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

July 2010

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Appendix A: Figures  
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[Note: black and white series with survey topographic base]

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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 (tide 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 (*Scirpus 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. *humboldtensis*), 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>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Extent</td>
<td>City/ COE</td>
<td>Cubic Yards of Fill associated with Permanent Impacts(^1)</td>
</tr>
<tr>
<td>CZ to South</td>
<td>City/ COE/ CC</td>
<td>Permanent Impacts (Ground Disturbance)(^2)</td>
</tr>
<tr>
<td>City Boundary</td>
<td></td>
<td>Permanent Impacts (Structure Shading)(^3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporary Construction Impacts (5ft buffer)(^4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporary Impacts Associated with Staging Areas(^5)</td>
</tr>
<tr>
<td></td>
<td>Various</td>
<td>Total Existing(^6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Habitats(^7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wetland Types(^8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Waters of US/State(^9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>California State Special Status Plants(^10)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Cubic Yards of Fill associated with Permanent Impacts(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Permanent Impacts (Ground Disturbance)(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Permanent Impacts (Structure Shading)(^3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Temporary Construction Impacts (5ft buffer)(^4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Temporary Impacts Associated with Staging Areas(^5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IMPACT SUMMARY (all project areas combined)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Cubic Yards of Fill associated with Permanent Impacts(^1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Permanent Impacts (Ground Disturbance)(^2)</td>
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<td></td>
<td>Various Permanent Impacts (Structure Shading)(^3)</td>
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<tr>
<td></td>
<td></td>
<td>Various Temporary Construction Impacts (5ft buffer from permanent impacts associated with ground disturbance)(^4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Various Temporary Impacts Associated with Staging Areas(^5)</td>
</tr>
<tr>
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<td>Notes:</td>
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<tr>
<td></td>
<td></td>
<td>Abbreviations:</td>
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<tr>
<td></td>
<td></td>
<td>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</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Habitat Types</th>
<th>Wetland Types</th>
<th>Other Waters of US/State</th>
<th>California State Special Status Plants</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Shorelined Roosting Rocky Shoreline</td>
<td>Riparian (1 Parameter)(^1)</td>
<td>Palustrine Emergent Wetlands</td>
<td>Tidal (stormwater conveyance or Palustrine Vegetation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SF</td>
<td>1,473</td>
<td>69,541</td>
<td>SF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ac.</td>
<td>0.03</td>
<td>2.06</td>
<td>0.01</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 (8.0’ 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><strong>Palustrine Emergent (Isolated).</strong> Located on Franke parcel. These isolated wetlands meet three-parameter definition, with compacted soils resulting in ponding water and scattered wetland vegetation and bare surface (sign of apparent surface water ponding).</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 pits only.</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.

None. City/COE

### 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><strong>Palustrine Emergent.</strong> 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><strong>Palustrine Emergent.</strong> 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><strong>Palustrine Emergent.</strong> 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>Palustrine Emergent. 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>
</tbody>
</table>
### SEGMENTS 3.4—L Street South of 8th Street to Samoa (Begins Coastal Zone)

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<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>

### SEGMENT 3.5—Samoa Boulevard Crossing

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 8, Ditch 9</td>
<td>Stormwater conveyance on north side of Samoa, both east and west of L Street. Receives input from City stormwater culverts. Mostly unvegetated, although Ditch 9 does have partial Palustrine Emergent vegetation. Both ditches are City/Coastal Commission jurisdictional. Both ditches are unlikely COE jurisdictional.</td>
<td>None</td>
<td>City/CC</td>
</tr>
</tbody>
</table>

### SEGMENT 4.0 / 5.1 / 5.2—South of Samoa to I Street

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 9</td>
<td><em>Palustrine Emergent.</em> This wetland begins as a ditch along the west side of the railroad approximately 300 feet south of Samoa Boulevard, and then transitions into a well established freshwater marsh that is set west of the railroad bed and east of a pond berm within the Arcata Marsh and Wildlife Sanctuary. The wetland continues until intersection with I Street, where it connects through a culvert and continues as a narrow marsh area on the southeast side of I Street. The trail is proposed on top of the existing berm to the west of this wetland.</td>
<td>T78</td>
<td>City/COE/CC</td>
</tr>
</tbody>
</table>

### SEGMENT 5.3—Arcata Marsh South of I Street

Area of investigation leaves the railroad alignment and follows a 25-foot wide swath centered on an existing trail through the Arcata Marsh.

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditch 10</td>
<td>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.</td>
<td>Confirmation pits of boundary.</td>
<td>City/COE/CC</td>
</tr>
<tr>
<td>Wetland 10 (Isolated)</td>
<td><em>Palustrine Emergent (Isolated).</em> 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.</td>
<td>Ref: T78int-T81int</td>
<td>City/CC</td>
</tr>
</tbody>
</table>

### SEGMENT 5.4—Arcata Marsh I Street to Butcher Slough

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 11</td>
<td><em>Estuarine Intertidal Emergent (Saltmarsh).</em> Saltmarsh vegetation on margins of Butcher Slough (continues to Segment 6.1). See general wetland description for typical plants. One and/or two-parameter boundary does not extend beyond COE boundary.</td>
<td>Ref: T77int</td>
<td>City/COE/CC</td>
</tr>
<tr>
<td>Wetland 12</td>
<td><em>Palustrine Emergent.</em> Formed on compacted imported soil material and gravel base that is topographically lower and between a historic landfill (to west) and the existing marsh trail bed (to east). Wetland connects through a culvert to Palustrine Emergent “No-Name Pond” to the south. One and/or two-parameter boundary does not extend beyond COE boundary. arroyo willow (Salix lasiolepis) [FACW]</td>
<td>T72 (Ref: T69int-T75int)</td>
<td>City/COE/CC</td>
</tr>
</tbody>
</table>
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]

<table>
<thead>
<tr>
<th>Wetland 12 (continued)</th>
<th><strong>Palustrine Emergent</strong> “No-Name Pond”</th>
<th>None. City/COE/CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>arroyo willow (<em>Salix lasiolepis</em>) [FACW]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baltic rush (<em>Juncus balticus</em>) [OBL]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California blackberry (<em>Rubus ursinus</em>) [FACW]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Himalayan blackberry (<em>Rubus discolor</em>) [FACW]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reed canary grass (<em>Phalaris arundinacea</em>) [NI]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>soft rush (<em>Juncus effuses</em>) [OBL]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cattail (<em>Typha sp.</em>) [FACW]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SEGMENT 6.1—Butcher Slough Crossing

<table>
<thead>
<tr>
<th>ID</th>
<th>Description / Location</th>
<th>Test Pit</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water 2</td>
<td><strong>Butcher Slough.</strong> The proposed trail route crosses Butcher Slough, defined at the High Tide Line (HTL) as a “Water of the U.S./State.” See Wetland 11 includes a narrow strip of Estuarine vegetation along the banks of this Water.</td>
<td>NA</td>
<td>City/COE/CC</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><strong>Estuarine Emergent (Saltmarsh).</strong> 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 (<em>Distichlis spicata</em>) [FACW] coyote bush (<em>Baccharis pilularis</em>) [NI]</td>
<td>None (Ref: t65int-t68int)</td>
<td>City/COE/CC</td>
</tr>
</tbody>
</table>

### SEGMENTS 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><strong>Palustrine Emergent.</strong> 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 (<em>Scirpus microcarpus</em>) [OBL] tufted hairgrass (<em>Deschampsia cespitosa</em>) [FACW] bristly oxtongue (<em>Picris echioïdes</em>) [FAC] teasel (<em>Dipsacus sylvestris</em>) [NI] Baltic rush (<em>Juncus balticus</em>) [OBL]</td>
<td>T61</td>
<td>City/COE/CC</td>
</tr>
</tbody>
</table>

| Wetland 15 | **Estuarine Intertidal Emergent (Saltmarsh).** Connects to Wetland 14 (Palustrine Emergent). Wetland areas along this stretch abut | T48, T3 | City/COE/CC |
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>Arroyo willow [few] (Salix lasiolepis) [FACW]</td>
<td>None</td>
</tr>
<tr>
<td>red alder (Alnus rubra) [FAC]</td>
<td>CC</td>
</tr>
<tr>
<td>Himalayan blackberry (Rubus discolor) [FACW]</td>
<td></td>
</tr>
<tr>
<td>Pacific wax myrtle (Myrica californica) [FAC+]</td>
<td></td>
</tr>
<tr>
<td>coyote bush (Baccharis pilularis) [NI]</td>
<td></td>
</tr>
<tr>
<td>lupine (Lupinus sp.) [NI]</td>
<td></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]
- 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]

<table>
<thead>
<tr>
<th>Wetland 16 (continued)</th>
<th>Estuarine Emergent (Ditch)</th>
<th>T1, T2, T28, T48</th>
<th>COE/CC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cordgrass (<em>Spartina densiflora</em>) [NI/FACW]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>tufted hairgrass (<em>Deschampsia cespitosa</em>) [FACW]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>seashore saltgrass (<em>Distichlis spicata</em>) [FACW]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Virginia glasswort (<em>Salicornia virginiana</em>) [OBL]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>marsh rosemary (<em>Limonium californicum</em>) [FACW]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baltic rush (<em>Juncus balticus</em>) [OBL]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Habitat Type
- One-Parameter Riparian. Adjacent to Wetland 16.
- Arroyo willow (*Salix lasiolepis*) [FACW]

| Water 4 | Jacoby Creek. “Other Water of the U.S. (Tidal)” and is mapped at the HTL and/or limits of unvegetated mud. | NA | CC |
| 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. | NA | COE/CC |
| Water 6 | Brainard’s Slough. “Other Water of the U.S. (Tidal)”, receives drainage from Washington and Rocky Gulches. | NA | COE/CC |

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 is 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>
<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><em>Abronia umbellata</em> ssp. <em>breviflora</em></td>
<td>pink sand-verbena</td>
<td>1B.1</td>
<td>Coastal dunes; flowers July-Oct.</td>
<td>Low potential to occur at site.</td>
</tr>
<tr>
<td><em>Carex arctata</em></td>
<td>northern clustered sedge</td>
<td>2.2</td>
<td>Wet areas in North Coast coniferous forests.</td>
<td>Not present at site during wetland delineation and habitat mapping Dec. 2009-March 2010.</td>
</tr>
<tr>
<td><em>Carex lyngbyei</em></td>
<td>Lyngbye’s sedge</td>
<td>2.2</td>
<td>Brackish or freshwater marshes and swamps; flowers May-Aug.</td>
<td>Present. Several populations mapped during May 2010 botanical survey at Gannon Slough but outside of trail alignment/footprint.</td>
</tr>
<tr>
<td><em>Castilleja ambiguа</em> ssp. <em>humboldtensis</em></td>
<td>Humboldt Bay owl’s clover</td>
<td>1B.2</td>
<td>Coastal salt marsh and swamps; flowers April-Aug.</td>
<td>Present. A total of 14 populations mapped during May 2010 botanical survey.</td>
</tr>
<tr>
<td><em>Cordylanthus maritimus</em> ssp. <em>palustris</em></td>
<td>Point Reyes bird’s beak</td>
<td>1B.2</td>
<td>Coastal salt marsh and swamps; flowers June-Oct.</td>
<td>Potentially present in salt marsh to west of highway 101 and in vicinity of Butter slough.</td>
</tr>
<tr>
<td><em>Erysimum menziesii</em> ssp. <em>eurekense</em></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>Not present. 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><em>Fissidens pauperculus</em></td>
<td>minute pocket moss</td>
<td>1B.2</td>
<td></td>
<td>Low potential to occur at site.</td>
</tr>
<tr>
<td><em>Layia carnosa</em></td>
<td>beach layia</td>
<td>1B.1, E (Fed/State)</td>
<td>Coastal dunes; flowers March-July.</td>
<td>Not present. no dune habitat present, not listed for Arcata south or north quads, but listed on adjacent quads and along margin of bay where dune habitat is present.</td>
</tr>
<tr>
<td><em>Lilium occidentale</em></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>Not present at site, no habitat present at site.</td>
</tr>
<tr>
<td><em>Montia howellii</em></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>Not present at site during 2006 surveys, no habitat present at site.</td>
</tr>
<tr>
<td>Northern Coastal Salt Marsh</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Present. Adjacent to proposed alignment along highway 101 corridor and within Butter slough and adjacent habitat.</td>
</tr>
<tr>
<td><em>Sidalcea malviflora</em> ssp. <em>patula</em></td>
<td>Siskiyou checkerbloom</td>
<td>1B</td>
<td>Openings in redwood forest, coast scrub and prairie; flowers late May-June.</td>
<td>Potentially present. Roadsides 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><em>Sidalcea oregana ssp. eximia</em></td>
<td>coast checkerbloom</td>
<td>1B.2</td>
<td>Openings in redwood forest, coast scrub and prairie; flowers late May-June.</td>
<td>Potentially present. Roadsides provide potential habitat.</td>
</tr>
<tr>
<td><em>Spergularia canadensis var. occidentalis</em></td>
<td>western sand spurry</td>
<td>2.2</td>
<td>Coastal salt marshes and swamps; flowers June-Aug.</td>
<td>Low to Moderate Potential 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><em>Viola palustris</em></td>
<td>marsh violet</td>
<td>2.2</td>
<td>Coastal scrub and coastal bogs and fens; flowers March-August.</td>
<td>Low potential 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, 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></td>
<td>Total: 9</td>
<td>Total: 5</td>
<td>Total: 4</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></td>
<td>Total: 15</td>
<td>Total: 13</td>
<td>Total: 8</td>
</tr>
<tr>
<td>Water</td>
<td>Waters 1 - 3</td>
<td>Waters 1 – 6</td>
<td>Waters 2 – 6</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


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

McLaughlin, J., and F. Harradine, 1965. *Soils of Western Humboldt County California,* Department of Soils and Plant Nutrition, University of California, Davis and the County of Humboldt.


USDA/NRCS, 2006. *Field Indicators of Hydric Soils in the United States.* United States Department of Agriculture (USDA) and Natural Resources Conservation Service (NRCS).


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 2-3
Project Study Boundary

Study Area
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

1 inch = 100 feet printed at 8.5x11

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

Cartography: GLD

Figure 2-4
Project Study Boundary
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

GDL

Date: 3/3/2011

Project #: 01051-09-004

1 inch = 100 feet printed at 8.5x11

Figure 2-5 Project Study Boundary

Study Area

Property Line

Alignment Study Segments

City Boundary

City Parks

Coastal Zone

HBNWR

Creeks

Page 5 of 28

Shay Park

Arcata High School

Jolly Giant Creek

Jolly Giant Creek

17TH ST

16TH ST

MST

LST

Segment #2

Segment #3.1
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: 3/5/2011
Project # 01051-09-004

Figure 2-7
Project Study Boundary

1 inch = 100 feet printed at 8.5x11

Study Area
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Alignment Study Segments
Property Line

N

0 25 50 100 Ft

Page 7 of 28

Page 7 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.

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

Figure 2-10
Project Study Boundary

Scale: 1 inch = 100 feet printed at 8.5x11

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

Segments:
- Segment #3.5
- Segment #4
- Segment #5.1

Arcata Marsh and Wildlife Sanctuary

Page 10 of 28
Figure 2-13
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 Boundary
City Parks
Coastal Zone
HBNWR
Creeks

Study Area
Property Line
Alignment Study Segments

South ST

Arcata Marsh and Wildlife Sanctuary

Jolly Giant Creek

Segment #5:3
Segment #5:4

Figure 2-13
Project Study Boundary

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
833 3RD ST
EUREKA, CA 95501
P: 707-443-8330    F: 707-444-8330
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

DG

Figure 2-17
Project Study Boundary

Page 17 of 28

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

1 inch = 100 feet printed at 8.5x11

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.
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.

Figure 2-18
Project Study Boundary

Page 18 of 28
Humboldt Bay National Wildlife Refuge

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 2-20
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 FEMA 2008 1 meter resolution.

Cartography
GLD

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

Study Area
City Boundary
City Parks
Coastal Zone
HBNWR
Creeks
Property Line
Alignment Study Segments
Segment #7.3
Segment #7.4
Segment #7.5

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

Figure 2-21
Project Study Boundary
Segment #7.6
Segment #7.7

US HWY 101

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
GLOD
Date: 3/5/2011
Project # 01051-06-004

Figure 2-23
Project Study Boundary

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

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

Page 23 of 28

Page 23 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.

Figure 2-24
Project Study Boundary

Page 24 of 28

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

1 inch = 100 feet printed at 8.5x11

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

Figure 2-27
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.

1 inch = 100 feet printed at 8.5x11
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.

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 3-1
Phase I Sites of Interest

Page 1 of 28

WINZLER & KELLY
813 3RD ST
EUREKA, CA 95501
P: 707-443-8328 F: 707-444-8330
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.

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)

Figure 3-2
Phase I Sites of Interest

Greenwood Cemetery
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

Figure 3-3

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 3-4
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: GLORCH
Date: 3/3/2011
Project #: 01051-09-004

Project:
City of Arcata
Rail-with-Trail Connectivity Project
Arcata High School (Location of former UST on school grounds unknown)

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.

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

Cartography: GLD/RCH
Date: 3/5/2011
Project #: 01051-09-004

Figure 3-5
Phase I Sites of Interest
Figure 3-6
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.

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

Jelly Giant Creek
14TH ST
M ST
LST
15TH ST

Site 3
Site 9
~300'

Site 10

Site 7

Site 8

Site 11, 13

Site 12

Arcata Mini Storage

Arcata Marine

Zehndner-Parton House

Stewart School

Date: 3/3/2011
Project: City of Arcata Rail-with-Trail Connectivity Project
Cartography: GLD/RCH
Project # 01051-09-004

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

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
Cartography: GLD/ROH
Date: 3/3/2011
Project #: 01501-004G

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.

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 3-8
Phase I Sites of Interest

Date: 3/3/2011
Cartography: GLO/RCH

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 3-9**
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.

Scale: 1 inch = 100 feet printed at 8.5x11

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

Cartography: GLO/RCH
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.
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.

Cartography: GLD/RCH
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: 707-443-8339 F: 707-444-8330
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: GLORCH
Date: 3/3/2011
Project #: 01051-09-004

Figure 3-11
Phase I Sites of Interest

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

WINZLER & KELLY
633 3RD ST
EUREKA, CA 95501
P: 707-444-8339  F: 707-444-8330
Arcata Marsh and Wildlife Sanctuary

Figure 3-13
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

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

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

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 3-15
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.

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 3-15
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 3-16
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.

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

Cartography: GLDIRCH
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: 707.443.8338  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

**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:**
- 05/01/09

**Date:**
- 3/3/2011

**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 3-19
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

WINZLER & KELLY
833 3RD ST
EUREKA, CA 95501
P: 707-444-8338 F: 707-444-8330
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

Phase I Sites of Interest

Sources: City of Arcata GIS - 1 ft resolution aerial, 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
Figure 3-21
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

Jacob Creek

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
833 3rd St
Eureka, CA 95501
P: 707-444-8338  F: 707-444-8330

HBNWR
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 3-22
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.

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

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

WINZLER & KELLY
813 3RD ST
EUREKA, CA 95501
P: 707-444-8396 F: 707-444-8330
Figure 3-24
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)
Study Area
Staging Area
Parcels
Creeks

Figure 3-25
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.
Rocky Gulch

Figure 3-26
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
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 3-27
Phase I Sites of Interest

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

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

KOA Campground
Bracut Industrial Park

Site TB-H ~100'
Site 41 ~1 Mile

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 #: 01051-09-004

WINZLER & KELLY
613 3RD ST
EUPEKA, CA 95521
P: 707-443-8339, F: 707-444-8330
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.

Supplemental Legend, See Figures 4-01 to 4-28

COE STAMP FOR JURISDICTIONAL APPROVAL
Project: City of Arcata Rail-with-Trail Connectivity Project

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

Cartography: GLD

Figure 4-01
Existing Wetlands/Habitats

Note: See Figure 4-00 for supplemental legend
Figure 4-04
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

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.

Date: 3/2/2011
Project #: 2001-00-004

Page 04 of 28
Figure 4-05
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 4-06
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.
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

Wetland 9

Figure 4-10
Existing Wetlands/Habitats

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

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

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

Camography: GLD
Date: 3/2/2011
Project #: 01051-09-004

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Figure 4-14
Existing Wetlands/Habitats

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

City Boundary
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.

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Figure 4-18
Existing Wetlands/Habitats

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

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

Note: See Figure 4-00 for supplemental legend

Date: 3/2/2011 Project #: PG01-09-004

Camography GLD
0 25 50 100 Ft

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.
Figure 4-23
Existing Wetlands/Habitats

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.

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

Cartography
GLD
Date: 3/2/2011
Project #: 01051-09-004

CityBoundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line
Cordylanthus maritimus
30 Plants

Cordylanthus maritimus
84 Plants

Cordylanthus maritimus
24 Plants

Cordylanthus maritimus
21 Plants

Cordylanthus maritimus
40 Plants

Cordylanthus

Bayside Cutoff

Figure 4-25
Existing Wetlands/Habitats

City of Arcata
Rail-with-Trail Connectivity Project

Project:

City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Note: See Figure 4-00 for supplemental legend

Page 25 of 28

0 25 50 100 Ft

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: 3/2/2011

Project 
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.

GLD

Project 
City of Arcata
Rail-with-Trail Connectivity Project

3/2/2011

P: 707-443-8326   F: 707-444-8330

633 3RD ST
EUREKA, CA 95521

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 4-27
Existing Wetlands/Habitats

Note: See Figure 4-00 for supplemental legend

Source: City of Arcata GIS - 1 ft resolution aerials, Streams, Parks, Landmarks, City Boundary, Humboldt County GIS 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

Page 27 of 28
City Boundary  Trail Footprint  Property Line
City Parks  Bridges  Bridges
Coastal Zone  Creeks  Bridges
HBNWR  Bridges  Bridges
Study Area  Bridges  Bridges

Page 28 of 28

Figure 4-28
Existing Wetlands/Habitats

City of Arcata
Rail-with-Trail Connectivity Project

Cartography:
GLD

Date: 3/2/2011  Project # 01051-09-004

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.
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.
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.
Note: See Figure 5-00 for supplemental legend.
Arcata Do It
Best Lumber

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.
Ca Central Creamery Plant

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 5-08
Wetlands/Habitats Impacts

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

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Figure 5-11
Wetlands/Habitats Impacts

Project # 01051-09-004

633 3RD ST
EUREKA, CA 95502
P: 707-444-8339 - F: 707-444-8330

Cartography: GLD
Date: 1/31/2011
Figure 5-12
Wetlands/Habitats Impacts

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

Page 12 of 28

Note: See Figure 5-00 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.

Arcata Marsh and
Wildlife Sanctuary

Existing Treatment Pond

Segment #52
Segment #53

South ST

0 25 50 100 Ft

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Date:
1/31/2011

01051-09-004

GLD
1/31/2011

WINZLER & KELLY
835 3RD ST
EUREKA, CA 95501
P: 707.444.8335  F: 707.444.8330
City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Jolly Giant Creek
Arcata Marsh and Wildlife Sanctuary

Figure 5-14
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
Sludge Drying Beds

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.

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Figure 5-16
Wetlands/Habitats Impacts

Page 16 of 28

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

Cartography:
GLD
Date:
1/31/2011
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.

Note: See Figure 5-00 for supplemental legend.

City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line
Project:
City of Arcata
Rail-with-Trail Connectivity Project

Figure 5-18
Wetlands/Habitats Impacts

Page 18 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.
Humboldt Bay National Wildlife Refuge (HBNWR)

Cordylanthus maritimus

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 5-19 Wetlands/Habitats Impacts

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**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.

**Figure 5-24**
Wetlands/Habitats Impacts

**Date:**
1/31/2011

**Note:**
See Figure 5-00 for supplemental legend

**Cartography:**
GLD

**Page 24 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.

Cartography:
GLD

Date:
1/31/2011

Project #
01051-09-004

Note: See Figure 5-00 for supplemental legend

Figure 5-25
Wetlands/Habitats Impacts

Page 25 of 28
City Boundary
City Parks
Coastal Zone
HBNWR
Study Area

Trail Footprint
Bridges
Creeks
Property Line

Note: See Figure 5-00 for supplemental legend

Figure 5-28
Wetlands/Habitats Impacts

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

Cartography: GLD
Date: 1/31/2011
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.
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Arcata Trails  
City/County: Arcata  
Applicant/Owner: CA  
Sampling Date: 01/21/10  
Investigator(s): webb teste  
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 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</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: above Cannery Slough, Southside ditch, rail trail

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>
<tr>
<td>= Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<th>Sapling/Shrub Stratum (Plot size: _________)</th>
<th>Absolute % Cover</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
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<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</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.  Cynodon dactylon</td>
<td>20</td>
<td>N1</td>
</tr>
<tr>
<td>2.  Ocotea brevata</td>
<td>20</td>
<td>N1</td>
</tr>
<tr>
<td>3.  Raphanus sativa</td>
<td>20</td>
<td>N1</td>
</tr>
<tr>
<td>4.  B. vulgaris</td>
<td>20</td>
<td>N1</td>
</tr>
<tr>
<td>= Total Cover</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>% Bare Ground in Herb Stratum</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</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>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>2.5×2Z</td>
<td>100</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)

- 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)

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

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

**Remarks:**
TI-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 Mats or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Incunabulum Visible on Aerial Imagery (B7)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B8) (except NW coast)
- Sparsely Vegetated Concave Surface (B8)
- Aquatic Invertebrates (B13)
- Hydrogen Sulphide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- 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): 
- **Saturation Present?** (includes capillary fringe) Yes [ ] No [X] Depth (inches): 

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

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

- **Project/Site:** Arcata Trail
- **City/County:** Arcata
- **Sampling Date:** 01/2/10
- **Applicant/Owner:** CA
- **Sampling Point:** T-1-W

**Investigator(s):** Web Lester

**Landform (hillslope, terrace, etc.):** ditch
**Local relief (concave, convex, none):** concave
**Slope (%):**

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

**Soil Map Unit Name:**
**NW classification:**

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

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

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

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

<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:** (off) Gammm 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 (AVB)</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>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Prevalence Index worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Total % Cover of: Multiply by:</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
<td>Column Totals: (A) (B)</td>
</tr>
</tbody>
</table>

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

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

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

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes [X] No [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Eschscholzia densiflora</td>
<td>50</td>
<td>FACW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Dichelostachys chrysophylla</td>
<td>20</td>
<td>FACW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Distichlis spicata</td>
<td>20</td>
<td>FACW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Grindelia stricta</td>
<td>10</td>
<td>FACW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></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>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes [X] No [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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&quot;</td>
<td>2.5% 3/2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>sand</td>
<td></td>
</tr>
<tr>
<td>6-18&quot;</td>
<td>2.5% 3/4</td>
<td>95</td>
<td>2.5% 3/3</td>
<td>B</td>
<td>M</td>
<td></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 Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- 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>
<th>Depth (inches):</th>
<th></th>
<th>Hydric Soil Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

**Remarks:**

TI-W is 1 foot from boundary intertidal emergent (bay mud below MLWL on Cannon Slough)

---

## 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)

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Wetland Hydrology Present?**

- Yes | No

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

**Remarks:**

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

Project/Site: Arcata trunks  
City/County: Arcata  
Sampling Date: 01/21/10

Applicant/Owner:  
State: CA  
Sampling Point: T-24

Investigator(s): Lea Weter  
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  
(If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? Yes  
No  
(If needed, explain any answers in Remarks.)

Are Vegetation, Soil, 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.

<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: 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:</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</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 6</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 16</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index Worksheet:</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>Multiply by:</td>
</tr>
<tr>
<td>Sapling/Shrub Stratum (Plot size: _________)</td>
<td>= Total Cover</td>
<td></td>
<td></td>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>Column Totals: (A) (B) Prevalence Index = B/A =</td>
</tr>
<tr>
<td>Herb Stratum (Plot size: _________)</td>
<td>= Total Cover</td>
<td></td>
<td></td>
<td>Hydrophytic Vegetation Indicators:</td>
</tr>
<tr>
<td>1. Cymbalaria umbellata</td>
<td>20</td>
<td>✅</td>
<td>N1</td>
<td>Dominance Test is &gt;50%</td>
</tr>
<tr>
<td>2. Tandanus sativus</td>
<td>20</td>
<td>✅</td>
<td>N1</td>
<td>Prevalence Index is ≤3.0 1</td>
</tr>
<tr>
<td>3. Cenium vulcanum</td>
<td>20</td>
<td>✅</td>
<td>FACU</td>
<td>Morphological Adaptations 2 (Provide supporting data in Remarks or on a separate sheet)</td>
</tr>
<tr>
<td>4. Bromus hordeaceus</td>
<td>20</td>
<td>✅</td>
<td>FACU</td>
<td>Wetland Non-Vascular Plants 3</td>
</tr>
<tr>
<td>5. Geranium dissectum</td>
<td>10</td>
<td>✅</td>
<td>N1</td>
<td>Problematic Hydrophytic Vegetation 3 (Explain)</td>
</tr>
<tr>
<td>6. Picris echioides</td>
<td>10</td>
<td>✅</td>
<td>FACU</td>
<td>1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</td>
</tr>
</tbody>
</table>
| 7.                                  |                  |                   |                  | Hydrophytic Vegetation Present? Yes  
No  |
| 8.                                  |                  |                   |                  | Woody Vine Stratum (Plot size: _________) |
| 9.                                  |                  |                   |                  | % Bare Ground in Herb Stratum |
| 10.                                 |                  |                   |                  | Remarks: |
| 11.                                 |                  |                   |                  | |
### 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>0-8</td>
<td>[01R3]</td>
<td>100</td>
<td></td>
<td>Sandy loam, clay loam, vary slightly below.</td>
</tr>
<tr>
<td>2-18</td>
<td>54.71</td>
<td>100</td>
<td></td>
<td>Loamy sand, vary slightly below.</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 Histosol (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Greyed 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:
- 2' above boundary (linear)

### 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)
  - Drit Deposits (B3)
  - Algal Mat or Crust (B4)
  - Iron Deposits (B5)
  - Surface Soil Cracks (B8)
  - Induration 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 (C3)
  - Geomorphic Position (C2)
  - Shallow Aquifer (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?** (includes capillary fringe) Yes No Depth (inches): 

**Wetland Hydrology Present?** Yes No

#### Remarks:

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

Project/Site: Arcata Bay
City/County: Co A
State: Sampling Date: 01/21/10
Applicant/Owner: Co A
Investigator(s): webb lester 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: 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.

Hydrophytic Vegetation Present? ☑ No ☐ Is the Sampled Area within a Wetland? Yes ☑ No ☐
Hydric Soil Present? ☑ No ☐
Wetland Hydrology Present? ☑ No ☐
Remarks: ditch embankment of canal slough

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>2.</td>
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<td>4.</td>
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<tr>
<td>= Total Cover</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub 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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</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. DESCHampsia cespitosa</td>
<td>25 ☑</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>2. Spectabilis densiflora</td>
<td>25 ☑</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>3. DISTichlis spicata</td>
<td>25 ☑</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>4. CALifornica virginiana</td>
<td>25 ☑</td>
<td>FACW</td>
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<td>11.</td>
<td>180 ☑</td>
<td>FACW</td>
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<tr>
<td>= Total Cover</td>
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</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>
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<td>2.</td>
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<td>= Total Cover</td>
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</tbody>
</table>

% Bare Ground in Herb Stratum __________
Remarks:

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
Total % Cover of:
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:
\( \Delta \) Dominance Test is >50%
\( \Delta \) Prevalence Index is ≤3.0\(^1\)
Morphological Adaptations\(^1\) (Provide supporting data in Remarks or on a separate sheet)

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

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>Log</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2.4</td>
<td>10%</td>
<td>100</td>
<td>90</td>
<td>5</td>
<td>RM</td>
<td>M</td>
<td>Low chroma from GM</td>
<td>Low chroma from GM</td>
</tr>
</tbody>
</table>

1Type: 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 Sulfides (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleysed 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>Depth (inches):</th>
</tr>
</thead>
</table>

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

**Remarks:**

2' 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)
- 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:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes [x] No [ ]</th>
<th>Water Table Present?</th>
<th>Yes [x] No [ ]</th>
<th>Saturation Present? (includes capillary fringe)</th>
<th>Yes [x] No [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth (inches):</td>
<td></td>
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</tbody>
</table>

**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: Arcadia Trail
Applicant/Owner: F&A
City/County: sanpa State: CA Sampling Date: 5/12/10
Investigator(s): Webb, Lester Section, Township, Range: 
Landform (hillslope, terrace, etc.): hum prism 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, Soil, or Hydrology significantly disturbed? Yes ☑ No ✗
Are Vegetation, Soil, 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.

<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>
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</tr>
</tbody>
</table>

Remarks: NWY101 shoulder just N. Jackby Creek X-ing

VEGETATION – Use scientific names of plants.

Trea Stratum (Plot size: _________)

<table>
<thead>
<tr>
<th></th>
<th>Absolute</th>
<th>Dominant</th>
<th>Indicator</th>
<th>Status</th>
</tr>
</thead>
<tbody>
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<td>1.</td>
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<td>= Total Cover</td>
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<td></td>
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</tbody>
</table>

Sapling/Shrub Stratum (Plot size: _________)

|          |          |          |          |        |
| 1.       |          |          |          |        |
| 2.       |          |          |          |        |
| 3.       |          |          |          |        |
| 4.       |          |          |          |        |
| 5.       |          |          |          |        |
|          |          | = Total Cover |          |        |

Herb Stratum (Plot size: _________)

|          |          |          |          |        |
| 1.       | Festsca arunidaga | 20 | ☑ | FAC- |
| 2.       | Dactylis glomerata | 20 | ☑ | FACW |
| 3.       | Bromus hordeaceus | 20 | ☑ | FAC |
| 4.       | Cenaronium dixcenum | 20 | ☑ | FAC |
| 5.       | Leucanthemum vulgone | 20 | ☑ | FAC |

|          |          |          |          |        |
| 11.      |          |          |          |        |
|          |          | = 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\(^1\)
- Morphological Adaptations\(^1\) (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants\(^1\)
- Problematic Hydrophytic Vegetation\(^1\) (Explain)

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

Hydrophytic Vegetation Present? Yes ☑ No ✗

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>0-5</td>
<td>25434b</td>
<td>100</td>
</tr>
<tr>
<td>5-18</td>
<td>104344</td>
<td>95</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)
- 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)
- Redox Depressions (F8)

**Restrictive Layer (if present):**

- Type: 
- Depth (inches): 

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

**Remarks:**

**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.**

---

### 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 Fallowed Soils (C5)
- Stunted or Stressed Plants (D1) (LRR A)

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

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

**Remarks:**

*No presence of GW*
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Arcata Trails
City/County: Arcata
State: CA
Sampling Date: 01/12/10
Applicant/Owner: C.A.
Investigator(s): Webb Lester
Section, Township, Range: 
Landform (hillslope, terrace, etc.): Hydy 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 Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation No Soil No 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>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes  No</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: G (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 60 (B)</td>
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<tr>
<td>3.</td>
<td></td>
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<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)</td>
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<tr>
<td>4.</td>
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<td></td>
<td>Prevalence Index worksheet:</td>
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<tr>
<td>5.</td>
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<td>Total % Cover of: Multiply by:</td>
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<td>6.</td>
<td></td>
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<td></td>
<td>OBL species x 1 =</td>
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<td>FACW species x 2 =</td>
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<td>FAC species x 3 =</td>
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<td>FACU species x 4 =</td>
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<td>UPL species x 5 =</td>
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<td>Column Totals: (A)</td>
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<td>Prevalence Index = B/A =</td>
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</tbody>
</table>

Hydrophytic Vegetation Indicators:

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: __________)</th>
<th>Absolute % Cover</th>
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<td>100.</td>
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</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>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>0-3</td>
<td>104 E +1</td>
<td>160</td>
<td></td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td>loam</td>
<td>Sandy loam</td>
</tr>
<tr>
<td>3-12</td>
<td>104 E +1</td>
<td>95</td>
<td>541/2</td>
<td></td>
<td>27%</td>
<td>RM</td>
<td>M</td>
<td></td>
<td>loam</td>
<td>104 E +1/2 2% 6 CM</td>
</tr>
<tr>
<td>12-18</td>
<td>104 E +1</td>
<td>167</td>
<td>2.5 %</td>
<td></td>
<td>16%</td>
<td></td>
<td></td>
<td></td>
<td>loam</td>
<td>Sandy loam 541/2 100%</td>
</tr>
</tbody>
</table>

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

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 ☐

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

**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 (B5) (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 Art Mounds (D6) (LRR A)

Field Observations:
- Surface Water Present? Yes ☒ No ☐ Depth (inches): 11
- Water Table Present? Yes ☒ No ☐ Depth (inches): 11
- Saturation Present? Yes ☒ No ☐ (includes capillary fringe)

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: Acoma Trails                   City/County: Acoma                   State: CA                   Sampling Date: 01/21/10
Applicant/Owner: Acoma                   Section, Township, Range:          Landform (hillslope, terrace, etc.): Hwy shoulder
Investigator(s): W. Lester                   Lat:                          Local relief (concave, convex, none): concave
Subregion (LRR):                              Long:                          Slope (%): 1
Soil Map Unit Name:                           Datum: 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? 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>

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>Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>3.</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>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<tr>
<td>4.</td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>= Total Cover</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. Leucanthemum vulgare 10 ______</td>
<td></td>
</tr>
<tr>
<td>2. Juncoa effusa 20 ______</td>
<td>OBL</td>
</tr>
<tr>
<td>3. Trifolium repens 20 ______</td>
<td>FACW</td>
</tr>
<tr>
<td>4. Festuca arundinacea 20 ______</td>
<td>FAC-</td>
</tr>
<tr>
<td>5. Achillea borealis 20 ______</td>
<td>N1</td>
</tr>
<tr>
<td>6. Acta cornicata 5 ______</td>
<td>FAC</td>
</tr>
<tr>
<td>7. Hypochris rudis 5 ______</td>
<td>N1</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>100 = Total Cover</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ______)</th>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes ______ No ______</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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</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks:</th>
</tr>
</thead>
</table>

Remarks:

Are hydrophytic vegetation indicators present? Yes ______ No ______

Hydrophytic Vegetation Indicators:
- Dominance Test is >50%
- Prevalence Index is ≤3.0
- Morphological Adaptations
- Problematic Hydrophytic Vegetation

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</th>
<th>Redox Features</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>0-2&quot;</td>
<td>104.83%</td>
<td></td>
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<tr>
<td>2-6&quot;</td>
<td>104.83%</td>
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<tr>
<td>6-12&quot;</td>
<td>104.83%</td>
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<tr>
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<tr>
<td>12-18&quot;</td>
<td>104.83%</td>
<td></td>
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</tbody>
</table>

**Texture:**
- loamy sand
- not-reduced matrix
- 104.83% not reduced matrix
- reduct/ no 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  No

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

### HYDROLOGY

**Wetland Hydrology Indicators:**

<table>
<thead>
<tr>
<th>Primary Indicators (any one indicator is sufficient)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
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<tr>
<td>Drift Deposits (B3)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
</tr>
</tbody>
</table>

**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)                  |

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present? Yes No Depth (inches):</th>
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</thead>
<tbody>
<tr>
<td>Water Table Present? Yes No Depth (inches): 13&quot;</td>
</tr>
<tr>
<td>Saturation Present? Yes No Depth (inches): 12&quot;</td>
</tr>
</tbody>
</table>

**Wetland Hydrology Present?** Yes  No

**Remarks:**
- recent significant rain event
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: ........................................ City/County: ........................................ Sampling Date: 01/21/10
Applicant/Owner: ........................................ State: CA ........................................ Sampling Point: T18S-W
Investigator(s): ........................................ Section, Township, Range: ........................................
Landform (hillslope, terrace, etc.): Highway 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? Yes ☑ No ______ 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.

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<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑ No ______</td>
<td></td>
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</tbody>
</table>

Remarks: Ditch

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ___________</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
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<td>= Total Cover</td>
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</tbody>
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<table>
<thead>
<tr>
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<th>% Cover</th>
<th>= Total Cover</th>
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</thead>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ___________</th>
<th>% Cover</th>
<th>= Total Cover</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deschampsia cespitosa</td>
<td>25</td>
<td>✔ FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Festuca ovina</td>
<td>20</td>
<td>✔ FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Agrostis stolonifera</td>
<td>15</td>
<td>✔ FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Juncus effusus</td>
<td>20</td>
<td>✔ FACW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Rumex crispus</td>
<td>20</td>
<td>✔ FACW</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: ___________</th>
<th>% Cover</th>
<th>= Total Cover</th>
<th></th>
<th></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>
</tbody>
</table>

% Bare Ground in Herb Stratum ___________

Remarks: 

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

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>FACW species</td>
<td>x 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>x 5 =</td>
</tr>
</tbody>
</table>

Column Totals: (A) (B)

Prevalence Index = B/A = __________________

Hydrophytic Vegetation Indicators: ☑

Hydrophytic Vegetation Present? Yes ☑ No ______

Hydrophytic Vegetation Present? Yes ☑ No ______

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</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Color (moist) %</td>
<td>Color (moist) %</td>
</tr>
<tr>
<td>0-12</td>
<td>104P 32 100</td>
<td>104P 4/6 40 C</td>
</tr>
</tbody>
</table>

1^Type: C=Concentration, D=Depletion, RM=Reduced Matrix  2^Location: PL=Pure 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 Sulphate (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 Matrix (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (if present):**

<table>
<thead>
<tr>
<th>Type:</th>
<th>Depth (inches):</th>
</tr>
</thead>
</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)
- 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 (D1) (LRR A)
- 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
- Water Table Present? Yes / No
- Saturation Present? Yes / No

**Wetland Hydrology Present?** Yes / No

**Remarks:**

GW may be abnormally high due to recent significant rain events
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Arcata Trails
City/County: Arcata
State: CA
Sampling Point: 2B

Applicant/Owner: Arcata
Sampling Date: 01/21/10

Investigator(s): Webb, Lester
Section, Township, Range: ____________

Landform (hillslope, terrace, etc.): hum shoulder
Local relief (concave, convex, none): concave
Slope (%): 10

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

Soil Map Unit Name: ________
NWPL 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: roadseditch 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>
</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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<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></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<td>2.</td>
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<td>3.</td>
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<tr>
<td>4.</td>
<td></td>
<td></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></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feature ammunita</td>
<td>20</td>
<td>FAC</td>
</tr>
<tr>
<td>2. Achillea tomentosa</td>
<td>20</td>
<td>VT</td>
</tr>
<tr>
<td>3. Taraxacum officinale</td>
<td>20</td>
<td>FACU</td>
</tr>
<tr>
<td>4. Mentha lanceolata</td>
<td>20</td>
<td>FAC</td>
</tr>
<tr>
<td>5. Pernett acetocera</td>
<td>20</td>
<td>EXC</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></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<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:
### 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>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>106YR 3/1</td>
<td>10D</td>
<td>106YR 3/1</td>
</tr>
<tr>
<td>4-18</td>
<td>106YR 4/4</td>
<td>35</td>
<td>106YR 4/6</td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histosol (A3)
- Hydrogen Sulfides (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)
- Redox Depressions (F8)

**Indicators for Problematic Hydrosoil:**

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

**Restrictive Layer (if present):**

- Type: 
- Depth (Inches): 

**Remarks:**

Does not meet hydrosoil indicators, not reduced matrix from wetland boundary.

### 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>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Geomorphic Position (D2)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Shallow Aquilt (D3)</td>
</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>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Raised Ant Mounds (D6) (LRR A)</td>
</tr>
</tbody>
</table>

**Field Observations:**

- Water Table Present? Yes [x] No [x] Depth (Inches): [x] 14

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

**Remarks:**

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

Project/Site: ACA Trau
City/County: ACA
State: CA
Sampling Date: 02/21/10
Applicant/Owner: CA Webb Lester
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, N, Soil A, N, or Hydrology A significantly disturbed? Yes ☑ No
Are Vegetation A, N, Soil A, N, or Hydrology A, N, 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.

<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>
<tr>
<td>Remarks:</td>
<td>sand dune, salt water influence</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></td>
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<tr>
<td>2.</td>
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<tr>
<td>4.</td>
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<tr>
<td>5.</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>
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<td>4.</td>
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<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: _______ )</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. D. virginiana</td>
<td>20</td>
<td>☑</td>
<td>FACP</td>
<td></td>
</tr>
<tr>
<td>2. D. alata</td>
<td>20</td>
<td>☑</td>
<td>FACP</td>
<td></td>
</tr>
<tr>
<td>3. D. gigas</td>
<td>20</td>
<td>☑</td>
<td>FACP</td>
<td></td>
</tr>
<tr>
<td>4. D. campestris</td>
<td>20</td>
<td>☑</td>
<td>FACP</td>
<td></td>
</tr>
<tr>
<td>5. D. occidentalis</td>
<td>20</td>
<td>☑</td>
<td>FACP</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>
<tr>
<td>% Bare Ground in Herb Stratum</td>
<td></td>
</tr>
</tbody>
</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>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>0-2</td>
<td>2.5/13/2</td>
<td>88</td>
<td>10/13/4</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>Loamy sand</td>
<td>54.7/12.10</td>
</tr>
<tr>
<td>2-20</td>
<td>10/4/16</td>
<td>85</td>
<td>2.5/13/2</td>
<td>5</td>
<td>C</td>
<td>M</td>
<td></td>
<td>DM stripping</td>
</tr>
<tr>
<td>4-20</td>
<td>10/4/16</td>
<td>60</td>
<td>5/3/3</td>
<td>40</td>
<td>RM</td>
<td>M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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)

- 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)

\[ \times \] Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: 

Depth (inches): 

Hydric Soil Present? Yes \[ \times \] No

Remarks:

21' from wetland boundary, begin estuarine to south (no direct connection, but

### 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 \[ \times \] No Depth (inches): 12
- Water Table Present? Yes \[ \times \] No Depth (inches): 0
- Saturation Present? Yes \[ \times \] No Depth (inches): 0

Wetland Hydrology Present? Yes \[ \times \] No

Remarks:

Describe Recorded Data (stream gauges, monitoring well, aerial photos, previous inspections). If available:

**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:* CA  
*Sampling Point:* [Redacted]

*Investigator(s):* [Redacted]  
*Section, Township, Range:* [Redacted]

*Landform (hillslope, terrace, etc.):* [Redacted]  
*Local relief (concave, convex, none):* [Redacted]  
*Slopes (%):* 0

*Subregion (LRR):* [Redacted]  
*Lat:* [Redacted]  
*Long:* [Redacted]  
*Datum:* [Redacted]

*Sediment 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 No significantly disturbed?**  
Yes [Redacted] No [Redacted]  
Are "Normal Circumstances" present? Yes [Redacted] No [Redacted]  
(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 [Redacted] No [✓]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes [✓] No [Redacted]</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes [✓] No [Redacted]</td>
</tr>
</tbody>
</table>

*Remarks:*

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**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>
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<td>2.</td>
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</table>

= Total Cover

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: [Redacted])</th>
<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
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<th>Absolute % Cover</th>
<th>Dominant Indicator Species?</th>
<th>Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Bromus baccatus</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>2.  Eragrostis virginiana</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>3.  Cymodocea rotundata</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>4.  Atriplex discolor</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>5.  Cerastium spectabile</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>6.  Diplotaxis chinensis</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>7.  Cerastium spectabile</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>8.  Diplotaxis chinensis</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>9.  Cerastium spectabile</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

<table>
<thead>
<tr>
<th>Woody Vine 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.  Cerastium spectabile</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>2.  Diplotaxis chinensis</td>
<td>20</td>
<td>Yes</td>
<td>FACW</td>
<td></td>
</tr>
</tbody>
</table>

= 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 (Explain)

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

---

**Hydrophytic Vegetation Present?**  
Yes [✓] No [Redacted]
**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>0-10&quot;</td>
<td>2.5%</td>
<td>100</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very gravelly (30%)</td>
</tr>
</tbody>
</table>

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

- Histosol (A1)
- Histic Epepodon (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 [x]

**Remarks:**

"[ ] from wet up edge"

---

**HYDROLOGY**

**Wetland Hydrology Indicators:**

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Mark (B1)
- Sediment Deposits (B2)
- Ditr 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)
- Geomorph 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]
- Water Table Present? Yes [ ] No [x]
- Saturation Present? (includes capillary fringe) 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:**

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

Project/Site:       Applicant/Owner:       City/County:       State:
       Sampling Date:       01/25/10       Sampling Point:       CW

Investigator(s):       Webb LaRue       Section, Township, Range:       

Landform (hillslope, terrace, etc.):       bay terrace       Local relief (concave, convex, none):       none       Slope (%): 0

Subregion (LRR):       Lat:       Long:       Datum:       

Soil Map Unit Name:       NWI classification:       

Are climatic/hydrologic conditions on the site typical for this time of year? Yes   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</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>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td></td>
<td>No</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></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>
<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 90       | ✓ FacW           |
| 2. Distichlis spicata 5            | ✓ FacW           |
| 3. Rubus ursinus                   | ✓ FacW           |

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

% Bare Ground in Herb Stratum __________

Remarks:  

Hydrophytic Vegetation Indicators:

1. Dominance Test is >50%
2. Prevalence Index is ≥5.0
3. Morphological Adaptations
4. Provide supporting data in Remarks or on a separate sheet
5. Wetland Non-Vascular Plants
6. Problematic Hydrophytic Vegetation

1Indicators 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>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>0-4</td>
<td>1048</td>
<td>35</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-12</td>
<td>1048</td>
<td>50</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-18</td>
<td>1048</td>
<td>54</td>
<td>97</td>
<td></td>
<td>18YR 4/4</td>
<td>1%</td>
<td>C</td>
<td>m</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></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.)

<table>
<thead>
<tr>
<th>Indicators for Problematic Hydric Soils:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 cm Muck (A10)</td>
</tr>
<tr>
<td>Red Parent Material (TF2)</td>
</tr>
<tr>
<td>Other (Explain in Remarks)</td>
</tr>
</tbody>
</table>

#### 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

**Hydric Soil Present?** Yes No

**Remarks:**

4' from wet edge

---

### HYDROLOGY

#### Wetland Hydrology Indicators:

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

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9) (except NW coast)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Soil Coast (B11)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>Aquatic Invertebrates (B13)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Oxidized Rhizospheres along Living Roots (C3)</td>
</tr>
<tr>
<td>Ditch Deposits (B3)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Recent Iron Reduction in Tilled Soils (C5)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Stunted or Stressed Plants (D1) (LRR A)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-Stained Leaves (B9) (NW coast)</td>
<td></td>
</tr>
<tr>
<td>Sparingly Vegetated Concave Surface (B8)</td>
<td></td>
</tr>
<tr>
<td>Drainage Pattern (B10)</td>
<td></td>
</tr>
<tr>
<td>Dry-Season Water Table (C2)</td>
<td></td>
</tr>
<tr>
<td>Saturation Visible on Aerial Imagery (C9)</td>
<td></td>
</tr>
<tr>
<td>Geomorphic Position (D2)</td>
<td></td>
</tr>
<tr>
<td>Shallow Aquitard (D3)</td>
<td></td>
</tr>
<tr>
<td>Frost-Heave Hummocks (D4)</td>
<td></td>
</tr>
<tr>
<td>FAC-Neutral Test (D6)</td>
<td></td>
</tr>
<tr>
<td>Raised Ant Mounds (D6) (LRR A)</td>
<td></td>
</tr>
</tbody>
</table>

**Field Observations:**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yes</th>
<th>No</th>
<th>Depth (Inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No</td>
<td>(Includes capillary fringe)</td>
</tr>
</tbody>
</table>

**Wetland Hydrology Present?** Yes No

**Remarks:**

Significant rain on Fri, 11-25, per day over weekend

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

<table>
<thead>
<tr>
<th>Project/Site:</th>
<th>Mokelumne</th>
<th>City/County:</th>
<th>Amador</th>
<th>Sampling Date: 04/25/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant/Owner:</td>
<td>De A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigator(s):</td>
<td>Web Lester</td>
<td>Section, Township, Range:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landform (hillslope, terrace, etc.):</td>
<td>Teasie Fill</td>
<td>Local relief (concave, convex, none):</td>
<td>Now</td>
<td>Slope (%): 0</td>
</tr>
<tr>
<td>Subregion (LRR):</td>
<td></td>
<td>Left:</td>
<td></td>
<td>Long:</td>
</tr>
<tr>
<td>Soil Map Unit Name:</td>
<td></td>
<td>Datum:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 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>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes ☑</td>
<td></td>
<td>No ☐</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes ☑</td>
<td></td>
<td>No ☐</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></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>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Baechnus pinnarum</td>
<td>20</td>
<td>✓</td>
<td>FACW</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>
<tr>
<td>5.</td>
<td></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>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bromus hordeaceus</td>
<td>20</td>
<td>✓</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>2. Daucus carota</td>
<td>20</td>
<td>✓</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>3. Eschscholzia californica</td>
<td>20</td>
<td>✓</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>4. Eriagrostis intermedia</td>
<td>20</td>
<td>✓</td>
<td>FACW</td>
<td></td>
</tr>
<tr>
<td>5. Bromus bycsholzia</td>
<td>20</td>
<td>✓</td>
<td>FACW</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>
<th>Dominance Test worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum           |                  |                   |                 |                           |

**Prevalence Index worksheet:**

Total % Cover of:

- OBL species
- FACW species
- FAC species
- FACU species
- UPL species

Prevalence Index = (A) / (B)

**Hydrophytic Vegetation Indicators:**

- Dominance Test is >50%
- Presence of Indicator plant 3
- Morphological Adaptations'
  - Provide supporting data in Remarks or on a separate sheet
- Wetland Non-Vascular Plants'
- Problematic Hydrophytic Vegetation'

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

**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>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td>2.5%</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>Sandy</td>
<td>Extremely gravelly</td>
</tr>
</tbody>
</table>

*Type: O=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.)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histosol (A1)</td>
<td>Sandy Redox (S5)</td>
</tr>
<tr>
<td>Histic Epipedon (A2)</td>
<td>Stripped Matrix (S6)</td>
</tr>
<tr>
<td>Black Histic (A3)</td>
<td>Loamy Mucky Mineral (F1) (except MLRA 1)</td>
</tr>
<tr>
<td>Hydrogen Sulfide (A4)</td>
<td>Loamy Gleyed Matrix (F2)</td>
</tr>
<tr>
<td>Depleted Below Dark Surface (A11)</td>
<td>Depressed Matrix (F3)</td>
</tr>
<tr>
<td>Thin Dark Surface (A12)</td>
<td>Redox Dark Surface (F6)</td>
</tr>
<tr>
<td>Sandy Mucky Mineral (S1)</td>
<td>Depressed Dark Surface (F7)</td>
</tr>
<tr>
<td>Sandy Gleyed Matrix (S4)</td>
<td>Redox Depressions (F6)</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>
</tr>
</thead>
<tbody>
<tr>
<td>Depth (inches):</td>
</tr>
</tbody>
</table>

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

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

**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)
  - 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:**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yes</th>
<th>No</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water Present?</td>
<td>Yes</td>
<td>No [X]</td>
<td></td>
</tr>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No [ ]</td>
<td></td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No [X]</td>
<td></td>
</tr>
</tbody>
</table>

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

*Field includes capillary fringe.*

**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: Acosta Trail
City/County: Acosta
Sampling Date: 01/25/10
Applicant/Owner: C & A
State: CA
Sampling Point: T-53-41
Investigator(s): Webb Lester
Section, Township, Range:

Landform (hillslope, terrace, etc.): bay terrace
Local relief (concave, convex, none): None
Slope (%): 0
Subregion (LRR):

Soil Map Unit Name:

Are climatic/hydrologic conditions on the site typical for his time of year? Yes ☑ No (if no, explain in Remarks.)
Are Vegetation N/A, Soil N/A, or Hydrology N/A signifi cantly disturbed? Are "Normal Circumstances" present? Yes ☑ No
Are Vegetation N/A, Soil N/A, or Hydrology N/A naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☑ No ☑
Hydric Soil Present? Yes ☑ No ☑
Wetland Hydrology Present? Yes ☑ No ☑

Is the Sampled Area within a Wetland? Yes ☑ No ☑

Remarks: edges saltmarsh / historic rail grade

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>5.</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>5.</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>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deschampsia caespitosa 80% ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>2. Distichlis spicata 5% ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>3. Specularia virgata 5% ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>4. Juncus balticus 5% ☑ OBL</td>
<td></td>
</tr>
<tr>
<td>5. Limnium ramosissimum 5% ☑ FACW</td>
<td></td>
</tr>
<tr>
<td>= Total Cover</td>
<td></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:
## 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>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>25×42 100</td>
<td></td>
<td></td>
<td>Sandy Loam</td>
<td></td>
</tr>
<tr>
<td>2-8</td>
<td>25×42 80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-10</td>
<td>54×1 95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1. **Type:** C=Concentration, D=Depletion, R=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)

---

**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:**

- 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)

**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 Aquifir (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)

**Field Observations:**

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes</th>
<th>No [x]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
<td>No [x]</td>
</tr>
</tbody>
</table>

**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: **Mack Track**

### Applicant/Owner: **CA**

### Investigator(s): **Webb Cester**

### Landform (hillslope, terrace, etc.): **Ditch/Soil All**

### 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>
<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>

### 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>
</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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<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>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: <strong>Daucus carota</strong>)</th>
<th>Absolute Cover</th>
<th>Dominant Species?</th>
<th>Indicator</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Daucus carota</strong></td>
<td>20</td>
<td>✓</td>
<td>N1</td>
<td></td>
</tr>
<tr>
<td>2. <strong>Daucus carota</strong></td>
<td>20</td>
<td>✓</td>
<td>N1</td>
<td></td>
</tr>
<tr>
<td>3. <strong>Cuscuta echinata</strong></td>
<td>20</td>
<td>✓</td>
<td>N1</td>
<td></td>
</tr>
<tr>
<td>4. <strong>Plantago lanceolata</strong></td>
<td>20</td>
<td>✓</td>
<td>Pde</td>
<td></td>
</tr>
<tr>
<td>5. <strong>Plantago lanceolata</strong></td>
<td>20</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

### Remarks:

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---

---

---

---

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Indicators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance Test is &gt;50%</td>
</tr>
<tr>
<td>Prevalence Index is ≤3.0</td>
</tr>
<tr>
<td>Morphological Adaptations⁷ (Provide supporting data in Remarks or on a separate sheet)</td>
</tr>
<tr>
<td>Wetland Non-Vascular Plants⁸</td>
</tr>
<tr>
<td>Problematic Hydrophytic Vegetation⁹ (Explain)</td>
</tr>
</tbody>
</table>

1. 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</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 6</td>
<td>2.5:1</td>
<td>Sandy Loam very gleyed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 - 12</td>
<td></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.)

- 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:**

- 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 (B6) (except NW coast)
- Sparsely Vegetated Concave Surface (B8)
- 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)
- Water-Stained Leaves (A10) (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): __________
- 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.*
WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Alaka'i Swamp
City/County: Alaka'i
Sampling Date: 01/25/10

Applicant/Owner: C.A. Washington
State: Sampling Point: T 46 N

Investigator(s): Wes C. Lentz
Section, Township, Range:

Landform (hillslope, terrace, etc.): Railside ditches
Local relief (concave, convex, none): CONCAVE
Slope (%): 1

Subregion (LRR): Long: Datum:
Lat:

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 ___ Are "Normal Circumstances" present? Yes ___ No ___

Are Vegetation and Soil 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>
</table>

Remarks: A parameter wetland, no soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _______)
1. Alnus viridis
   Absolute % Cover: 20
   Dominant Species: FBC
   Indicator Status: ___

Tree Stratum (Plot size: _______)
2. _______
3. _______
4. _______
5. _______ = Total Cover

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

Herb Stratum (Plot size: _______)
1. Salicis microcarpa
   Absolute % Cover: 20
   Dominant Species: FACW
   Indicator Status: ___
2. Dacrydium californicum
   Absolute % Cover: 20
   Dominant Species: FACW
   Indicator Status: ___
3. Pinus edulis
   Absolute % Cover: 20
   Dominant Species: FACW
4. Douglasia伊利
5. Juniperus horizontalis
6. _______
7. _______
8. _______
9. _______
10. _______
11. _______ = Total Cover

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

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

% 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>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Location</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-18</td>
<td></td>
<td>Multi color</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grass</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 Epedon (A2)
- Black Histic (A3)
- Hydrogen Sulphide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Matrix (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)
- Depressed Matrix (F3)
- Redox Dark Surface (F6)
- Depressed Dark Surface (F7)
- Redox Depressions (F8)

**Restrictive Layer (if present):**

- Type: 
- Depth (inches): 

**Hydric Soil Present?** Yes [x] 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)

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

- Water-Stained Leaves (B9) (except 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 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 [x] No
- Water Table Present? Yes [x] No
- Saturation Present? Yes [x] No

**Description:** (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**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:** Waterfall  
**City/County:** Arcata  
**State:** CA  
**Sampling Date:** 01/25/10

**Applicant/Owner:**  
**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, or Hydrology significantly disturbed? Yes  
- [ ] No  
  [ ] 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</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:** Mud trail side

### 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>
<th>Dominance Test Worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapling/Shrub Stratum (Plot size: __________)</th>
<th>= Total Cover</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: __________)</th>
<th>= Total Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Woody Vine Stratum (Plot size: __________)</th>
<th>= Total Cover</th>
<th>% Bare Ground in Herb Stratum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

---

**Vegetation Dominance Test Worksheet:**

- Number of Dominant Species That Are OBL, FACW, or FAC: 0
- Total Number of Dominant Species Across All Strata: 6
- Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index Worksheet:**

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

- Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- Dominance Test is >60%
- Prevalence Index is ≥50%
- 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.

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

---

*US Army Corps of Engineers*  
*Western Mountains, Valleys, and Coast - Interim Version*
### Soil Profile Description

<table>
<thead>
<tr>
<th>Depth (Inches)</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>2.94%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75-90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90-105</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)
- HiUtic 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 (TP2)
- Other (Explain in Remarks)

**Restrictive Layer (if present):**

- Type: 
- Depth (inches): 

**Remarks:**

- Compacted trail 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)
- 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 Aquifard (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (E6) (LRR A)

**Field Observations:**

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

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

**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: Arden Hayly City/County: Alakea
Applicant/Owner: CEA State: CA
Investigator(s): W. L. Larson 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>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:

MODA 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>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Salix lasiolepis</em></td>
<td>51 %</td>
<td>Yes</td>
<td>fetch</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

* Sapling/Shrub Stratum (Plot size: )

| 1.                        |                  |                   |        |
| 2.                        |                  |                   |        |
| 3.                        |                  |                   |        |
| 4.                        |                  |                   |        |
| 5.                        |                  |                   |        |

Total Cover

* Herb Stratum (Plot size: )

| 1. *Anchusa coerulea*      | 70 %             | Yes               | FACW   |
| 2. *Artemisia paludosa*    | 10 %             | Yes               | FACW   |
| 3. *Bulbina discors*       | 10 %             | Yes               | FAC    |
| 4. *Equisetum palustre*    | 10 %             | Yes               | FACW   |
| 5. *Salix montana*         | 20 %             | Yes               | FAC    |
| 6. *Salix caucasia*        | 10 %             | Yes               | FACW   |
| 7. *Salix humboldtiana*    | 20 %             | Yes               | FAC    |
| 8.                        |                  |                   |        |
| 9.                        |                  |                   |        |
| 10.                       |                  |                   |        |
| 11.                       |                  |                   |        |

Total Cover

* Woody Vine Stratum (Plot size: )

| 1.                        |                  |                   |        |
| 2.                        |                  |                   |        |

Total Cover

% Bare Ground in Herb Stratum

Remarks:

trailside/old landfill ditch
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>0-7</td>
<td></td>
<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
</tr>
<tr>
<td>0-18</td>
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<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
</tr>
<tr>
<td>0-24</td>
<td></td>
<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
</tr>
<tr>
<td>0-30</td>
<td></td>
<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
</tr>
<tr>
<td>0-36</td>
<td></td>
<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
</tr>
<tr>
<td>0-42</td>
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<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
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<tr>
<td>0-48</td>
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<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
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<tr>
<td>0-54</td>
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<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
</tr>
<tr>
<td>0-60</td>
<td></td>
<td>2.54</td>
<td>100</td>
<td></td>
<td>2.54</td>
<td>2</td>
<td>C</td>
<td>M</td>
<td>SI+loam</td>
<td></td>
</tr>
</tbody>
</table>

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

Hydric Soil Indicators: (Applicable to all LRREs, unless otherwise noted.)
- Histosol (A1)
- Histic Epihedon (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 dryphytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
- Type: __________________________
- Depth (inches): __________________

Hydric Soil Present? Yes [ ] No [X]

Remarks:

3 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 Conceal Surface (B8)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C8)
- 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): __________
- Water Table Present? Yes [X] No [ ] Depth (inches): __________
- 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: Archaeol. City/County: Arcata Sampling Date: 8/1/26/10
Applicant/Owner: CA Investigator(s): Webb Lester
Section, Township, Range:
Landform (hillslope, terrace, etc.): AMP Allen marsh diller
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 No, Soil No, or Hydrology receiving significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation No, Soil No, or Hydrology receiving naturally problematic? (If needed, explain any answers in Remarks.)

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

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<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>Is the Sampled Area within a Wetland?</th>
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<th>No</th>
</tr>
</thead>
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<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: Archaea 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>
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<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>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

<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>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</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. Rumen asterella</td>
<td>20</td>
<td>√</td>
<td>FACW</td>
</tr>
<tr>
<td>2. Rupheanum setum</td>
<td>20</td>
<td>x</td>
<td>N1</td>
</tr>
<tr>
<td>3. Davolius caudal</td>
<td>50</td>
<td>√</td>
<td>N1</td>
</tr>
<tr>
<td>4. Brownus catharticus</td>
<td>10</td>
<td>√</td>
<td>FACW</td>
</tr>
<tr>
<td>5. Rumen octa</td>
<td>10</td>
<td>√</td>
<td>FACW</td>
</tr>
<tr>
<td>6. Plantago paludosa</td>
<td>10</td>
<td>√</td>
<td>FACW</td>
</tr>
<tr>
<td>7. Astraea ludovici</td>
<td>10</td>
<td>√</td>
<td>FAC</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Total Cover

<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>
</tbody>
</table>

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

Remarks:

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

Prevalence Index Worksheet:

Total % Cover of: Multiply by:
OBL species x 1 =
FACW species x 2 =
FAC species x 3 =
FACU species x 4 =
UFL species x 5 =

Column Totals: (A) (B)
Prevalence Index = BA =

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)

Hydrophytic Vegetation Present?

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</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Lo</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>104R32</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-8</td>
<td>104R32</td>
<td>100</td>
<td></td>
<td>254R41</td>
<td>2</td>
<td>RM M</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.

Hydrologic 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)

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

- 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 [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 Depots (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 (C3)
- Geomorphic Position (D2)
- Shallow Aquifer (D3)
- Frost-Heave Hummocks (D4)
- FAC-Neutral Test (D5)
- 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]

**Depth (inches):**

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

**Remarks:**

- Surface Water, Water Table, Saturation Present.
- Describe Recorded Data (stream gauges, monitoring well, aerial photos, previous inspections), if available:
  - "Raised n 1" past 29 hrs, water table just stabilized"
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys, and Coast Region

**Project/Site:** Ancar Trail  
**City/County:**  
**Sampling Date:** 01/26/10  
**Applicant/Owner:** CIA  
**State:** CA  
**Sampling Point:**  
**Investigator(s):** Web, Lester  
**Section, Township, Range:**  
**Landform (billslope, terrace, etc.):** AMP Allen Ranch  
**Local relief (concave, convex, none):** Dike  
**Slope (%):** 10  
**Subregion (LRR):**  
**Lat:**  
**Long:**  
**Datum:**  
**Soil Map Unit Name:**  
**NWI classification:**  

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

### SUMMARY OF FINDINGS

- Attach site map showing sampling point locations, transects, important features, etc.

### HYDROPHYTIC VEGETATION

- **Present?** Yes [ ] No [ ]  
- **Hydric Soil Present?** Yes [ ] No [ ]  
- **Is the Sampled Area within a Wetland?** Yes [ ] No [ ]

**Remarks:**

\[ /parameter wetland, willow marsh trail side / \]

### 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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<tr>
<td>3.</td>
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</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>
<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. Acrochaetus microcarpus 50 %</td>
<td></td>
</tr>
<tr>
<td>2. Oenothera californica</td>
<td></td>
</tr>
<tr>
<td>3. Cardaminaceae maculatum</td>
<td></td>
</tr>
<tr>
<td>4. Desmanthus</td>
<td></td>
</tr>
<tr>
<td>5. Caesalpinia eugenioides</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></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
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<tr>
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</tr>
</tbody>
</table>

| % Bare Ground in Herb Stratum: |
|-------------------------------|---|

**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.
### 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>0-12&quot;</td>
<td>2.54%</td>
<td>92%</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 Hist (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

### Redox Features

- 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)

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

### 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 (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): 10'
- Saturation Present? Yes __ No __ Depth (inches): (includes capillary fringe)

**Wetland Hydrology Present?** Yes __ No __

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

**Project/Site:** Acacia Trails  
**City/County:** Riverside  
**Sampling Date:** 01/26/10  
**State:** CA  
**Sampling Point:** [Point]  

**Investigator(s):** [Names]  
**Section, Township, Range:** [Details]  
**Landform (hillslope, terrace, etc.):** Roadside  
**Local relief (concave, convex, none):** None  
**Slope (%):** 1  
**Subregion (LRR):** [Details]  
**Datum:** [Details]  

**Soil Map Unit Name:** [Name]  
**NWI classification:** [Type]  

**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:** gravel fill, vacant lot behind storage units / work area

**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>
<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: 2 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 7 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 28 (A/B)</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Herb Stratum (Plot size: ________ )</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>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 7 (B)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC: 28 (A/B)</td>
</tr>
<tr>
<td>4.</td>
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<td>5.</td>
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</tr>
</tbody>
</table>

**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 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>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>
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<tr>
<td>2.</td>
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<tr>
<td>% Bare Ground in Herb Stratum</td>
<td></td>
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</tr>
</tbody>
</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>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Type</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td></td>
<td>2.5Y 3/1</td>
<td>100</td>
<td></td>
<td>Loan</td>
<td></td>
<td>Gravel, extremely gravelly</td>
</tr>
<tr>
<td>6-12</td>
<td></td>
<td>2.5Y 3/1</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>Sandy Loan, do</td>
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</tr>
</tbody>
</table>

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

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

- Histosol (A1)  
- Histic Epipeds (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)

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

Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

- Depth (inches): 8"  
- Hydric Soil Present? Yes  
- 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)
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- 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 Art Mounds (D6) (LRR A)

Field Observations:

- Surface Water Present? Yes  
- Water Table Present? Yes  
- Saturation Present? Yes  
- Wetland Hydrology Present? Yes

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

very recent rain, lots of runoff, ponding on property

Remarks:

2' from boundary, does not meet 2 parameter wetlands (only hydrology)
Project/Site: Arava soils
City/County: Arava
Sampling Date: 01/24/16
Applicant/Owner: CA
State: CA
Section, Township, Range: T82W
Investigator(s): web. com
Landform (hillslope, terrace, etc.): west 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 No. Soil No. or Hydrology No. significantly disturbed? Yes No
Are Vegetation No. Soil No. or Hydrology No. naturally problematic? Yes No

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: Gravel hill, vacant lot behind storage units west of trail

old root 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>
<td></td>
<td></td>
<td></td>
<td>Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>Total Number of Dominant Species Across All Strata: 8 (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>
<td></td>
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</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>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Prevalence Index worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td>Total % Cover of: Multiply by:</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td>Column Totals: (A)</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td>Prevalence Index = B/A =</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</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>Herb Stratum (Plot size: _______ )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
<th>Hydrophytic Vegetation Indicators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Juncus effusus</td>
<td>20</td>
<td>Yes</td>
<td>OBL</td>
<td>X Dominance Test is =50%</td>
</tr>
<tr>
<td>2. Festuca arundinacea</td>
<td>20</td>
<td>Yes</td>
<td>FAC</td>
<td>Prevalence Index is ≤3.01</td>
</tr>
<tr>
<td>3. Knortha crispa</td>
<td>10</td>
<td>Yes</td>
<td>FAC</td>
<td>Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)</td>
</tr>
<tr>
<td>4. Equisetum arundinatum</td>
<td>10</td>
<td>Yes</td>
<td>FAC</td>
<td>Wetland Non-Vascular Plants (Explain)</td>
</tr>
<tr>
<td>5. Agrostis stolonifera</td>
<td>10</td>
<td>Yes</td>
<td>FAC</td>
<td>Problematic Hydrophytic Vegetation (Explain)</td>
</tr>
<tr>
<td>6. Rubus discolor</td>
<td>10</td>
<td>Yes</td>
<td>FAC</td>
<td>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</td>
</tr>
<tr>
<td>7. Nympha aquatilis</td>
<td>10</td>
<td>Yes</td>
<td>OBL</td>
<td></td>
</tr>
<tr>
<td>8. Rubus discolor</td>
<td>10</td>
<td>Yes</td>
<td>OBL</td>
<td></td>
</tr>
<tr>
<td>9. Nympha aquatilis</td>
<td>10</td>
<td>Yes</td>
<td>OBL</td>
<td></td>
</tr>
<tr>
<td>10. Nympha aquatilis</td>
<td>10</td>
<td>Yes</td>
<td>OBL</td>
<td></td>
</tr>
<tr>
<td>11. Nympha aquatilis</td>
<td>10</td>
<td>Yes</td>
<td>OBL</td>
<td></td>
</tr>
<tr>
<td>= Total Cover</td>
<td></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>
<th>Hydrophytic Vegetation Present? Yes No</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>= Total Cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</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>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>642</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>642</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-12</td>
<td>245</td>
<td>100</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 Epepidon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (G1)
- Sandy Gleyed Matrix (G4)

**Indicators for Problematic Hydric Soils:**

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

**Restrictive Layer (if present):**

- Type: compacted gravel base
- Depth (inches): 12
- Hydric Soil Present? Yes [X] No

**Remarks:**

### 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) Water-Stained Leaves (B9) except NW coast</td>
<td>Water-Stained Leaves (B9) (NW coast)</td>
</tr>
<tr>
<td>High Water Table (A2) Salt Crust (B11)</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) Aquatic Invertebrates (B13)</td>
<td>Dry-Season Water Table (C2)</td>
</tr>
<tr>
<td>Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)</td>
<td>Saturation Visible on Aerial Imagery (C9)</td>
</tr>
<tr>
<td>Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3)</td>
<td>Geomorphic Position (D2)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4) Presence of Reduced Iron (C4)</td>
<td>Shallow Aquitard (D3)</td>
</tr>
<tr>
<td>Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6)</td>
<td>Frost-Heave Hummocks (D4)</td>
</tr>
<tr>
<td>Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)</td>
<td>FAC-Neutral Test (D5)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)</td>
<td>Raised Ant Mounds (D6) (LRR A)</td>
</tr>
</tbody>
</table>

**Field Observations:**

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

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

*Very recent rain, gw not stabilized, lots of sand.*

**Remarks:**

10' from boundary
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys and Coast Region (DRAFT)

Project/Site: **Arcata Trails**  
Applicant/Owner: **City of Arcata**

**City/County:** Humboldt  
**State:** CA

**Sampling Date:** 8/8/12  
**Sampling Point:** 4710

Investigator(s): **LW**  
**Section, Township, Range:**

Landform (hillslope, terrace, etc.): **Roadside ditch**  
**Local relief (concave, convex, none):** Concave

**Subregion (LRR):** ______  
**Lat:** 40° 49' 50.1" N  
**Long:** 124° 47' 50.9"

**Soil Map Unit Name:** ______  
**Datum:** WGS

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

**Are Vegetation____, Soil____, or Hydrology____ significantly disturbed?**  
Are "Normal Circumstances" present? **Yes X No _____**

**Are Vegetation____, Soil____, or Hydrology____ naturally problematic?** (If needed, explain any answers in Remarks.)

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

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

**Is the Sampled Area within a Wetland?** **Yes _____ No X**

**Remarks:**

---

### VEGETATION

<table>
<thead>
<tr>
<th>Tree Stratum (Use scientific names.)</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><strong>213</strong> (A)</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>
<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>

| Sapling/Shrub Stratum |                  |                   |                 |                          |
| 1.                                  |                  |                   |                 |                          |
| 2.                                  |                  |                   |                 |                          |
| 3.                                  |                  |                   |                 |                          |
| 4.                                  |                  |                   |                 |                          |
| 5.                                  |                  |                   |                 |                          |
| **Total Cover:**                    |                  |                   |                 |                          |

| Herb Stratum |                  |                   |                 |                          |
| 1. Festuca arundinacea | 30 | Y | FAC |                          |
| 2. Festuca ovina | 35 | Y | FAC |                          |
| 3. Fescue sp. | 18 | Y | FAC |                          |
| 4. Bellis perennis | 10 | Y | OBL |                          |
| 5. Juncus effusus | 6 | Y | FAC |                          |
| 6. Plantago lanceolata | 2 | Y | FAC |                          |
| **Total Cover:** | 100 | | | |

| Woody Vine Stratum |                  |                   |                 |                          |
| 1.                                  |                  |                   |                 |                          |
| 2.                                  |                  |                   |                 |                          |
| **Total Cover:** |                  |                   |                 |                          |

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

**Remarks:**

**Dominance Test worksheet:**

- **Number of Dominant Species That Are OBL, FACW, or FAC:** **213** (A)
- **Total Number of Dominant Species Across All Strata:** **400** (A/B)
- **Percent of Dominant Species That Are OBL, FACW, or FAC:**

**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** (Explain)

†Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** **Yes _____ No X**
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>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>10YR 4/4</td>
<td>Loam</td>
<td></td>
</tr>
<tr>
<td>4-8</td>
<td>5YR 1/3</td>
<td>Loam</td>
<td>Variation not recorded, matrix is high chromas</td>
</tr>
<tr>
<td>8-18</td>
<td>10YR 4/6</td>
<td>Sandy Loam</td>
<td>Variation in</td>
</tr>
</tbody>
</table>

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

- Hietsol (A1) - Sandy Redox (S5)
- Histic Epipedon (A2) - Stripped Matrix (S6)
- Black Histic (A3) - Loamy Mucky Mineral (F1) (except MLRA 1)
- Hydrogen Sulfide (A4) - Loamy Gleyed Matrix (F2)
- Depleted Below Dark Surface (A11) - Depleted Matrix (F3)
- Thick Dark Surface (A12) - Redox Dark Surface (F6)
- Sandy Mucky Mineral (S1) - Depleted Dark Surface (F7)
- Sandy Gleyed Matrix (S4) - 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: Test pit 4' 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)
- Sparserly Vegetated Concave Surface (B8)

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

Field Observations:
- Surface Water Present? Yes No Depth (inches): 4'
- Water Table Present? Yes No Depth (inches): 3'
- Saturation Present? Yes No Depth (inches): 3'

Wetland Hydrology Present? Yes No

Remarks: Pit left open 1/2 hour to observe if saturated conditions appear, or groundwater present.

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

Recent rain events

Saturated conditions appear, or groundwater present.
**WETLAND DETERMINATION DATA FORM** – Western Mountains, Valleys and Coast Region (DRAFT)

**Project/Site:** Acca Trails  
**City/County:** Humboldt  
**Sampling Date:** 18/5 - W  
**Applicant/Owner:**  
**State:** CA  
**Sampling Point:** 9/4/01  
**Investigator(s):**  
**Section, Township, Range:**  
**Landform (hillslope, terrace, etc.):**  
**Local relief (concave, convex, none):**  
**Subregion (LRR):**  
**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 [ ] Soil [ ] or Hydrology [ ] significantly disturbed?**  
**Are "Normal Circumstances" present?** Yes [ ] No [x]  
**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 [x]</th>
<th>Is the Sampled Area within a Wetland?</th>
<th>Yes [ ] No [x]</th>
</tr>
</thead>
</table>

**Remarks:**  
3' from wetland boundary

---

**VEGETATION**

<table>
<thead>
<tr>
<th>Tree Stratum (Use scientific names.)</th>
<th>Absolute % Cover</th>
<th>Dominant Species</th>
<th>Indicator</th>
<th>Dominance Test worksheet:</th>
<th>Prevalence Index worksheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total % Cover of:</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Multiply by:</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OBL species x 1 =</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FACW species x 2 =</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FAC species x 3 =</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FACU species x 4 =</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UPL species x 5 =</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Column Totals:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(A)</td>
</tr>
</tbody>
</table>

**Herb Stratum**

| Grass [ ] Short Festuca antirrhinum complex 10 [ ]  
| Woody Vine Stratum | 1. | | | | |
| 2. | | | |

| Total Cover: | |

**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)  
- Wetland Bryophytes  
- Problematic Hydrophytic Vegetation 1 (Explain)

1Indicators of hydric soil and wetland hydrology must be present.
### Soil Profile Description

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Matrix**: Color (moist) | % | Color (moist) | % | Type | Loc | Texture | Remarks |
- **Redox Features**:%
- **Type**: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
- **Loc**: PL=Pore Lining, M=Matrix.

#### Hydric Soil Indicators

- 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**:
- 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: 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)
  - Dry-Season Water Table (C2)
  - Saturation Visible on Aerial Imagery (C9)
  - Geomorphic Position (D2)
  - Shallow Aquitard (D3)
  - FAC-Neutral Test (D5)
  - Raised Ant Mounds (D6) (LRR A)
  - Frost-Heave Hummocks (D7)

#### Field Observations:

- **Surface Water Present?** Yes __ No X Depth (inches): __
- **Water Table Present?** Yes X No Depth (inches): __
- **Saturation Present?** (includes capillary fringe) Yes X No Depth (inches): __

#### Wetland Hydrology Present? Yes X No __

#### Remarks:

---

**Recent significant rain events**
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>%</td>
</tr>
<tr>
<td>0-8</td>
<td>10M13£2</td>
<td>100</td>
</tr>
<tr>
<td>8-13</td>
<td>2.5M13£</td>
<td>100</td>
</tr>
<tr>
<td>13-18</td>
<td>2.5M13£</td>
<td>100</td>
</tr>
</tbody>
</table>

*Type: C=Concentration, D=Deposition, 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.)

<table>
<thead>
<tr>
<th></th>
<th>Sandy Redox (S5)</th>
<th>Stripped Matrix (S6)</th>
<th>Loamy Mucky Mineral (F1) (except MLRA 1)</th>
<th>Loamy Gleyed Matrix (F2)</th>
<th>Depleted Matrix (F3)</th>
<th>Redox Dark Surface (F6)</th>
<th>Depleted Dark Surface (F7)</th>
<th>Redox Depressions (F8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histosol (A1)</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
<tr>
<td>Histic Epipedon (A2)</td>
<td></td>
<td></td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
<tr>
<td>Black Histic (A3)</td>
<td></td>
<td></td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
<tr>
<td>Hydrogen Sulfate (A4)</td>
<td></td>
<td></td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
<tr>
<td>Depleted Below Dark Surface (A11)</td>
<td></td>
<td></td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
<tr>
<td>Thick Dark Surface (A12)</td>
<td></td>
<td></td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
<tr>
<td>Sandy Mucky Mineral (S1)</td>
<td></td>
<td></td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
<tr>
<td>Sandy Gleyed Matrix (S4)</td>
<td></td>
<td></td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
<td>Sudden decline</td>
</tr>
</tbody>
</table>

Restrictive Layer (if present):

Type: ——

Depth (inches): ——

Hydric Soil Present? Yes [X] No ——

Remarks: Second soils + Hydro pit adjacent to T88 to confirm observed conditions at 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 Mats 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) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

- Surface Water Present? Yes [X] No —— Depth (inches): ——
- Water Table Present? Yes [X] No —— Depth (inches): ——
- 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

<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>B3</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>Depth (inches)</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>2.54</td>
<td>100</td>
<td></td>
<td></td>
<td></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 Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- 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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Remarks:**

At least saturated longer than 14 days, 2 parameters. Second soils + hydro test pit adjacent to T86.

### 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 Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

**Field Observations:**

- Surface Water Present? Yes No Depth (inches): 0
- Water Table Present? Yes No Depth (inches): 0
- Saturation Present? Yes No Depth (inches): 0

**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: Arcata trails
Applicant/Owner: CoA
City/County: Arcata
State: CA
Sampling Date: 01/20/10
Sampling Point: 120-3

Investigator(s): Webb Lester
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 (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>
<tr>
<td>Is the Sampled Area within a Wetland?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Remarks: parameter wetland outside coastal zone

VEGETATION – Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicative 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</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. Scirpus microcarpus</td>
<td>30</td>
</tr>
<tr>
<td>2. Rumex crispus</td>
<td>20</td>
</tr>
<tr>
<td>3. Calocephalum officinale</td>
<td>10</td>
</tr>
<tr>
<td>4. Equisetum arvense</td>
<td>20</td>
</tr>
<tr>
<td>5. Sphagnum cespitose</td>
<td>10</td>
</tr>
<tr>
<td>6. Cypripedium calceolus</td>
<td>10</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:

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>
<tbody>
<tr>
<td>0-18</td>
<td></td>
<td>10%</td>
<td>100</td>
<td></td>
<td>NA</td>
<td>NA</td>
<td>Sandy Clay Loam</td>
<td>mixed railroad bed ag base includes pockets of loamy, not redox</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

- Histosol (A1)
- Black Histosol (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)
- 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: gravel
- Depth (inches): 21

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

**Remarks:**

### 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) (except 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>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Geomorphic Position (D2)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Shallow Aquitard (D3)</td>
</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>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Raised Ant Mounds (D6) (LRR A)</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

**Remarks:**

- Rain significantly past 24 hrs, no surface or GW present

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

---

**US Army Corps of Engineers**

Western Mountains, Valleys and Coast – DRAFT Version 9-15-2006
### SUMMARY OF FINDINGS

- **Hydrophytic Vegetation Present?** Yes X No
- **Hydric Soil Present?** Yes \(\_\_\_\) No \(\_\_\_\) 
- **Wetland Hydrology Present?** Yes \(\_\_\_\) No \(\_\_\_\)

**Remarks:**
- **Stonehenge beyond/8’ approx. width
  - Jolly Grant Creek (OHV) extends**

### VEGETATION

<table>
<thead>
<tr>
<th>Tree Stratum (Use scientific names.)</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><strong>Total Cover:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sapling/Shrub Stratum               |                  |                   |                 |
| 1.                                  |                  |                   |                 |
| 2.                                  |                  |                   |                 |
| 3.                                  |                  |                   |                 |
| 4.                                  |                  |                   |                 |
| **Total Cover:**                    |                  |                   |                 |

| Herb Stratum                        |                  |                   |                 |
| 1. Ranunculus repens 60 % FACW      |                  |                   |                 |
| 2. Stachys palustris 10 % OBL       |                  |                   |                 |
| 3. Senecio sarmantosa 20 % OBL     |                  |                   |                 |
| 4.                                  |                  |                   |                 |
| 5.                                  |                  |                   |                 |
| 6.                                  |                  |                   |                 |
| 7.                                  |                  |                   |                 |
| 8.                                  |                  |                   |                 |
| **Total Cover:**                    |                  |                   |                 |

| Woody Vine Stratum                  |                  |                   |                 |
| 1.                                  |                  |                   |                 |
| 2.                                  |                  |                   |                 |
| **Total Cover:**                    |                  |                   |                 |

| % Bare Ground in Herb Stratum       | 10               |                   |                 |

**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></td>
<td>Color (moist)</td>
<td>%</td>
</tr>
<tr>
<td>0-11</td>
<td>104yR32</td>
<td>100</td>
</tr>
<tr>
<td>11-18</td>
<td>104yR32</td>
<td>50</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Hydric Soil Indicators</th>
<th>Indicators for Problematic Hydric Soils³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histosol (A1)</td>
<td>Sandy Redox (S5)</td>
</tr>
<tr>
<td>Histic Epipedon (A2)</td>
<td>Stripped Matrix (S6)</td>
</tr>
<tr>
<td>Black Histic (A3)</td>
<td>Loamy Mucky Mineral (F1) (except MLRA 1)</td>
</tr>
<tr>
<td>Hydrogen Sulfides (A4)</td>
<td>Loamy Gleyed Matrix (F2)</td>
</tr>
<tr>
<td>Depleted Below Dark Surface (A11)</td>
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<td>Redox Dark Surface (F6)</td>
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<tr>
<td>Sandy Mucky Mineral (S1)</td>
<td>Depleted Dark Surface (F7)</td>
</tr>
<tr>
<td>Sandy Gleyed Matrix (S4)</td>
<td>Redox Depressions (F8)</td>
</tr>
</tbody>
</table>

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

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 ☑ No

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:

Primary indicators (minimum of one required: check all that apply)

<table>
<thead>
<tr>
<th>Wetland Hydrology Indicators</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 (C8)</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:

<table>
<thead>
<tr>
<th>Surface Water Present?</th>
<th>Yes ☑ No</th>
<th>Depth (inches):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Table Present?</td>
<td>Yes ☑ No</td>
<td>Depth (inches):</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes ☑ No</td>
<td>Depth (inches):</td>
</tr>
<tr>
<td>(includes capillary fringe)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wetland Hydrology Present? Yes ☑ No

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

Recent significant rain events in past week, rain yesterday

Remarks: