREKA, CA 95501
P: 707-443-6339   F: 707-444-8330
Project: City of Arcata
Rail-with-Trail Connectivity Project

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)
Study Area
Staging Area
Parcels
Creeks

Figure 3-4
Phase I Sites of Interest

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Arcata High School

Foster Ave

Jolly Giant Creek

Site TB-D

Site TB-C

0 25 50 100 Ft
1 inch = 100 feet printed at 8.5x11
Arcata High School

(Site of former UST on school grounds unknown)

Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
813 3RD ST
EUREKA, CA 95501
P: 707-443-8330 F: 707-444-8330

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Figure 3-5
Phase I Sites of Interest

Sources:
- City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
Figure 3-6
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)
Study Area
Staging Area
Parcels
Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

1 inch = 100 feet printed at 8.5x11

Cartography: GLDRCH
Date: 3/3/2011
Project #: 01051-09-004

Project:
City of Arcata Rail-with-Trail Connectivity Project

WINZLER & KELLY
833 3RD ST
EUREKA, CA 95501
P: 707-444-8330  F: 707-444-8330
Figure 3-7
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Project:
City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY
633 3RD ST
EUREKA, CA 95501
P: 707-443-8335  F: 707-444-9330

Cartography:
GLD/RC

Date: 3/3/2011
Project #: 01051-09-004
Figure 3-8
Phase I Sites of Interest

Historical TP Burner Sites

- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest

- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Legend:
- Trail Centerline (5/10/10)
- Study Area
- Staging Area
- Parcels
- Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004

Project:
City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY
633 3RD ST
EUREKA, CA 95501
P. 707-443-8378 F. 707-444-8330

Page 8 of 28
Figure 3-9
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NaP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004

Project:
City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY
613 3RD ST
EUREKA, CA 95501
P: 707-443-8339  F: 707-444-6330

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NaP 2009 1 meter resolution.
Figure 3-10
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
Figure 3-12
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Arcata Marsh and Wildlife Sanctuary

Site 35 ~300'

Jolly Giant Creek

Figure 3-13

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 61061-00004

Project:
City of Arcata Rail-with-Trail Connectivity Project
Project: City of Arcata Rail-with-Trail Connectivity Project

Figure 3-14
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Site TB-F

Jolly Giant Creek

Arcata Marsh and Wildlife Sanctuary

Cartography GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
633 3RD ST EUREKA, CA 95501
P: 707.444.8338  F: 707.444.8339
Figure 3-15
Phase I Sites of Interest

Historical TP Burner Sites
- ▲ Hazard Rank 1
- ▲ Hazard Rank 2

Other Sites of Interest
- ● Hazard Rank 1
- ○ Hazard Rank 2
- ▲ Hazard Rank 3
- ● Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

City of Arcata WWTP and Corp Yard

Site 36 ~100'

Site 38

Site 37

Site 39

Driveway

South G ST

Butcher Slough

Trail Centerline (5/10/10)

Study Area

Staging Area

Parcels

Creeks

1 inch = 100 feet printed at 8.5x11

Date: 3/3/2011

Project #: 01051-09-004

Page 15 of 28
Figure 3-17
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 - 1 meter resolution.

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 - 1 meter resolution.

Cartography: GLD/RCH
Date: 3/5/2011
Project #: 01505-900

Project:
City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY
813 3RD ST
EUREKA, CA 95501
P: 707-444-8338  F: 707-444-8330
Figure 3-18
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004
Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Study Area
Trail Centerline (5/10/10)
Staging Area
Parcels
Creeks

Figure 3-19
Phase I Sites of Interest

Sources:
City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004

Note: 1 inch = 100 feet printed at 8.5x11
Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)
Study Area
Staging Area
Parcels
Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Figure 3-20
Phase I Sites of Interest

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-09-004

1 inch = 100 feet printed at 8.5x11
Historical TP Burner Sites
- ▲ Hazard Rank 1
- ▲ Hazard Rank 2

Other Sites of Interest
- ● Hazard Rank 1
- ● Hazard Rank 2
- ● Hazard Rank 3
- ● Hazard Rank 4

- Trail Centerline (5/10/10)
- Study Area
- Staging Area
- Parcels
- Creeks

Figure 3-21
Phase I Sites of Interest

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD/RCH
Date: 3/3/2011
Project #: 01051-004-004
Figure 3-22
Phase I Sites of Interest

- **Historical TP Burner Sites**
  - Hazard Rank 1
  - Hazard Rank 2

- **Other Sites of Interest**
  - Hazard Rank 1
  - Hazard Rank 2
  - Hazard Rank 3
  - Hazard Rank 4

- Trail Centerline (5/10/10)
- Study Area
- Staging Area
- Parcels
- Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Historical TP Burner Sites

- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest

- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)

Staging Area

Parcels

Creeks


Figure 3-23
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)
Study Area
Staging Area
Parcels
Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
Project: City of Arcata Rail-with-Trail Connectivity Project

Historical TP Burner Sites
- ▲ Hazard Rank 1
- ▲ Hazard Rank 2

Other Sites of Interest
- ● Hazard Rank 1
- ● Hazard Rank 2
- ● Hazard Rank 3
- ● Hazard Rank 4

- Trail Centerline (5/10/10)
- Study Area
- Staging Area
- Parcels
- Creeks

Figure 3-24
Phase I Sites of Interest

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLDRCH
Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
833 3RD ST
EUREKA, CA 95501
P: 707-444-8330 F: 707-444-8330
Figure 3-25
Phase I Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

N
0 25 50 100 Ft
1 inch = 100 feet printed at 8.5x11

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS, Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Project:
City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY
633 3RD ST
EUREKA, CA 95501
P: 707-443-8339  F: 707-444-8330
Figure 3-27
Phase 1 Sites of Interest

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)
Study Area
Staging Area
Parcels
Creeks

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography
GLORCH
Date: 3/3/2011
Project #: 01051-09-004

WINZLER & KELLY
813 3RD ST
EUREKA, CA 95501
P: 707-443-8339  F: 707-444-8330
Figure 3-28
Phase I Sites of Interest

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Historical TP Burner Sites
- Hazard Rank 1
- Hazard Rank 2

Other Sites of Interest
- Hazard Rank 1
- Hazard Rank 2
- Hazard Rank 3
- Hazard Rank 4

Trail Centerline (5/10/10)
Study Area
Staging Area
Parcels
Creeks

Site TB-H
~100'

Site 41
~1 Mile

Bracut Industrial Park
Bracut Driveway
US HWY 101
KOA CAMP GROUND

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
**Wetland Delineation - Habitat Mapping - Sensitive Plant Species**

- **Wetland - Palustrine Emergent**
- **Wetland - Ditch (Palustrine)**
- **Wetland - Estuarine Emergent (Ditch)**
- **Wetland - Estuarine Intertidal Emergent**
- **Other Waters of the US (Tidal)**
- **Water - OHWM**
- **Shorebird Roosting**
- **Riparian**
- **Plant Species**
  - *Caryx lyngbyei*
  - *Castilleja ambigua*
  - *Cordylanthus maritimus*

**Field Data Points**
- Estuarine Intertidal Emergent Wetland
- Other Waters of the US (Tidal)
- Palustrine Emergent Wetland
- Test Pit

**Elevation data**
- Contour, Index (5 Ft)
- Contour, Minor (1 Ft)
- Mean High Tide (6ft - NAVD88)
- High Tide Line (8ft - NAVD88)

This wetlands delineation map is the opinion of Winzler & Kelly at the time the delineation was conducted. This map is not for planning, permitting, or construction uses without a U.S. Army Corps of Engineers (COE) jurisdictional determination stamp below. Note that some projects may also need verification of delineation map from the California Department of Fish & Game (DFG), County, and/or USFWS.
Figure 4-03
Existing Wetlands/Habitats

Project:
City of Arcata
Rail-with-Trail Connectivity Project

CityBoundry
City Parks
Coastal Zone
HBNWR
Study Area

Note: See Figure 4-00 for supplemental legend

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

M ST
Greenwood Cemetery

Page 03 of 28
Figure 4-06
Existing Wetlands/Habitats

Project:
City of Arcata
Rail-with-Trail Connectivity Project

 Sources: City of Arcata GIS - 1 ft resolution aerials; Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 4-00 for supplemental legend
Figure 4-07
Existing Wetlands/Habitats

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Legend:
- City Boundary
- City Parks
- Coastal Zone
- HBNWR
- Trail Footprint
- Bridges
- Creeks
- Property Line

Note: See Figure 4-00 for supplemental legend
Figure 4-08
Existing Wetlands/Habitats

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 4-00 for supplemental legend

Camography
GLD
Date: 3/2/2011
Project # 0051-08-000
Figure 4-09
Existing Wetlands/Habitats

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 4-00 for supplemental legend.
Arcata Marsh and Wildlife Sanctuary

Existing Treatment Pond

Existing Treatment Pond

Ditch 10

Ditch 10

Wetland 9

Wetland 10

Note: See Figure 4-00 for supplemental legend
Figure 4-15
Existing Wetlands/Habitats

City Boundary

City Parks

Coastal Zone

HBNWR

Study Area

Trail Footprint

Bridges

Creeks

Property Line

Note: See Figure 4-00 for supplemental legend

Page 15 of 28

City of Arcata
WWTP and Corp Yard

Castilleja ambigu 19 Plants

Water 2

Wetland 13

Wetland 14

City of Arcata

WWTP and Corp Yard

Segment #3

Segment #2

Segment #4

South G ST

Date: 3/2/2011

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
Figure 4-17
Existing Wetlands/Habitats

City of Arcata
Rail-with-Trail Connectivity Project

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

CityBoundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Note: See Figure 4-00 for supplemental legend
Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
Note: See Figure 4-00 for supplemental legend.
Figure 4-21
Existing Wetlands/Habitats
Figure 4-26
Existing Wetlands/Habitats

Source: City of Arcata GIS - 1 ft resolution aerials; Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 4-00 for supplemental legend

CityBoundary
City Parks
Coastal Zone
HBNWR
Study Area
Trail Footprint
Bridges
Creeks
Property Line

0 25 50 100 Ft

Date: 3/2/2011
Project #: 05051-08-004
City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY
613 3RD ST
EUREKA, CA 95501
P: 707-443-8330  F: 707-444-9330
Figure 4-28
Existing Wetlands/Habitats

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 4-00 for supplemental legend

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Camography
G.L.D
Date: 3/2/2011
Project # 01051-09-004
Impacts to Wetland, Habitats and Sensitive Plant Species

- **Wetland - Palustrine Emergent**
- **Wetland - Ditch (Palustrine)**
- **Wetland - Estuarine Emergent (Ditch)**
- **Wetland - Estuarine Intertidal Emergent**
- **Other Waters of the US (Tidal)**
- **Water - OHWM**

- **Shorebird Roosting**
- **Riparian**
- **Plant Species**
  - Caryx lyngbyei
  - Castilleja ambigua
  - Cordylanthus maritimus

**Elevation data**
- Contour, Index (5 Ft)
- Contour, Minor (1 Ft)
- Mean High Tide (6ft - NAVD88)
- High Tide Line (8ft - NAVD88)

This wetlands delineation map is the opinion of Winzler & Kelly at the time the delineation was conducted. This map is not for planning, permitting, or construction uses without a U.S. Army Corps of Engineers (COE) jurisdictional determination stamp below. Note that some projects may also need verification of delineation map from the California Department of Fish & Game (DFG), County, and/or USFWS.

**COE STAMP FOR JURISDICTIONAL APPROVAL**

**Figure 5 - 00 Wetlands/Habitats Impacts**
Impacts to Wetland, Habitats and Sensitive Plant Species

- **Wetland - Palustrine Emergent**
- **Wetland - Estuarine Intertidal Emergent**
- **Other Waters of the US (Tidal)**
- **Wetland - Estuarine Emergent (Ditch)**
- **Wetland - Ditch**
- **Water - OHWM**

- **Habitat Type - Shorebird Roosting**
- **Habitat Type - Riparian**
- **Plant Species**
  - Caryx lyngbyei
  - Castilleja ambigua
  - Cordylanthus maritimus

**Elevation data**
- Contour, Index (5 Ft)
- Contour, Minor (1 Ft)
- Mean High Tide (6ft - NAVD88)
- High Tide Line (8ft - NAVD88)

This wetlands delineation map is the opinion of Winzler & Kelly at the time the delineation was conducted. This map is not for planning, permitting, or construction uses without a U.S. Army Corps of Engineers (COE) jurisdictional determination stamp below. Note that some projects may also need verification of delineation map from the California Department of Fish & Game (DFG), County, and/or USFWS.
Project:
City of Arcata
Rail-with-Trail Connectivity Project

Figure 5-02
Wetlands/Habitats Impacts

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS, Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 5-00 for supplemental legend.

Page 02 of 28
Arcata High School

Kling...
Project: City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

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Figure 5-05
Wetlands/Habitats Impacts

Note: See Figure 5-00 for supplemental legend
Project: City of Arcata
Rail-with-Trail Connectivity Project

Figure 5-06
Wetlands/Habitats Impacts

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 5-00 for supplemental legend
Project: City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GDB - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 - 1 meter resolution.

Note: See Figure 5-00 for supplemental legend.

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Figure 5-07
Wetlands/Habitats Impacts

Page 07 of 28
Project: City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Date: 1/31/2011

Figure 5-08
Wetlands/Habitats Impacts

Note: See Figure 5-00 for supplemental legend.
Project: City of Arcata Rail-with-Trail Connectivity Project
Project # 01051-09-004

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 5-00 for supplemental legend.
Project: City of Arcata
Rail-with-Trail Connectivity Project

Figure 5-10
Wetlands/Habitats Impacts

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Note: See Figure 5-00 for supplemental legend
Sludge Drying Beds

South G ST

Project: City of Arcata
Rail-with-Trail Connectivity Project

Project # 01051-09-004

633 3RD ST
EUREKA, CA 95521
P: 707-443-8326   F: 707-444-8330

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD

Date: 1/31/2011

Note: See Figure 5-00 for supplemental legend
Figure 5-17
Wetlands/Habitats Impacts

City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Note: See Figure 5-00 for supplemental legend

Cartography: GLD
Date: 1/31/2011
Project #: 01051-09-004
Humboldt Bay National Wildlife Refuge (HBNWR)

Cordylanthus maritimus Impacted

US HWY 101

Project: City of Arcata Rail-with-Trail Connectivity Project

Project #: 01051-09-004

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD

Date: 1/31/2011

Figure 5-19 Wetlands/Habitats Impacts

Note: See Figure 5-00 for supplemental legend
Figure 5-20
Wetlands/Habitats Impacts

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 - 1 meter resolution.

Note: See Figure 5-00 for supplemental legend.

Cartography: GLD
Date: 1/31/2011
Project #: 01051-09-004
Project: City of Arcata
Rail-with-Trail Connectivity Project

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 5-00 for supplemental legend.

Figure 5-22
Wetlands/Habitats Impacts

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Project: City of Arcata
Rail-with-Trail Connectivity Project

Project # 01051-09-004

Date: 1/31/2011

Figure 5-23
Wetlands/Habitats Impacts

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone; HBNWR Boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 5-00 for supplemental legend.

Legend:
- City Boundary
- City Parks
- Coastal Zone
- HBNWR
- Study Area
- Trail Footprint
- Bridges
- Creeks
- Property Line

Cartography: GLD

Scale: 0 - 25 - 50 - 100 Ft

613 3RD ST
EUREKA, CA 95501
P: 707-443-9358, F: 707-444-9330

Page 23 of 28
City of Arcata
Rail-with-Trail Connectivity Project

Project # 01051-09-004

633 3RD ST
EUREKA, CA 95521
P: 707-443-8326   F: 707-444-8330

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Note: See Figure 5-00 for supplemental legend

Figure 5-24
Wetlands/Habitats Impacts

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Figure 5-25
Wetlands/Habitats Impacts

Project:
City of Arcata
Rail-with-Trail Connectivity Project

Note: See Figure 5-00 for supplemental legend

Source: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.

Cartography: GLD
Date: 1/31/2011
Project #: 01051-09-004

WINZLER & KELLY
833 3RD ST
EUREKA, CA 95501
P: 707-443-8339 F: 707-444-8330
Project: City of Arcata
Rail-with-Trail Connectivity Project

Wetlands/Habitats Impacts

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Note: See Figure 5-00 for supplemental legend

Figure 5-27

Sources: City of Arcata GIS - 1 ft resolution aerials, Streets, Parks, Landmarks, City Boundary, Humboldt County GIS, Coastal Zone, HBNWR boundaries, and Aerial NAIP 2009 1 meter resolution.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** Areata Trails  
**City/County:** Arcata  
**Sampling Date:** 01/24/10

**applicant/Owner:** CA  
**State:** CA  
**Sampling Point:** T1E

**Investigator(s):** Webb Tester  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): concave  
Local relief (concave, convex, none):  
Slope (%): 25

**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 [ ] (If needed, explain any answers in Remarks.)*

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No [x]</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No [x]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No [x]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No [x]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Above Oregon Slough, south side ditch, rail trail

**VEGETATION** – Use scientific names of plants.

**Tree Stratum** (Plot size: _________)

<table>
<thead>
<tr>
<th>Tree Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total % Cover**

**Shrub Stratum** (Plot size: _________)

<table>
<thead>
<tr>
<th>Shrub Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total % Cover**

**Herb Stratum** (Plot size: _________)

<table>
<thead>
<tr>
<th>Herb Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Calamagrostis canadensis 20</td>
<td>[x] N</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Deyeus canadensis 20</td>
<td>[x] N</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Raphanus sativa 20</td>
<td>[x] N</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Mirza major 20</td>
<td>[x] N</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Bromus Hordeaceus 20</td>
<td>[x] N</td>
<td></td>
</tr>
</tbody>
</table>

**Total % Cover**

**Woody Vine Stratum** (Plot size: _________)

<table>
<thead>
<tr>
<th>Woody Vine Species</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total % Cover**

**% Bare Ground in Herb Stratum**

**Remarks:**

**Hydrophytic Vegetation Indicators:**

- **Dominance Test worksheet:**
  - Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
  - Total Number of Dominant Species Across All Strata: 5 (B)
  - Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (AB)

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Multiply by</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL</td>
<td>x 1</td>
</tr>
<tr>
<td>FACW</td>
<td>x 2</td>
</tr>
<tr>
<td>FAC</td>
<td>x 3</td>
</tr>
<tr>
<td>FACU</td>
<td>x 4</td>
</tr>
<tr>
<td>UPL</td>
<td>x 5</td>
</tr>
</tbody>
</table>

**Column Totals:** (A) (B)

**Prevalence Index = B/A =**

**Hydrophytic Vegetation Present?** Yes [x] No [ ]
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 18</td>
<td>2.54%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Types: C=Concentration, D=Depletion, RM=Reduced Matrix.

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

- Histosol (A1)
- Histic Epepedon (A2)
- Black Hist (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)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

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

Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hydric Soil Present? Yes [x] No

Remarks:

T1-U is 2' above boundary

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- 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)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (except NW coast)
- Sparserly Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphc Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Tnounds (D6) (LRR A)

Field Observations:

- Water Present? Yes [x] No
- Depth (inches): __________
- Water Table Present? Yes [x] No
- Depth (inches): __________
- Saturation Present? Yes [x] No
- Depth (inches): __________
- (includes capillary fringe)

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: Arcata trail
City/County: Arcata
Applicant/Owner: CA
State: CA
Sampling Date: 01/21/10
Sampling Point: 
Investigator(s): 
Section, Township, Range: 
Landform (hillslope, terrace, etc.): ditch
Local relief (concave, convex, none): concave
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 _ Hydrology _ significantly disturbed? Are "Normal Circumstances" present? Yes _ No ___
Are Vegetation _ Soil _ Hydrology _ naturally problematic? (If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes _ No _</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes _ No _</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes _ No _</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes _ No _</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Opp. Gamma Slough, south side ditch

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</td>
</tr>
<tr>
<td>2.</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
<td>Total Number of Dominant Species Across All Strata: 4 (B)</td>
</tr>
<tr>
<td>3.</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AB)</td>
</tr>
<tr>
<td>4.</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
<td></td>
</tr>
<tr>
<td>= Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _________)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
<tr>
<td>= Total Cover</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: _________)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Eucalyptus densiflora</em> 50 % FACW</td>
</tr>
<tr>
<td>2. <em>Dactylis glomerata</em> 20 % FACW</td>
</tr>
<tr>
<td>3. <em>Dactylis glomerata</em> 20 % FACW</td>
</tr>
<tr>
<td>4. <em>Gymnopodium striatum</em> 10 % NFL</td>
</tr>
<tr>
<td>5.</td>
</tr>
<tr>
<td>6.</td>
</tr>
<tr>
<td>7.</td>
</tr>
<tr>
<td>8.</td>
</tr>
<tr>
<td>9.</td>
</tr>
<tr>
<td>10.</td>
</tr>
<tr>
<td>11.</td>
</tr>
<tr>
<td>= Total Cover</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: _________)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>= Total Cover</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum

Remarks:

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Interim Version
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6'</td>
<td>2.54/3/2</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>sand</td>
<td></td>
</tr>
<tr>
<td>6-18'</td>
<td>2.54/3/2</td>
<td>95</td>
<td>2.54/3/2</td>
<td>5</td>
<td>C</td>
<td>M</td>
<td>sand</td>
<td></td>
</tr>
</tbody>
</table>

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix. Location: PL=Pore Lining, RC=Root Channel, M=Matrix.*

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

- **Histosol (A1)**
- **Histic Epipedon (A2)**
- **Black Histosol (A3)**
- **Hydrogen Sulfide (A4)**
- **Depleted Below Dark Surface (A11)**
- **Thick Dark Surface (A12)**
- **Sandy Mucky Mineral (S1)**
- **Sandy Gleyed Matrix (S4)**

**Indicators for Problematic Hydric Soils:**

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Redox Depressions (F8)

**Restrictive Layer (if present):**

- Type: 
- Depth (inches): 

**Hydric Soil Present?** Yes [x] No

**Remarks:**

\[T1-W \text{ is 1 foot from boundary, intertidal emergent (bay mud below MLW on Cannon Sough)}\]

**HYDROLOGY**

**Wetland Hydrology Indicators:**

- **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)**

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (NW coast)
- Sparingly Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (C2)
- Shallow Aquitard (D9)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- **Surface Water Present?** Yes [x] No 
- **Water Table Present?** Yes [x] No 
- **Saturation Present?** Yes [x] No 

**Depth (inches):**

**Wetland Hydrology Present?** Yes [x] No

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

**Significant rain event past 24 hrs, > 18" total for season**

**Remarks:**

No GW present, currently low tide, likely tidal/brackish based on veges.
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

**Project/Site:** Arcata tracts

**Applicant/Owner:**

**City/County:** Arcata

**State:** CA

**Sampling Date:** 01/21/80

**Investigator(s):** Webb, Lester

**Section, Township, Range:**

**Landform (hillock, terrace, etc.):** ditch

**Local relief (concave, convex, none):** concave

**Slope (%):** 25

**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 [X] (If no, explain in Remarks.)

**Are Vegetation N[ ] Soil M[ ] or Hydrology N[ ] significantly disturbed?** Are "Normal Circumstances" present? Yes [X] No [ ]

**Are Vegetation N[ ] Soil M[ ] or Hydrology N[ ] naturally problematic?** (If needed, explain any answers in Remarks.)

---

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes [ ] No [X]</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes [X] No [ ]</th>
</tr>
</thead>
</table>

**Remarks:** fill adj to Cannon Slough ditch + Hwy 101

---

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <em>1</em> (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: <em>6</em> (B)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: <em>16</em> (A/B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <em>x</em> 1 =  _</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>FACW species <em>x</em> 2 =  _</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>FAC species <em>x</em> 3 =  _</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td>FACU species <em>x</em> 4 =  _</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td>UFL species <em>x</em> 5 =  _</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td>Column Totals: _ (A) _ (B)</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index = B/A =  _</td>
</tr>
</tbody>
</table>

**Hydrophytic Vegetation Indicators:**

- Dominance Test is >50%
- Prevalence index is ≤5.0
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation (Explain)

---

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: )</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Prevalence Index = A/B =  _</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>20</td>
<td><em>Y</em></td>
<td><em>Y</em></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>20</td>
<td><em>Y</em></td>
<td><em>Y</em></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>20</td>
<td><em>Y</em></td>
<td><em>Y</em></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>10</td>
<td><em>Y</em></td>
<td><em>Y</em></td>
<td></td>
</tr>
</tbody>
</table>

**Woody Vine Stratum (Plot size: )**

1. [ ]

2. [ ]

---

**% Bare Ground in Herb Stratum**

**Remarks:**

---

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Interim Version
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>LVR3</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-18</td>
<td>54:41</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, RM=Reduced Matrix.  
2. Location: PL=Pore Lining, RC=Root Channel, 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)

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type</th>
<th>Depth (inches)</th>
<th>Hydric Soil Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

**Remarks:**

2' above boundary (linear)

### HYDROLOGY

**Wetland Hydrology Indicators:**

- Surface Water (A1)  
- High Water Table (A2)  
- Saturation (A3)  
- Water Marks (B1)  
- Sediment Deposits (B2)  
- Drit Deposits (B3)  
- Algal Mat or Crust (B4)  
- Iron Deposits (B5)  
- Surface Soil Cracks (B8)  
- Inundation Visible on Aerial Imagery (B7)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (except NW coast)  
- Sparsely Vegetated Concave Surface (B8)  
- Drainage Patterns (B10)  
- Dry-Season Water Table (C2)  
- Saturation Visible on Aerial Imagery (C9)  
- Geomorph Position (C2)  
- Shallow Aquitard (D3)  
- Frost-Heave Hummocks (D4)  
- FAC-Neutral Test (D5)  
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes No  
- Water Table Present? Yes No  
- Saturation Present? Yes No (includes capillary fringe)

**Wetland Hydrology Present?** Yes No

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

Project/Site: Arcata
City/County: Co A
Sampling Date: 01/2/10
Applicant/Owner: Co A
State: Sampling Point: T27 W
Investigator(s): webb luster
Section, Township, Range:
Landform (hillslope, terrace, etc.): ditch
Local relief (concave, convex, none): concave
Slope (%): 10
Subregion (LRR):
Lat:
Long:
Datum:
Soil Map Unit Name:
NWRI classification:

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No __</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑ No __</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No __</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No __</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: ditch side of canyon

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ____________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: ____________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ____________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deschampsia cespitosa 25 ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>2. Sphaeralcea densiflora 25 ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>3. Distichlis spicata 29 ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>4. Stipa virginiana 25 ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ____________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum ____________

Remarks:

Hydrophytic Vegetation Indicators:
- Dominance Test is >50%
- Prevalence Index is ≤3.0
- Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation¹ (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No __
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>LG</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2.1</td>
<td>10YR 3/1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-4</td>
<td>2.5YR 1/2</td>
<td>90</td>
<td>2.5YR 1/2</td>
<td>5</td>
<td>RM</td>
<td>M</td>
<td>Sandy Clay loam 5% 10YR 7/3 CM</td>
<td></td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix

1^Type: C=Concentration, D=Depletion, RM=Reduced Matrix

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulphide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:

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

Restrictive Layer (if present):

Type: __________________________

Depth (inches): __________________________

Hydric Soil Present? Yes ☒ No □

Remarks: __________________________

2' from boundary

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drain Salt Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (NW coast)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulphide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Field Observations:

Surface Water Present? Yes ☒ No □

Water Table Present? Yes ☒ No □

Saturation Present? (includes capillary fringe) Yes ☒ No □

Depth (inches): __________________________

Wetland Hydrology Present? Yes ☒ No □

Remarks:

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: ____________________ City/County: ____________ Sampling Date: ____________
Applicant/Owner: ____________________ State: ____________ Sampling Point: ____________
Investigator(s): ____________________ 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 NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ___ 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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ___ No ___</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ___ No ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: ____________

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: _________ (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: _________ (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: _________ (A/B)</td>
</tr>
<tr>
<td>4.</td>
<td>_______ = Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sapling/Shrub Stratum (Plot size: _______ ) | | | |
|---------------------------------------------|------------------|-------------------|------------------|-------------------------|
| 1.                                           |                  |                   |                  |                         |
| 2.                                           |                  |                   |                  |                         |
| 3.                                           |                  |                   |                  |                         |
| 4.                                           |                  |                   |                  |                         |
| 5.                                           |                  |                   |                  |                         |
| _______ = Total Cover                        |                  |                   |                  |                         |

| Herb Stratum (Plot size: _______ ) | | | |
|----------------------------------|------------------|-------------------|------------------|-------------------------|
| 1.                             |                  |                   |                  |                         |
| 2.                             |                  |                   |                  |                         |
| 3.                             |                  |                   |                  |                         |
| 4.                             |                  |                   |                  |                         |
| 5.                             |                  |                   |                  |                         |
| _______ = Total Cover           |                  |                   |                  |                         |

| Woody Vine Stratum (Plot size: _______ ) | | | |
|-------------------------------------------|------------------|-------------------|------------------|-------------------------|
| 1.                                         |                  |                   |                  |                         |
| 2.                                         |                  |                   |                  |                         |
| _______ = Total Cover                      |                  |                   |                  |                         |

% Bare Ground in Herb Stratum ____________

Remarks: ____________

Hydrophytic Vegetation Indicators:
- Dominance Test is >50%
- Prevalence Index is ≤3.0
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ___

US Army Corps of Engineers
Western Mountains, Valleys, and Coast – Interim Version
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| 0-5           |        | 2S1E84        | 100| sandlyloam     |               |    |      |     |         | color variation due to variation in ag base soil, not low chlor.
| 5-18          |        | 10YR4/4        | 95 |                | 2S1E84        | 2% |      |     |         | So not notice indicator |

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, L=Location: PL=Pore Lining, RC=Root Channel, 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)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)

Indicators for Problematic Hydric Soils:

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

Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____________________________
Depth (inches): ______________________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient):

- 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)

Secondary Indicators (2 or more required):

- Water-Stained Leaves (B8) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches): ______
Water Table Present? Yes ______ No ______ Depth (inches): ______
Saturation Present? Yes ______ No ______ Depth (inches): ______

Field Observations includes capillary fringe

Wetland Hydrology Present? Yes ______ No X

Remarks:

Significant rains past 48 hrs.

No presence of GW

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

ProjectSITE: Arcada Trail
CityCounty: Arcada
State: CA
Sampling Date: 01/11/10
ApplicantOwner: CWA
Investigator(s): Webb, Lester
Section, Township, Range:
Landform (hillslope, terrace, etc.): Hydric Sudden
Local relief (concave, convex, none): Concave
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 No (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes 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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Remarks: hurly burly just nothing Jacoby Jacoby

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lupinus perennis</td>
<td>25</td>
<td>✓ OBL</td>
<td></td>
</tr>
<tr>
<td>2. Rubus ursinus</td>
<td>25</td>
<td>✓ FACW</td>
<td></td>
</tr>
<tr>
<td>3. Aster clematis</td>
<td>25</td>
<td>✓ FAC</td>
<td></td>
</tr>
<tr>
<td>4. Equisetum arvense</td>
<td>10</td>
<td>✓ FACW</td>
<td></td>
</tr>
<tr>
<td>5. Deschampsia cespitosa</td>
<td>18</td>
<td>✓ FACW</td>
<td></td>
</tr>
<tr>
<td>6. Equisetum vulgare</td>
<td>5</td>
<td>✓ FAC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum

Remarks:

Hydrophytic Vegetation Indicators:

<table>
<thead>
<tr>
<th>Dominance Test is &gt;50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence index is ≤30.0</td>
</tr>
<tr>
<td>Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)</td>
</tr>
<tr>
<td>Wetland Non-Vascular Plants</td>
</tr>
<tr>
<td>Problematic Hydrophytic Vegetation (Explain)</td>
</tr>
</tbody>
</table>

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>% Color (moist)</th>
<th>% Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>1042943</td>
<td>160</td>
<td></td>
<td></td>
<td>loam</td>
<td>Sandy loam</td>
</tr>
<tr>
<td>3-12</td>
<td>1042943</td>
<td>548/2</td>
<td>29%</td>
<td>RM</td>
<td>M</td>
<td>loam 1042416 2% C 0</td>
</tr>
<tr>
<td>12-18</td>
<td>1042944</td>
<td>548/2</td>
<td>16%</td>
<td></td>
<td></td>
<td>Sandy loam 548/2 100%</td>
</tr>
</tbody>
</table>

1 Type: C=Concentration, D=Depletion, RM=Reduced Matrix.  Location: PL=Pore Lining, RC=Root Channel, M=Matrix

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (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:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

1 Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

- Type:
- Depth (inches):

Hydric Soil Present? Yes □ No □

Remarks:

---

### HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- 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)

- Water-Stained Leaves (B9) (except NW coast)
- 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 Plowed Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

Field Observations:

- Surface Water Present? Yes □ No □ Depth (inches): 6.11
- Water Table Present? Yes □ No □ Depth (inches): 6.11
- Saturation Present? Yes □ No □ Depth (inches): 6.11

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:** Acata trails  
**City/County:** Acata  
**State:** CA  
**Sampling Date:** 09/22/10

**Applicant/Owner:** Acata  
**Investigator(s):** Webb Lester  
**Landform (hillslope, terrace, etc.):** Highway Shoulder  
**Local relief (concave, convex, none):** Concave  
**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 ☑ No _ (If no, explain in Remarks.)

**Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed?**  
**Are *Normal Circumstances* present?** Yes ☑ No _ (If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No _</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑ No _</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No _</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No _</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

### VEGETATION – Use scientific names of plants.

**Tree Stratum** (Plot size: ________)

<table>
<thead>
<tr>
<th>Tree Species</th>
<th>Percentage Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Absolute % Cover**

<table>
<thead>
<tr>
<th>Tree Stratum</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sapling/Shrub Stratum** (Plot size: ________)

<table>
<thead>
<tr>
<th>Shrub Species</th>
<th>Percentage Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Absolute % Cover**

<table>
<thead>
<tr>
<th>Shrub Stratum</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Herb Stratum** (Plot size: ________)

<table>
<thead>
<tr>
<th>Herb Species</th>
<th>Percentage Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Absolute % Cover**

<table>
<thead>
<tr>
<th>Herb Stratum</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Woody Vine Stratum** (Plot size: ________)

<table>
<thead>
<tr>
<th>Woody Vine Species</th>
<th>Percentage Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Absolute % Cover**

<table>
<thead>
<tr>
<th>Woody Vine Stratum</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Hydrophytic Vegetation Indicators:**

- **Dominance Test is >50%**
- **Prevalence Index is ≤3.0**
- Morphological Adaptations^1 (Provide supporting data in Remarks or on a separate sheet)
- Welland Non-Vascular Plants^1
- Problematic Hydrophytic Vegetation^1 (Explain)

^1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☑ No _

**% Bare Ground in Herb Stratum**  
**Hydrophytic Vegetation Present?** Yes ☑ No _

**Remarks:**
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>10-4R 3/4</td>
<td>95%</td>
<td>10-4R 4/6</td>
<td>5%</td>
<td>—</td>
<td></td>
<td>loamy sand</td>
<td>not reduced matrix</td>
</tr>
<tr>
<td>6-18</td>
<td>16-4R 4/6</td>
<td>80%</td>
<td>5-4R 4/6</td>
<td>5%</td>
<td>—</td>
<td></td>
<td></td>
<td>10-4R 4/6 15% - not reduced matrix</td>
</tr>
</tbody>
</table>

Type: C = Concentration, D = Depletion, RM = Reduced 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)

Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

Restrictive Layer (if present):
Type: 
Depth (inches): 

Hydric Soil Present? Yes [X] No 

Remarks: does not meet hydric soil indicators for sandy soil 2' from boundary (wetland)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)
- 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)

Secondary indicators (2 or more required)
- Water-Stained Leaves (B9) (except NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

Field Observations:
- Surface Water Present? Yes [X] No 
Depth (inches): 13'
- Water Table Present? Yes [X] No 
Depth (inches): 12'
- Saturation Present? Yes [X] No 
(Include capillary fringe)

Wetland Hydrology Present? Yes [X] No 

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

recent significant rain event

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

**Project/Site:**

**City/County:**

**State:** CA  
**Sampling Date:** 01/21/10

**Applicant/Owner:**

**Investigator(s):** Webb, Lester

**Section, Township, Range:**

**Landform (hillslope, terrace, etc.):** Hwy 101 Shoulder

**Local relief (concave, convex, none):** Concave

**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 ☑ No ☐ (If no, explain in Remarks.)

Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are “Normal Circumstances” present? Yes ☑ 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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No ☐</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑ No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No ☐</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Dutch

**VEGETATION** – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size:________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size:________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size:________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Deschampsia cespitosa</strong></td>
<td>25 ☑ FACW</td>
</tr>
<tr>
<td>2. <strong>Lactuca ciliata</strong></td>
<td>15 ☑ FACW</td>
</tr>
<tr>
<td>3. <strong>Agropyron smithii</strong></td>
<td>15 ☑ FACW</td>
</tr>
<tr>
<td>4. <strong>Ludus cordifolius</strong></td>
<td>10 ☑ FACW</td>
</tr>
<tr>
<td>5. <strong>Rumex crispus</strong></td>
<td>20 ☑ FACW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size:________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum |               |

**Remarks:**

**Hydrophytic Vegetation Indicators:**

- Dominance Test is >50%
- Prevalence Index is ≤3.01
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants (Explain)
- Problematic Hydrophytic Vegetation

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column Totals: (A)</th>
<th>(B)</th>
</tr>
</thead>
</table>

**Hydrophytic Vegetation Present?** Yes ☑ No ☐
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>104R³/²</td>
<td>100</td>
</tr>
<tr>
<td>4-8</td>
<td>57R³/²</td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type¹</th>
<th>Loc²</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandy loam</td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulphide (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:²**

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

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

3' from boundary (wetland)

### HYDROLOGY

**Wetland Hydrology Indicators:**

- 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)
- Water-Stained Leaves (B9) (except NW coast)
- Sail Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulphide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction In Plowed Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B8) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes x No
- Water Table Present? Yes x No Depth (inches): 9
- Saturation Present? Yes x No Depth (inches): 2

**Wetland Hydrology Present?** Yes x No

**Remarks:**

GW may be abnormally high due to recent significant rain events

---

US Army Corps of Engineers
Western Mountains, Valleys and Coast – DRAFT Version 9-15-2006
**SUMMARY OF FINDINGS** – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
Roadside ditch, above brackish area

**VEGETATION** – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: ______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Cover</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Hydrophytic Vegetation Indicators:**
- Dominance Test is >50%
- Prevalence Index is ≤3.0
- Morphological Adaptations
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes | No
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10YR 3/1</td>
<td>10D</td>
<td>10YR 3/1</td>
<td>10D</td>
</tr>
</tbody>
</table>
| 4-18           | 10YR 4/4 | 85 | 10YR 4/6 | 5 | Loamy Mucky Mineral (F1) except MLRA 1 | w/ 10% SSS |}

1. **Type:** C=Concentration, D=Depletion, RM=Reduced Matrix  
2. **Location:** PL=Pore Lining, RC=Root Channel, M=Matrix

#### Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histonic Epipedon (A2)
- Black Histosol (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

#### Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

#### Restrictive Layer (if present):
- Type:  
  Depth (Inches):  

#### Remarks:
- Does not meet hydric soil indicators, not reduced matrix 2' from wetland boundary.

---

### HYDROLOGY

#### Wetland Hydrology Indicators:
- **Primary Indicators (any one indicator is sufficient):**
  - 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)

- **Secondary Indicators (2 or more required):**
  - Water-Stained Leaves (B9) (NW coast)
  - Sparsely Vegetated Concave Surface (B10)
  - Drainage Patterns (B10)
  - Dry-Season Water Table (C2)
  - Saturation Visible on Aerial Imagery (C9)
  - Geomorphic Position (C3)
  - Shallow Aquitard (D3)
  - Frost-Heave Hummocks (D4)
  - FAC-Neutral Test (D5)
  - Raised Ant Mounds (D6) (LRR A)

#### Field Observations:
- Surface Water Present? Yes No  
  Depth (Inches): 14
- Water Table Present? Yes No  
  Depth (Inches): 14

#### Wetland Hydrology Present? Yes No  
**Remarks:** intertidal

---

US Army Corps of Engineers
Western Mountains, Valleys and Coast – DRAFT Version 9-15-2006
### Wetland Determination Data Form – Western Mountains, Valleys, and Coast Region

**Project/Site:** Anaca Tram  
**City/County:** Anaca  
**State:** CA  
**Sampling Date:** 01/21/10

**Applicant/Owner:** C.A. Webb  
**Section, Township, Range:**  
**Landform (hillslope, terrace, etc.):** Highway  
**Local relief (concave, convex, none):** Concave  
**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 A.O. Soil N.O. or Hydrology A.N. significantly disturbed?** Yes [ ] No [ ]  
**Are "Normal Circumstances" present?** Yes [ ] No [ ]  
**Are Vegetation N.I. Soil N.O. or Hydrology A.N. naturally problematic?** (If needed, explain any answers in Remarks.)

### Summary of Findings

| 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:** Rainside ditch, Salt water influence

### Vegetation

**Tree Stratum (Plot size: )**  
| 1. |  
| 2. |  
| 3. |  
| 4. |  
| 5. | Total Cover

**Sapling/Shrub Stratum (Plot size: )**  
| 1. |  
| 2. |  
| 3. |  
| 4. |  
| 5. | Total Cover

**Herb Stratum (Plot size: )**  
| 1. *Poa annua* densiflora | 20 [ ] FACW  
| 2. *Distichlis spicata* | 20 [ ] FACW  
| 3. *Salicornia virginica* | 20 [ ] FACW  
| 4. *Deschampia cespitosa* | 20 [ ] FACW  
| 5. *Carex thurberiana* | 20 [ ] FACW  

| Prevalence Index worksheet:  
| Total % Cover of: | Multiply by:  
| OBL species | 1 =  
| FACW species | 2 =  
| FAC species | 3 =  
| FACU species | 4 =  
| UPL species | 5 =  

| Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**  

**Woody Vine Stratum (Plot size: )**  
| 1. |  
| 2. | Total Cover

**% Bare Ground in Herb Stratum**  

**Remarks:**
<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>Color (Moist) %</th>
<th>Redox Features Type</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>2.5/3/2 88</td>
<td>10/13/4</td>
<td>2 C M</td>
<td>Loamy sand, S4 12 10 DM steaming</td>
<td></td>
</tr>
<tr>
<td>2-20</td>
<td>10/13/4 65</td>
<td>2.5/3/2</td>
<td>5 C M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-20</td>
<td>10/13/4 60</td>
<td>5/3/3</td>
<td>40 RM M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Type: C=Concentration, D=Depletion, RM=Reduced Matrix. 2 Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present.

Hydric Soil Present? Yes ☑ No

HYDROLOGY

Wetland Hydrology Indicators:

**Primary Indicators (any one indicator is sufficient):**
- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposites (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)

**Secondary Indicators (2 or more required):**
- Water-Stained Leaves (B8) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

Field Observations:
- Surface Water Present? Yes ☑ No
- Water Table Present? Yes ☑ No
- Saturation Present? Yes ☑ No
  (includes capillary fringe)

Wetland Hydrology Present? Yes ☑ No

Remarks:

US Army Corps of Engineers
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: [Redacted] City/County: [Redacted] Sampling Date: 01/25/10
Applicant/Owner: [Redacted] State: [Redacted] Sampling Point: [Redacted]
Investigator(s): [Redacted] Section, Township, Range: [Redacted]
Landform (hillslope, terrace, etc.): Bay terrace/RECL Local relief (concave, convex, none): [Redacted] Slopes (%): [Redacted]
Subregion (LRR): [Redacted] Lat: [Redacted] Long: [Redacted] Datum: [Redacted]

Soil Map Unit Name: [Redacted] NWI classification: [Redacted]

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [Redacted] No [Redacted] (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology significantly disturbed? Are “Normal Circumstances” present? Yes [Redacted] No [Redacted]
Are Vegetation No, Soil No, 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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No [Redacted]</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No [Redacted]</th>
</tr>
</thead>
</table>

Remarks: [Redacted]

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: [Redacted])</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
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</tr>
<tr>
<td>4.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: [Redacted])</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: [Redacted])</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. [Redacted]</td>
<td></td>
</tr>
<tr>
<td>2. [Redacted]</td>
<td></td>
</tr>
<tr>
<td>3. [Redacted]</td>
<td></td>
</tr>
<tr>
<td>4. [Redacted]</td>
<td></td>
</tr>
<tr>
<td>5. [Redacted]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: [Redacted])</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Bare Ground in Herb Stratum</th>
<th>[Redacted]</th>
</tr>
</thead>
</table>

Remarks: [Redacted]
### Profile Description
(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Log</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10&quot;</td>
<td></td>
<td>2.57&quot;</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. **Type:** C=Concentration, D=Depletion, RM=Reduced Matrix.  
2. **Location:** PL=Pore Lining, RC=Root Channel, M=Matrix.

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

- Histosol (A1)
- Histic Epeirogen (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)
- Redox Dark Surface (F6)
- Redox Depressions (F8)

### Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

### Restrictive Layer (if present): 
- Type: 
- Depth (inches): 
- Hydric Soil Present? Yes ☑ No ❌

### Remarks:
"\[\text{from wet up edge}\]

### HYDROLOGY

#### Wetland Hydrology Indicators:
Primary Indicators (any one indicator is sufficient)

- **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)**

- **Water-Stained Leaves (B9) (except NW coast)**
- **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 (C5)**
- **Stunted or Stressed Plants (D1) (LRR A)**
- **Other (Explain in Remarks)**

#### Secondary Indicators (2 or more required)

- **Water-Stained Leaves (B9) (NW coast)**
- **Sparsely Vegetated Concave Surface (B8)**
- **Drainage Patterns (B10)**
- **Dry-Season Water Table (C2)**
- **Saturation Visible on Aerial Imagery (C9)**
- **Geomorphic Position (D2)**
- **Shallow Aquitard (D3)**
- **Frost-Heave Hummocks (D4)**
- **FAC-Neutral Test (D5)**
- **Raised Ant Mounds (D6) (LRR A)**

### Field Observations:
- **Surface Water Present?** Yes ☑ No ❌ Depth (inches): 14"  
- **Water Table Present?** Yes ☑ No ❌ Depth (inches): 14"  
- **Saturation Present?** (includes capillary fringe) Yes ☑ No ❌ Depth (inches): 14"  

Wetland Hydrology Present? Yes ☑ No ❌

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

### Remarks:

US Army Corps of Engineers
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: [Project Name]  
City/County: [County]  
State: [State]  
Sampling Date: [Date]  
Applicant/Owner: [Name]  
Investigator(s): [Name]  
Section, Township, Range: [Details]  
Landform (hillslope, terrace, etc.): [Details]  
Local relief (concave, convex, none): [Details]  
Slope (%): [Percentage]  
Subregion (LRR): [Details]  
Lat: [Latitude]  
Long: [Longitude]  
Datum: [Datum]  
Soil Map Unit Name: [Name]  
NWI classification: [Classification]  

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

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☒ No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☒ No</th>
</tr>
</thead>
</table>

Remarks: [Remarks]

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ______)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ______)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deschampsia caespitosa 90% ✓ FACW</td>
<td></td>
</tr>
<tr>
<td>2. Distichlis spicata 5% ✓ FACW</td>
<td></td>
</tr>
<tr>
<td>3. Rubus ursinus 8% ✓ FACW</td>
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</tr>
<tr>
<td>4.</td>
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<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
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<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ______)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Bare Ground in Herb Stratum</th>
<th></th>
</tr>
</thead>
</table>

Remarks: [Remarks]
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>1048</td>
<td>%</td>
</tr>
<tr>
<td>4-12</td>
<td>1048</td>
<td>%</td>
</tr>
<tr>
<td>12-18</td>
<td>1048</td>
<td>%</td>
</tr>
</tbody>
</table>

*Type:* C = Concentration, D = Depletion, RM = Reduced Matrix

*Location:* PL = Pore Lining, RC = Root Channel, M = Matrix

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

- Histosol (A1)
- Histus Epipedon (A2)
- Black Histis (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)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth (Inches):</td>
</tr>
</tbody>
</table>

**Hydric Soil Present?** Yes [ ] No [x]

**Remarks:**

4' from wet edge

**HYDROLOGY**

**Wetland Hydrology Indicators:**

**Primary Indicators** (any one indicator is sufficient)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Value 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)

**Secondary Indicators** (2 or more required)

- Water-Stained Leaves (B8) (except NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorph Position (D2)
- Shallow Aquifer (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D6)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes [ ] No [x]
- Water Table Present? Yes [ ] No [x]
- Saturation Present? Yes [ ] No [x]

**Wetland Hydrology Present?** Yes [ ] No [x]

**Remarks:**

Significant rain on Fri, Mon, 0.25" per day over weekend

 today light rain
**WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region**

<table>
<thead>
<tr>
<th>Project/Site: Mountain Trail</th>
<th>City/County: Anchorage</th>
<th>Sampling Date: 06/25/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant/Owner:</td>
<td>00 A</td>
<td>State: CA</td>
</tr>
<tr>
<td>Investigator(s):</td>
<td>Webb Lester</td>
<td>Sampling Point: TSBU</td>
</tr>
<tr>
<td>Landform (hillslope, terrace, etc.):</td>
<td>Tuske [ill]</td>
<td>Local relief (concave, convex, none): Now</td>
</tr>
<tr>
<td>Subregion (LRR):</td>
<td></td>
<td>Le:</td>
</tr>
<tr>
<td>Soil Map Unit Name:</td>
<td></td>
<td>Long:</td>
</tr>
<tr>
<td>Are climatic / hydrologic conditions on the site typical for this time of year? Yes [ ] No [X] (If no, explain in Remarks.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are Vegetation No, Soil No, or Hydrology No significantly disturbed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are Vegetation No, Soil No, or Hydrology No naturally problematic?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrophytic Vegetation Present? Yes [ ] No [X]</td>
<td>Is the Sampled Area Yes [ ] No [X] within a Wetland?</td>
<td></td>
</tr>
<tr>
<td>Hydric Soil Present? Yes [ ] No [X]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present? Yes [ ] No [X]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ____________ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata:</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
</tr>
</tbody>
</table>

**Prevalence Index worksheet:**

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>x 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>x 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
<tr>
<td>Column Totals:</td>
<td></td>
</tr>
</tbody>
</table>

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- Dominance Test is >50%
- Prevalence Index is ≤3.0
- Morphological Adaptations (Provide supporting data in Remarks on a separate sheet)
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ____________ )</th>
<th>Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum ____________

Remarks:
### SOIL

**Sampling Point:** T63-U

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>2.5:1</td>
<td>100 =</td>
<td>Sand</td>
<td>Extremely gravelly</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Indicator</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Concentration</td>
<td>PL= pore lining, RC=root channel, M=matrix</td>
</tr>
<tr>
<td>D</td>
<td>Depletion</td>
<td></td>
</tr>
<tr>
<td>RM</td>
<td>Reduced Matrix</td>
<td></td>
</tr>
</tbody>
</table>

**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)  
- Thisk Dark Surface (A12)  
- Sandy Mucky Mineral (S1)  
- Sandy Gleyed Matrix (S4)  

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (if present):**

- Type:  
- Depth (inches):  

**Remarks:**  
4 feet from upland/wet boundary

---

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (any one indicator is sufficient)**

- Surface Water (A1)  
- High Water Table (A2)  
- Saturation (A3)  
- Water Marks (B1)  
- Sediment Deposits (B2)  
- Drill Deposits (B3)  
- Algal Mat or Crust (B4)  
- Iron Deposits (B5)  
- Surface Soil Cracks (B6)  
- Inundation Visible on Aerial Imagery (B7)

**Secondary Indicators [2 or more required]**

- Water-Stained Leaves (B9) (except NW coast)  
- Saturated Concave Surface (B8)  
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- Shallow Aquitard (D3)  
- Frost-Heave Hummocks (D4)  
- FAC-Neutral Test (D5)  
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes  No  Depth (inches):  
- Water Table Present? Yes  No  Depth (inches):  
- Saturation Present? Yes  No  Depth (inches):  

Wetland Hydrology Present? Yes  No

**Remarks:**
### VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
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<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FAC, or FACW: 5 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 5 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)</td>
</tr>
<tr>
<td>4.</td>
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<tr>
<td>5.</td>
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<td></td>
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<tr>
<td>= Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sapling/Shrub Stratum (Plot size: ) | | | |
|-------------------------------------|------------------|
| 1.                                  |                  |
| 2.                                  |                  |
| 3.                                  |                  |
| 4.                                  |                  |
| 5.                                  |                  |
| = Total Cover                       |                  |

| Herb Stratum (Plot size: ) | | | |
|---------------------------|------------------|
| 1. Deschampsia caespitosa | 80 %              | Yes               | FACW |
| 2. Distichlis spicata    | 5 %               | Yes               | FACW |
| 3. Speckia virginiana    | 5 %               | Yes               | FACW |
| 4. Juncus bcesticulcs    | 5 %               | Yes               | OBL  |
| 5. Limnion calaminiclus   | 5 %               | Yes               | FACW |
| = Total Cover             |                  |

| Woody Vine Stratum (Plot size: ) | | | |
|----------------------------------|------------------|
| 1.                               |                  |
| 2.                               |                  |
| = Total Cover                    |                  |

\% Bare Ground in Herb Stratum | |

### 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:**

- Edgy salt marsh / Historic rail road grade
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>2.5142</td>
<td>100</td>
<td>2.5142</td>
<td>100</td>
<td>-</td>
<td>Sandy Loam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-8</td>
<td>2.5142</td>
<td>80</td>
<td>1048.64</td>
<td>20 C</td>
<td>M</td>
<td>Laminated Sand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-10</td>
<td>544.14</td>
<td>95</td>
<td>1048.64</td>
<td>37.5 C</td>
<td>M</td>
<td>Silty Clay</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, R=Reduced Matrix.
2. Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

- H fistsol (A1)
- Histic Epipedon (A2)
- Black Haplic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Redox Depressions (F6)
- ... (other indicators)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (F10)
- Other (Explain in Remarks)

**Hydric Soil Present?** Yes [x] No [ ]

**Remarks:**

*Scribbled notes:

From wet edge

**HYDROLOGY**

**Wetland Hydrology Indicators:**

**Primary Indicators (any one indicator is sufficient):**

- 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)

- Water-Stained Leaves (B9) (except NW coast)
- 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 (C5)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquifard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes [x] No [ ] Depth (inches): 10
- Water Table Present? Yes [x] No [ ] Depth (inches): 10
- Saturation Present? Yes [x] No [ ] Depth (inches): 10

**Wetland Hydrology Present?** Yes [x] No [ ]

**Remarks:**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys, and Coast Region

**Project/Site:** Maple Tracks  
**City/County:** Anacortes  
**Sampling Date:** 01/28/10  
**Applicant/Owner:**  
**State:** CA  
**Sampling Point:**  
**Investigator(s):**  
**Section, Township, Range:**  
**Landform (hillslope, terrace, etc.):** Ditch/Soil All  
**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 ☑ No  
If no, explain in Remarks.  
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are “Normal Circumstances” present? Yes ☑ No  
If needed, explain any answers in Remarks.  
Are Vegetation No, Soil No, or Hydrology No naturally problematic?  

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑ No</th>
<th>Remarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VEGETATION** – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominant Species Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 1 ☑ (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 5 ☑ (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 20 ☑ (A/B)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: )</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: )</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  <em>Daucus Carota</em></td>
<td>60 ☑ N1</td>
</tr>
<tr>
<td>2.  <em>Papaveraceae Urosa</em></td>
<td>20 ☑ M1</td>
</tr>
<tr>
<td>3.  <em>Canadensis Echinos</em></td>
<td>20 ☑ M1</td>
</tr>
<tr>
<td>4.  <em>Brassica Mee</em></td>
<td>20 ☑ M1</td>
</tr>
<tr>
<td>5.  <em>Platycodium Iberolacta</em></td>
<td>20 ☑ PDE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Bare Ground in Herb Stratum</th>
<th></th>
</tr>
</thead>
</table>

**Remarks:**
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>2.5</td>
<td>Sandy Redox (S5)</td>
<td></td>
<td>sandy loam, very gravelly</td>
</tr>
<tr>
<td>6-12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix. Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

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

- Histosol (A1)
- Histic Epiopedon (A2)
- Black histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

Indicators for Problematic Hydric Soils:

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

**Restrictive Layer (if present):**

- Type:________
- Depth (inches):________

**Hydric Soil Present?** Yes________ No________

**Remarks:**

---

**HYDROLOGY**

**Wetland Hydrology Indicators:**

- 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)

**Primary Indicators (any one indicator is sufficient):**

- Water-Stained Leaves (B9) (except NW coast)
- 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):**

- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes________ No________ Depth (inches):________
- Water Table Present? Yes________ No________ Depth (inches):________
- Saturation Present? Yes________ No________ Depth (inches):________

**Wetland Hydrology Present?** Yes________ No________

**Remarks:**

---

US Army Corps of Engineers
Western Mountains, Valleys and Coast – DRAFT Version 9-15-2006
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Alcania
City/County: Alcania
Sampling Date: 01/28/10
Applicant/Owner: C.A.
State: Sampling Point: T61N
Investigator(s): Web Lenter
Section, Township, Range: ____________
Landform (hillslope, terrace, etc.): Railside \\
Local relief (concave, convex, none): CONCAV
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 and Soil significantly disturbed? Yes ______ No ______ (If needed, explain any answers in Remarks.)
Are Vegetation and Hydrology naturally problematic? Yes ______ No ______

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 ☐ |

Remarks:

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ____________ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tilia americana</td>
<td>20</td>
<td>☑️</td>
<td>FWC</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: ____________ )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ____________ )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salix nivalis</td>
</tr>
<tr>
<td>2. Deschampsia californica</td>
</tr>
<tr>
<td>3. Prunus emarginata</td>
</tr>
<tr>
<td>4. Dipsacus silvatica</td>
</tr>
<tr>
<td>5. Salix bullata</td>
</tr>
<tr>
<td>6.</td>
</tr>
<tr>
<td>7.</td>
</tr>
<tr>
<td>8.</td>
</tr>
<tr>
<td>9.</td>
</tr>
<tr>
<td>10.</td>
</tr>
<tr>
<td>11.</td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ____________ )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
</tbody>
</table>

= Total Cover

% Bare Ground in Herb Stratum ____________

Remarks:

Hydrophytic Vegetation Indicators:
1. Dominance Test is >50%
2. Prevalence Index is <3.0
3. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
4. Wetland Non-Vascular Plants
5. Problematic Hydrophytic Vegetation (Explain)

Hydrophytic Vegetation Present? Yes ______ No ______
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td></td>
<td>2.593k</td>
<td>100</td>
<td>multicolor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>gravel</td>
<td>man made, ditch filled with pea gravel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Type: C=Concentration, D=Depletion, RM=Reduced Matrix
2. Location: PL=Pore Lining, RC=Root Channel, 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 Glycisé Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Depressed Matrix (F3)
- Redox Dark Surface (F6)
- Depressed Dark Surface (F7)
- Redox Depressions (F8)

#### Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

#### Restrictive Layer (if present):
Type: _______________________
Depth (inches): ______________

#### Hydric Soil Present?: Yes ___ No X__

#### Remarks:

### HYDROLOGY

#### Wetland Hydrology Indicators:

**Primary Indicators (any one indicator is sufficient)**

- 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)

- Water-Stained Leaves (B9) (except NW coast)
- 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) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D8) (LRR A)

#### Field Observations:

- Surface Water Present? Yes ___ No X__ Depth (inches): __________
- Water Table Present? Yes ___ No X__ Depth (inches): __________
- Saturation Present? Yes ___ No X__ Depth (inches): __________

Wetland Hydrology Present? Yes ___ No X__

#### Remarks:

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:** [Entry]
- **City/County:** [Entry]
- **State:** CA
- **Applicant/Owner:** [Entry]
- **Investigator(s):** Web
- **Area:** [Entry]
- **Landform (hillslope, terrace, etc.):**
- **Local relief (concave, convex, none):**
- **Slope (%):**
- **Subregion (LRR):**
- **Lat:**
- **Long:**
- **Datum:**
- **Sampling Date:** 01/25/10
- **Sampling Point:** [Entry]

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

**Are Vegetation [ ] Soil [X] or Hydrology [ ] significantly disturbed?** Are “Normal Circumstances” present? Yes [ ] No [X]

**Are Vegetation [ ] Soil [X] 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.**

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes [X] No [ ]</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes [X] No [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes [X] No [ ]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes [X] No [ ]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Marsh Trail side

**VEGETATION – Use scientific names of plants.**

<table>
<thead>
<tr>
<th>Stratum</th>
<th>(Plot size: [ ] )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Stratum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 6 (B)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)</td>
</tr>
<tr>
<td>3.</td>
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<td>4.</td>
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<td>5.</td>
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</tr>
</tbody>
</table>

| Stratum                  | (Plot size: [ ] ) |                  |                   |        |                           |
| Sapling/Shrub Stratum    |                   |                  |                   |        |                           |
| 1.                       |                   |                  |                   |        |                           |
| 2.                       |                   |                  |                   |        |                           |
| 3.                       |                   |                  |                   |        |                           |
| 4.                       |                   |                  |                   |        |                           |
| 5.                       |                   |                  |                   |        |                           |

| Stratum                  | (Plot size: [ ] ) |                  |                   |        |                           |
| Herb Stratum             |                   |                  |                   |        |                           |
| 1.                       | Gramma aristata   | 10               | (A)               |        |                           |
| 2.                       | Gleditsia triacanthos | 20             | (B)               |        |                           |
| 3.                       | Ampelopsis xialis | 20               | (A)               |        |                           |
| 4.                       | Dryopteris octopus | 20              | (B)               |        |                           |
| 5.                       | Thalictrum officinale | 20          | (A)               |        |                           |
| 6.                       | Thalictrum intermedium | 20        | (B)               |        |                           |
| 7.                       | Thalictrum leastifolium | 10     | (A)               |        |                           |
| 8.                       | Thalictrum acuminatum | 10       | (B)               |        |                           |
| 9.                       | Thalictrum versicolor | 10         | (A)               |        |                           |
| 10.                      | Thalictrum bupleurifolium | 10    | (B)               |        |                           |
| 11.                      | Thalictrum stoloniferum | 10  | (A)               |        |                           |

**Woody Vine Stratum (Plot size: [ ] )**

| Woody Vine Stratum (Plot size: [ ] ) |                  |                   |        |                           |
| % Bare Ground in Herb Stratum        |                   |                   |        |                           |

**Hydrophytic Vegetation Indicators:**
- Dominance Test is >60%
- Prevalence Index is ≤30%
- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants1
- Problematic Hydrophytic Vegetation1 (Explain)

1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes [X] No [ ]

Remarks:
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>2,912</td>
<td>%</td>
</tr>
</tbody>
</table>

**Texture:**

- Sandy

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

- Histic (A1)
- Histoxic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulphide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A10)
- Red Parent Material (TP2)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: Compacted Trail
- Depth (inches): 2 ft from boundary

**Remarks:** Composed from boundary

### HYDROLOGY

**Wetland Hydrology Indicators:**

- 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)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes  No
- Water Table Present? Yes  No
- Saturation Present? Yes  No

**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:** Arctic Valley  
**City/County:** Alaska  
**Sampling Date:** 01/25/10  
**Applicant/Owner:** C.A.  
**State:** CA  
**Sampling Point:** TG-2  
**Investigator(s):** John Lentz  
**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 [ ]  
**Are Vegetation No, Soil No, or Hydrology No significantly disturbed?** Are “Normal Circumstances” present? **Yes [ ] No [ ]**  
**Are Vegetation No, Soil No, or Hydrology No naturally problematic?**  

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes [ ] No [ ] Is the Sampled Area within a Wetland?</th>
<th>Yes [ ] No [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes [ ] No [ ]</td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes [ ] No [ ]</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Arctic Valley trail side

**VEGETATION – Use scientific names of plants.**

### Tree Stratum (Plot size: ____________)

<table>
<thead>
<tr>
<th>Tree Name</th>
<th>% Cover</th>
<th>Dominant Indicator</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Salix sachalinensis</em></td>
<td>50%</td>
<td>[ ]</td>
<td>?</td>
</tr>
</tbody>
</table>

### Sapling/Shrub Stratum (Plot size: ____________)

### Herb Stratum (Plot size: ____________)

<table>
<thead>
<tr>
<th>Herb Name</th>
<th>% Cover</th>
<th>Dominant Indicator</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Populus balsamifera</em></td>
<td>70%</td>
<td>[ ]</td>
<td>FACW</td>
</tr>
<tr>
<td><em>Rubus discolor</em></td>
<td>10%</td>
<td>[ ]</td>
<td>FAC</td>
</tr>
<tr>
<td><em>Erechtites humidus</em></td>
<td>10%</td>
<td>[ ]</td>
<td>FAC</td>
</tr>
<tr>
<td><em>Calamagrostis canadensis</em></td>
<td>20%</td>
<td>[ ]</td>
<td>FAC</td>
</tr>
</tbody>
</table>

### Woody Vine Stratum (Plot size: ____________)

### % Bare Ground in Herb Stratum

**Remarks:** trail side, old landfill ditch

**Dominance Test worksheet:**

- Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)
- Total Number of Dominant Species Across All Strata: 7 (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)

**Hydrophytic Vegetation Indicators:**

- Dominance Test is >50%
- Prevalence Index is ≤3%³
- Morphological Adaptations³ (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants³
- Problematic Hydrophytic Vegetation² (Explain)

²Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes [ ] No [ ]
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type:** C=Concentration, D=Depletion, RM=Reduced Matrix  
**Location:** PL=Pore Lining, RC=Root Channel, 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 Glyzed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- Sandy Redox (S3)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Glyzed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Restrictive Layer (if present):**

- Type: _________________________
- Depth (inches): _________________________

**Hydric Soil Present?** Yes [X] No

**Remarks:**

- [X] From boundary

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (any one indicator is sufficient):**

- 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)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (except NW coast)
- 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 (C5)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- Water-Stained Leaves (B9) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C8)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes [X] No
- Water Table Present? Yes [X] No
- Saturation Present? Yes [X] No

- Depth (inches): _________________________

**Wetland Hydrology Present?** Yes [X] No

**Remarks:**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Arch Traj  
City/County: Arcata  
Sampling Date: 8/1/26/10

Applicant/Owner: CA  
State: CA  
Sampling Point: 

Investigator(s): Web Lester  
Section, Township, Range: 

Landform (hillslope, terrace, etc.): AMP Allen marsh dille 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  
(If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ❑ No ❑</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ❑ No ❑</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ❑ No ❑</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ❑ No ❑</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Arch tra marsh trail side

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>4.</td>
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<tr>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rumex arcticus</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>2. Raphanus sativum</td>
<td>20</td>
<td>✔</td>
</tr>
<tr>
<td>3. Dactylis caerulea</td>
<td>20</td>
<td>✔</td>
</tr>
<tr>
<td>4. Bromus catharticus</td>
<td>10</td>
<td>✔</td>
</tr>
<tr>
<td>5. Rumex crispus</td>
<td>10</td>
<td>✔</td>
</tr>
<tr>
<td>6. Plantago lanceolata</td>
<td>10</td>
<td>✔</td>
</tr>
<tr>
<td>7. Asper turbosus</td>
<td>10</td>
<td>✔</td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum

Remarks: 

Hydrophytic Vegetation Indicators:

- Dominance Test is 50%
- Prevalence Index is 3.0
- Morphological Adaptations
- Wetland Non-Vascular Plants
- Problematic Hydrophytic Vegetation

Hydrophytic Vegetation Present? Yes ❑ No ❑
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Matrix Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Redox Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Log</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>104R72</td>
<td>1T0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>104R72</td>
<td>1T0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type:** C=Concentration, D=Depletion, RM=Reduced Matrix  
**Location:** PL=Pore Lining, RC=Root Channel, 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)

**Indicators for Problematic Hydric Soils:**

- 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)

**Restrictive Layer (If present):**

- Type:
- Depth (inches): ____________

**Hydric Soil Present?** Yes ___ No __

**Remarks:**

### HYDROLOGY

**Wetland Hydrology Indicators:**

- Water-Stained Leaves (B9) (except NW coast)
- Silt 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 (C8)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (NW coast)
- Sparsely Vegetated Concave Surface (B3)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquifer (D3)
- Frost-Heave Hummocks (D4)
- FAC-Negative Test (D6)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes ___ No __ Depth (inches): ____________
- Water Table Present? Yes ___ No __ Depth (inches): ____________
- Saturation Present? Yes ___ No __ Depth (inches): ____________

**Wetland Hydrology Present?** Yes ___ No __

**Remarks:**

- Raised 1" past 24 hrs, water table not yet stabilized
- Wetland seep adjacent to road and berm for pathway, and road ditch
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McAlester Lake  
Applicant/Owner: CTA  
Investigator(s): Webster, Last  
Landform (hillslope, terrace, etc.): AMP Allen Brook  
Subregion (LRR):  

City/County: Adair  
State: OK  
Section, Township, Range:  
Local relief (concave, convex, none): Sink  
Slope (%): 10  
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 and/or Hydrology significantly disturbed? Yes □ No □ (If needed, explain any answers in Remarks.)  
Are Vegetation and/or Hydrology naturally problematic? Yes □ 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 □  
Hydric Soil Present? Yes □ No □  
Is the Sampled Area within a Wetland? Yes □ No □

Remarks:  

1 parameter = wetland, McAlester Trail S  

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator</th>
<th>Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>3.</td>
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<td>4.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: _________)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: _________)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agrocybus microcarpus 50 □ FACW</td>
</tr>
<tr>
<td>2. Alnus glutinosa 60 □ OBL</td>
</tr>
<tr>
<td>3. Cattleya maculatum 20 □ FACW</td>
</tr>
<tr>
<td>4. Dicranum nudum 10 □ FACW</td>
</tr>
<tr>
<td>5. Carex elliottiana 10 □ FACW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: _________)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum              

Remarks:

Hydrophytic Vegetation Indicators:  
□ Dominance Test is >50%  
□ Prevalence Index is ≥3.0  
□ Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)  
□ Wetland Non-Vascular Plants  
□ Problematic Hydrophytic Vegetation (Explain)  

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
### Soil Profile Description

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 12&quot;</td>
<td>2:54:31:2</td>
<td>100</td>
<td>Sandy Redox (55)</td>
<td>2 cm Muck (A10)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Whorly out</td>
</tr>
</tbody>
</table>

**Type: C=Concentration, D=Depletion, RM=Reduced Matrix. Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**

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

- Histosol (A1)
- Histie Epipedon (A2)
- Black Histie (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (If present):**

- Type: 
- Depth (inches): 
- Hydric Soil Present? Yes No X

**Remarks:**

### Hydrology

**Wetland Hydrology Indicators:**

- 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)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes No X Depth (inches): 
- Water Table Present? Yes No X Depth (inches): 10 ft
- Saturation Present? Yes No X Depth (inches): 

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

Project/Site: Acacia Trails  
City/County: Atascadero  
State:  
Sampling Date: 01/26/10

Applicant/Owner: C  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): road side  
Local relief (concave, convex, none): None  
Slope (%): 1

Subregion (LRR):  
Lat.:  
Long.:  
Datum:  
Soil Map Unit Name:  
NWI classification:  

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

Are Vegetation, Soil, or Hydrology significantly disturbed? Yes No  
(if needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
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</tr>
</tbody>
</table>

Remarks: Gravel fill, vacant lot behind storage units / yard debris

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>4.</td>
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<tr>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shrub/Herb Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>Total Cover</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
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<tr>
<td>Total Cover</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>Total Cover</td>
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</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum

Remarks:

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Interim Version
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>2.57</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-12</td>
<td>4.48</td>
<td>100</td>
<td></td>
<td>gravel extremely gravelly sandy loam do</td>
</tr>
</tbody>
</table>

**Type:** C=Concentration, D=Depletion, RM=Reduced Matrix. **Location:** P=Pipe Lining, RC=Root Channel, M=Matrix.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- Strip (A5)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Redox Depressions (F8)

**Restrictive Layer (if present):**

- Depth (inches): 5"

**Hydric Soil Present?** Yes [x] No [ ]

**Remarks:**

### HYDROLOGY

**Wetland Hydrology Indicators:**

- 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)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (NW coast)
- Sparser Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Anti Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes [x] No [ ]
- Water Table Present? Yes [x] No [ ]
- Saturation Present? Yes [x] No [ ]

**Wetland Hydrology Present?** Yes [x] No [ ]

**Remarks:**

- Does not meet 2 parameter wetlands (only hydrology) 2' from boundary

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

- Very recent rain, lots of runoff, ponding on part
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Araksa Trails  
City/County: Araksa  
State: CA  
Sampling Date: 11/26/16

Applicant/Owner: CA  
Section, Township, Range:  
Landform (hillslope, terrace, etc.): inside  
Local relief (concave, convex, none): none  
Slope (%): 1

Subregion (LRR):  
Lat:  
Long:  
Datum:  
Soil Map Unit Name:  
NWI classification:  

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

Are Vegetation, Soil, or Hydrology significantly disturbed? Yes ☑ No  
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.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ☑ No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes ☑ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No</td>
<td></td>
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</tr>
</tbody>
</table>

Remarks: Gravel fill, vacant lot behind storage units (west of trailer)

old, red bed

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ________ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>Total Cover</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: ______________________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ______________________)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Juncus effusus</td>
<td>20 ☑</td>
<td>OBL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Festuca arundinacea</td>
<td>20 ☑</td>
<td>FAG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Cymox crispos</td>
<td>10 ☑</td>
<td>FAV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Elymus canadensis</td>
<td>10 ☐</td>
<td>FAV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Achillea millefolium</td>
<td>10 ☐</td>
<td>FAV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Acronia streptanthus</td>
<td>10 ☐</td>
<td>FAV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Hymenocrinus millefolium</td>
<td>10 ☐</td>
<td>FAV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Rubus discolor</td>
<td>10 ☐</td>
<td>FAV</td>
<td></td>
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</tr>
<tr>
<td>9.</td>
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<td>10.</td>
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<tr>
<td>11.</td>
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<tr>
<td>Total Cover</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: __________ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<tr>
<td>Total Cover</td>
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</tr>
</tbody>
</table>

% Bare Ground in Herb Stratum  

Remarks:
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>Sandy Redox (S5)</td>
<td>100</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>Stripped Matrix (S6)</td>
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</tr>
<tr>
<td>5-12</td>
<td>Loamy Mucky Mineral (F1) (except MLRA 1)</td>
<td>100</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>12</td>
<td>Loamy Gleyed Matrix (F2)</td>
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<tr>
<td>12-14</td>
<td>Depleted Matrix (F3)</td>
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<td>14-16</td>
<td>Redox Depletion (F4)</td>
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<tr>
<td>16-18</td>
<td>Redox Depressions (F8)</td>
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</tr>
</tbody>
</table>

**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)
- Histosol (A1)
- Histosol (A2)
- Black (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**
- Compacted Gravel Base
- Depth (inches): 12
- Hydric Soil Present? Yes ✗ No

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<table>
<thead>
<tr>
<th>Primary Indicators (any one indicator is sufficient)</th>
<th>Secondary Indicators (2 or more required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9) (NW coast)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Sparsely Vegetated Concave Surface (B8)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Drainage Patterns (B10)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Dry-Season Water Table (C2)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Saturation Visible on Aerial Imagery (C9)</td>
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<td>Drift Deposits (B3)</td>
<td>Geomorphic Position (D2)</td>
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<td>Algal Mat or Crust (B4)</td>
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</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Frost-Heave Hummocks (D4)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
<td>FAC-Neutral Test (D5)</td>
</tr>
</tbody>
</table>

**Field Observations:**
- Surface Water Present? Yes ✗ No
- Water Table Present? Yes ✗ No
- Saturation Present? Yes ✗ No

**Wetland Hydrology Present?** Yes ✗ No

- Depth (inches): 3/4

**Remarks:**
- Very recent rain, gus not stabilized, lots of ground

**US Army Corps of Engineers**
Western Mountains, Valleys and Coast – DRAFT Version 9-15-2006
### WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region (DRAFT)

- **Project/Site:** Arcata Trails
- **City/County:** Humboldt
- **Sampling Date:** 1/8-12
- **State:** CA
- **Sampling Point:** 1/7/10
- **Investigator(s):** LLW
- **Landform (hillslope, terrace, etc.):** Roadside ditch
- **Local relief (concave, convex, none):** Concave
- **Slope (%):**
- **Subregion (LRR):**
- **Lat:** 40°49'50.1"N
- **Lon:** 124°45'0.0"W
- **Datum:**
- **Soil Unit Name:**
- **NWI classification:**

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Remarks:**

### VEGETATION

<table>
<thead>
<tr>
<th>Tree Stratum (Use scientific names.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
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<td></td>
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</tr>
<tr>
<td>Total Cover:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sapling/Shrub Stratum**

<p>| | | | |</p>
<table>
<thead>
<tr>
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<tr>
<td>Total Cover:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Herb Stratum**

<table>
<thead>
<tr>
<th>Species</th>
<th>% Cover</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Festuca arundinacea</td>
<td>30</td>
<td>Y FAC</td>
</tr>
<tr>
<td>Andropogon gerardii</td>
<td>35</td>
<td>Y FAC</td>
</tr>
<tr>
<td>Iris sp</td>
<td>8</td>
<td>X OBL</td>
</tr>
<tr>
<td>Bellis perennis (daisy)</td>
<td>10</td>
<td>Y FAC</td>
</tr>
<tr>
<td>Equisetum arvense</td>
<td>8</td>
<td>N FAC</td>
</tr>
<tr>
<td>Plantago lanceolata</td>
<td>2</td>
<td>N FAC</td>
</tr>
<tr>
<td>Total Cover:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Woody Vine Stratum**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cover:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**% Bare Ground in Herb Stratum**

**Remarks:**

**Hydrophytic Vegetation Present?** Yes No X

**Dominance Test Worksheet:**

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

Total Number of Dominant Species Across All Strata: 40 (A/B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.5

**Prevalence Index Worksheet:**

Total % Cover of:

- OBL species x 1 =
- FACW species x 2 =
- FAC species x 3 =
- FACU species x 4 =
- UPL species x 5 =

Column Totals: (A) (B)

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- Dominance Test is >50%
- Prevalence Index is ≤3.0
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- Wetland Bryophytes
- Problematic Hydrophytic Vegetation

1Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes No X

US Army Corps of Engineers

Western Mountains, Valleys and Coast – DRAFT Version 9-15-2006
**SOIL**

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10YR 4/4</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-8</td>
<td>5YR 4/3</td>
<td>30</td>
<td>10YR 4/4</td>
<td>20 C V</td>
</tr>
<tr>
<td>8-18</td>
<td>10YR 4/6</td>
<td>35</td>
<td>5YR 4/4</td>
<td>Is NA M</td>
</tr>
</tbody>
</table>

**Type:** C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)
- Histic Epepedon (A2)
- Black Histic (A3)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**
- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**
- Type:________________________
- Depth (inches):__________

**Hydric Soil Present?** Yes _____ No X

**Remarks:**
Test pit 4'/8' upslope of wetland boundary

**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)
- S parsely Vegetated Concave Surface (B8)

**Secondary Indicators (2 or more required):**
- 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)
- Frost-Heave Hummocks (D7)

**Field Observations:**
- Surface Water Present? Yes _____ No X Depth (inches): 1'
- Water Table Present? Yes _____ No X Depth (inches): 1'
- Saturation Present? Yes _____ No X Depth (inches): 1'

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

**Remarks:**
Recent rain events

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

**Pit left open 1/2 hour to observe if saturated conditions appear, or groundwater apparent.**
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys and Coast Region (DRAFT)

**Project/Site:** Accata Trails  
**City/County:** Humboldt  
**Sampling Date:** 188-W

**Applicant/Owner:**  
**State:** CA  
**Sampling Point:** 14101

**Investigator(s):**  
**Section, Township, Range:**  
**Landform (hillslope, terrace, etc.):**  
**Local relief (concave, convex, none):**  
**Subregion (LRR):**  
**Lat:** 40°49'44.0"  
**Long:** 124°03'41.4"  
**Datum:**  
**Soil Map Unit Name:**  
**NWI classification:**

---

**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:** 3” from wetland boundary

---

**VEGETATION**

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tree Stratum</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sapling/Shrub Stratum</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Herb Stratum</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. <em>Juncus effusus</em></td>
<td>20</td>
<td>Y *OBL</td>
<td></td>
</tr>
<tr>
<td>2. <em>Calamagrostis canadensis</em></td>
<td>60</td>
<td>Y FACW</td>
<td></td>
</tr>
<tr>
<td>3. <em>Festuca arundinacea</em></td>
<td>10</td>
<td>Y FAC</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Woody Vine Stratum</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Cover:** 100

**Dominance Test worksheet:**
- **Number of Dominant Species That Are OBL, FACW, or FAC:** 2/4 (A)
- **Total Number of Dominant Species Across All Strata:**  
- **Percent of Dominant Species That Are OBL, FACW, or FAC:** 50% (A/B)

**Prevalence Index worksheet:**
- **Total % Cover of:**
  - OBL species \*x 1 =  
  - FACW species \*x 2 =  
  - FAC species \*x 3 =  
  - FACU species \*x 4 =  
  - UPL species \*x 5 =  

**Column Totals:** (A) (B)

**Prevalence Index = B/A =**

**Hydrophytic Vegetation Indicators:**
- **Dominance Test is >50%**
- **Prevalence Index is ≤3.0**
- **Morphological Adaptations** (Provide supporting data in Remarks or on a separate sheet)
- **Wetland Bryophytes**
- **Problematic Hydrophytic Vegetation**

**Indicators of hydric soil and wetland hydrology must be present.**

**Hydrophytic Vegetation Present?** Yes [X] No

---

**Remarks:**
## SOIL

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(inches)</td>
<td>Color (moist)</td>
<td>%</td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td>0-6</td>
<td>54/12</td>
<td>80%</td>
<td>164/816</td>
<td>28%</td>
</tr>
<tr>
<td>0-18</td>
<td>164/816</td>
<td>80%</td>
<td>54/12</td>
<td>40%</td>
</tr>
</tbody>
</table>

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. 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)

*Indicators for Problematic Hydric Soils:*

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

**Restrictive Layer (if present):**

- Type: NA
- Depth (inches): NA
- 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)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C5)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? Yes X No Depth (inches): 0
- Water Table Present? Yes X No Depth (inches): 6
- Saturation Present? Yes X No Depth (inches): 6 (includes capillary fringe)
- Wetland Hydrology Present? Yes X No

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

Recent significant rain events

**Remarks:**

---

US Army Corps of Engineers Western Mountains, Valleys, and Coast – Interim Version
SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist) %</td>
<td>Color (moist) %</td>
</tr>
<tr>
<td>0-8</td>
<td>10%</td>
<td>-</td>
</tr>
<tr>
<td>8-13</td>
<td>2.5%</td>
<td>-</td>
</tr>
<tr>
<td>13-18</td>
<td>2.5%</td>
<td>-</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (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)

Restrictive Layer (if present):

- Type:
- Depth (inches):
- Hydric Soil Present? Yes [X] No

Remarks:

Second soils + hydro pit adjacent to 188 to confirm observed conditions at 188

HYDROLOGY

Wetland Hydrology Indicators:

<table>
<thead>
<tr>
<th>Primary indicators (minimum of one required; check all that apply)</th>
<th>Secondary indicators (2 or more required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td></td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Salt Crust (B11)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Aquatic Invertebrates (B13)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Oxidized Rhizospheres along Living Roots (C3)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
<td>Stunted or Stressed Plants (D1) (LRR A)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Sparsely Vegetated Concave Surface (B8)</td>
<td></td>
</tr>
</tbody>
</table>

Field Observations:

- Surface Water Present? Yes [X] No
- Water Table Present? Yes [X] No
- Saturation Present? Yes [X] No

Depth (inches):

13" 

Wetland Hydrology Present? Yes [X] No

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

Remarks:
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>2.54%</td>
<td>100</td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)  
- Histic Epipod (A2)  
- Black Histic (A3)  
- Hydrogen Sulfide (A4)  
- Depleted Below Dark Surface (A11)  
- Thick Dark Surface (A12)  
- Sandy Mucky Mineral (S1)  
- Sandy Gleyed Matrix (S4)

**Indicators for Problematic Hydric Soils:**

- 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)

**Restrictive Layer (if present):**

- Type:  
- Depth (inches):  
- Hydric Soil Present? **Yes ✗ No**

**Remarks:** Saturated longer than 14 days, 2 parameters.

**Second soils: hydro test pit adjacent to T88**

### 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)

Secondary indicators (2 or more required)

- 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 Tiled Soils (C6)  
- Stunted or Stressed Plants (D1) (LRR A)  
- Other (Explain in Remarks)  
- FAC-Neutral Test (D5)  
- Frost-Heave Hummocks (D7)

**Field Observations:**

- Surface Water Present? **Yes ✗ No**  
- Water Table Present? **Yes ✗ No**  
- Saturation Present? **Yes ✗ No**  
- (includes capillary fringe)  
- 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

Applicant/Owner: CoA

Investigator(s): Webb Lester

Landform (hillslope, terrace, etc.):

Local relief (concave, convex, none):

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 V No (If no, explain in Remarks.)

Are Vegetation No. Soil No. or Hydrology No. significantly disturbed? Are "Normal Circumstances" present? Yes V No (If needed, explain any answers in Remarks.)

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

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes V No</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes V No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes V No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes V No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: parameter wetland

Outside coastal zone

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ) Absolute % Cover Dominant Indicator Species? Status

1. 
2. 
3. 
4. 
5. = Total Cover

Sapling/Shrub Stratum (Plot size: )

1. 
2. 
3. 
4. 
5. = Total Cover

Herb Stratum (Plot size: )

1. Scirpus microcarpus 30 ✓ FACW
2. Rumex crispus 20 ✓ FACW
3. Collinsia repens 10 ✓ DRL
4. Calamagrostis canadensis 10 ✓ FACW
5. Stipa tenacissima 10 ✓ FSL
6. Deschampsia californica 10 ✓ FACV
7. Sporobolus cryptandrus 10 ✓ FACW
8. 
9. 
10. 
11. = Total Cover

Woody Vine Stratum (Plot size: )

1. 
2. = Total Cover

% Bare Ground in Herb Stratum

Remarks:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5

Total Number of Dominant Species Across All Strata: 7

Percent of Dominant Species That Are OBL, FACW, or FAC: 71

Prevalence Index worksheet:

Multiply by:

OBL species x 1 =
FACW species x 2 =
FAC species x 3 =
FACU species x 4 =
UPL species x 5 =
Column Totals: (A) (B)

Prevalence Index = B/A

Hydrophytic Vegetation Indicators:

Dominance Test is >50%

Prevalence Index is ≤3.0

Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)

Wetland Non-Vascular Plants1

Problematic Hydrophytic Vegetation1 (Explain)

1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
### SOIL

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>10%</td>
<td>Sandy Clay loam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed railroad bed or base</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Includes pockets of loamy, not redox</td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyad Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- 2 cm Muck (A16)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: Drained
- Depth (inches): 21

**Hydric Soil Present?** Yes ☒ No ☒

**Remarks:**

---

### HYDROLOGY

**Wetland Hydrology Indicators:**

**Primary Indicators (any one indicator is sufficient):**

- 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)

**Secondary Indicators (2 or more required):**

- Water-Stained Leaves (B9) (except NW coast)
- 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 Plowed Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)
- Water-Stained Leaves (B9) (NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

- Surface Water Present? Yes ☒ No ☒ Depth (inches): 15
- Water Table Present? Yes ☒ No ☒ Depth (inches): 17
- Saturation Present? Yes ☒ No ☒ Depth (inches): 1

**Wetland Hydrology Present?** Yes ☒ No ☒

**Remarks:**

Rain significantly past 24 hrs, no surface or GW present.

---

US Army Corps of Engineers

Western Mountains, Valleys and Coast – DRAFT Version 9-15-2006
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region (DRAFT)

Project/Site: _____________________________ City/County: ______________ State: _____________________________ Sampling Date: 4/7/10

Applicant/Owner: _____________________________ Section, Township, Range: _____________________________ Lat: _____________________________ Datum: ______________

Investigator(s): _____________________________ Long: _____________________________ NWI classification: _____________________________

Landform (hillslope, terrace, etc.): Stream terrace Local relief (concave, convex, none): Concave Slope (%): __________

Subregion (LRR): _____________________________ Lat: _____________________________ Datum: ______________

Soil Map Unit Name: _____________________________ Long: _____________________________ 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 _____ (If needed, explain any answers in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?

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: Stonehenge beyond. Jolly Grant Creek (OHV) extends approx. width.

VEGETATION

Tree Stratum (Use scientific names.) Absolute Percent Cover Dominant Species? Indicator Status
1. _____________________________ _____________ Yes _____ No _____
2. _____________________________ _____________ Yes _____ No _____
3. _____________________________ _____________ Yes _____ No _____
4. _____________________________ _____________ Yes _____ No _____

Total Cover: _____________

Sapling/Shrub Stratum
1. _____________________________ _____________ Yes _____ No _____
2. _____________________________ _____________ Yes _____ No _____
3. _____________________________ _____________ Yes _____ No _____
4. _____________________________ _____________ Yes _____ No _____

Total Cover: _____________

Herb Stratum
1. Ranunculus repens 60 % FACW
2. Stachys paludosa 10 % OBL
3. Senekaio pachyandra 20 % OBL
4. _____________________________ _____________ Yes _____ No _____
5. _____________________________ _____________ Yes _____ No _____
6. _____________________________ _____________ Yes _____ No _____
7. _____________________________ _____________ Yes _____ No _____
8. _____________________________ _____________ Yes _____ No _____

Total Cover: _____________

Woody Vine Stratum
1. _____________________________ _____________ Yes _____ No _____
2. _____________________________ _____________ Yes _____ No _____

Total Cover: _____________

% Bare Ground in Herb Stratum 10

Hydrophytic Vegetation Indicators:
- Dominance Test is >60%
- Prevalence Index is ≤3.0
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- Wetland Bryophytes
- Problematic Hydrophytic Vegetation

Hydrophytic Vegetation Present? Yes X No _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3/3 (A)
Total Number of Dominant Species Across All Strata: (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)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- Dominance Test is >60%
- Prevalence Index is ≤3.0
- Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
- Wetland Bryophytes
- Problematic Hydrophytic Vegetation

Indicators of hydric soil and wetland hydrology must be present.

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

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-11</td>
<td>6YR3/2</td>
<td>100</td>
</tr>
<tr>
<td>11-18</td>
<td>6YR3/2</td>
<td>50 2.5Y2.5/45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>loam</td>
<td>Sandy pockets from soil mixing</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Hist (A3)
- Hydrogen Sulfides (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandy Redox (S5)</td>
<td></td>
</tr>
<tr>
<td>Stripped Matrix (S6)</td>
<td></td>
</tr>
<tr>
<td>Loamy Mucky Mineral (F1) (except MLRA 1)</td>
<td></td>
</tr>
<tr>
<td>Loamy Gleyed Matrix (F2)</td>
<td></td>
</tr>
<tr>
<td>Depleted Matrix (F3)</td>
<td></td>
</tr>
<tr>
<td>Redox Dark Surface (F6)</td>
<td></td>
</tr>
<tr>
<td>Depleted Dark Surface (F7)</td>
<td></td>
</tr>
<tr>
<td>Redox Depressions (F8)</td>
<td></td>
</tr>
</tbody>
</table>

### Indicators for Problematic Hydric Soils:

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

### Restrictive Layer (if present):

<table>
<thead>
<tr>
<th>Type</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hydric Soil Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### 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)

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<th>Indicator</th>
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<tbody>
<tr>
<td>Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</td>
<td></td>
</tr>
<tr>
<td>Salt Crust (B11)</td>
<td></td>
</tr>
<tr>
<td>Aquatic Invertebrates (B13)</td>
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<td>Stunted or Stressed Plants (D1) (LRR A)</td>
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<tr>
<td>Other (Explain in Remarks)</td>
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</tbody>
</table>

**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)

<table>
<thead>
<tr>
<th>Field Observation</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water Present?</td>
<td>Yes</td>
</tr>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
</tr>
<tr>
<td>Saturation Present? (includes capillary fringe)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wetland Hydrology Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

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

*Recent significant rainfall events in past week, rain yesterday*

### Remarks: